

SL2100

Features and Specifications Manual

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MEMO

Regulatory

BATTERY DISPOSAL

The SL2100 system includes the batteries listed below. When disposing of these batteries, Chassis, and/or Unit, you must comply with applicable regulations relating to your location regarding proper disposal procedures.

Unit Name	Type of Battery	Quantity	Note
IP7[]-CPU-C1	Lithium	1	
External Battery (IP4WW-Battery Box)	Sealed Lead	2 per IP4WW-Battery Box	

The SL2100 IP7[]-CPU-C1 provides memory backup for approximately three years. The Lithium battery should be replaced every two years.

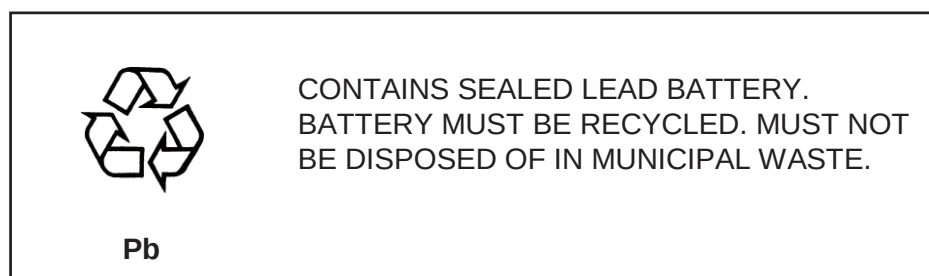
IMPORTANT SAFEGUARDS FOR BATTERY DISPOSAL

DO NOT PLACE USED BATTERIES IN YOUR REGULAR WASTE! THE PRODUCT YOU PURCHASED CONTAINS LITHIUM, SEALED LEAD BATTERIES. LITHIUM, SEALED LEAD BATTERIES MUST BE COLLECTED, RECYCLED, OR DISPOSED OF IN AN ENVIRONMENTALLY SOUND MANNER.

The incineration, landfilling or mixing of sealed lead batteries with the municipal solid waste stream is PROHIBITED BY LAW in most areas. Contact your local solid waste management officials for other information regarding the environmentally sound collection, recycling, and disposal of the battery.

Sealed lead batteries must be returned to an approved sealed lead battery recycler. This may be where the batteries were originally sold or a local seller of automotive batteries. Contact your local waste management officials for other information regarding the environmentally sound collection, recycling and disposal of the battery contained in this product.

The packaging for the SL2100 system contains the following labels regarding proper disposal.



BATTERY INFORMATION

Defective or exhausted batteries should never be disposed of as municipal waste. Return old batteries to the battery supplier, a licensed battery dealer or a designated collection facility. Do not incinerate batteries. This product uses Lithium batteries. Do not use any other type.

For an overview of the location of batteries used in these systems, the battery replacement or removal instructions, please refer to the SL2100 System Hardware Manual.

AUSTRALIAN REGULATORY INFORMATION

ELECTROMAGNETIC INTERFERENCE (EMI)

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

INCIDENCE OF HARM

If the System is malfunctioning, it may also be causing harm to the telephone network.

The Telephone system should be disconnected until the source of the problem can be determined and until repair has been made. If this is not done, the Network Provider may temporarily disconnect the service.

HEARING AID COMPATIBILITY

The NEC Multiline Terminals that are provided for this system are hearing aid compatible. The manufacturer of Single Line Telephones for use with the system must provide notice of hearing aid compatibility to comply with ACA Technical Standards.

SERVICE REQUIREMENTS

This equipment must only be installed and maintained by service personnel.

In the event of equipment malfunction, all repairs must be performed by an authorised dealer of NEC. It is the responsibility of users requiring service to report the need for service to one of NEC authorised agents.

COMPLIANCE INFORMATION

This equipment has been tested to comply with all relevant Australia and New Zealand regulatory requirements.

Warning: Small metal objects such as staples and pins may be caught and held in the earpiece and that the user should be aware and careful to prevent any accident from such an event.

The SL2100 system must be permanently connected to protective earth.

UL REGULATORY INFORMATION

This equipment has been listed by Underwriters Laboratories and complies with all applicable requirements of the standard for telephone equipment UL 1459.

VOICE ANNOUNCEMENT/MONITORING

The use of monitoring, recording or listening devices to eavesdrop, monitor, retrieve or record telephone conversations or other sounds activities, whether or not contemporaneous with its transmission may be illegal in certain circumstances under federal or state laws. Legal advice should be sought prior to implementing any practice that monitors or records any telephone conversation. Some federal and state laws require some form of notification to all parties to the telephone conversation, such as using a beep tone or other notification methods, or require the consent of all parties to the telephone conversation, prior to monitoring or recording a telephone conversation. Some of these laws incorporate strict penalties.

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POWER FAILURE

The NEC SL2100 system is operated on 230VAC Mains power. The System and Terminals will not operate when the mains power fails unless Battery Back-up or a UPS is connected. If emergency telephone use is required a Battery back-up or UPS needs to be connected.

MEMO

Chapter 1. Features

Section 1 ABOUT THIS CHAPTER

This chapter provides an alphabetical listing of the features that are available with the SL2100 system.

Each feature provides the following information:

Description - briefly describes the feature and how it is used.

Conditions - provides special operating conditions (if any) that need to be considered with using the feature.

Default Settings - indicates the factory default setting (if any).

System Availability - describes Multiline Terminals that can be used with this feature and lists any additional equipment, such as adapters or units, which must be installed for this feature to operate.

Programming - lists the memory blocks that support the feature.

Related Features - lists features that are associated with the feature being described (e.g., the Account Codes feature lists the Speed Dialing feature in the related features list because speed dialing bins can contain stored account code (if any).

Operation - provides step-by-step instructions for using the feature.

Section 2 FEATURES

Simplifying Multiline Terminal Operation with One-Touch Keys

A Multiline Terminal user can access many features Service Codes (e.g., Service Code 744 sets Call Forward Busy/No Answer). To streamline the operation of their telephone, a Multiline Terminal user can store these codes under One-Touch Keys. This provides one-button operation for almost any feature. To find out more, turn to the One-Touch Calling and One-Touch Serial Operation features.

Programmable Keys

When reading an instruction using programmable keys, you will see a notation similar to (*PRG 15-07 or SC nnn*). This means that the key requires service code nnn, and you can program this code in PRG 15-07 or by dialing Service Code 751 or 752. Refer to the Programmable Function Keys feature for more information.

Using Handsfree

The manual assumes each extension has Automatic Handsfree. This lets a user just press a line key or **Speaker** key to answer or place a call. For extensions without Automatic Handsfree, the user must:

- Lift the handset or press **Speaker** key for Intercom dial tone.
- Lift the handset or press **Speaker** key, then press a line key for trunk dial tone.

Port Assignments***Port Calculation for Trunks:***

The system detects the type of unit (trunk or extension) and assigns the required extension or trunk ports to the slot. The system will use the next available port numbers - it will not reserve any.

Abbreviated Dialing/Speed Dial

Description

Abbreviated Dialing/Speed Dial gives an extension user quick access to frequently called numbers. This saves time, for example, when calling a client with whom they deal often. Instead of dialing a long telephone number, the extension user just dials the Speed Dialing code.

There are three types of Speed Dialing: System, Group and Station. All co-workers can share the System Speed Dialing numbers. All co-workers in the same Speed Dialing Group can share the Group Speed Dialing numbers. Station Speed Dialing numbers are available only at a user's own extension. The system has 1000 Speed Dialing bins that you can allocate between System and Group Speed Dialing and a maximum of 50 Speed Dialing Groups are available. Each extension has 100 Station Speed Dial bins.

Each Speed Dialing bin can store a number with up to 36 digits.

When placing a not an Speed Dialing call, the system normally routes the call through Trunk Group Routing or ARS (whichever is enabled). Or, the user can preselect a specific trunk for the call. Also the system can optionally force System Speed Dialing numbers to route over a specific Trunk Group. User selection always overrides the system routing.

System Bins Limited to 900 with Speaker Key or #2 Service Code

Though there are 1000 Speed Dialing bins available in the system, once programmed, these bins can currently be dialed only using the Directory Dial feature (Press Directory key + ABB softkey + use arrow keys to locate number or Press Directory key + enter the Speed Dial bin name + **Speaker** key to place call.)

The **Speaker** key and service code #2 operations are not available for any 4-digit Speed Dial System bin number.

DSS Console Chaining

DSS Console chaining allows an extension user with a DSS Console to chain to a not an Speed Dialing number stored under a DSS Console key. The stored number dials out (chains) to the initial call. This can, for example, simplify dialing when calling a company with an Automated Attendant. You can program the bin for the company number under one DSS Console key (e.g., #200) and the client's extension number under the other (e.g., #201). The DSS Console user presses the first key to call the company, waits for the Automated Attendant to answer, then presses the second key to call the client (extension 400). See the Programming section below for additional details.

The DSS Console user can also chain to a number not in the Speed Dial list dialed manually, from a Programmable Function Key or a One-Touch Key.

Storing a Flash

To enhance compatibility with connected Centrex and PBX lines, Speed Dialing bin can have a stored Flash command. For example, storing 0 Flash 926 5400 causes the system to dial 0, flash the line and then dial 926 5400. The Flash can be stored by the user from their telephone or by the system administrator during system programming.

Using a Programmable Function Key

To streamline frequently-called numbers, a Speed Dialing Programmable Function Key can also store a Speed Dialing bin number. When the extension user presses the key, the telephone automatically dials out the stored number. This provides true one-touch calling via telephone function keys.

Cursor Key Operation (When set PRG 15-02-60:0)

By pressing the Right Cursor key, the user can access all directory menus. The flow chart below shows the menu access sequence (refer to [Figure 1-1 Right Cursor Key Operation Flow Chart](#)). If the terminal is not allowed access to Speed Dial and/or Telephone Book numbers or no telephone numbers are programmed in those areas, they are skipped.

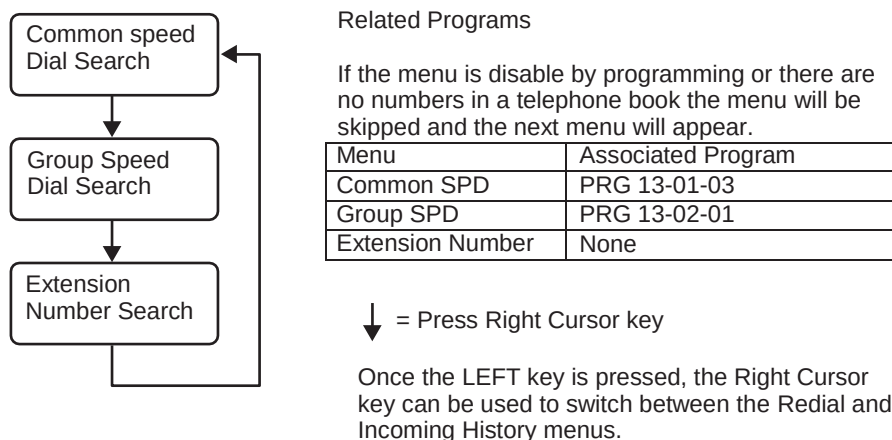


Figure 1-1 Right Cursor Key Operation Flow Chart

Conditions

- Speed Dial bins can contain stored Account Codes. To prevent them from being displayed use PRG 35-05-04.
- ARS selects the trunk for the call unless selected by the user.
- A user can implement Speed Dial only if their extension has access to outgoing trunks.
- An extension can have a One-Touch Key for Speed Dial operation.
- If you enter a PBX trunk access code in a Speed Dial bin, the system automatically inserts a pause after the bin.
- Single Line Terminals can dial only System and Group Speed Dial numbers.
- Toll Restriction may prevent a user from using a stored Speed Dial number.
- Unless selected by the user, Trunk Group Routing selects the trunk Speed Dial uses for trunk calls.
- If the Speed Dial bin does not have a name assigned it does not show when scrolling through the directory of speed dials.
- If PRG 13-01-01 is set to 1 (Intercom Access mode), system speed dial bins require inserting a trunk access code.
- When operating the Right Cursor key, if the menu is disabled by programming or there are no numbers in a telephone book, the menu is skipped and the next menu will appear.
- If a name is not associated with a speed dial bin, the speed dial entry will not show up when scrolling through the terminals Softkeys.
- When PRG 13-01-03 is set to 100 bins (00 ~ 99) 13-01-02 Station Speed Dialing must be disabled for bins 80 ~ 99 to be available as Common Speed Dial Bins.
- When PRG 13-01-02 is Enabled with 13-01-03 set as 100 bins (00 ~ 99) bins 80 ~ 99 are reserved for Station Speed Dial Bins (01 ~ 20) and are not used as Common Speed Dials.

Default Settings

Available (No Speed Dialing bins are assigned).

System Availability

Terminals

All Terminals

Required Component(s)

None

Related Features

Account Code Entry

Automatic Route Selection (ARS/F-Route)

Central Office Calls, Placing

Code Restriction/Toll Restriction

Dial Tone Detection

One-Touch Calling

PBX Compatibility/Behind PBX

Programmable Function Keys

Single Line Terminals

Trunk Group Routing

Guide to Feature Programming

The programs listed below indicate the most commonly used programs required for this feature. The programs are listed in the order that the installer should follow. Refer to the PCPro wizards for further detailed programming.

- When a * is listed next to the Program Number it indicates a program that **MUST** be set (from a default state) for this feature to be enabled.

System Speed Dial

Program No.	Program Name	Input Data	Default
13-01-01	Speed Dialing Function Setup - Speed Dialing Auto Outgoing Call Mode	0 = Trunk Outgoing Mode (Use trunk group assigned in PRG 13-05.) 1 = Intercom Outgoing Mode (Follow the system routing for the trunk access code entered.)	0
13-01-03	Speed Dialing Function Setup - Common Speed Dial Table Size	0 ~ 1000 0 = No Common Speed Dialing (No System Speed Dial)	900

Program No.	Program Name	Input Data	Default
13-05-01	Speed Dial Trunk Group/Route - Trunk Group/Route Number	0 = Follow the caller's extension trunk group routing (PRG 21-02) 1 ~ 50 = Trunk group 1 ~ 50	No Setting
13-04-01 *	Speed Dialing Number and Name - Number	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
13-04-02 *	Speed Dialing Number and Name - Name	Maximum 12 Characters (Use dial pad to enter name)	No Setting
11-10-04	Service Code Setup (for System Administrator) - Storing Common Speed Dialing Numbers	0~9, *, # Maximum of 8 digit	753
20-07-04	Class of Service Options (Administrator Level) - Storing Speed Dialing Entries	0 = Off (Deny) 1 = On	COS1 ~ 14/COS15 = 1
11-12-10	Service Code Setup (for Service Access) - Speed Dial Common/Station	0~9, *, # Maximum of 8 digit	#2
20-08-03	Class of Service Options (Outgoing Call Service) - System Speed Dialing	0 = Off (Deny) 1 = On	COS 01 ~ 15 = 1
15-07-01	Programmable Function Keys	27 = Common/Private Speed Dial	Refer to the programming manual for the default values and for all other available options in this command.

Additional Data for Group Speed Dial

Program No.	Program Name	Input Data	Default
13-03-01 *	Speed Dialing Group Assignment for Extensions - Speed Dial Group	01 ~ 50 Assign group number for extension	1
13-02-01 *	Group Speed Dialing Bins	0 ~ 999 = Speed dial bins 0 ~ 999	0
11-10-05	Service Code Setup (for System Administrator) - Storing Group Speed Dialing Numbers	0~9, *, # Maximum of 8 digit	754
20-07-04	Class of Service Options (Administrator Level) - Storing Speed Dialing Entries	0 = Off (Deny) 1 = On	COS1 ~ 14/COS15 = 1
11-12-11	Service Code Setup (for Service Access) - Group Speed Dialing	0~9, *, # Maximum of 8 digit	#4
20-08-04	Class of Service Options (Outgoing Call Service) - Group Speed Dialing	0 = Off (Deny) 1 = On	COS 01 ~ 15 = 1
15-07-01	Programmable Function Keys	28 = Group Speed Dial	Refer to the programming manual for the default values and for all other available options in this command.

Additional Data for Station Speed Dial

Program No.	Program Name	Input Data	Default
13-01-02	Speed Dialing Function Setup - Station Speed Dial	0 = Do not use 1 = Use	1
15-02-60	Multiline Telephone Basic Data Setup - Soft Key/ Navigation key Mode	0 = Standard Mode 1 = Advanced Mode1 2 = Advanced Mode2	2
13-06-01 *	Station Speed Dial Number and Name - Speed Dialing Data	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
13-06-01 *	Station Speed Dial Number and Name - Speed Dialing Name	Maximum of 12 characters	No Setting
15-14-01	One-Touch Keys - Dial Data	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
15-14-02	One-Touch Keys - Name	Maximum of 12 characters	No Setting
11-11-39	Service Code Setup (for Setup/Entry Operation) - One Touch Dial Entry	0~9, *, # Maximum of 8 digit	755
10-09-01	DTMF, Dial Tone Detection Setup - DTMF, Dial Tone Detection	0 = Common use for both analog extensions and trunks 1 = Use for analog extensions(DTMF receivers) 2 = Use for analog trunks(DTMF receivers/ Dial tone Detection/ Caller ID detection)	Resource 01-140 = 0
13-04-03	Speed Dialing Number and Name - Transfer Mode	0 = Not Used (Calls will not be routed based off a users caller ID.) 1 = Internal Dial (Calls will be routed to an internal number specified in PRG 13-04-04.) 2 = Incoming Ring Group (Calls will be routed to a ring group specified in PRG 13-04-04.) 3 = Remote Monitor (Used for the security feature and not Flexible Caller ID routing.)	0
13-04-04	Speed Dialing Number and Name - Transfer Destination Number	If Transfer mode is (Refer to 13-04-03) : 1 = Internal Dial Mode 1 ~ 9, 0, *, #, P, R, @ (Maximum 36 Characters) 2 = Incoming Ring Group 0 ~ 50 (IRG Number) P = Pause R = Recall @ = Additional Digits when using ISDN functionality 3 = Remote Monitor Dial (Up to 8 digits)	No Setting
13-04-05	Speed Dialing Number and Name - Incoming Ring Pattern	0 = Normal System Ring Pattern 1 ~ 4 = Tone Pattern 1 ~ 4 5 ~ 9 = Scale Pattern 1 ~ 5 10 ~ 13 = Tone Pattern 5 ~ 8	0

Program No.	Program Name	Input Data	Default
14-02-06	Analog Trunk Data Setup - Pause after First Digit For Manually Dialed Calls	0 = No Pause (No) 1 = Pause (Yes)	1
15-02-04	Multiline Telephone Basic Data Setup - Redial (Speed Dial) Control	0 = Common and Individual Speed Dialing 1 = Group Speed Dialing	0
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
80-03-01	DTMF Tone Receiver Setup - Detect Level	0 = 0 dBm ~ - 25 dBm 1 = - 5 dBm ~ - 30 dBm 2 = - 10 dBm ~ - 35 dBm 3 = - 15 dBm ~ - 40 dBm 4 = - 20 dBm ~ - 45 dBm 5 = - 25 dBm ~ - 50 dBm 6 = - 30 dBm ~ - 55 dBm	Refer to the Programming Manual for the default values.
80-03-02	DTMF Tone Receiver Setup - Start Delay Time	0 ~ 255 (0.25 ms ~ 64 ms)	Refer to the Programming Manual for the default values.
80-03-03	DTMF Tone Receiver Setup - Min. Detect Level	0 ~ 15 DTMF Tone 0 = - 10 dBm (0) to - 25 dBm (15) DTMF Tone 1 = - 15 dBm (0) to - 30 dBm (15) DTMF Tone 2 = - 20 dBm (0) to - 35 dBm (15) DTMF Tone 3 = - 25 dBm (0) to - 40 dBm (15) DTMF Tone 4 = - 30 dBm (0) to - 45 dBm (15) DTMF Tone 5 = - 35 dBm (0) to - 50 dBm (15) DTMF Tone 6 = - 40 dBm (0) to - 55 dBm (15)	Refer to the Programming Manual for the default values.
80-03-04	DTMF Tone Receiver Setup - Max. Detect Level	0 ~ 15 DTMF Tone 0 = 0 dBm (0) to - 15 dBm (15) DTMF Tone 1 = - 5 dBm (0) to - 20 dBm (15) DTMF Tone 2 = - 10 dBm (0) to - 25 dBm (15) DTMF Tone 3 = - 15 dBm (0) to - 30 dBm (15) DTMF Tone 4 = - 20 dBm (0) to - 35 dBm (15) DTMF Tone 5 = - 25 dBm (0) to - 40 dBm (15) DTMF Tone 6 = - 30 dBm (0) to - 45 dBm (15)	Refer to the Programming Manual for the default values.
80-03-05	DTMF Tone Receiver Setup - Forward Twist Level	0 ~ 9 (1 dB ~ 10 dB)	Refer to the Programming Manual for the default values.
80-03-06	DTMF Tone Receiver Setup - Backward Twist Level	0 ~ 9 (1 dB ~ 10 dB)	Refer to the Programming Manual for the default values.
80-03-07	DTMF Tone Receiver Setup - ON Detect Time	1 ~ 255 (15 + 15 ms ~ 3825 ms)	Refer to the Programming Manual for the default values.
80-03-08	DTMF Tone Receiver Setup - OFF Detect Time	1 ~ 255 (15 + 15 ms ~ 3825 ms)	Refer to the Programming Manual for the default values.

Program No.	Program Name	Input Data	Default
80-04-01	Call Progress Tone Detector Setup - Detection Level	0 = 0 dBm ~ - 25 dBm 1 = - 5 dBm ~ - 30 dBm 2 = - 10 dBm ~ - 35 dBm 3 = - 15 dBm ~ - 40 dBm 4 = - 20 dBm ~ - 45 dBm 5 = - 25 dBm ~ - 50 dBm 6 = - 30 dBm ~ - 55 dBm	Refer to the Programming Manual for the default values.
80-04-02	Call Progress Tone Detector Setup - Min. Detection Level	0 ~ 15 0 = - 10 dBm (0) ~ - 25 dBm (15) 1 = - 15 dBm (0) ~ - 30 dBm (15) 2 = - 20 dBm (0) ~ - 35 dBm (15) 3 = - 25 dBm (0) ~ - 40 dBm (15) 4 = - 30 dBm (0) ~ - 45 dBm (15) 5 = - 35 dBm (0) ~ - 50 dBm (15) 6 = - 40 dBm (0) ~ - 55 dBm (15)	Refer to the Programming Manual for the default values.
80-04-03	Call Progress Tone Detector Setup - S/N Ratio	0 ~ 4 (0 dB ~ - 20 dB)	Refer to the Programming Manual for the default values.
80-04-04	Call Progress Tone Detector Setup - No Tone Time	0 ~ 255 (30 + 30 ~ 7680 ms) (0 = not detect) 1 ~ 255 = 60 ~ 7680 ms The formula is 30 + 30N When set to N = 1, it means 30 + 30 * 1 = 60. When set to N = 255, it means 30 + 30 * 255 = 7680.	Refer to the Programming Manual for the default values.
80-04-05	Call Progress Tone Detector Setup - Pulse Count	1 ~ 255	Refer to the Programming Manual for the default values.
80-04-06	Call Progress Tone Detector Setup - ON Minimum Time	1 ~ 255 (30 + 30 ~ 7680 ms)	Refer to the Programming Manual for the default values.
80-04-07	Call Progress Tone Detector Setup - ON Maximum Time	0 ~ 255 (30 + 30 ~ 7680 ms)	Refer to the Programming Manual for the default values.
80-04-08	Call Progress Tone Detector Setup - OFF Minimum Time	1 ~ 255 (30 + 30 ~ 7680 ms)	Refer to the Programming Manual for the default values.
80-04-09	Call Progress Tone Detector Setup - OFF Maximum Time	0 ~ 255 (30 + 30 ~ 7680 ms)	Refer to the Programming Manual for the default values.
11-12-40	Service Code Setup (for Service Access) - Station Speed Dialing	0~9, *, # Maximum of 8 digit	#7
30-03-01	DSS Console Key Assignment		The DSS keys 001~060 of all DSS consoles = DSS/One-Touch key 101~160 The DSS keys 061~114 of all DSS consoles = No Setting

Operation

To store a Speed Dialing number:

1. Press **Speaker** key.
2. Dial **753** (for system) or **754** (for group).

3. Dial system or group storage code.



Initially, there are 900 System Speed Dialing codes. Group Speed Dialing codes must be defined in programming.

4. Dial telephone number you want to store (up to 36 digits).



*Valid entries are 0~9, # and *. To enter a pause, press **Transfer** key. To store a Flash, press **Flash** key.*



Enter @ for await answer before sending following digits on ISDN.

5. Press **Hold** key.
6. Enter the name associated with the Speed Dialing number.

Table 1-1 Keys for Entering Names

Use this keypad digit . . .	When you want to. . .
1	Enter characters: 1 @ [¥] ^ _ ` { } → ← Á Â Ã Ä Å Æ Ç È É Ê Ë Ì Í Î Ï
2	Enter characters: A-C, a-c, 2.
3	Enter characters: D-F, d-f, 3.
4	Enter characters: G-I, g-i, 4.
5	Enter characters: J-L, j-l, 5.
6	Enter characters: M-O, m-o, 6.
7	Enter characters: P-S, p-s, 7.
8	Enter characters: T-V, t-v, 8.
9	Enter characters: W-Z, w-z, 9.
0	Enter characters: 0 ! " # \$ % & ' () * + , - . / : ; < = > ? [\] ^ _ ` { } ~ ¡ ¢ £ ¤ ¥ ¦ § ¨ © ª « ¬ ® ¯ ° ± ² ³ ´ µ ¶ · ¸ ¹ º » ¼ ½ ¾
*	Enter characters: * + , - . / : ; < = > ? [\] ^ _ ` { } ~ ¡ ¢ £ ¤ ¥ ¦ § ¨ © ª « ¬ ® ¯ ° ± ² ³ ´ µ ¶ · ¸ ¹ º » ¼ ½ ¾
#	# = Accepts an entry (only required if two letters on the same key are needed - ex: TOM). Pressing # again = Space. (In system programming mode, use the right arrow Softkey instead to accept and/or add a space.)
Clear/Back or DND (2W Digital/IP Multiline Terminal)	Clear the character entry one character at a time.
Flash	Clear all the entries from the point of the flashing cursor and to the right.

7. Press **Hold** key.
8. Press **Speaker** key to hang up or repeat steps 3~7 to program another System or Group Speed Dial bin.

To dial a System Speed Dialing number (When set PRG 15-02-60:0):

1. Go off-hook.
2. Press the **Redial** key.
- OR -
Press the **Right Cursor** key until the System Speed Dial menu appears.
- OR -
Dial the System Speed Dialing storage code.



Unless selected by the user, Trunk Group Routing selects the trunk for the call. The system may optionally select a specific Trunk Group for the call.



If you have a DSS Console, you may be able to press a DSS Console key to chain to a stored number.

To dial a System Speed Dialing number:

1. Go off-hook.
2. Dial **#2**.
3. Dial the System Speed Dialing Bin Number.

To dial a System Speed Dialing number by Directory Dialing

<When PRG 15-02-60: 0>

1. On-Hook condition.
2. Press **Right Cursor** key until **ABB:Common** menu appears.
3. Press **Up Cursor** key or **Down Cursor** key to select the destination name.
4. Press **Speaker** key or Lift handset.

<When PRG 15-02-60: 1 or 2>

1. On-Hook condition.
2. Press **Down Cursor** key and press 1st character you want to search.
3. Press **Up Cursor** key or **Down Cursor** key to select the destination name.
4. Press **Center Cursor** key to confirm a name and number.
5. Press **Speaker** key or Lift handset.

 Unless selected by the user, Trunk Group Routing selects the trunk for the call. The system may optionally select a specific Trunk Group for the call.

 If you have a DSS Console, you may be able to press a DSS Console key to chain to a stored number.

To store a Speed Dialing number under a Programmable Function Key:

1. At Multiline Terminal, press **Speaker** key.
2. Dial **751**.
3. Press the key where the number is to be stored.
4. Dial **27** (System Speed Dial), Dial **28** (Group Speed Dial).
5. Dial Speed Dial Bin number to put under the key.
6. Press **Speaker** key to hang up.

To dial a Speed Dialing number under a Programmable Function Key:

1. At the Multiline Terminal, press **Speaker** key.
2. Press the key, which has the stored number to be dialed.

 The number seizes an outside line and dials out.

To dial a Group Speed Dialing number (When set PRG 15-02-60:0):

1. Go off-hook.
2. Press the **Redial** key.
- OR -
Press the **Right Cursor** key until the Group Speed Dial menu appears.
- OR -
Press the **Group Speed Dialing** key (PRG 15-07-01 or SC **751**: 28).

 To preselect, press a line key in step 1 (instead of **Speaker** key) before pressing the **Redial** or **Speed Dialing** key.

3. Dial the Group Speed Dialing code.



The stored number dials out.



Unless selected by the user, Trunk Group Routing selects the trunk for the call.



If you have a DSS Console, you may be able to press a DSS Console key to chain to a stored number.

To dial a Group Speed Dialing number

1. Go Off-Hook.
2. Dial #4.
3. Dial the Group Speed Dialing Bin Number.

To dial a Group Speed Dialing number by Directory Dialing

<When PRG 15-02-60: 0>

1. On-Hook condition.
2. Press **Right Cursor** key until **ABB:Group** menu appears.
3. Press **Up Cursor** key or **Down Cursor** key to select the destination name.
4. Press **Speaker** key or Lift handset.

<When PRG 15-02-60: 1 or 2>

1. On-Hook condition.
2. Press **Down Cursor** key and press 1st character you want to search.
3. Press **Up Cursor** key or **Down Cursor** key to select the destination name.
4. Press **Enter Cursor** key to confirm a name and number.
5. Press **Speaker** key or Lift handset.



The stored number dials out.



Unless selected by the user, Trunk Group Routing selects the trunk for the call.



If you have a DSS Console, you may be able to press a DSS Console key to chain to a stored number.

To check your stored Speed Dialing numbers (When set PRG 15-02-60:0):

1. Press **Help** key.
2. For System Speed Dialing, press the **Redial** key.
Dial the Speed Dialing Code (e.g., common code **001**).



*If the entire stored number is too long for your telephone display, press * to see the rest of the number.*

- OR -

For Group Speed Dialing, press the **Group Speed Dialing** key.

- OR -

For System Speed Dialing key, press the **System Speed Dialing** key.

3. Press **Exit** key.



To display additional numbers, repeat from step 1.

- OR -

Press the **Right Cursor** key until the appropriate, System or Group Speed Dial menu appears.



Use the Volume "Down" and Volume "Up" keys to scroll through the stored numbers.

To check your stored Speed Dialing number by Directory Dialing

<When PRG 15-02-60: 0>

1. On-Hook condition.
2. For System Speed Dialing, press **Right Cursor** key.
- OR -
For Group Speed Dialing, press **Right Cursor** key twice.
3. Press **Up Cursor** key or **Down Cursor** key to select and confirm the name and number.
4. Press **Exit** key to return to idle condition.

<When PRG 15-02-60: 1 or 2>

1. On-Hook condition.
2. Press **Down Cursor** key and press 1st character you want to search.
3. Press **Up Cursor** key or **Down Cursor** key to select the destination name.
4. Press **Enter Cursor** key to confirm a name and number.
5. Press **Exit** key to return to idle condition.

To store a Station Speed Dialing number:

1. Press **Speaker** key.
2. Dial **755**.
3. Dial the Station Speed Dial buffer number to be programmed (**0~9**).
1 = Station Speed Dial buffer 1
2 = Station Speed Dial buffer 2
:
:
0 = Station Speed Dial buffer 10
4. Dial the telephone number you want to store (maximum of 36 digits).
 *Valid entries are 0~9, # and *. To enter a pause, press **Mute** key. To store a Flash, press **Flash** key.*
5. Press **Hold** key.

6. Enter the name associated with the Speed Dialing number.

Key for Entering Names	
Use this keypad digit . . .	When you want to. . .
1	Enter characters: 1 @ [¥] ^ _ ` { } → ← Á Â Ã Ä Å Æ Ç È É Ê Ë Ì Í Î Ï
2	Enter characters: A-C, a-c, 2.
3	Enter characters: D-F, d-f, 3.
4	Enter characters: G-I, g-i, 4.
5	Enter characters: J-L, j-l, 5.
6	Enter characters: M-O, m-o, 6.
7	Enter characters: P-S, p-s, 7.
8	Enter characters: T-V, t-v, 8.
9	Enter characters: W-Z, w-z, 9.
0	Enter characters: 0 ! " # \$ % & ' () ð ñ ò ó ô õ ö ù á â ã ä å æ ø ù α ε θ ß
*	Enter characters: * + , - . / : ; < = > ? π Σ σ Ω ∞ ∅ £
#	# = Accepts an entry (only required if two letters on the same key are needed - ex: TOM). Pressing # again = Space.
Clear/Back or DND (2W Digital/IP Multiline Terminal)	Clear the character entry one character at a time.
Flash	Clear all the entries from the point of the flashing cursor and to the right.

7. Press **Hold** key.
 8. Press **Speaker** key to hang up.

To store a Station Speed Dialing number (Single Line Terminals only):

- Lift the Handset.
- Dial **755**.
- Dial the Station Speed Dial buffer number to be programmed (**0~9**).
 - 1 = Station Speed Dial Buffer 1
 - 2 = Station Speed Dial Buffer 2
 - 3 = Station Speed Dial Buffer 3
 - 4 = Station Speed Dial Buffer 4
 - 5 = Station Speed Dial Buffer 5
 - 6 = Station Speed Dial Buffer 6
 - 7 = Station Speed Dial Buffer 7
 - 8 = Station Speed Dial Buffer 8
 - 9 = Station Speed Dial Buffer 9
 - 0 = Station Speed Dial Buffer 10
- Dial the telephone number you want to store (maximum of 36 digits).



Valid entries are 0~9, # and *.



A Single line set cannot program a pause or flash in a spd bin.

5. Hang up.

To dial a Station Speed Dialing number (Multiline Terminal):

- Press **Speaker** key.

2. Dial **#7** (default Service Code).

- OR -

Press the **System Speed Dialing** key (Service Code **751**: 27).



*To preselect, press a line key in step 1 (instead of **Speaker**).*

3. Dial the Station Speed Dial buffer number (**0~9**).

1 = Station Speed Dial buffer 1

2 = Station Speed Dial buffer 2

:

:

0 = Station Speed Dial buffer 10



The stored number dials out.



Unless selected by the user, Trunk Group Routing selects the trunk for the call. The system may optionally select a specific Trunk Group for the call.



If you have a DSS Console, you may be able to press a DSS Console key to chain to a stored number.

To dial a Station Speed Dialing number (Single Line Terminal):

1. Lift the Handset.
2. Station Speed Dial **#7**
Group Speed Dial **#4**
System Speed Dial **#2**
3. Dial the Speed Dial Memory Location.
Station Speed Dial **0~9**
Group Speed Dial **xxx** (none at default)
System Speed Dial **000~999**
4. Converse.

Account Code Forced/Verified/Unverified

Description

Account Codes are user-dialed codes that help the system administrator categorize and/or restrict trunk calls. The system has two types of Forced Account Codes:

- **Forced Account Codes (Unverified)**
Forced Account Codes **require** an extension user to enter an Account Code every time they place a trunk call. If the user does not enter the code, the system prevents the call. As with Account Codes, the extension user can elect to enter an Account Code for an incoming call. However, the system does not require it.
Once set up in system programming, you can enable Forced Account Codes on a trunk-by-trunk basis. In addition, Forced Account Codes can apply to all outside calls or just long distance calls.
- **Verified Account Codes**
With Verified Account Codes, the system compares the Account Code the user dials to a list of up to 800 pre-programmed codes. If the Account Code is in the list, the call goes through. If the code dialed is not in the list, the system prevents the call. Verified Account Codes can have 3~16 digits using the characters 0~9 and #. During programming, you can use "wild cards" to streamline entering codes into system memory. For example, the entry 123@ lets users dial Verified Account Codes from 1230 through 1239.

Operator Notification

To prevent Account Code abuse, the system can notify the operator each time an Account Code violation occurs (PRG 20-13-20). This can happen if the user fails to enter an Account Code (if Forced) or enters a Verified Account Code that is not in the list. The notification is an automatic Intercom call to the attendant and a RESTRICT message in the operator display.

Account Codes for Incoming Calls

The system allows extension users to enter Account Codes for incoming calls. When this option is enabled, a user can dial * while on an incoming call, enter an Account Code, and then dial * to return to their caller. If the option is disabled, any digits the user dials after answering an incoming call outdial on the connected trunk.

Hiding Account Codes

Account Codes can be optionally hidden from a telephone display. This would prevent, for example, an unauthorized co-worker from obtaining a Verified Account Code by watching the display and making note of the digits that dial out. When hidden, the Account Code digits show as * on the telephone display.

Account Code Capacity

Account Codes print along with the other call data on the SMDR record after the call completes. Account Codes can have 1~16 digits using 0~9 and #. Verified Account Codes can have 3~16 digits.

Redialed Numbers Do Not Contain Account Codes

When using the Last Number Redial, Save or Repeat Dial features, the system does not retain Account Code information. Any number redialed with these features, the user needs to reenter an Account Code.



*If a user enters *12345*203 926 5400*67890*, if the Last Number Redial feature is used, the system dials the number as 203 926 5400*67890*. The *67890* is not treated as an Account Code.*

Conditions

- If a user enters a code that exceeds the 16 digit limit, the system ignores the Account Code Entry.
- If the system has Account Codes disabled, the digits dialed (e.g., *1234*) appear on the SMDR report as part of the number dialed.
- If using Forced Account Code with Single Line Terminal you need a VRS to get the prompts to enter the Forced Account Code.
- When you use Forced Account Code on only toll calls, and you dial a local call, you hear a beep.
- The timer set in PRG 21-01-14 is applied to toll calls and local calls.
- Speed Dial - System/Group/Station bins can contain stored Account Codes. They can be prevented from being displayed using PRG 20-07-04.
- To simplify Account Code Entry, store the Account Code (e.g., *1234*) in a One-Touch Key. Just press the key instead of dialing the codes.
- Account Codes appear on the SMDR report (even if they are hidden on the telephone display).
- Do not use an asterisk within a PBX/CTX access code when using Account Codes. The *, causes the trunk to stop sending digits to the central office until another * is entered.
- Account Codes for incoming calls not available for Single Line Terminals.
- When using Forced Account Codes (Unverified) for toll calls only, the station follows the timer setting in PRG 21-01-14 for all calls.
- System Account codes are bypassed when using DISA trunks. If a user calls in via a DISA trunk, the user is not required to enter an account code.
- Emergency number data will be defined in PRG 21-24-01. First digit of dialing data should be same as trunk access code.

Default Settings

Disabled

System Availability

Terminals

Any Station

Required Component(s)

VRS for Forced Account Codes for Single Line Terminals

Related Features

Abbreviated Dialing/Speed Dial

Automatic Route Selection (ARS/F-Route)

PBX Compatibility/Behind PBX

Station Message Detail Recording

Guide to Feature Programming

The programs listed below indicate the most commonly used programs required for this feature. The programs are listed in the order that the installer should follow. Refer to the PCPro wizards for further detailed programming.

- When a * is listed next to the Program Number it indicates a program that **MUST** be set (from a default state) for this feature to be enabled.

Program No.	Program Name	Input Data	Default
35-05-01 *	Account Code Setup - Account Code Mode	0 = Account Codes Disabled 1 = Account Codes Optional (This is for the account code entry feature.) 2 = Account Code Required Not Verified (Forced Account Codes enabled, no verification with the system required) 3 = Account Code Required and Verified (Forced Account Codes enabled, verification with PRG 35-06-01 required)	0
35-05-02	Account Code Setup - Forced Account Code Toll Call Setup	0 = Account Codes for ALL calls 1 = Account Codes for TOLL calls	0
35-05-03	Account Code Setup - Account Codes for Incoming Calls	0 = Disabled (User cannot enter an account code.) 1 = Enabled (User can enter an account code while on an incoming call.)	0
35-05-04	Account Code Setup - Hiding Account Codes	0 = Account Codes displayed 1 = Account Codes not displayed	0
35-06-01	Verified Account Code Table - Verified Account Code	1 ~ 9, 0, #, @ (@ = Wild card) (Up to 16 digits)	No Setting
40-10-01	Voice Announcement Service Option - VRS Fixed Message	0 = Disable (VRS fixed message will not be played.) 1 = Enable (VRS fixed message will be played.)	0
15-07-01	Programmable Function Keys	50 = Account Code	Refer to the programming manual for the default values and for all other available options in this command.
21-01-14	System Options for Outgoing Calls - Forced Account Code Inter-digit Timer	0 ~ 64800 seconds	3
14-01-11	Basic Trunk Data Setup - Account Code Required	0 = Disabled (user cannot enter account codes using this trunk.) 1 = Enabled (user can enter account codes using this trunk.)	1
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-13-20	Class of Service Options (Supplementary Service) - Account Code/Toll Restriction Operator Alert (Restricted Operation Transfer)	0 = Off (Call restricted.) 1 = On (Call routed to operator.)	COS 01 ~ 15 = 0
21-04-01	Toll Restriction Class for Extensions - Restriction Class	1 ~ 15 = Toll Class 1 ~ 15	2
21-24-01	Forced Access Dial Data - Dialing Number	1 ~ 0, *, # (maximum 16 digits)	No Setting

Operation

To enter an Account Code anytime while on a trunk call:

The outside caller cannot hear the Account Code digits you enter. You can use this procedure if your system has Optional Account Codes enabled. You may also be able to use this procedure for incoming calls. This procedure is not available for Single Line Terminals.

1. Dial *.
- OR -
Press your **Account Code** key (PRG 15-07-01 or SC **751**: code 50).
2. Dial your Account Code (1~16 digits, using 0~9 and #).
 *If Account Codes are hidden, each digit you dial shows an "*" character on the telephone display.*
3. Dial *.
- OR -
Press your **Account Code** key (PRG 15-07-01 or SC **751**: code 50).

To enter a Forced Account Code before dialing the outside number:

If your system has Forced or Verified Account Codes, you may use this procedure instead of letting the system prompt you for your Account Code. You may also use this procedure if your system has Optional Account Codes.

If your system has Verified Account Codes enabled, be sure to choose a code programmed into your Verified Account Code list.

1. Access trunk for outside call.
 *You can access a trunk by pressing a line key or dialing a code. Refer to [Central Office Calls, Placing](#) for more information.*
2. Dial *.
- OR -
Press your **Account Code** key (PRG 15-07-01 or SC **751**: code 50).
3. Dial your Account Code [1~16 digits, using 0~9 and # or (3~16 digits for Forced)].
 *If you make an incorrect entry, your system may automatically alert the operator. If Account Codes are hidden, each digit you dial shows an * on the telephone display (depending on programming).*
4. Dial *.
- OR -
Press your **Account Code** key (PRG 15-07-01 or SC **751**: code 50).
5. Dial the number you want to call.

To dial an outside number and let your system tell you when a Forced Account Code is required:

1. Access a trunk and dial the number you want to call.
2. Wait for your call to go through.
- OR -

3. If you hear *"Please enter an Account Code,"*(depending on system programming) and your display shows *ENTER ACCOUNT CODE*.
 - Dial *.
 - OR -
 - Press your **Account Code** key (PRG 15-07-01 or SC **751**: code 50).
 - Dial your Account Code (3~16 digits, using 0~9 and #).
If Account Codes are hidden, each digit you dial shows an * on the telephone display.
 - Dial *.
 - OR -
 - Press your **Account Code** key (PRG 15-07-01 or SC **751**: code 50).

To enter an Account Code for an incoming call:

This procedure is not available for Single Line Terminals.

1. Answer incoming call.
 -  *If Account Codes for Incoming Calls is disabled, the following steps dial digits out onto the connected trunk.*
2. Dial *.
3. Enter the Account Code (1~16 digits).
 -  *You can enter any code of the proper length.*
4. Dial *.

To enter a Forced Account Code at a Single Line Terminal:

1. Access trunk for outside call.
 -  *You can access a trunk by dialing a code. Refer to Central Office Calls, Placing for more information.*
 -  *With Forced Account Codes, you hear, "Please enter an Account Code."(It depends on programming).*
2. Dial *.
3. Enter Account Code (3~16 digits).
4. Dial *.
5. Dial number you want to call.

Account Code Entry

Description

Account Codes are user-dialed codes that help the System Administrator categorize and/or restrict trunk calls. Optional Account Codes allow a user to enter an Account Code while placing a trunk call or anytime while on a call. The system does not require the user to enter the optional account code.

Account Codes for Incoming Calls

The system can control extension user ability to enter Account Codes for incoming calls. When this option is enabled, a user can dial * while on an incoming call, enter an Account Code, and then dial* to return to their caller. If the option is disabled, any digit the user dials after answering an incoming call outdials on the connected trunk.

Hiding Account Codes

Account Codes can be optionally hidden from a telephone display. This prevents, for example, an unauthorized co-worker from obtaining a Verified Account Code by watching the display and making note of the digits that dial out. When hidden, the Account Code digits show an * on the telephone display.

Account Code Capacity

Account Codes print along with the other call data on the SMDR record after the call completes. Account Codes can have 1~16 digits using 0~9 and #.

Redialed Numbers Do Not Contain Account Codes

When using the Last Number Redial, Save or Repeat Dial features, the system does not retain Account Code information. To redial any number with these features, the user must enter an Account Code.



*If a user enters *12345*203 926 5400*67890* , if the Last Number Redial feature is used, the system dials the number as 203 926 5400 *67890* . The *67890* is not treated as an Account Code.*

Conditions

- If a user enters a code that exceeds 16 digits limit, the system ignores it.
- If the system has Account Codes disabled, the digits dialed (e.g., *1234*) appear on the SMDR report as part of the number dialed.
- Do not use an asterisk in a PBX access code when using Account Codes. Otherwise, after the *, the trunk stops sending digits to the central office.
- Account Codes appear on the SMDR report (even if they are hidden on the telephone display).
- To simplify Account Code Entry, store the Account Code (e.g., 1234) in a One-Touch Key, and Press the key instead of dialing the code.
- Speed Dialing bins can contain stored Account Codes. Prevent them from being displayed using PRG 20-07-04.
- When Account Codes are enabled, the user must press the * three times before the * character is passed to the Telco. The system recognizes the initial * as the beginning of an Account Code entry, the second * as the end of an Account Code entry, and the third * is passed to Telco.

Default Settings

Disabled

System Availability

Terminals

All Terminals

Required Component(s)

None

Related Features

Abbreviated Dialing/Speed Dial

Automatic Route Selection (ARS/F-Route)

One-Touch Calling

PBX Compatibility/Behind PBX

Station Message Detail Recording

Guide to Feature Programming

The programs listed below indicate the most commonly used programs required for this feature. The programs are listed in the order that the installer should follow. Refer to the PCPro wizards for further detailed programming.

- When a * is listed next to the Program Number it indicates a program that **MUST** be set (from a default state) for this feature to be enabled.

Program No.	Program Name	Input Data	Default
14-01-11	Basic Trunk Data Setup - Account Code Required	0 = Disabled (user cannot enter account codes using this trunk.) 1 = Enabled (user can enter account codes using this trunk.)	1
35-05-01 *	Account Code Setup - Account Code Mode	0 = Account Codes Disabled 1 = Account Codes Optional (This is for the account code entry feature.) 2 = Account Code Required Not Verified (Forced Account Codes enabled, no verification with the system required) 3 = Account Code Required and Verified (Forced Account Codes enabled, verification with PRG 35-06-01 required)	0
35-05-03	Account Code Setup - Account Codes for Incoming Calls	0 = Disabled (User cannot enter an account code.) 1 = Enabled (User can enter an account code while on an incoming call.)	0
35-05-04	Account Code Setup - Hiding Account Codes	0 = Account Codes displayed 1 = Account Codes not displayed	0

Program No.	Program Name	Input Data	Default
15-07-01	Programmable Function Keys	50 = Account Code	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
21-01-04	System Options for Outgoing Calls - Dial Tone Detection Time	0 ~ 64800 seconds	5
35-05-02	Account Code Setup - Forced Account Code Toll Call Setup	0 = Account Codes for ALL calls 1 = Account Codes for TOLL calls	0
35-06-01	Verified Account Code Table - Verified Account Code	1 ~ 9, 0, #, @ (@ = Wild card) (Up to 16 digits)	No Setting

Operation

To enter an Account Code anytime while on a trunk call:

The outside caller cannot hear the Account Code digits you enter. You can use this procedure if your system has Optional Account Codes enabled. You may also be able to use this procedure for incoming calls. This procedure is not available for Single Line Terminals.

- Dial *.
- OR -
Press your **Account Code** key (PRG 15-07 or SC **751**: code 50).
- Dial your Account Code (1~16 digits, using 0~9 and #).
 *If Account Codes are hidden, each digit you dial shows an * on the telephone display.*
- Dial *.
- OR -
Press your **Account Code** key (PRG 15-07 or SC **751**: code 50).

To enter an Account Code before dialing the outside number:

If your system has Forced or Verified Account Codes, you may use this procedure instead of letting the system prompts you for your Account Code. You may also use this procedure if your system has Optional Account Codes.

If your system has Verified Account Codes enabled, be sure to choose a code programmed into your Verified Account Code list.

- Access trunk for outside call.
 *Press a line key or dial a code to access a trunk. Refer to [Central Office Calls, Placing](#) for more information.*
- Dial *.
- OR -
Press your **Account Code** key (PRG 15-07 or SC **751**: code 50).
- Dial your Account Code (1~16 digits, using 0~9 and #).
 *If you make an incorrect entry, your system may automatically alert the operator. If Account Codes are hidden, each digit you dial shows an * on the telephone display.*

4. Dial *.
- OR -
Press your **Account Code** key (PRG 15-07 or SC **751**: code 50).
5. Dial the number you want to call.

To enter an Account Code for an incoming call:

This procedure is not available for Single Line Terminals.

1. Answer incoming call.
 *If Account Codes for Incoming Calls is disabled, the following steps dial digits out to the connected trunk.*
2. Dial *.
3. Enter the Account Code.
 *You can enter any code of the proper length. Incoming Account Codes cannot be Forced or Verified.*
4. Dial *.

To enter an Account Code at a Single Line Terminal:

1. Access trunk for outside call.
 *You can access a trunk by dialing a code. Refer to [Central Office Calls, Placing](#) for more information.*
2. Dial *.
3. Enter Account Code (1~16 digits).
4. Dial *.
5. Dial number you want to call.

Alarm

Description

Alarm lets any station extension work like an Alarm clock. An extension user can have Alarm remind them of a meeting or an appointment. There are two types of Alarms:

- Alarm 1 (sounds only once at the preset time)
- Alarm 2 (sounds every day at the preset time)

Conditions

- Single Line Terminals ring and Music on Hold is heard when the Alarm sounds.
- Only a Multiline Terminal user can view what time the Alarm is currently set for.

Default Settings

Enabled

System Availability

Terminals

Any Station

Required Component(s)

None

Related Features

None

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
20-01-06	System Options - Alarm Duration	0 ~ 64800 seconds	30

Operation

To set the alarm:

1. At the Multiline Terminal, press **Speaker** key.
- OR -
At the Single Line Terminal, lift the handset.
2. Dial **727**.
3. Dial alarm type (1 or 2).
 *Alarm 1 sound only once. Alarm 2 sounds each day at the preset time.*
4. Dial the alarm time (24-hour clock).
 *For example, for 1:15 PM dial 1315.
A confirmation tone is heard if the alarm has been set. If the alarm was not set, an error tone is heard instead.*
5. At the Multiline Terminal, press **Speaker** key to hang up.
- OR -
At the Single Line Terminal, hang up.

To silence an alarm:

1. At Multiline Terminal, press **Exit** key.
- OR -
At the Single Line Terminal, lift the handset.
 *The Single Line Terminal user hears Music on Hold when the handset is lifted.*

To check the programmed alarm time at a Multiline Terminal:

1. Press **Help** key.
2. Dial **727**.
3. Dial alarm type (1 or 2).
 *The programmed time displays.*
4. Press **Exit** key.

To cancel an alarm:

1. At the Multiline Terminal, press **Speaker** key.
- OR -
At the Single Line Terminal, lift the handset.
2. Dial **727**.
3. Dial alarm type (1 or 2).
4. Dial **9999**.
5. At a Multiline Terminal, press **Speaker** key to hang up.
- OR -
At the Single Line Terminal, hang up.

Alarm Reports

Description

The system logs various errors and reports information about the operation that can be used to determine the cause of a problem. The system can indicate several errors on the Multiline Terminal display, or be downloaded in PCPro. The report data also can be sent via e-mail.

DSP Resource Full

When attempting a call requiring an IP to TDM conversion and no DSP resource is available, the system displays a message on Multiline Terminal and can generate an alarm via the Alarm Report.

IP Collision

System is able to detect another device on the same subnet having an IP address that conflicts with those assigned to the CPU, VoIPDB and DSP resource to make troubleshooting easy when IP packets are not sent.

Alarm Report

The Alarm Reports indicate:

- System start-up/upgrade date and time.
- Unit communication error with date and time and the restoration date and time.
- Date and time a unit was removed from the system.
- Date and time an extension was disconnected from the system.
- Date and time of any system data change.

Table 1-2 Sample Alarm Report

<< Alarm Report					05/16/2006 14:30 PAGE 001				
LVL	NO	STAT	DATE	TIME	ITEM	UNIT	SLT	PRT	PARAMETER
MIN	0002	REC	05/16/06	14:21	PKG Installation	PRIU	02	00	
MAJ	0010	ERR	05/16/06	14:21	ISDN Link	PRIU	02	12	
MAJ	0010	REC	05/16/06	14:21	ISDN Link	PRIU	02	12	
MIN	0002	ERR	05/16/06	14:33	PKG Installation	PRIU	02	00	
MAJ	0050	WAR	05/16/06	14:33	System Start Up	none	00	00	
MIN	0002	REC	05/16/06	14:33	PKG Installation	PRIU	02	00	
MAJ	0014	ERR	05/16/06	14:33	CPU-LAN Link	none	00	00	
MAJ	0014	REC	05/16/06	14:35	CPU-LAN Link	none	00	00	
MIN	0002	REC	05/16/06	14:40	PKG Installation	PRIU	07	00	
MIN	0002	ERR	05/16/06	14:40	PKG Installation	PRIU	07	00	
MAJ	0006	ERR	05/16/06	14:41	Blocking	ESIB	01	05	
MAJ	0006	REC	05/16/06	15:01	Blocking	ESIB	01	05	
MAJ	0006	ERR	05/16/06	15:05	Blocking	ESIB	01	07	
MAJ	0006	REC	05/16/06	15:07	Blocking	ESIB	01	07	
MIN	0068	ERR	01/22/09	09:30	VoIP All DSP Busy	VoIPDB	01	00	STA
MIN	0068	ERR	01/22/09	09:31	VoIP All DSP Busy	VoIPDB	01	00	TRK

<< Alarm Report

05/16/2006 14:30 PAGE 001

LVL	NO	STAT	DATE	TIME	ITEM	UNIT	SLT	PRT	PARAMETER
MIN	0068	ERR	01/22/09	09:40	VoIP All DSP Busy	VoIPDB	01	00	NET

Table 1-3 Alarm Report Definitions

Alarm Report Heading	Definitions
LVL	Alarm Type (MAJ = Major, MIN = Minor)
NO	Number of Alarm (4-digit)
STAT	Status (REC = Recovered, ERR = Error, WAR = Warning)
DATE	Date the Alarm Occurred
TIME	Time the Alarm Occurred
ITEM	Name of the Alarm
UNIT	Name of the Board
SLT	Chassis Slot Number
PRT	Chassis Port Number
PARAMETER	Related Information

Table 1-4 Alarm Report Item Definitions

Item Name	Definition
PKG Installation	Board is removed or inserted.
ISDN Link	ISDN Line failure is detected.
CPU LAN Link	CPU LAN connection failure is detected.
Blocking	Terminal Failure may have occurred because terminal blocking is detected. Terminal is unplugged or wire is disconnected.
System Data Change	System Upgrade performed or Programming change.
System Start Up	System is reset.
SMDR Link	Connection failure is detected between the CPU and SMDR printer device.
STA	DSP for IP Station Call were all busy.
TRK	DSP for Trunk Call were all busy, includes SIP trunks.
NET-DSP	SL Net Call when all DSP resource is busy.

Conditions

- Alarm reports can not be stored on SD card in SL2100.
- The supports the following Alarms to be output to the LCD of a Multiline Terminal:
 - SMDR Buffer Full
 - CPU-LAN link Error
- The SL2100 does not support printouts of the following Alarms:
 - Power Failure
 - RAM Backup Battery Error
 - Networking Keep Alive Error
- Up to 12 System Alarm times can be scheduled to print on a Monthly, Daily, and Hourly time frame. The report indicates both Major and Minor Alarms.
- When using the E-mail functionality of reports, the E-mail address in PRG 90-11-10 (From Address) must be set for the E-mail feature to work.

- Up to 100 System Alarm Reports can be stored. When the buffer fills, the oldest record is deleted to allow the new record to be saved.
- If the System is set up to E-mail the Alarm Reports and the Mail Server is down, the report is not sent.
- Scheduled Alarm Reports via E-mail prints all alarms. When the system detects New alarms, this information is output via E-mail individually.
- E-mail Alarm Reports can be sent when each new alarm occurs (Per Event). If you want to receive complete Alarm Reports periodically, you must specify 12 individual dates and times in PRG 90-24-01 ~ PRG 90-24-04 (per period).



A maximum of 99 entries are emailed with the scheduled alarms.

- System Alarm Report can be sent by E-mail using following features.
In case of the PRG 90-11 SMTP client notifies of an alarm report in the email text.
In case of the PRG 47-18 SMTP client attaches an alarm report to an email as a text file and notifies.
 - PRG 47-18: Set to SMTP server setting (Outside E-mail service is necessary)
 - PRG 90-11-14: Set YES to use PRG 47-18 SMTP client.
In case of No uses a PRG90-11 SMTP client.
 - PRG 90-11-15: Set YES to transmit DIMLAST, DIMDUMP. PRG 90-11-14=YES (PRG 47-18 SMTP Client uses) is necessary.
 - Alarm Report per event
When an alarm occurs, an alarm report will be sent by E-mail.
 - PRG 90-10-02 System Alarm Setup - Report = 1: Yes
 - PRG 90-11-02 Alarm Report SMTP Setting - Report Method = 1: E-mail
 - Alarm Report per period
According to the PRG 90-24 (Alarm Report Notification Time Setup), an alarm report will be sent by E-mail.
 - DIMLAST/DIMDUMP Notification
If PRG 90-11-15 is On, Dimlast.gz and Dimdump.gz will be sent by E-Mail when system failed.
 - When the E-mail transmission failed
When failed the E-Mail transmission, the retry process will be started (15 minutes x 95 times)
- An attached Text File will be saved to the System Memory temporary until the e-mail transmission is completed.
The maximum 200 files can be saved to the System Memory temporary.
- The Text File in the System Memory will be deleted when the e-mail transmission is completed.
- When the E-Mail Transmission is failed and maximum retry process (15 min x 95 times) is over, the E-mail and attached text file will be deleted.
- When the maximum SMTP client Mail Buffer capacity (200) is over, an alarm report does not send.

Default Settings

None

System Availability

Terminals

All Multiline Terminals

Required Component(s)

SD Card for maintenance

Related Features

None

Guide to Feature Programming

Setting Up Alarms:

Program No.	Program Name	Input Data	Default
90-10-01	System Alarm Setup - Alarm Type		Refer to Programming Manual.
90-10-02	System Alarm Setup - Report	0 = Not Report (No autodial) 1 = Report (autodial)	Refer to the Programming Manual for the default values.
90-24-01	System Alarm Report Notification Time Setup - Month	0 = Disabled 1 = January 2 = February 3 = March 4 = April 5 = May 6 = June 7 = July 8 = August 9 = September 10 = October 11 = November 12 = December	0: Disable
90-24-02	System Alarm Report Notification Time Setup - Day	00 ~ 31 (0 = Not Set)	0: Disable
90-24-03	System Alarm Report Notification Time Setup - Hour	00 ~ 23	0: Disable
90-24-04	System Alarm Report Notification Time Setup - Minute	00 ~ 59	0: Disable

Printing Reports:

Program No.	Program Name	Input Data	Default
90-12-01	System Alarm Output - Output Port Type	0 = No Setting 5 = SD	0

E-mailing Alarm Reports:

Program No.	Program Name	Input Data	Default
10-12-01	CPU Network Setup - IP Address	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	192.168.0.10

Program No.	Program Name	Input Data	Default
10-12-02	CPU Network Setup - Subnet Mask	128.0.0.0 192.0.0.0 224.0.0.0 240.0.0.0 248.0.0.0 252.0.0.0 254.0.0.0 255.0.0.0 255.128.0.0 255.192.0.0 255.224.0.0 255.240.0.0 255.248.0.0 255.252.0.0 255.254.0.0 255.255.0.0 255.255.128.0 255.255.192.0 255.255.224.0 255.255.240.0 255.255.248.0 255.255.252.0 255.255.254.0 255.255.255.0 255.255.255.128 255.255.255.192 255.255.255.224 255.255.255.240 255.255.255.248 255.255.255.252 255.255.255.254 255.255.255.255	255.255.255.0
10-12-03	CPU Network Setup - Default Gateway	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0
90-11-02	Alarm Report SMTP Setting - Report Method	0 = No Report 1 = E-mail Address	0
90-11-06	Alarm Report SMTP Setting - SMTP Host Name	Up to 255 Characters	No Setting
90-11-07	Alarm Report SMTP Setting - SMTP Host Port Number	0 ~ 65535	25
90-11-08	Alarm Report SMTP Setting - To E-mail Address	Up to 255 Characters	No Setting
90-11-09	Alarm Report SMTP Setting - Reply Address	Up to 255 Characters	No Setting
90-11-10	Alarm Report SMTP Setting - From Address	Up to 255 Characters	No Setting
90-11-13	Alarm Report SMTP Setting - Customer Name	Up to 255 Characters	No Setting
90-11-14	Alarm Report SMTP Setting - Use Standard SMTP Settings	0 = No 1 = Yes	0
90-11-15	Alarm Report SMTP Setting - DIMLOG Notification	0 = No 1 = Yes	0
90-25-01	System Alarm Report CC Mail Setup - CC Mail Address	Up to 255 Characters	No Setting

SMTP Setup:

Program No.	Program Name	Input Data	Default
47-18-01	SMTP Setup - SMTP Enabled	0 = No 1 = Yes	0
47-18-02	SMTP Setup - Server Name	Up to 48 characters	No Setting
47-18-03	SMTP Setup - SMTP Port	0 ~ 65535	25
47-18-04	SMTP Setup - Encryption	0 = No 1 = Yes	0
47-18-05	SMTP Setup - Authentication	0 = No 1 = Yes 2 = POP3	0
47-18-06	SMTP Setup - User Name	Up to 48 characters	No Setting
47-18-07	SMTP Setup - Password	Up to 48 characters	No Setting
47-18-08	SMTP Setup - E-mail Address	Up to 48 characters	No Setting

Program No.	Program Name	Input Data	Default
47-18-09	SMTP Setup - Reply to Address	Up to 48 characters	No Setting

POP3 Setup:

Program No.	Program Name	Input Data	Default
47-19-01	POP3 Setup - Server Name	Up to 48 characters	No Setting
47-19-02	POP3 Setup - POP3 Port	0 ~ 65535	110
47-19-03	POP3 Setup - Encryption	0 = No 1 = Yes	0
47-19-04	POP3 Setup - User Name	Up to 48 characters	No Setting
47-19-05	POP3 Setup - Password	Up to 48 characters	No Setting

Operation

To use this feature at any terminal:

The user must be logged in with an Installer (IN) level password as defined in PRG 90-02.

Alphanumeric Display

Description

Display Multiline Terminals have the following Alphanumeric Display that provides various feature status messages.

- IP7WW-12/24TXH-B1: 3-line (24 character-per-line)
- IP7[]-8IPLD: 168 x 128 Dots
- DTK-24D-1A:168 x 58 Dots
- ITK-24CG-1A:4.3 inch (480 x 272) Color LCD
- ITK-32LCG-1A:3.5 inch (320 x 240) Color LCD

These messages help the display telephone user process calls, identify callers and customize features.

Conditions

- When the telephone is idle, contrast can not be changed when BGM or Navigation mode (PRG 15-02-60) is enabled.
- When Navigation is enabled, contrast can be changed using a Navigation mode.

Default Settings

Enabled for all display telephones.

System Availability

Terminals

All Display Multiline Terminals.

Required Component(s)

None

Related Features

Clock/Calendar Display/Time and Date

Selectable Display Messaging

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-11-13	Service Code Setup (for Setup/Entry Operation) - Set Display Language	0~9, *, # Maximum of 8 digit	678

Program No.	Program Name	Input Data	Default
15-02-01	Multiline Telephone Basic Data Setup - Display Language Selection	1 = English 2 = German 3 = French 4 = Italian 5 = Spanish 6 = Dutch 7 = Portuguese 8 = Norwegian 9 = Danish 10 = Swedish 11 = Turkish 12 = Latin American Spanish 13 = Romanian 14 = Polish 16 = Russian 17 = Simplified Chinese 18 = Traditional Chinese	1
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-11-08	Class of Service Options (Hold/Transfer Service) - Transfer Information Display	0 = Off 1 = On	COS 01 ~ 15 = 1

Operation

Operation is automatic if enabled in programming.

Analog Communications Interface (ACI)

Description

The Analog Communications Interface (ACI) feature uses analog ports (with associated relays) for Music on Hold, External Paging, and Back Ground Music (BGM).

External Paging, External MOH and BGM

Each 082U-B1 boards have one Audio-In and one Audio-Out on RJ61 modular jack (RL/Audio). One Audio-In is used for EXMOH or BGM input, and one Audio-Out is for External Paging.

A system can have one BGM and one MOH source and maximum of three External Paging can be used by using Audio-Out jack (RL/Audio) at 082U-B1.

Relay Control

Each 082U-B1 boards have two relay ports (RL/Audio: Relay1/2). The System can have maximum of 11 relay ports.

These relays can be used for External MOH, BGM resource, External Speaker, or Door Phone control in accordance with PRG 10-61-01 to PRG 10-61-04 settings.

Conditions

Interface Specifications	
Relay Contacts	
Maximum Contact Ratings	48 VDC @ 320 mA (Normally Open)
BGM/ExMOH Source Input	
Output Impedance	600 Ohms @ 1 KHz
Input Level	Nominal 250 mV (– 10 dBm)
Maximum Input	1.0 Vrms
External Paging Output	
Output Impedance	600 Ohms @ 1 KHz
Output Level	Nominal 250 mV (– 10 dBm)
Maximum Output	400 mVrms

Default Settings

Disabled

System Availability

Terminals

None

Required Component(s)

None

Related Features**Background Music****Hotline****One-Touch Calling****Paging, External****Door Box****Music on Hold**

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-60-01	Audio Port Setup - BGM Channel (Slot No.)	0-3 5-7 9-11 Each chassis can be set except 4th Slot (Slot No. 4,8,12).	0
10-60-02	Audio Port Setup - External MOH Channel (Slot No.)	0-3 5-7 9-11 Each chassis can be set except 4th Slot (Slot No. 4,8,12).	0
10-60-03	Audio Port Setup - External Speaker Channel 1 (Slot No.)	0-3 5-7 9-11 Each chassis can be set except 4th Slot (Slot No. 4,8,12).	0
10-60-04	Audio Port Setup - External Speaker Channel 2 (Slot No.)	0-3 5-7 9-11 Each chassis can be set except 4th Slot (Slot No. 4,8,12).	0
10-60-05	Audio Port Setup - External Speaker Channel 3 (Slot No.)	0-3 5-7 9-11 Each chassis can be set except 4th Slot (Slot No. 4,8,12).	0
10-61-01	Relay Port Setup - Relay Port 1	0 = No Setting 1 = External MOH 2 = BGM resource 3 = External Speaker 4 = Door Phone	0

Program No.	Program Name	Input Data	Default
10-61-02	Relay Port Setup - Destination Selection 1	[In case PRG 10-61-01 is set 1 or 2] Not Used [In case PRG 10-61-01 is set 3] 1-3 = External Speaker message No.1-3 [In case PRG 10-61-01 is set 4] 1-6 = Door Phone No.1-6	0
10-61-03	Relay Port Setup - Relay Port 2	0 = No Setting 1 = External MOH 2 = BGM resource 3 = External Speaker 4 = Door Phone	0
10-61-04	Relay Port Setup - Destination Selection 2	[In case PRG 10-61-01 is set 1 or 2] Not Used [In case PRG 10-61-01 is set 3] 1-3 = External Speaker message No.1-3 [In case PRG 10-61-01 is set 4] 1-6 = Door Phone No.1-6	0

Operation

None

Ancillary Device Connection

Description

Ancillary Device Connection allows installation of selected peripheral (ancillary) devices to a Multiline Terminal. This feature enhances peripheral device objectives.

Allows an IP7WW-12/24TXH-B1 Multiline Terminal user to connect ancillary devices such as Wireless Headset.

Conditions

- The optional device fits underneath the terminal.

Default Settings

None

System Availability

Terminals

IP7WW-12/24TXH-B1 Multiline Terminal

Required Component(s)

WHA (Wireless Headset Adapter)

Related Features

None

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-03-10	ETU Setup (ESIU PKG Setup) - Bottom Option Information	0 = None 4 = WHA	0
15-05-20	IP Telephone Terminal Basic Data Setup - Bottom Option Information	Read Only: 0 = No Option 1 = Not Used 2 = Not Used 3 = WHA	0

Operation

Depends on the connected ancillary device.

Answer Hold/Automatic Hold

Description

Answer Hold/Automatic Hold allows a Multiline Terminal user to press the flashing line key to answer an incoming ringing call or a Camp-On call. When the Multiline Terminal user is already answering a call, the first call is automatically placed on hold, depending on the user setting in PRG 15-02-06.

Conditions

- When multiple incoming calls activate the line key LED, the LED continues to flash until all calls are answered.
- Use PRG 15-02-06 (Normal Common, Exclusive Hold) to set the type of **Hold** key to be used (Default = Normal Common).
- For calls placed in a Park Group, the LED blinks slow (green).
- For calls placed in a Park Group by another user, the LED blinks slow (red).
- The Answer Hold/Automatic Hold Feature is not available for Virtual Extensions.
- The Answer Hold/Automatic Hold Feature does not function for incoming internal calls.
- CO/PBX incoming calls, not assigned to ring or assigned to another ring group, do not activate the Answer Hold feature.
- If the direct trunk appearance key is not assigned, the next incoming call cannot be answered.

Default Settings

None

System Availability

Terminals

All Multiline Terminals

Required Component(s)

Not Applicable

Related Features

Central Office Calls, Answering

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
15-02-06	Multiline Telephone Basic Data Setup - Hold Key Operating Mode	0 = Normal (Common) 1 = Exclusive Hold	0

Program No.	Program Name	Input Data	Default
15-02-07	Multiline Telephone Basic Data Setup - Automatic Hold for CO Lines	0 = Hold 1 = Disconnect (Cut)	1
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
11-12-32	Service Code Setup (for Service Access) - Answer for Park Hold	0~9, *, # Maximum of 8 digit	*6
20-09-01	Class of Service Options (Incoming Call Service) - Second Call for DID/DISA/DIL/E&M Override	0 = Off (2nd call will not be allowed.) 1 = On (2nd call is allowed.)	COS 01 ~ 15 = 1

Operation

To answer a call on a different line key with a call in progress:

1. Receive a CO/PBX, DID/DISA/DIL incoming ring.



The line key LED flashes.

2. Press the line key and answer the new call.



The line key LED goes out. The original call is put on hold.

3. If additional calls are received, press the line key to place the current call on hold and connect to the next call as long as CO line keys are available.

Description

The AspireNet provides a seamless connection of multiple systems into a single "virtual" communications system using VoIP lines with a unified numbering plan. AspireNet will allow many companies to connect their telephone systems so they appear as one. This will give them the ability to have only one operator to manage the system and share one voice mail within the network. An extension user in the network can easily dial another extension or transfer a call within the AspireNet System. Calls are passed from network node to network node using a protocol that contains information about the source of the call, the type of call and the destination of the call.

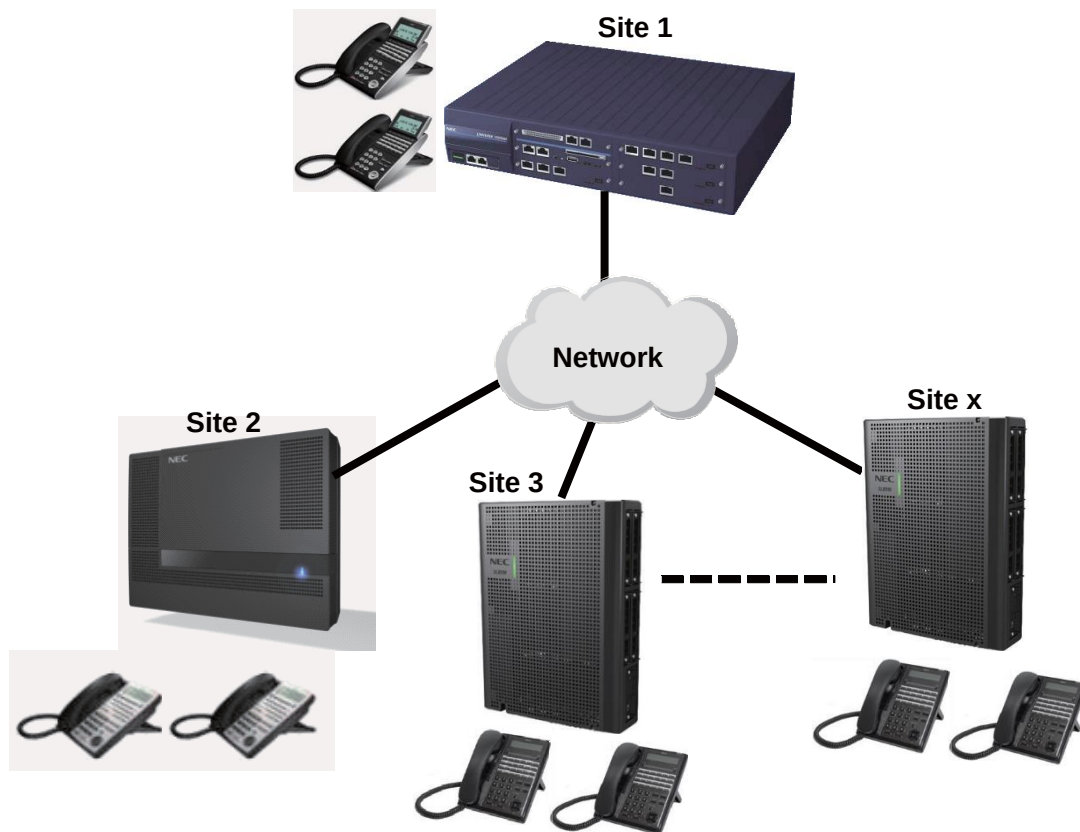
AspireNet system can be networked with SL2100, SL1100, SV9100 and SV8100 system.

A few benefits of AspireNet are:

- **Centralized Network Attendant**
Centralized Network Attendant allows multiple networked systems to share a single centralized attendant. The centralized attendant can receive calls from and transfer calls to any destination throughout the whole network. This allows calls to route as if they were part of a single, much larger system.
- **Centralized Voice Mail**
Centralized Voice Mail allows multiple networked systems to share a single voice mail system. This centralised voice mail can receive calls from and transfer calls to any destination in any network node. Unanswered calls recall and route as if they were part of a single, much larger system.
- **ICM calling between all sites**
Users may place an intercom call or transfer a call to any location by simply dialing an extension number.
- **Sharing Trunk Lines between all sites**
An extension can access a trunk line at another system in the network. The user dials the standard trunk access code and the system will automatically route the call to the system that has trunks connected.
- **Network BLF Indication/Centralized Call Park Orbits**
Users can see the status of other extensions throughout the network as if they were all in the same system. Park orbits can also be shared and viewed by all users in the network.

AspireNet requires the license: **SL2100 ASPIRENET-01 LIC**. This license is a channel based license. If there were a total a three systems in the network, each of the three systems would need one of the **SL2100 ASPIRENET-01 LIC** licenses.

System Capacity



AspireNet allows a maximum of 50 systems to be networked. Each system will provide bundled channels to be shared for all IP related devices (e.g. IP Phones, IP Trunks, AspireNet).

Network Requirements

The voice quality of VoIP depends on variables such as available bandwidth, network latency, and quality of service initiatives (QoS), all of which are controlled by the network and internet service providers. Because these variables are not within NEC's control, the performance of the users IP-based voice solution cannot be guaranteed. Therefore, NEC recommends connecting the VoIP equipment through a fully managed data network with Quality of Service (QoS) implemented.

For a network to be suitable for VoIP it must pass specific requirements. The requirements are:

- One way delay must not exceed 150 ms
- Round trip delay must not exceed 300 ms
- Packet loss must not exceed 1 %
- Data switches must be manageable
- No half-duplex equipment may be present in the network
- Routers must provide QOS

 Depending upon how the QOS policies are built in the network, assignments may be needed in the CPU (PRG 84-10).

- Adequate bandwidth for the estimated VoIP traffic must be available

 See below chart for bandwidth calculations.

Below is a chart that shows the average bandwidth per VoIP call over Ethernet.

Codec	Packet Size	Bandwidth Used	Codec	Packet Size	Bandwidth Used
G.711	10 ms	110.4 kbps	G.729	10 ms	54.4 kbps
G.711	20 ms	87.2 kbps	G.729	20 ms	31.2 kbps
G.711	30 ms	79.5 kbps	G.729	30 ms	23.5 kbps
G.711	40 ms	75.6 kbps	G.729	40 ms	19.6 kbps
G.722	10 ms	110.4 kbps	G.729	50 ms	17.3 kbps
G.722	20 ms	87.2 kbps	G.729	60 ms	15.7 kbps
G.722	30 ms	79.5 kbps	G.723	30 ms	20.8 kbps
G.722	40 ms	75.6 kbps	G.723	60 ms	13.2 kbps

For example, if one site plans on making a maximum of 16 calls across the network using G.729 with a 30 ms packet size, there must be a minimum of 376 kbps available for voice traffic. The QOS policy for this network should allow for 376 kbps to be set aside for voice prioritization.

Conditions

- This feature is only supported when networked with another SL2100, SL1100, SV9100 or SV8100 no other system types are available.
- Each system must be individually licensed for this feature with the following license: **SL2100 ASPIRENET-01 LIC.**
- Each system requires a VoIPDB if system uses more than eight channels.
- Each site must have different extension numbers assigned. The same extension number cannot exist at multiple sites.
- Call redirect is not supported with AspireNet networking.
- Dual Hold across the network is not supported.
- If calls across AspireNet are to follow the local ARS routing, all sites must use ARS routing.
- AspireNet is not supported through NAT.
- A Trunk Access via Networking key (*06) will not light up when all trunks in the Remote site trunk group are busy. If a user tries to access a trunk, when they are all busy, the word "Busy" will be in the display and the user will hear Busy Tone but the key will not light up.
- Camp On across AspireNet is only supported to a Busy extension.
- Hold, Transfer, and Park recall timers will follow the timer of the system where the call is on hold (Trunk and Station). For example, a user in Site A calls a user in Site B. Site B answers the call and places the call on hold. The hold recall time is based on Site A because the call on hold is in Site A and not site B.
- The allowing or denying of Class of Service features in an AspireNet Network must be performed network wide. For example, if users in Class of Service 1 at site 1 want to block the Camp On feature a change will have to be made in Class of Service 1 of all systems in the network.
- Paging to a networked system can only be activated by dialing a service code and the target network's system ID.
- When a terminal or trunk is placed on hold, the Music on Hold comes from the system where the terminal or trunk resides.
- When the Hold recall times out, the call will recall to the operator in the system where the CO trunk resides. Hold recall timeout to the operator is controlled in Class of Service program 20-11-13.
- Forced Account Codes are not applied to calls across AspireNet.
- When Multiple Voice Mails are installed in the network, each site must have a unique Voice Mail pilot number. The pilot number assigned must be within the routable extension number range in all sites throughout the network.
- When each site has its own Voice Mail system, a user in one location cannot call the Voice Mail pilot number that resides in another system.

- When each site has its own Voice Mail system, a Voice Mail Message Line key (Program 15-07 : key 77) cannot be programmed for an extension in a Remote system.
- Virtual Loopback trunks are not supported across AspireNet.
- Code Restriction is not applied for CO trunks accessed across the AspireNet network.
- Network ports (extension or trunk) cannot land on a virtual extension key. When Program 15-18 is set to "land on key" the virtual extension will still ring. When the call is answered the virtual key will go back to an idle state.
- SMDR information is collected in the system where the trunk resides. If a user in Site A accesses a CO trunk out of Site B, this call is reported in Site B's SMDR and not in Site A's SMDR.
- When a networked ICM call forwards to Voice Mail (Centralized or Individual Voice Mail) the user will not be able to perform any dialing options to dial out of the mailbox. The associated dial action table cannot be accessed unless the call originates from a CO trunk.
- If you use the Make Call feature while listening to a Voice Mail message, the first few seconds of the call may be silent if the call is routed across the AspireNet network.
- When using Loop Keys to make outgoing CO calls via the network, the loop key will not light. If ARS is enabled, and an outgoing CO call via the network is placed, the loop key will light for the first few seconds until the system determines which trunk to seize.
- When a CO call via the network is put on hold, the call is placed onto the users Hold key. To retrieve this call the user must press the Hold key. If one call is already on Hold the user cannot place a second call on hold, the second call must be placed into a park orbit or transferred to another station.
- Built-in Automated Attendant and Centralized Voice Mail cannot be used in the same system.
- Calls (Intercom or Trunk) routed across the AspireNet network cannot be answered by the Built-In Automated Attendant.
- Caller ID Flexible Ringing does not work for incoming calls via the AspireNet network. For the calls to route based on caller ID, the programming must be performed in the system that contains the CO trunks. Routing to other system's extensions is available; however the ringing patterns will not be followed.
- Directory Dialing will not list extension numbers in remote AspireNet systems.
- Distinctive Ringing patterns will only work in the system where the trunk resides.
- The Flash Key will not function for calls routed across the AspireNet network.
- Long conversation cutoff will not disconnect a trunk call if a user accesses a trunk out of a networked system.
- An operator extension (Program 20-17) cannot be assigned to an extension in a Remote AspireNet system. The operator for each site must reside in their own local system.
- Calls routed across the AspireNet network cannot use the Repeat Redial function.
- Room Monitor cannot be used to monitor an extension in a Remote AspireNet system.
- A Saved Number Dialed key (Program 15-07 : key 30) cannot be used to save a number if the call is routed across the AspireNet network.
- A Secondary Incoming Extension cannot be programmed for a station in a Remote AspireNet system.
- A Secretary Call Buzzer and Secretary Call Pickup key (Program 15-07 : key 41 and key 42) cannot be programmed for a station in a Remote AspireNet system.
- A Serial Call cannot be performed to a station in a Remote AspireNet system.
- Tandem Ringing cannot be set to an extension in a Remote AspireNet system.
- If an extension is using a CO trunk in a Remote AspireNet system, the Tone Override feature is not supported. In this scenario the busy station will receive the Tone Override but will not be able to answer the caller.
- Trunk Queuing/Camp-On cannot be performed to a busy CO trunk in a Remote AspireNet system.
- Voice Over to a busy extension, is not supported across the AspireNet network.
- Personal Park (Program 15-07 : key *07 or Service Code 757) is not supported for calls across the AspireNet network.
- Mobile Extension is not supported for calls across the AspireNet network.

- Trunk calls (Copper, ISDN, or SIP) that are transferred across AspireNet to a virtual extension will not display the caller ID until the call is answered.
- If PRG 15-18-04 is set to "Not Display" for a virtual extension, intercom calls across AspireNet will still display the users name/number. PRG 15-18-04 does not affect AspireNet calls.
- When transferring a caller to a remote AspireNet extension via the press of a DSS key on a 60 button DSS console, without pressing Transfer first, you must press the DSS key twice to complete the transfer.

Default Settings

None

System Availability

Terminals

All Terminal types are supported

Required Component(s)

IP7[]-CPU-C1

IP7WW-VOIPDB-C1

AspireNet License - SL2100 ASPIRENET-01 LIC

Related Features

None

Guide to Feature Programming

The programs listed below indicate the most commonly used programs required for this feature. The programs are listed in the order that the installer should follow. Refer to the PCPro wizards for further detailed programming.

Basic Setup

Program No.	Program Name	Input Data	Default
10-12-03	CPU Network Setup - Default Gateway	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0
10-12-09	CPU Network Setup - IP Address (VoIPDB)	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	172.16.0.10

Program No.	Program Name	Input Data	Default
10-12-10	CPU Network Setup - Subnet Mask (VoIPDB)	128.0.0.0 192.0.0.0 224.0.0.0 240.0.0.0 248.0.0.0 252.0.0.0 254.0.0.0 255.0.0.0 255.128.0.0 255.192.0.0 255.224.0.0 255.240.0.0 255.248.0.0 255.252.0.0 255.254.0.0 255.255.0.0 255.255.128.0 255.255.192.0 255.255.224.0 255.255.240.0 255.255.248.0 255.255.252.0 255.255.254.0 255.255.255.0 255.255.255.128 255.255.255.192 255.255.255.224 255.255.255.240 255.255.255.248 255.255.255.252 255.255.255.254 255.255.255.255	Refer to the programming manual for all the possible valid subnet mask entries. (default = 255.255.0.0)
10-19-01	VoIPDB DSP Resource Selection - VoIPDB DSP Resource Selection	0 = Common use for both IP extensions and trunks 1 = Use for IP extensions 2 = Use for SIP trunks 3 = Use for Networking 5 = Blocked 6 = Common without unicast paging 7 = Multicast paging 8 = Unicast paging	Resource 1 ~ 128 = 0
10-20-01	LAN Setup for External Equipment - TCP Port	Available values are: 0 ~ 65535	External Device 1 (CTI Server) = 0 External Device 2 (ACD-MIS) = 0 External Device 4 (Networking System) = 0 External Device 5 (SMDR Output) = 0 External Device 6 (DIM Output) = 0 External Device 8 (UC Web Application) = 0 External Device 9 (1st Party CTI) = 0 External Device 11 (O&M Server) = 8010 External Device 12 (Traffic Report Output) = 0 External Device 13 (Room Data Output for Hotel Service) = 0 External Device 14 (IP-DECT Directory Access) = 0 External Device 15 (Presence) = 0
10-27-01	H.323 System Interconnection with Application Setup - IP Address	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0
10-27-02	H.323 System Interconnection with Application Setup - Call Procedure Port	1 ~ 65535	1730
10-31-01	Network Keep Alive Setup - Keep Alive Interval	0 ~ 65535 seconds	0
10-50-01	License Information - License Name	Read Only: Character	None
11-01-01	System Numbering - System Numbering	Refer to Programming Manual.	Refer to Programming Manual.

Program No.	Program Name	Input Data	Default
20-01-04	System Options - Interval timer for BLF Data	0 ~ 64800 (0 ~ 6480 seconds)	0
84-26-01	VoIP Basic Setup (DSP) - IP Address	xxx.xxx.xxx.xxx	172.16.0.20 ~
90-10-01	System Alarm Setup - Alarm Type	0 = No Setting 1 = Major Alarm 2 = Minor Alarm	Refer to Programming Manual.
90-10-02	System Alarm Setup - Report	0 = Not Report (No autodial) 1 = Report (autodial)	Refer to the Programming Manual for the default values.

Codec Assignment

Program No.	Program Name	Input Data	Default
84-12-01	Networking CODEC Information Basic Setup - Number of G.711 Audio Frames	1 = 10 ms 2 = 20 ms 3 = 30 ms 4 = 40 ms	3
84-12-02	Networking CODEC Information Basic Setup - G.711 VAD mode	0 = Disable 1 = Enable	0
84-12-03	Networking CODEC Information Basic Setup - G.711 Type	0 = A-law 1 = μ -law	0
84-12-04	Networking CODEC Information Basic Setup - G.711 Jitter Buffer (min)	0 ~ 300 ms	30
84-12-05	Networking CODEC Information Basic Setup - G.711 Jitter Buffer (average)	0 ~ 300 ms	60
84-12-06	Networking CODEC Information Basic Setup - G.711 Jitter Buffer (max)	0 ~ 255 ms	120
84-12-07	Networking CODEC Information Basic Setup - Number of G.729 Audio Frames	1 = 10 ms 2 = 20 ms 3 = 30 ms 4 = 40 ms 5 = 50 ms 6 = 60 ms	3
84-12-08	Networking CODEC Information Basic Setup - G.729 VAD mode	0 = Disable 1 = Enable	0
84-12-09	Networking CODEC Information Basic Setup - G.729 Jitter Buffer (min)	0 ~ 300 ms	30
84-12-10	Networking CODEC Information Basic Setup - G.729 Jitter Buffer (average)	0 ~ 300 ms	60
84-12-11	Networking CODEC Information Basic Setup - G.729 Jitter Buffer (max)	0 ~ 300 ms	120
84-12-17	Networking CODEC Information Basic Setup - Jitter Buffer Mode	1 = Static 3 = Self Adjusting	3
84-12-18	Networking CODEC Information Basic Setup - VAD Threshold	0 ~ 30 (-20 db ~ +10 db) 0 = -20 dB (-50 dBm) 1 = -19 dB (-49 dBm) : 20 = 0 dB (-30 dBm) : 29 = 9 dBm(-21 dBm) 30 = 10 dBm(-20 dBm)	20
84-12-28	Networking CODEC Information Basic Setup - Audio Capability Priority	0 = G.711 1 = Not Used 2 = G.729 3 = G.722	0

Program No.	Program Name	Input Data	Default
84-34-01	VoIPDB DTMF Setup - DTMF Relay Mode	0 = Disable 1 = RFC 2833 2 = H.245 Refer to the Programming Manual for more details.	0
84-33-01	FAX over IP Setup - Fax Relay Mode	0 = Disable 1 = Enable 2 = Each Port Mode Refer to the Programming Manual for more details.	0
84-12-33	Networking CODEC Information Basic Setup - Number of G.722 Audio Frame	1 = 10 ms 2 = 20 ms 3 = 30 ms 4 = 40 ms	3
84-12-35	Networking CODEC Information Basic Setup - G.722 Jitter Buffer (min)	0 ~ 300 ms	30
84-12-36	Networking CODEC Information Basic Setup - G.722 Jitter Buffer (average)	0 ~ 300 ms	60
84-12-37	Networking CODEC Information Basic Setup - G.722 Jitter Buffer (max)	0 ~ 300 ms	120
84-12-38	Networking CODEC Information Basic Setup - RTP Filter	0 = Disable 1 = Enable 2 = Enable (Include SSRC)	1
84-35-01	VoIPDB RFC2833 Payout Setup - RFC2833 Payout Level	0 = depend on RFC2833 1 = Configuration	0
84-35-02	VoIPDB RFC2833 Payout Setup - RFC2833 Payout Level High	1 = -33 dBm : 28 = -6 dBm	28
84-35-03	VoIPDB RFC2833 Payout Setup - RFC2833 Payout Level Low	1 = -33 dBm : 28 = -6 dBm	28

Call Routing - Outbound

Program No.	Program Name	Input Data	Default
11-09-01	Trunk Access Code - Trunk Access Code	Dial (Up to four digits)	9
11-09-02	Trunk Access Code - 2nd Trunk Route Access Code	Dial (Up to four digits)	No Setting
11-12-16	Service Code Setup (for Service Access) - Trunk Access via Networking	0~9, *, # Maximum of 4 digit	No Setting
14-06-01	Trunk Group Routing - Trunk Group	0 = Not Set 001 ~ 050 = Trunk group No. 101 ~ 150 = 100 + Networking System No. 1001 ~ 1050 = 1000 + Route Table No.	Refer to Programming Manual.

Program No.	Program Name	Input Data	Default
15-07-01	Programmable Function Keys	*06 = Trunk Access via Networking Secondary Settings: 1 = Remote System 1 from PRG 10-27 2 = Remote System 2 from PRG 10-27 : 49 = Remote System 49 from PRG 10-27 50 = Remote System 50 from PRG 10-27	Refer to the programming manual for the default values and for all other available options in this command.
21-02-01	Trunk Group Routing for Extensions - Route Table Number	0 ~ 50 0 = No Setting (Calls will not route.)	1
21-15-01	Individual Trunk Group Routing for Extensions - Route Table Number	0 ~ 50 0 = No Setting (Calls will not route.)	0
21-16-01	Trunk Group Routing for Networking - Route Table Number	0 ~ 50 0 = No Setting (Calls will not route.)	1
25-03-01	VRS/DISA Transfer Ring Group With Incorrect Dialing - Incoming Group Number	0 = Disconnect 01 ~ 50 = Incoming Ring Group 102 = VMI 103 = Centralized VM 104 = Assign the Speed Dial Number	1
25-04-01	VRS/DISA Transfer Ring Group With No Answer/Busy - Incoming Group Number	0 = Disconnect 01 ~ 50 = Incoming Ring Group 102 = VMI 103 = Centralized VM 104 = Assign the Speed Dial Number	0
26-02-03	Dial Analysis Table for ARS/LCR - Additional Data/Service Number	If Service Type 1 (in 26-02) : Select Trunk Group Number 0 ~ 50 (Trunk Group Number 0 = No Route) 101 ~ 150 (Networking ID) If Service Type 2 (in 26-02) : F-Route Time Schedule Not Used = 0 ~ 100 (F-Route Table Number). Refer to Program 44-05 : ARS/F-Route Table. F-Route Time Schedule Used = 0 ~ 100 (F-Route Selection Number). Refer to Program 44-04 : ARS/F-Route Selection for Time Schedule.	0
44-05-01	ARS/F-Route Table - Trunk Group Number	0 = No setting (Calls will not route) 1 ~ 50 = Trunk Group 1 ~ 50 101 ~ 150 = Remote Systems 1 ~ 50 255 = Intercom	0

Call Routing - Inbound Analog Trunk

Program No.	Program Name	Input Data	Default
22-01-04	Incoming call System options - Normal, DIL incoming call no answer Timer	0 ~ 64800 seconds 0 = No Overflow	0
22-02-01	Incoming Call Trunk Setup - Trunk Service Type	0 = Normal 1 = VRS (second dial tone if no VRS installed) 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delayed VRS 7 = ANI/DNIS 8 = DID (DDI) Mode Switching	0
22-05-01	Incoming Trunk Ring Group Assignment - Incoming Group Number	0 = No Setting 01 ~ 50 = Incoming Ring group 102 = VM 103 = Centralized VM	1
22-07-01	DIL Assignment - Number of Transferring Destination	Maximum of 8 digits (0 ~ 9, *, #)	No Setting
22-08-01	DIL/IRG No Answer Destination - Incoming Ring Group Number	0 = No Setting 01 ~ 50 = Incoming Ring group 102 = VM 103 = Centralized VM	Group01 has 101, 102, 103, 104, 105, 106, 107, and 108 (First 8 ports ringing)

Call Routing - Inbound (DID)

- When a * is listed next to the Program Number it indicates a program that **MUST** be set (from a default state) for this feature to be enabled.

Program No.	Program Name	Input Data	Default
22-01-06	System Options for Incoming Calls - DID Ring-No-Answer Time	0 ~ 64800 seconds	20
22-01-07	System Options for Incoming Calls - DID Incoming Ring Group No Answer Time	0 ~ 64800 seconds	20
22-02-01 *	Incoming Call Trunk Setup - Trunk Service Type	0 = Normal 1 = VRS (second dial tone if no VRS installed) 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delayed VRS 7 = ANI/DNIS 8 = DID (DDI) Mode Switching	0
22-11-01 *	DID Translation Table - Received Number	Maximum eight digits (0 ~ 9, *, #)	Refer to Programming Manual.
22-11-02 *	DID Translation Table - Target Number	Maximum of 8 digits (0 ~ 9, *, #, @)	Refer to Programming Manual.
22-11-04	DID Translation Table - Transfer Operation Mode	0 = No Transfer 1 = Busy 2 = No Answer 3 = Busy/No Answer	0

Program No.	Program Name	Input Data	Default
22-11-05	DID Translation Table - Transfer Destination Number 1	0 = No setting 01 ~ 50 = Incoming Ring Group 102 = VM 103 = Centralized VM 201 ~ 250 = Department Group 400 = VRS 401 = DISA 501 ~ 599 = DISA (VRS Message No.) 1000 ~ 1999 = Common ABB Dial (000 ~ 999)	0
22-11-06	DID Translation Table - Transfer Destination Number	0 = No setting 01 ~ 50 = Incoming Ring Group 102 = VM 103 = Centralized VM 201 ~ 250 = Department Group 400 = VRS 401 = DISA 501 ~ 599 = DISA (VRS Message No.) 1000 ~ 1999 = Common ABB Dial (000 ~ 999)	0
22-12-01	DID Intercept Ring Group - Incoming Ring Group Number	0 = No setting 1 ~ 50 = Incoming Ring Group 102 = VMI 103 = Centralized VM	1

Centralized Voice Mail

- When a * is listed next to the Program Number it indicates a program that **MUST** be set (from a default state) for this feature to be enabled.

Program No.	Program Name	Input Data	Default
11-07-01	Department Group Pilot Numbers - Extension Group Pilot Number	Dial (Up to 8 digits)	Group Number 1-49 = No Setting Group Number 50 = 3999
14-01-22	Basic Trunk Data Setup - Caller ID to Voice Mail	0 = Disable (Caller ID not sent to VM.) 1 = Enable (Caller ID is sent to VM.)	1
15-03-01 *	Single Line Telephone Basic Data Setup - SLT Signaling Type	0 = DP 1 = DTMF	1
15-03-03 *	Single Line Telephone Basic Data Setup - Terminal Type	0 = Normal 1 = Special	0
16-01-02	Department Group Basic Data Setup - Department Calling Cycle	0 = Normal Routing (Priority) 1 = Easy - UCD Routing (Circular)	0
16-01-04	Department Group Basic Data Setup - Hunting Mode	0 = Stop at last member (non-loop) 1 = Circular	0
16-01-10	Department Group Basic Data Setup - Enhanced Hunt Type	0 = No hunting 1 = Hunting When Busy 2 = Hunting When Not Answered 3 = Hunting When Busy or No Answer	0
16-02-01	Department Group Assignment for Extensions	1 ~ 50	1

Program No.	Program Name	Input Data	Default
16-02-02	Department Group Priority Assignment	1 ~ 999	(Refer to the programming manual for the default values of all extensions.)
45-01-01	Voice Mail Integration Options - Voice Mail Department Group Number	0 = No Voice Mail Assigned 1 ~ 50 = Department Group 1 ~ 50	0
45-01-07 *	Voice Mail Integration Options - Centralized Voice mail Pilot No.	Maximum of 8 digits (0 ~ 9, *, #,)	No Setting
45-01-08 *	Voice Mail Integration Options - Centralized Voice Mail Department Group Number	0 ~ 50 0 = No Voice Mail Assigned	0
45-01-09 *	Voice Mail Integration Options - Centralized Voice Mail master Name	Up to 12 characters	C.V.M.
45-01-10 *	Voice Mail Integration Options - New NSL Protocol support	0 = Off (Disable) 1 = On (Enable)	0
84-34-01 *	VoIPDB DTMF Setup - DTMF Relay Mode	0 = Disable 1 = RFC 2833 2 = H.245	0
84-38-10 *	VoIPDB Network Side Echo Canceller Setup - Tx Level Control	0 = Disable 1 = Manual 2 = Auto 3 = HLC (for SIP Trunk Profile 1 - 6)	0
84-38-13 *	VoIPDB Network Side Echo Canceller Setup - Tx HLC Threshold	0 ~ 42 (- 42 dBm ~ 0 dBm) 0 = - 42 dBm 1 = - 41 dBm : 42 = 0 dBm (for SIP Trunk Profile 1 - 6)	41
84-38-14 *	VoIPDB Network Side Echo Canceller Setup - Tx Signal Limiter mode	0 = Disable 1 = Enable (for SIP Trunk Profile 1 - 6)	0
84-38-15 *	VoIPDB Network Side Echo Canceller Setup - Tx Signal Limiter Threshold	0 ~ 42 (- 42 dBm ~ 0 dBm) 0 = - 42 dBm 1 = - 41 dBm : 42 = 0 dBm (for SIP Trunk Profile 1 - 6)	41
90-10-01	System Alarm Setup - Alarm Type	0 = Not Set 1 = Major Alarm 2 = Minor Alarm	-
90-10-02	System Alarm Setup - Report	0 = Not Report (No autodial) 1 = Report (autodial)	Refer to the Programming Manual for the default values.

AspireNet Basic Features

Refer to the SL2100 Feature and Specifications Manual for a complete description and programming information for the following features. The information detailed here applies only to the feature when used in a Networked system.

ICM calling

An extension user can make an intercom call to a networked system if the networked extensions are defined with the Network Access Code (PRG 11-01, Dial Type = 8). A user can change the signaling

type for the intercom call they place to either a voice announce or ringing call to an extension in a networked system.

Operation

To place an Intercom call:

1. At a Multiline Terminal, press **Speaker** key or Lift the Handset.
- OR -
At a Single Line telephone, lift the handset.
2. Dial the extension number (or 0 for the operator).

*Your call may voice-announce or ring the called extension. Dial **1** on the key pad to toggle back and forth between ring and voice-announce.*

Voice Mail, Centralized

Networking will support the use of a single InMail for the entire network. A user may call into the voice mail from anywhere in the network and perform functions as if the voice mail were located on their premises.

Operation

To place a Voice Mail call:

1. At a Multiline Terminal, press **Speaker** key or Lift the Handset.
- OR -
At a Single Line telephone, lift the handset.
2. Dial the pilot number of the Voice Mail (PRG 45-01-07).

Using the above method the caller will not log into their own box. The caller will be prompted to enter the extension number they wish to use.

For the caller to log directly into the Voice Mail box of the calling extension:

1. At a Multiline Terminal, press **Speaker** key or Lift the Handset.
- OR -
At a Single Line telephone, lift the handset.
2. Dial the Voice Mail access code of *8 (PRG 11-12-51).

A multiline telephone user may also:

1. Press the **VM** Soft Key in the display of the Multiline telephone.

A user may want a line key programmed to indicate if another extension has Voice Mail messages. When a message is left for the extension, which is programmed under this key, the LED will flash indicating the user has a Voice Mail Message. This same line key, when pressed, will log the user directly into the associated mailbox.

To program a Voice Mail key on a Multiline telephone:

1. Press **Speaker** key.
2. Dial **751** (PRG 11-11-17).
3. Press the key you want to program.

4. Dial **77** (PRG 15-07-01).
5. Dial the number of the extension you want to appear on the key.
6. Press **Speaker** key.

Network Busy Lamp Field (BLF) indication

An extension user can see the status of other extensions throughout the network as if they were all in the same system. The **BLF** keys will show the status for idle, busy, DND, and Call Forward All. This same key provides one-button access to extensions and system features throughout the network. This saves time for users that do a lot of call processing (e.g., attendants, operators, or dispatchers). Lamp status may not be updated immediately. Status will be updated in the time interval specified in PRG 20-01-04.

Operation

To program a DSS/BLF key on a Multiline telephone:

1. Press **Speaker** key.
2. Dial **751** (PRG 11-11-17).
3. Press the key you want to program.
4. Dial **01** (PRG 15-07-01).
5. Dial the number of the extension you want to appear.
6. Press **Hold** key.
7. Press **Speaker** key.

Network Paging

Users can perform Internal, External, or Combined page to any system in the network. Paging to a networked system can only be activated by dialing a service code and the target network's system ID.

Operation

To Make an Internal Page:

1. At a Multiline Terminal, press **Speaker** key or Lift the Handset.
- **OR** -
At a Single Line telephone, lift the handset.
2. Dial **701** (PRG 11-12-19).
3. Dial # and the system ID (the system ID must be dialed as two digits (e.g. **#01**)).
4. Dial the paging zones number (00 ~ 50). Dialing **00** calls All Call Internal Paging.
5. Make the paging announcement.
6. Press **Speaker** key or hang up the Handset to end the page.

To make an External Page:

1. At a Multiline Terminal, press **Speaker** key or Lift the Handset.
- **OR** -
At a Single Line telephone, lift the handset.
2. Dial **703** (PRG 11-12-20).
3. Dial # and the system ID (the system ID must be dialed as two digits (e.g. **#01**)).
4. Dial the External Zone number (0 ~ 3). Dial **0** calls All Call External Paging.
5. Make the paging announcement.

6. Press **Speaker** key or hang up the Handset to end the page.

To make a Combined Page:

1. At a Multiline Terminal, press **Speaker** key or Lift the Handset.
- **OR** -
At a Single Line telephone, lift the handset.
2. Dial ***1** (PRG 11-12-24).
3. Dial # and the system ID (the system ID must be dialed as two digits (e.g. #**01**)).
4. Dial the External Zone number (0 ~ 3). Dial **0** calls All Call External Paging.
5. Make the paging announcement.
6. Press **Speaker** key or hang up the Handset to end the page.

Network Call Park

Park places a call (ICM or Trunk) in a waiting state, called Park Orbit, so that an extension user may pick it up. Any extension user in the network who is in the same Park Group as the extension which placed the call in park can answer the call. If you do not want the park hold orbits to be available to other users within the network, then place the extensions at each site in a different park hold group in PRG 24-03.

Operation

To Park a call in a system orbit:

1. At a Multiline Terminal press the **Park** key (PRG 15-07 or SC **752**: ***04** + orbit).
The Park Key LED lights.
If you hear busy tone, the orbit is busy. Try another orbit.
2. Use Paging to announce the call.
3. Press **Speaker** key or hang up the handset.
If not picked up the call will recall to you.

OR -

1. At a Multiline Terminal, press **Transfer** key or **Hold** Key.
- **OR** -
At a Single Line telephone, hook flash.
2. Dial #**6** (PRG 11-12-31) and the Park orbit (01 ~ 50).
If you hear busy tone, the orbit is busy. Try another orbit.
3. Use Paging to announce the call.
4. Press **Speaker** key or hang up the handset.
If not picked up the call will recall to you.

To pick up a parked call:

1. At a Multiline Terminal press the **Park** key (PRG 15-07 or SC **752**: ***04** + orbit).

OR -

1. Press **Speaker** Key or Lift the handset.
2. Dial ***6** (PRG 11-12-32) and the Park orbit (01 ~ 50).

Attendant Call Queuing

Description

Attendant extensions can have up to 32 incoming calls queued before additional callers hear busy tone. This helps minimize call congestion in systems that use the attendant as the overflow destination for unanswered calls. For example, you can program Direct Inward Lines and Voice Mail calls to route to the attendant when their primary destination is busy. With Attendant Call Queuing, these unanswered calls would normally “stack up” for the attendant until they can be processed.

The 32 call queue total includes Intercom, DISA, DID, DIL and transferred calls. If the attendant does not have an appearance for the queued call, it waits in line to be answered. If the attendant has more than 32 calls queued, an extension can Transfer a call to the attendant only if they have Busy Transfer enabled.

Attendant Call Queuing is a permanent, non-programmable system feature.

Conditions

- Forwarding when unanswered or busy can occur only at the attendant if there are more than 32 calls in queue.
- Assigning a station as operator in PRG 20-17-01 enables call queuing function.
- PRG 20-17-01 setting overrides setting in PRG 20-09-07: Call Queuing Class of Service Option when set to disable.

Default Settings

Enabled

System Availability

Terminals

Any Multiline Terminal assigned as an operator

Required Component(s)

None

Related Features

Call Forwarding

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
20-01-01	System Options - Operator Access Mode	0 = Step Call 1 = Circular	0
20-09-07	Class of Service Options (Incoming Call Service) - Call Queuing	0 = Off (Calls are not queued.) 1 = On (Calls are queued.)	COS 01 ~ 15 = 0
20-17-01	Operator Extension - Operator's Extension Number	Up to eight digits	101
24-02-01	Transfer System Options - Transfer to busy Extension	0 = Disable (No) 1 = Enable (Yes)	1

Operation

None

Automatic Call Distribution (ACD)

Description

Automatic Call Distribution (ACD) uniformly distributes calls among agents of a programmed ACD Group. When a call rings into an ACD Group, the system automatically routes the call to the agent that has been idle the longest. Automatic Call Distribution is much more sophisticated and comprehensive than Department Calling and other group services – it can accurately judge the work load at each agent and distribute calls accordingly. The system allows up to 8 ACD Groups and 128 ACD agents.

The ACD Master Number is the extension number of the whole group. Calls directly ringing or transferred to the ACD Master number enter the group and are routed accordingly. Although the master number can be any valid extension number, you should choose a number that is out of the normal extension range.

Automatic Call Distribution operation is further enhanced by:

ACD Call Queuing

When all agents in an ACD Group are unavailable, an incoming call queues and causes the Queue Status Display to occur on the ACD agent's display. The display helps the agent keep track of the traffic load in their group.

The Queue Status Displays shows:

- The number of calls queued for an available agent in the group.
- The trunk that has been waiting the longest, and how long it has been waiting.

For each ACD Group, you can set the following conditions:

- The number of trunks that can wait in queue before the Queue Status Display occurs.
- How often the time in queue portion of the display reoccurs.
- If the supervisor should hear a Queue Alarm when the time in queue portion reoccurs.
- This alarm is a single beep tone that reminds the supervisor to check the condition of the queue.

ACD Overflow (With Announcements)

ACD offers extensive overflow options for another ACD Group. For example, a caller ringing in when all agents are unavailable can hear an initial announcement (called the 1st Announcement). This announcement can be a general greeting like, "Thank you for calling. All of our agents are currently busy helping other customers. Please stay on the line and we will help you shortly." If the caller continues to wait, you can have them hear another announcement (called the 2nd Announcement) such as, "Your business is important to us. Your call will be automatically answered by the first available agent. Please stay on the line." If all the ACD Group agents still are unavailable, the call can automatically overflow to another ACD Group or the Voice Mail. If all agents in the overflow ACD Group are busy, Lookback Routing automatically ensures that the waiting call rings into the first agent in either group that becomes free.

You can assign an ACD Group with any combination of 1st Announcement, 2nd Announcement and overflow methods. You can have, for example, a Technical Service group that plays only the 2nd Announcement to callers and then immediately overflows to Voice Mail. At the same time, you can have a Customer Service group that plays both announcements and does not overflow.

You can assign an ACD Group to play the Queue Depth only when using the VRS for message. The Queue Depth can be played after the 1st Announcement only, 2nd Announcement only, or after both Announcements.

VRS Delay Announcements Using InMail

InMail can provide ACD Delay Announcements. Any of the 32 (1 ~ 32) InMail Routing mailboxes (Program 47-07-02) can be set to Announcement mailboxes and can be used as the message source for the 1st and 2nd Announcement Messages. This option is applicable only to ACD Overflow modes that are assigned ACD delayed messages and Program 41-08-03 must be set to 2.

Agent Log In and Log Out Services

An ACD Agent can log in and log out of their ACD Group. While logged in, the agent is available to receive ACD Group calls. When logged out, the agent is excluded from the group calls. The programmable keys and Alphanumeric Display on an agent telephone show at a glance when they are logged in or logged out.

Agent Identity Code (AIC)

An Agent Identity Code (AIC) allows ACD agents to log in any extension without setting Program 41-02-01. Using AIC, ACD agents can also log in to multiple ACD groups at the same time (up to 8 ACD Groups). The system also allows all extensions (up to the system maximum) to log in using the same AIC code. AIC and ACD groups for each work period (mode pattern number) can be set in Program 41-18-01 as shown in the following example.

Table#	AIC	Operation Group	Mode Pattern Number							
			1	2	3	4	5	6	7	8
1	789	1	1	1	-	-	-	-	-	-
2	789	1	2	1	-	-	-	-	-	-
3	789	1	8	1	-	-	-	-	-	-
4	567	7	7	7	7	7	7	7	7	7
5	678	2	2	2	2	2	2	2	2	2
6	678	2	3	3	3	3	3	3	3	3
7	678	2	5	5	5	5	5	5	5	5

EXAMPLE:

With this example, ACD works as follows:

Example 1: Log In with AIC 789

- During Mode Pattern 1, ACD agents belong to ACD groups 1, 2, and 8 at the same time.
- During Mode Pattern 2, ACD agents belong to only ACD group 1.
- During Mode Pattern 3 ~ 8, ACD agents do not belong to any ACD group and the ACD extensions work as normal extensions.

Example 2: Log In with AIC 567

- During Mode Patterns 1 ~ 8, ACD agents belong to only ACD group 7.

Example 3: Log In with AIC 678

- During Mode Patterns 1 ~ 8, ACD agents belong to ACD groups 2, 3 and 5 at the same time.

Multiple Agent Log In

ACD agents can log in any extension with multiple AICs. Using the example setup above, ACD works as follows:

EXAMPLE:

Example 1: Log In with AIC 789 and 567

- During Mode Pattern 1, ACD agents belong to ACD groups 1, 2, 7 and 8 at the same time.

- During Mode Pattern 2, ACD agents belong to ACD groups 1 and 7.
- During Mode Pattern 3~8, ACD agents belong to only ACD group 7.

Example 2: Log In with AIC 789, 567 and 678

- During Mode Pattern 1, ACD agents belong to ACD groups 1, 2, 3, 5, 7 and 8 at the same time.
- During Mode Pattern 2, ACD agents belong to ACD groups 1, 2, 3, 5 and 7.
- During Mode Pattern 3~8, ACD agents belong to only ACD groups 2, 3, 5 and 7.

Some conditions with Multiple Agent Log In:

- ACD agents cannot log in to the system supervisor or group supervisor extension.
- To log in with AIC, the extension should be set to AIC Log In mode in Program 41-17-01.
- If the extension is set to AIC log in mode in Program 41-17-01, the system ignores the setting of Program 41-02-01 for the extension.
- Multiple extensions (up to the maximum capacity of the extension) can log-in with one AIC. For example, even if ACD agent A logs in extension 350 with AIC 789, ACD agent B can also log in to extension 351 with the same AIC 789 at the same time.
- A supervisor cannot log out an agent logged in by an AIC code.
- When logging into multiple queues using either a single AIC code or multiple AIC codes, the first default queue is used for timers and alarm displays.

Emergency Call

If an ACD Agent needs assistance with a caller, they can place an Emergency Call to their ACD Group Supervisor. Once the supervisor answers the Emergency Call, they automatically monitor both the ACD Agent and the caller. If the agent needs assistance, the supervisor can join in the conversation. Emergency Call can be a big help to inexperienced ACD Agents that need technical advice or assistance with a difficult caller. The supervisor can easily listen to the conversation and then “jump in” if the situation gets out of hand.

Enhanced DSS Operation

A programmed extension user can use their DSS Console to monitor the status of the ACD Agents in a group. The DSS Console is an essential tool for supervisors. The console key flash rates tell the supervisor at a glance which of the group agents is:

- Logged onto the group (i.e., in service).
- Logged out of the group (i.e., out of service).
- Busy on a call.
- Placing an Emergency Call to the supervisor.
- Not available or installed.

The ACD Supervisor can use their console also for placing and transferring calls – just like any other extension user.

Flexible Time Schedules

An ACD Work Schedule lets you divide a day into segments (called Work Periods) for scheduling the activity in your ACD Groups. You can set up four distinct Work Schedules, with up to eight Work Periods in each Work Schedule. Each day of the week has one Work Schedule, but different days can share the same schedule. For example, your Monday through Friday Work Schedule could consist of only two Work Periods. Work Period 1 could be from 8:00 AM to 5:00 PM - when your business is open. Work Period 2 could be from 5:00 PM to 8:00 AM - which covers those times when your business is closed.

Headset Operation (With Automatic Answer)

An ACD Agent can use a customer-provided headset in place of the handset. The headset conveniently frees up the user's hands for other work and provides privacy while on the call. In

addition, an ACD Agent with a headset can have Automatic Answer. This allows an agent busy on a call to automatically connect to the next waiting call when they hang up.

Incoming Call Routing

Incoming trunk calls can automatically route to specific ACD Groups. These types of calls ring directly into the ACD Group without being transferred by a co-worker or the Automated Attendant.

Rest Mode

Rest Mode temporarily logs-out an ACD agent's telephone. There are two types of Rest Mode:

Manual Rest Mode:

An ACD Agent can enable Manual Rest Mode anytime they want to temporarily leave the ACD Group. They might want to do this if they go to a meeting or get called away from their work area. While in Rest Mode, calls to the ACD Group do not ring the agent's telephone.

Automatic Rest Mode:

When an ACD Group has Automatic Rest Mode, the system automatically puts an agent's telephone in Rest Mode if it is not answered. This ensures callers do not have to wait while ACD rings an extension that is not answered. For multiline terminals, the system enables Automatic Rest Mode for all Agents' telephones with Rest Mode keys. For single line telephones, you must set an option in programming to enable Automatic Rest Mode. If an agent's telephone is placed in Rest Mode because a call is not answered, the agent needs to manually cancel Rest Mode to log back into the ACD group.

With a Rest Mode key programmed on an ACD agent's telephone, when the agent is in rest mode, the key is lit. If the Rest Mode key is pressed while an agent is on a call, the key flashes to indicate a pre-Rest Mode status. When the current call is finished, the agent's telephone is in rest mode. The agent can place intercom calls or receive direct incoming calls while in Rest Mode. The ability to receive incoming intercom calls is defined in system programming for each ACD group.



An ACD System Supervisor cannot be placed in Rest Mode.



When logging in with AIC mode, Program 41-18-02 must be set for 41-14-08 to work.

Supervisor, ACD Group

You can designate an extension in an ACD Group to be the group supervisor.



An ACD Group can only have one supervisor.

Once assigned as an ACD Group Supervisor, the user can:

- Take the entire ACD Group out of service (outside callers will hear ringback or the ACI recording).
- Check the log out status of each agent after the group has been taken down.
- Restore the ACD Group to service.

During programming, you can choose one of three modes of operation for each ACD Group supervisor:

- The Supervisor's extension cannot receive calls to the ACD Group (mode 0).
- The Supervisor's extension can only receive ACD Group calls during overflow conditions (mode 1).
- The Supervisors extension receives calls just like any other ACD Group agent (mode 2).

In addition, any extension can be a supervisor for only one ACD Group. There is a maximum of 8 available ACD Groups.

Supervisor, ACD System

You can designate an extension as an ACD System Supervisor.



The system can have only one ACD System Supervisor.

Once assigned as an ACD System Supervisor, the user can:

- Take all system ACD Groups out of service simultaneously (outside callers will hear ringback or the ACI recording).
- Check the log out status of each agent after the groups are taken down.
- Restore all ACD Groups to service simultaneously.
- Log an agent into or out of an ACD Group.
- Reassign an agent to a different ACD Group.

Work Time

Work Time temporarily busies-out an ACD agent's telephone so they can work at their desk uninterrupted. This gives the agent time to fill out important logs and records as soon as they are finished with their call. There are two types of Work Time:

Manual Work Time:

An ACD Agent can enable Manual Work Time anytime they need to work at their desk undisturbed. You might prefer this Work Time mode if an agent only occasionally has to fill out follow-up paper work after they complete their call. When the agent is through catching up with their work, they manually return themselves to the ACD Group.

Automatic Work Time:

The system implements Automatic Work Time for the agent as soon as they hang up their current ACD call. This is helpful in applications (such as Tech Service groups) where follow-up paperwork is a requirement for every call. When the agent is done with their work, they manually return themselves to the ACD Group or can be programmed to automatically return to the ACD Group.

Hotline Key Shows Agent Status

An extension Hotline key provides the normal Busy Lamp Field (BLF) for co-workers and a unique BLF for ACD Agents. Like the DSS Console BLF, the unique BLF shows when the covered agent is in service, out of service or busy on a call. This enhanced BLF gives a department manager, for example, ACD Group monitoring abilities without having to become a supervisor with a DSS Console.

Hotline gives a multiline terminal user one-button calling and Transfer to another extension (the Hotline partner). Hotline helps co-workers that work closely together. The Hotline partners can call or Transfer calls to each other just by pressing a single key. Enhanced for ACD applications, Hotline provides a unique Busy Lamp Field for ACD agents as well as a BLF for co-workers that are not ACD agents. The charts below show both sets of BLF indications.

BLF For ACD Agents	
When the key is ...	The ACD Agent is ...
Off	Idle and is not an ACD Agent
On	Busy
Double Wink Off	Making an Emergency Call
Wink Off	Logged off or not installed
Double Wink On	Logged on

BLF For Co-Workers That Are Not ACD Agents	
When the key is ...	The ACD Agent is ...
Off Idle	Off Idle
On Busy or ringing	On Busy or ringing

BLF For Co-Workers That Are Not ACD Agents	
Fast Flash In Do Not Disturb - All calls (option 3)	Fast Flash In Do Not Disturb - All calls (option 3)

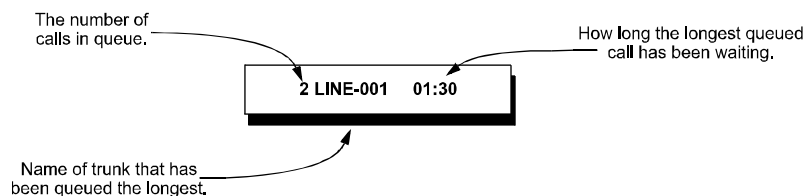
Enhanced Supervisor Options:

An ACD supervisor can individually assign extensions to ACD Groups, and set an agent's status once assigned. This provides the supervisor with tremendous flexibility to reassign agents as work loads vary.

Queue Status Display:

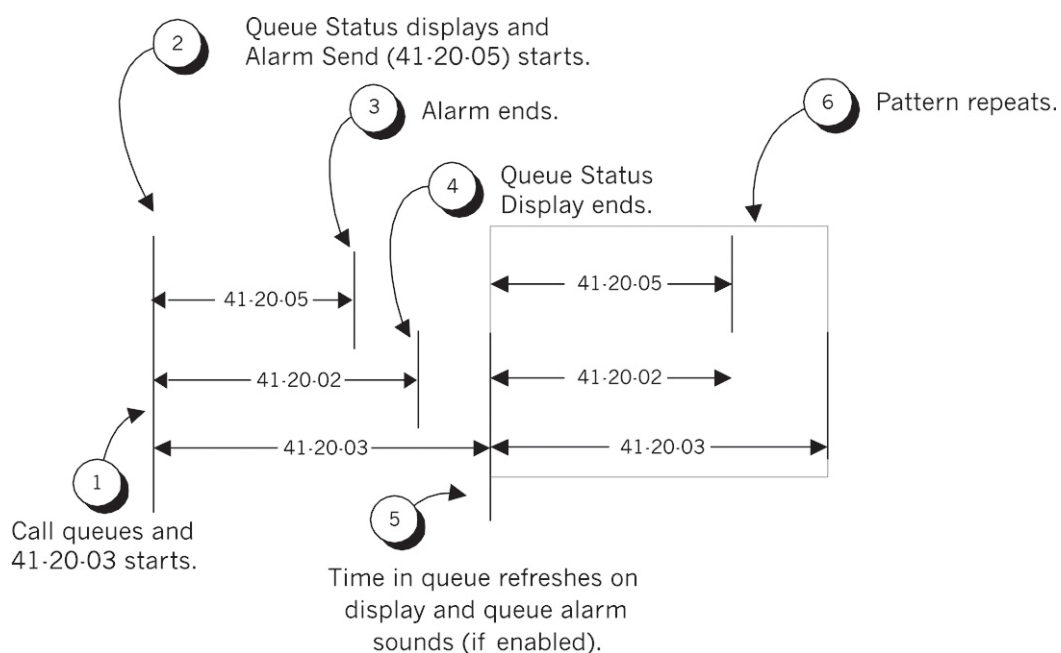
When all agents in each ACD Group are unavailable, an incoming call queues and causes the Queue Status Display to occur on the ACD Supervisor and/or agent's display (based on the Class of Service). The display helps the Supervisor keep track of the traffic load in their own group. Any display multiline terminal can have a Queue Status Display Check programmable function key. The Multiline terminal user can press this key anytime while idle, and using the VOL (▲) and VOL (▼), scroll through the Queue Status Displays of all the ACD Groups. The Queue Status Displays shows (see the Queue Status Display illustration below):

- The number of calls queued.
- The trunk that has been waiting the longest, and how long it has been waiting.



For each ACD Group, you can set the following conditions:

- The number of trunks that can wait in queue before the Queue Status Display occurs.
- How often the time in queue portion of the display reoccurs (see the Queue Status display Timing illustration below).
- Queue Status Display holding time.
- Queue Status Alarm enable/disable.
- Queue Status Alarm sending time.



When Logged Out of ACD Group:

When ACD agents are logged out and a call is placed into the ACD queue, the telephones of the logged out agents display the Queue Status and they hear the alarm according to the settings defined in system programming. Pressing the Queue Status Display Programmable Function key returns the telephone to idle until the time in Program 41-20-03 expires again.

Feature	Available in Program 41-20-01 ~ 05
Queue Status Display	Yes
Queue Status Display Time	Yes
Alarm	Yes
Alarm Send Time	Yes
Interval Time of Queue Status Display	Yes
Class of Service	Yes
Timing of alarm and display queue status	Alarm triggered after the number of calls in Program 41-20-01 is exceeded. Then follows Program 41-20-03 timing for displaying status.



- If a telephone is not idle, it cannot use the Queue Status Display Programmable Function key.
- The Queue Status Display is not shown and the Queue Alarm is not heard by ACD agents in Off-Duty mode.
- To scroll through the ACD groups queue status, the Queue Status Display Programmable Function key must be used. You cannot scroll when the Queue Status Display is displayed due to an alarm.
- If the Queue Status display and alarm are active and the queued called is answered/disconnected, the display and alarm continue until the times in Program 41-20-02 and Program 41-20-05 expire.
- When an overflowed call is in queue, the call is included in its original ACD group queue and not in the group queue to which it overflowed.
- The Queue Status is not displayed on a supervisor's telephone based on the settings in Programs 41-20-xx. The supervisor must use the Queue Status Display Programmable Function key to view the queue.

ACD Group as Overflow Destination

The system can transfer an overflow call to a specific ACD Group, off-site via a speed dial bin, Ring Group or to voice mail. When Program 41-08-02: ACD Overflow Destination has the ACD Overflow Destination set to 1 ~ 8, the system overflows the call to the ACD Group programmed in Program 41-08-02. (The system does not allow you to program an ACD group with that ACD group as the overflow.) If, while the call is ringing, the extension where the call was transferred becomes available, both the extension and the overflow ACD group ring.

NEC Contact Center

The NEC Contact Center is a series of Windows®-based software programs designed to enhance the Contact Center features of the SL2100 Telephone System. The software displays both real-time data and historical reports. The NEC Contact Center is supported on Windows Server 2008, Windows 7 Professional and Ultimate 32- and 64-bit and Windows 8 Professional and Enterprise 32- and 64-bit.

Refer to the SL2100 ACD Supervisor Manual for more information.

Conditions

System:

- The ACD Wait queue exists for every ACD group.
- The Call Duration Timer (Program 20-13-36) is not displayed for inbound ACD calls.
- InMail can play ACD Delay Announcements.
- If all agents are logged out of an ACD Queue, a trunk call directly to the Queue is placed in queue.
- If all agents are logged out of an ACD Queue, a transferred call to the ACD Pilot number recalls immediately back to the transferring party if no Overflow Destination is setup (PRG 41-08).

- If all agents are logged out of an ACD Queue, a transferred call to the ACD Pilot number will be placed in queue if an Overflow Destination is setup (PRG 41-08).
- If defined in Program 22-11-03, DID calls in queue display the trunk name with the Queue Status feature.
- When Program 12-07-01 is customized, an agent's display does not indicate the WAIT ACD LOGIN status, however an agent may still log in.
- Conversation Recording is programmed system-wide – it is not ACD feature-specific.
- Up to 16 channels (speech paths) are available when using the DSP with VRS installed on the CPU for messages.
- Wireless DECT (SIP) is not supported with ACD.
- When all InMail talk paths (ports) are simultaneously being accessed by InMail Mailbox subscribers or Voice Mail Delay Announcements, or combination of the two, the next incoming call to the InMail will Ring No Answer until an available talk path becomes idle (First Come - First Served).
- When Voice Mail Delay Announcements are being played, InMail talk paths (ports) are used.
- InMail cannot be used for ACD Night Announcement.
- Program 41-08-03: ACD Overflow Options - Delay Announcement Source Type.
- ACD can only support one Music on Hold source.
- When an agent is in a Ring Group and logged in, it will not ring when a call comes to the Ring Group. It will ring when logged out.
- If a phone has never been brought up and is assigned as an agent, the system will have to be reset before the phone is able to login.
- If the Help key is pressed when an Agent is logged in, calls in Queue are not received until the Agent exits the Help menu.
- When ACD delay announcements are used, and a call is delivered to an available agent, the agent MLT display shows how many delay announcements have been played (no exclamations for no delay messages played or one exclamations for 1st delay played or two exclamations for 1st and 2nd delay message played) while the call is ringing.
- In order for Queue Depth Announcement to function an idle VRS Port must be available. Therefore, a minimum of two VRS Ports are required, one for the Delayed Announcement and one for the Queue Depth Announcement.

NEC Contact Center:

- The SL2100 system does not buffer the Contact Center Statistics when the PC running the Contact Center Server application is not connected.
- The programming of the Agents are pulled by the PC running the Contact Center Server applications.
- Call Detail by Queue Report shows the Caller ID (if available) for each call.
- The maximum number of Contact Center Monitoring programs that can run simultaneously is 2.

ACD Queue Alarm Function Key

- If the number of calls in queue is more than Program 41-20-01, the ACD Queue Alarm Display Key lights or flashes based on settings in Program 41-20-06.
- If Program 41-20-06 is less than Program 41-20-01, the ACD queue alarm display key will flash, not light solid.
- The state of the ACD Queue Alarm Display key is not affected by the update interval in Program 41-20-03.
- The ACD Queue Alarm Display key will not flash or light if Program 41-06-01 is set to 0.
- The notification by the function key is set on all terminals the button is programmed on regardless of the state of the terminal.
- The key will lamp when in ACD Log Out, ACD Work Wrap up time and ACD Off Duty Mode.

Default Settings

Refer to the NEC Contact Center Supervisor Manual for more details.

System Availability

Terminals

All Terminals

Required Component(s)

ACD Software License (SL2100 IN-ACD LIC (2001))

CPU Board

Required Software

None

Related Features

Direct Inward Dialing (DID)

InMail

Music on Hold

Night Service

Voice Mail Integration (Analog)

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-20-01	LAN Setup for External Equipment - TCP Port	Available values are: 0 ~ 65535	External Device 1 (CTI Server) = 0 External Device 2 (ACD-MIS) = 0 External Device 4 (Networking system) = 0 External Device 5 (SMDR Output) = 0 External Device 6 (DIM Output) = 0 External Device 8 (UC Web Application) = 0 External Device 9 (1st Party CTI) = 0 External Device 11 (O&M Server) = 8010 External Device 12 (Traffic Report Output) = 0 External Device 13 (Room Data Output for Hotel Service) = 0 External Device 14 (IP-DECT Directory Access) = 0 External Device 15 (Presence) = 0
10-20-03	LAN Setup for External Equipment - Keep Alive Time	1 ~ 255 seconds	30
10-47-01	Terminal License Server Information Setup - Register Port of TCP I/F	0 ~ 65535	6080
10-47-02	Terminal License Server Information Setup - TCP Keep Alive Time	1~255 seconds	5
11-13-01	Service Code Setup (for ACD) - ACD Log In/Log Out (for KTS)	0~9, *, # Maximum of 8 digit	*5
11-13-02	Service Code Setup (for ACD)Service Code Setup (for ACD) - ACD Log Out (for SLT)	0~9, *, # Maximum of 8 digit	655
11-13-03	Service Code Setup (for ACD)Service Code Setup (for ACD) - Set ACD Wrap-Up Time (for SLT)	0~9, *, # Maximum of 8 digit	656
11-13-04	Service Code Setup (for ACD) - Cancel ACD Wrap-Up Time (for SLT)	0~9, *, # Maximum of 8 digit	657
11-13-05	Service Code Setup (for ACD) - Set ACD Off Duty (for SLT)	0~9, *, # Maximum of 8 digit	658
11-13-06	Service Code Setup (for ACD) - Cancel ACD Off Duty (for SLT)	0~9, *, # Maximum of 8 digit	659
11-15-02	Service Code Setup, Administrative (for Special Access) - ACD Access in Dialin Conversion Table	0~9, *, # Maximum of 8 digit	No Setting
11-17-01	ACD Group Pilot Number - ACD Group Pilot Number	Dial (Up to eight digits)	No Setting
15-07-01	Programmable Function Keys	Line Key 1 ~ 32	0 ~ 99, #00~ #99 (Normal Function Code 751 by default) *00 ~ *99 (Appearance Function Code) (Service Code 752 by default)

Program No.	Program Name	Input Data	Default
20-02-05	System Options for Multiline Telephones - Head-set Busy Mode	0 = No (Disable) 1 = Yes (Enable)	0
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-13-06	Class of Service Options (Supplementary Service) - Automatic Off-Hook Signaling (Automatic Override)	0 = Off (manually) 1 = On (automatically)	COS 01 ~ 15 = 1
20-13-33	Class of Service Options (Supplementary Service) - ACD Supervisor's Position Enhancement	0 = Off 1 = On	0
20-13-39	Class of Service Options (Supplementary Service) - ACD Queue Status Display	0 = Off 1 = On	COS 01 ~ 15 = 0
30-05-04	DSS Console Lamp Table - ACD Agent Busy	0 ~ 7 (Lamp Pattern Data)	7
30-05-05	DSS Console Lamp Table - Out of Schedule (ACD DSS)	0 ~ 7 (Lamp Pattern Data)	0
30-05-06	DSS Console Lamp Table - ACD Agent log Out (ACD DSS)	0 ~ 7 (Lamp Pattern Data)	5
30-05-07	DSS Console Lamp Table - ACD Agent Log In (ACD DSS)	1 ~ 7 (Lamp Pattern Data)	4
41-01-01	System Options for ACD - System Supervisory Extension	Up to eight digits (0 ~ 9, *, #)	No Setting
41-01-02	System Options for ACD - Login ID Code Digit	0 ~ 20 0 = No Login ID	0
41-01-03	System Options for ACD - ACD MIS Connection Ports	0 = Not Set 3 = LAN (CPU)	0
41-01-04	System Options for ACD - ACD MIS Notification when ACD Call receives Busy	0 = Notifies 1 = No notification	0
41-01-05	System Options for ACD - ACD MIS Output Format	0 = Classic 1 = 8-digit DDI Field 2 = Extra DDI Event 3 = XML Format	0
41-02-01	ACD Group and Agent Assignments - ACD Group No.	ACD Work Period Mode Number: 1 ~ 8 ACD Group Number: 0 ~ 8 (0 = No Setting)	0
41-03-01	Incoming Ring Group Assignment for ACD Group - ACD Group Number	0 ~ 2 0 = No Setting	0
41-03-02	Incoming Ring Group Assignment for ACD Group - Night Announcement Service	0 = No 1 = Yes	0
41-03-03	Incoming Ring Group Assignment for ACD Group - Priority Data	0, 1 ~ 7 0 = No Priority 1 = Highest Priority 7 = Lowest Priority	0
41-04-01	Group Supervisory Station Setup - Group Supervisory Extension	Up to eight digits (0 ~ 9, *, #)	No Setting
41-04-02	Group Supervisory Station Setup - Operation Type	0 = Do Not receive any ACD Group incoming calls (No) 1 = Receive ACD Group incoming calls in case of overflow (Busy) 2 = Receive ACD Group incoming calls all the time (Yes)	0
41-05-01	ACD Agent Work Schedules	Work Period Mode Number = 1 ~ 8 Start Time = 0000 ~ 2359 End Time = 0000 ~ 2359	(Start) 0000 (End) 0000

Program No.	Program Name	Input Data	Default
41-06-01	Trunk Work Schedules	Work Period Mode Number = 1 ~ 8 Start Time = 0000 ~ 2359 End Time = 0000 ~ 2359	(Start) 0000 (End) 0000
41-07-01	ACD Weekly Schedule Setup	Day No./Time Pattern: 1 = Sunday/ 0 ~ 4 (0 = No ACD) 2 = Monday/ 0 ~ 4 (0 = No ACD) 3 = Tuesday/ 0 ~ 4 (0 = No ACD) 4 = Wednesday/ 0 ~ 4 (0 = No ACD) 5 = Thursday/ 0 ~ 4 (0 = No ACD) 6 = Friday/ 0 ~ 4 (0 = No ACD) 7 = Saturday/ 0 ~ 4 (0 = No ACD)	0
41-08-01	ACD Overflow Options - Overflow Operation Mode	0 = No Overflow (None) 1 = Overflow with No Announcement 2 = No Overflow with First Announcement Only 3 = No Overflow with First & Second Announcements 4 = Overflow with First Announcement Only 5 = Overflow with First & Second Announcement 6 = Not Used 7 = Not Used 8 = No Overflow with Second Announcement Only 9 = Overflow with Second Announcement Only	0
41-08-02	ACD Overflow Options - ACD Overflow Destination	0 = No Setting 1 ~ 8 = ACD Group 9 = Overflow Table (Program 41-09) 10 = Voice Mail Integration 11 = System Speed (Program 41-08-05) 12 = Incoming Ring Group (Program 41-08-06)	0
41-08-03	ACD Overflow Options - Delay Announcement Source Type	1 = VRS 2 = InMail	1
41-08-04	ACD Overflow Options - ACD Overflow Transfer Time	0 ~ 64800 (seconds)	30
41-08-05	ACD Overflow Options - Speed Dial Area Overflow Destination	0 ~ 999 (Used when 41-08-02 is set to 5)	999
41-08-06	ACD Overflow Options - Incoming Ring Group when Overflow	01 ~ 50 (Used when 41-08-02 is set to 6)	1
41-09-01	ACD Overflow Table Setting - 1 ~ 3	0 ~ 9 0 = No Setting 1 ~ 8 = ACD Group 1 ~ 8 9 = InMail	0
41-11-01	VRS Delay Announcement - Delay Message Start Timer	0 ~ 64800 (seconds)	0
41-11-02	VRS Delay Announcement - 1st Delay Message Number	0 ~ 101 0 = No Message 101 = Fixed Message	0
41-11-03	VRS Delay Announcement - 1st Delay Message Sending Count	0 ~ 255	0

Program No.	Program Name	Input Data	Default
41-11-04	VRS Delay Announcement - 2nd Delay Message Number	0 ~ 101 0 = No Message 101 = Fixed Message	0
41-11-05	VRS Delay Announcement - 2nd Waiting Message Sending Count	0 ~ 255	0
41-11-06	VRS Delay Announcement - Tone Kind at Message Interval	0 = Ring Back Tone 1 = MOH Tone 2 = BGM Source	0
41-11-07	VRS Delay Announcement - ACD Forced Disconnect Time after the 2nd DelayMessage	0 ~ 64800 (seconds) (0 = No Disconnect)	60
41-11-08	VRS Delay Announcement - Queue Depth Announcement	0 = Disable 1 = After 1st (1st) 2 = After 2nd (2nd) 3 = After 1st and 2nd (1st and 2nd)	0
41-12-03	Night Announcement Setup - ACD Night Announcement Sending Time	0 ~ 64800 (seconds)	30
41-13-01	VRS Message Number for Night Announcement - VRS Message Number	0 ~ 100 0 = No Message	0
41-13-02	VRS Message Number for Night Announcement - Tone Kind at Message Interval	0 = Ring Back Tone 1 = MOH Tone 2 = BGM Source	0
41-14-01	ACD Options Setup - Emergency Call Operation Mode	0 = Call to system supervisory extension when group supervisory extension is busy. 1 = No calls to system supervisory extension when group supervisory extension is busy.	0
41-14-02	ACD Options Setup - Automatic Wrap Up Mode	0 = After wrap up the mode key is pressed. (Manual) 1 = After call is finished automatically. (Auto)	0
41-14-03	ACD Options Setup - ACD Priority for Overflow Calls	0 = Own group priority 1 = Priority order by Program 41-03-03	0
41-14-04	ACD Options Setup - Automatic Answer at Headset	0 = Off 1 = On	0
41-14-06	ACD Options Setup - Call Queuing after 2nd Announcement	0 = Enable (Yes) 1 = Disable (No)	0
41-14-07	ACD Options Setup - Automatic Off Duty for SLT	0 = No change to Off Duty mode 1 = Change to Off Duty mode automatically (Skip)	0
41-14-08	ACD Options Setup - ACD Off Duty Mode	0 = Cannot receive internal call 1 = Can receive internal call	0
41-14-09	ACD Options Setup - Automatic Wrap Up End Time	0 ~ 64800 (seconds)	0
41-14-10	ACD Options Setup - ACD No Answer Skip Time	0 ~ 64800 (seconds)	10
41-14-12	ACD Options Setup - Start Headset Ear Piece Ringing (for SLT)	0 ~ 64800 (seconds)	0
41-14-17	ACD Options Setup - CTI : Operation mode when transfer no login ACD groups	0 = Transfer to ACD group 1 = Error notice	0
41-16-01	ACD Threshold Overflow - Number of Calls in Queue	0 ~ 128 0 = No Limitation	0

Program No.	Program Name	Input Data	Default
41-16-02	ACD Threshold Overflow - Operation Mode for ACD Queue	0 = The last waiting call is transferred 1 = The longest waiting call is transferred 2 = Send Busy Tone	0
41-17-01	ACD Login Mode Setup - Login Mode	0 = Normal Login Mode 1 = AIC Login Mode	0
41-18-01	ACD Agent Identity Code Setup - ACD Agent Identity Code	Maximum of four digits	No Setting
41-18-02	ACD Agent Identity Code Setup - Default ACD Group Number	0 ~ 8 0 = No Setting 1 ~ 8 = ACD Group No.	0
41-18-03	ACD Agent Identity Code Setup - ACD Group Number in Operation Mode 1	0 ~ 8 0 = No Setting 1 ~ 8 = ACD Group No.	0
41-18-04	ACD Agent Identity Code Setup - ACD Group Number in Operation Mode 2	0 ~ 8 0 = No Setting 1 ~ 8 = ACD Group No.	0
41-18-05	ACD Agent Identity Code Setup - ACD Group Number in Operation Mode 3	0 ~ 8 0 = No Setting 1 ~ 8 = ACD Group No.	0
41-18-06	ACD Agent Identity Code Setup - ACD Group Number in Operation Mode 4	0 ~ 8 0 = No Setting 1 ~ 8 = ACD Group No.	0
41-18-07	ACD Agent Identity Code Setup - ACD Group Number in Operation Mode 5	0 ~ 8 0 = No Setting 1 ~ 8 = ACD Group No.	0
41-18-08	ACD Agent Identity Code Setup - ACD Group Number in Operation Mode 6	0 ~ 8 0 = No Setting 1 ~ 8 = ACD Group No.	0
41-18-09	ACD Agent Identity Code Setup - ACD Group Number in Operation Mode 7	0 ~ 8 0 = No Setting 1 ~ 8 = ACD Group No.	0
41-18-10	ACD Agent Identity Code Setup - ACD Group Number in Operation Mode 8	0 ~ 8 0 = No Setting 1 ~ 8 = ACD Group No.	0
41-19-01	ACD Voice Mail Delay Announcement - Delay Message Start Timer	0 ~ 64800 (seconds)	0
41-19-02	ACD Voice Mail Delay Announcement - Mailbox Number for 1st Announcement Message	Dial (up to eight digits)	No Setting
41-19-03	ACD Voice Mail Delay Announcement - 1st Delay Message Sending Count	1 ~ 255 0 = No message is played.	0
41-19-04	ACD Voice Mail Delay Announcement - Mailbox Number for 2nd Announcement Message	Dial (up to eight digits)	No Setting
41-19-05	ACD Voice Mail Delay Announcement - 2nd Delay Message Sending Count	1 ~ 255 0 = No message is played.	0
41-19-06	ACD Voice Mail Delay Announcement - Wait Tone Type at Message Interval	0 = Ring Back Tone 1 = Music On Hold Tone 2 = Background Music Source	0
41-19-07	ACD Voice Mail Delay Announcement - ACD Forced Disconnect Time after 2nd Announcement	0 ~ 64800 (seconds)	0
41-19-08	ACD Voice Mail Delay Announcement - Delay Message Interval Time	0 ~ 64800 (seconds)	20
41-20-01	ACD Queue Display Settings - Number of Calls in Queue	0 ~ 128 0 = No Display	0

Program No.	Program Name	Input Data	Default
41-20-02	ACD Queue Display Settings - Queue Status Display Time	0 ~ 64800 (seconds)	5 (seconds)
41-20-03	ACD Queue Display Settings - Queue Status Display Interval	0 ~ 64800 (seconds)	60 (seconds)
41-20-04	ACD Queue Display Settings - ACD Call Waiting Alarm	0 = Disable (Off) 1 = Enable (On)	0
41-20-05	ACD Queue Display Settings - ACD Call Waiting Alarm Hold Time	0 ~ 64800 (seconds)	0
47-03-02	InMail Group Mailbox Options - Mailbox Number	Up to eight digits No Setting (entered by pressing Hold)	No Setting
47-03-03	InMail Group Mailbox Options - Mailbox Type	0 = None 1 = Subscriber 2 = Routing	1
47-03-03	InMail Group Mailbox Options - Routing Mailbox Number	01 ~ 32	1
47-07-02	InMail Routing Mailbox Options - Routing Mailbox Type	0 = None 1 = Call Routing 2 = Announcement 3 = Directory 4 = Distribution	Mailboxes 01 ~ 08 = 1 (Call Routing) Mailboxes 09 ~ 32 = 2 (Announcement)
47-09-03	Announcement Mailbox Options - Hang Up After	0 = None 1 = Goodbye 2 = Silent	0
92-04-01	Extension Data Swap - 1st Extension Number	Up to eight digits.	Refer to Programming Manual.
92-06-01	Fill Command - Source Number	Each extension port = 001 ~ 128 (Program 11-02) Each virtual extension port = 01 ~ 50 (Program 11-04) Each extension group = 1 ~ 50 (Program 11-07) Each ACD Group = 1 ~ 8	Refer to Programming Manual.
92-07-01	Delete Command - Destination Number (From)	Each extension port = 001 ~ 128 (Program 11-02) Each virtual extension port = 01 ~ 50 (Program 11-04) Each extension group = 1 ~ 50 (Program 11-07) Each ACD Group = 1 ~ 8	Refer to Programming Manual.

Operation

Using the Headset with Automatic Answer for ACD Agents:

1. With the multiline terminal in an idle state, press **Help** key.
2. Press the HEADSET key (Program 15-07-01 or SC **751**: 05) twice.



- The Headset key blinks when Automatic Headset is activated.
- To cancel Automatic Headset, repeat these steps.

Transferring Trunk Calls to the ACD Pilot Number:

1. While on an outside call, press **Transfer** key.
2. Dial the ACD Pilot number.

3. Hang up.



• The call is transferred to the ACD group.

Agent Log In

To log in:

Multiline Terminal

1. Press the **ACD LOG IN/LOG OUT** key (Program 15-07-01 or SC **752**: *10).



The **ACD LOG IN/LOG OUT** key lights.

Single Line Telephone

1. Lift the handset.
2. Dial the ACD Log In service code *5 (Program 11-13-01).

To log out

Multiline Terminal

1. Press the **ACD LOG IN/LOG OUT** key (Program 15-07-01 or SC **752**: *10).
2. Display shows:

ACD Logout?
(1: YES, 0: NO)

Enter 1 to log out.



The **ACD LOG IN/LOG OUT** key goes out.

Single Line Telephone

1. Lift the handset.
2. Dial the ACD Log Out service code **655** (Program 11-13-02).

AIC Agent Log In:

To log in:

Multiline Terminal

1. Press the **ACD LOG IN/LOG OUT** key (Program 15-07-01 or SC **752**: *10).
- OR -
Press **Speaker** and dial the AIC Log In service code (Program 11-13-08).
2. Dial the log in code (up to 20 digits).



This step is not required if the ID code is disabled in Program 41-01-02.

3. Dial the Agent Identity Code (AIC) (up to four digits).



The **ACD LOG IN/LOG OUT** key lights.

To Log Out (for single or multiple agent logins):

Multiline Terminal

1. Press the **ACD LOG IN/LOG OUT** key (Program 15-07-01 or SC **752**: *10).
2. Dial **1** to accept.
- **OR**
Press **Speaker** and dial the AIC Log In service code (Program 11-13-08).



*The **ACD LOG IN/LOG OUT** key goes out.*

Single Line Telephone

1. Lift the handset.
2. Dial the AIC Log Out service code (Program 11-13-08).

- OR -

1. To log out of a group without using AIC, lift the handset.
2. Dial the ACD Log Out service code **655** (Program 11-13-02).

Multiple Agent Log In:

To log in:

Multiline Terminal

After already being logged in:

1. Press the **ACD LOG IN/LOG OUT** key (Program 15-07-01 or SC **752**: *10).
2. Dial **0** to cancel the log out option.
3. Dial the Agent Identity Code (AIC) (up to four digits).



*The **ACD LOG IN/LOG OUT** key lights.*

- OR -

Press **Speaker** and dial the AIC Log In service code (Program 11-13-08).

4. Dial the Agent Identity Code (AIC) (up to four digits).



*The **ACD LOG IN/LOG OUT** key lights.*

Single Line Telephone

Follow Steps 1 ~ 3 to log in with additional AICs (up to three) anytime.

1. Lift the handset and dial the AIC Log In service code (Program 11-13-08).
2. Dial the log in code (up to 20 digits).



This step is not required if the ID code is disabled in Program 41-01-02.

3. Dial the first Agent Identity Code (AIC) (up to four digits).



You hear a confirmation tone when immediately logging in with additional AICs.

4. For second agent log: Dial the second Agent Identity Code (AIC) (up to four digits).



You hear a confirmation tone.

5. For third agent log: Dial the third Agent Identity Code (AIC) (up to four digits).



You hear a confirmation tone.

Queue Status Display

When Logged Into ACD Group

1. With an idle multiline terminal, press the Queue Status Display Programmable Function Key (Code:*19).
 -  • *The display indicates the number of calls in queue, the trunk name, and the time the call has been waiting.*
 - *When the Queue Status Display key is pressed, the queue status of the extension group is displayed. When the extension is not in an ACD group, the Queue Status of group 1 is displayed instead.*
2. Press **VOL UP** and **VOL DOWN** to scroll through the Queue Status Displays of all the ACD Groups.
3. Press the **Exit** key to return the telephone to an idle state.

When Logged Out of ACD Group

When ACD agents are logged out and a call is placed in the ACD queue, the telephone of the logged out agents displays the Queue Status and they hear the alarm according to the settings defined in system programming.

Pressing the Queue Status Display Programmable Function key returns the telephone to idle until the time in Program 41-20-03 expires again.

Rest Mode

To set the manual Rest Mode:

Multiline Terminal

1. With the multiline terminal idle, press the **ACD Rest Mode** key (Program 15-07-01 or SC **752**: *13).
 -  *The **ACD Rest Mode** key lights. If the Rest Mode key is pressed while the agent is on an active call, the key flashes until the agent hangs up.*

Single Line Telephone

1. Lift the handset and dial **658**.
 -  • *A fast busy is heard.*
 - *To set Pre-Rest Mode (while on a call), press the hookflash and then dial **658**. Press the Hookflash again to return to the outside party. Rest Mode begins once the call is completed.*
2. Hang up.

To cancel the manual Rest Mode:

Multiline Terminal

1. Press the **ACD Rest Mode** key (Program 15-07-01 or SC **752**: *13).

 *The ACD Rest Mode key light goes off.*

Single Line Telephone

1. Lift the handset.

 *A fast busy is heard.*

2. Dial **659**.
3. Hang up.

Automatic Release

Description

Automatic Release drops the line circuit when an outside party abandons the call. For this feature to work with Loop Start Trunks, the CO/PBX providing the outside line must provide a timed disconnect signal. Automatic Release is normally provided on DID, ISDN, and Tie Line trunks.

Conditions

- Automatic Release on ISDN trunks is provided by the protocol.
- When an outside line is accessed using a dedicated line key, the LED associated with the line key goes off when Automatic Release occurs.
- On Loop Start trunks Automatic Release is only available on incoming calls.
- This feature functions while a call is in progress, on hold, or in a conference.
- This feature applies to all ICM type calls in progress, holding or parked.
- When Automatic Release occurs and the telephone is in handsfree mode, **Speaker** automatically turns off. If using the handset, the station is set to idle when the handset goes on-hook.

Default Settings

None

System Availability

Terminals

Not applicable

Required Component(s)

None

Related Features

Central Office Calls, Answering

Central Office Calls, Placing

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
14-02-09	Analog Trunk Data Setup - Busy Tone Detection	0 = Disable (No) 1 = Enable (Yes)	1

Program No.	Program Name	Input Data	Default
80-04-01	Call Progress Tone Detector Setup - Detection Level	0 = 0 dBm ~ - 25 dBm 1 = - 5 dBm ~ - 30 dBm 2 = - 10 dBm ~ - 35 dBm 3 = - 15 dBm ~ - 40 dBm 4 = - 20 dBm ~ - 45 dBm 5 = - 25 dBm ~ - 50 dBm 6 = - 30 dBm ~ - 55 dBm	Refer to the Programming Manual for the default values.
80-04-02	Call Progress Tone Detector Setup - Min. Detection Level	0 ~ 15 0 = - 10 dBm (0) ~ - 25 dBm (15) 1 = - 15 dBm (0) ~ - 30 dBm (15) 2 = - 20 dBm (0) ~ - 35 dBm (15) 3 = - 25 dBm (0) ~ - 40 dBm (15) 4 = - 30 dBm (0) ~ - 45 dBm (15) 5 = - 35 dBm (0) ~ - 50 dBm (15) 6 = - 40 dBm (0) ~ - 55 dBm (15)	Refer to the Programming Manual for the default values.
80-04-03	Call Progress Tone Detector Setup - S/N Ratio	0 ~ 4 (0 dB ~ - 20 dB)	Refer to the Programming Manual for the default values.
80-04-04	Call Progress Tone Detector Setup - No Tone Time	0 ~ 255 (30 + 30 ~ 7680 ms) (0 = not detect) 1 ~ 255 = 60 ~ 7680 ms The formula is 30 + 30N When set to N = 1, it means 30 + 30 * 1 = 60. When set to N = 255, it means 30 + 30 * 255 = 7680.	Refer to the Programming Manual for the default values.
80-04-05	Call Progress Tone Detector Setup - Pulse Count	1 ~ 255	Refer to the Programming Manual for the default values.
80-04-06	Call Progress Tone Detector Setup - ON Minimum Time	1 ~ 255 (30 + 30 ~ 7680 ms)	Refer to the Programming Manual for the default values.
80-04-07	Call Progress Tone Detector Setup - ON Maximum Time	0 ~ 255 (30 + 30 ~ 7680 ms)	Refer to the Programming Manual for the default values.
80-04-08	Call Progress Tone Detector Setup - OFF Minimum Time	1 ~ 255 (30 + 30 ~ 7680 ms)	Refer to the Programming Manual for the default values.
80-04-09	Call Progress Tone Detector Setup - OFF Maximum Time	0 ~ 255 (30 + 30 ~ 7680 ms)	Refer to the Programming Manual for the default values.

Operation

None

Automatic Route Selection (ARS/F-Route)

Description

Automatic Route Selection (ARS/F-Route) provides call routing and call restriction based on the digits a user dials. ARS gives the system the most cost-effective use of the connected long distance carriers.

ARS is an on-line call routing program that you can customize (like other system options) from a display telephone. ARS accommodates 400 call routing choices - without a custom-ordered rate structure database. With ARS, you can modify the system routing choices quickly and easily. This is often necessary in the telecommunications world of today where the cost structure and service choices frequently change.

The ARS feature can add or delete digits and route calls according to pre-determined levels.

ARS Feature Summary

ARS provides:

Call Routing

- ARS can apply up to 36-digit analysis to every number dialed. For programming, ARS provides 8-digit and 36-digit tables. Each table can have up to 250 numbers.
- Dialing Translation (Special Dialing Instructions)
ARS can automatically execute stored dialing instructions (called Dial Treatments) when it chooses a route for a call. The system allows up to 15 Dial Treatments. The Dial Treatments can:
 - Insert or delete an area code (NPA)
 - Add digits (such as a dial-up OCC number), pauses and waits to the dialing sequence
 - Require the user to enter an authorization code when placing a call (refer to PRG 44-03)
- Time of Day Selection
For routing purposes, ARS provides 10 different day selections (called Time Schedule Patterns). Each Time Schedule Pattern can provide up to 20 time intervals which are assigned to one of the eight day/night modes. The Time Schedule Patterns are then assigned to a day of the week (Monday~Friday, Saturday, Sunday or Holiday).
- Hierarchical Class of Service Control
ARS allows or denies call route choices based on an extension ARS Class of Service. This allows lower Classes of Service (e.g., 1) to access routes unavailable to higher Classes of Service (e.g., 16). The system provides up to 16 (0=unrestricted, 1~16) ARS Classes of Service.
- Separate Routing for Selected Call Types
To provide unique control, you can program separate routing instructions for:
 - Directory assistance calls
 - Emergency calls

Basic ARS Operation

When a user places an outside call, ARS analyzes the digits dialed and assigns one of 400 Selection Numbers to the call. The Selection Number chosen depends on which digits the user dialed. ARS then checks the time of day, the day of week and the extension ARS Class of Service. Based on these call routing options, ARS selects a trunk group for the call and imposes the Dial Treatment instructions (if any).

Class of Service Option Allows Outgoing Calls to Not Follow Access Map

Using this option allows a Class of Service to be set so that ARS does not follow the trunk access map settings (PRG 14-07-01 and PRG 15-06-01). The feature allows an extension user to have CO line

keys on their telephone which allow incoming access only. The user has only outgoing access on the CO lines when using ARS to place a call.

Class of Service Matching

With the ARS Class of Service Match Access feature, you can determine whether the system should allow a call based on the COS assigned to the Dial Analysis Table (PRG 26-02). This change can be used to create a tenant-like application. It then uses the trunk group defined in the Additional Entry in PRG 26-02-03 to place the outgoing call.

When this feature is enabled, the calls are routed in sequential order, and forward provided the Class of Service for the trunk group's match.

For this feature, **PRG 26-01-06: Automatic Route Selection Service, COS Match Access** is used. The examples below use the following system programming:

PRG 26-02 for Dial Analysis Table for ARS set as:

Table No.	PRG 26-02-01 Dial	PRG 26-02-02 Service Type	PRG 26-02-03 Add Data	PRG 26-02-04 ARS COS
1	203@@@@@@@	1:Route to trunk group	3 (Group 3)	5
2	214@@@@@@@	1:Route to trunk group	1 (Group 1)	4
197	@@@@@@@@@@	1:Route to trunk group	2 (Group 2)	4
198	@@@@@@@@@@	1:Route to trunk group	3 (Group 3)	3
199	@@@@@@@@@@	1:Route to trunk group	2 (Group 2)	2
200	@@@@@@@@@@	1:Route to trunk group	1 (Group 1)	1

PRG 12-02 for Automatic Night Service Patterns as:

Time Pattern No.	PRG 12-02-01 Start Time	PRG 12-02-02 End Time	PRG 12-02-03 Operation Mode
1	00:00	08:30	2 (Night)
2	08:30	17:00	1 (Day)
3	17:00	00:00	2 (Night)

PRG 12-02 for Automatic Night Service Patterns as:

Mode	Ext. 301	Ext. 302	Ext. 401	Ext. 402
Mode 1 (Day)	1	2	3	3
Mode 2 (Night)	1	4	3	5

PRG 26-01-03 for ARS Misdialed Number Handling as: 1 (Warning Tone)

With PRG 26-01-06: ARS COS Match Access disabled (set to 0):

- If at 9:00 AM, each extension dialed 9+(203)926-5400
All Extension would use Trunk Group 3
- If at 9:00 AM, each extension dialed 9+(214)262-2000
All Extension would use Trunk Group 1
- If at 6:00 PM, each extension dialed 9+(203)926-5400
All Extension would use Trunk Group 3
- If at 6:00 PM, each extension dialed 9+(214)262-2000
Extension 301, 302 and 401 would use Trunk Group 1
Extension 402 would not be able to dial out as the COS is lower

With PRG 26-01-06: ARS COS Match Access enabled (set to 1):

- If at 9:00 AM, each extension dialed 9+(203)926-5400
Extension 301 would use Trunk Group 1
Extension 302 would use Trunk Group 2
Extension 401, 402 would use Trunk Group 3
- If at 9:00 AM, each extension dialed 9+(214)262-2000
Extension 301 would use Trunk Group 1
Extension 302 would use Trunk Group 2
Extension 401, 402 would use Trunk Group 3
- If at 6:00 PM, each extension dialed 9+(203)926-5400
Extension 301 would use Trunk Group 1
Extension 302 would use Trunk Group 2
Extension 401, 402 would use Trunk Group 3
- If at 6:00 PM, each extension dialed 9+(214)262-2000
Extension 301, 302 would use Trunk Group 1
Extension 401 would use Trunk Group 3
Extension 402 would not be able to dial out as the COS does not match

Conditions

- Do not use ARS behind a Centrex/PBX.
- Line keys, outgoing trunk group keys, dialing 704 + trunk group, dialing +trunk number, and speed dial numbers assigned to a certain trunk group can all be used to by-pass ARS.
- If no PBX access code is entered in the Dial Treatment, the system can still dial 911.
- Toll Restriction overrides ARS.
- A system with Automatic Route Selection cannot also have Trunk Group Routing.
- With ARS installed, Trunk Queuing automatically queues for the least costly route. The system automatically redials the queued call when the extension user lifts the handset.
- Speed Dialing may bypass ARS routing.
- Set up other options for outgoing calls (e.g., assigned line keys, adjust gains, ARS access key, etc.).
- Refer to the Dial Tone Detection feature for the specifics on how the system handles Dial Tone Detection.
- ARS does not permit 0 and 011 + calls to be routed out separate trunk groups. The supports only direct trunk selection for dial 9 (Operator) type calls.
- If a user dials a number not programmed in ARS, PRG 26-01-03 determines if the system should route over the trunk group settings defined in PRG 21-02 or play an error tone.
- When using ARS Class of Service, with PRG 26-01-03 set to (1) "Play Warning Tone", any trunk pointed or transferred to a virtual that is Call Forward Off-Premise will not complete. For a virtual to Call Forward Off-Premise, PRG 26-01-03 must be set to "Route to trunk group" and the call will follow the trunk group settings of the trunk, assigned in PRG 21-03.
- When using ARS Class of Service, with PRG 26-01-03 set to (1) "Play Warning Tone" or transferred to a virtual that is call forwarded off premise will always follow ARS Class 1 routing properties.

Default Setting

Disabled

System Availability**Terminals**

None

Required Component(s)

None

Related Features

Abbreviated Dialing/Speed Dial

Central Office Calls, Placing

Code Restriction/Toll Restriction

Dial Tone Detection

Trunk Group Routing

Trunk Queuing/Camp On

Guide to Feature Programming

The programs listed below indicate the most commonly used programs required for this feature. The programs are listed in the order that the installer should follow. Refer to the PCPro wizards for further detailed programming.

- When a * is listed next to the Program Number it indicates a program that **MUST** be set (from a default state) for this feature to be enabled.

ARS with trunk group routing

Program No.	Program Name	Input Data	Default
11-09-01	Trunk Access Code - Trunk Access Code	Dial (Up to four digits)	0
14-05-01 *	Trunk Group - Trunk Group Setup	Trunk Port 1 ~ 128 = Priority 1 ~ 128 Trunk Group : 0 ~ 50	Refer to the Programming Manual for the default values.
26-01-01 *	Automatic Route Selection (ARS/F-Route) Service - ARS Service	0 = Disabled (ARS service is OFF.) 1 = Enabled (ARS service is ON.)	0
26-02-01 *	Dial Analysis Table for ARS/LCR - Dial	Maximum of 16 digits (0 ~ 9, *, #, @)	No Setting
26-02-02 *	Dial Analysis Table for ARS/LCR - ARS Service Type	0 = No Service (Call Restricted) 1 = Route to Trunk Group 2 = Select F-Route Access	0

Program No.	Program Name	Input Data	Default
26-02-03 *	Dial Analysis Table for ARS/LCR - Additional Data/Service Number	If Service Type 1 (in 26-02) : Select Trunk Group Number 0 ~ 50 (Trunk Group Number 0 = No Route) 101 ~ 104 (Networking ID) If Service Type 2 (in 26-02) : F-Route Time Schedule Not Used = 0 ~ 100 (F-Route Table Number). Refer to Programming Manual.. F-Route Time Schedule Used = 0 ~ 100 (F-Route Selection Number). Refer to Programming Manual..	0
26-02-05	Dial Analysis Table for ARS/LCR - Dial Treatment for ARS	0 ~ 15	0
26-03-01	ARS Dial Treatments - Treatment Code	Maximum 36 characters	No Setting
20-03-04	System Options for Single Line Telephones - Dial Sending Start Time for SLT or ARS	0 ~ 64800 seconds	1

ARS with F-Route routing

Program No.	Program Name	Input Data	Default
11-09-01	Trunk Access Code - Trunk Access Code	Dial (Up to four digits)	0
26-01-01 *	Automatic Route Selection (ARS/F-Route) Service - ARS Service	0 = Disabled (ARS service is OFF.) 1 = Enabled (ARS service is ON.)	0
26-02-01 *	Dial Analysis Table for ARS/LCR - Dial	Maximum of 16 digits (0 ~ 9, *, #, @)	No Setting
26-02-02 *	Dial Analysis Table for ARS/LCR - ARS Service Type	0 = No Service (Call Restricted) 1 = Route to Trunk Group 2 = Select F-Route Access	0
26-02-03 *	Dial Analysis Table for ARS/LCR - Additional Data/Service Number	If Service Type 1 (in 26-02) : Select Trunk Group Number 0 ~ 50 (Trunk Group Number 0 = No Route) If Service Type 2 (in 26-02) : F-Route Time Schedule Not Used = 0 ~ 100 (F-Route Table Number). Refer to Programming Manual.. F-Route Time Schedule Used = 0 ~ 100 (F-Route Selection Number). Refer to Programming Manual..	0
44-05-01 *	ARS/F-Route Table - Trunk Group Number	0 = Trunk Group 0 (Call Restricted) 1 ~ 50 = Trunk Group 1 ~ 50	0
44-05-08	ARS/F-Route Table - Dial Treatment	0 = No Dial Treatment Table Added (Call will be sent out of the system as dialed.) 1 ~ 15 = ARS Treatment tables 1 ~ 15	0
44-05-09 *	ARS/F-Route Table - Maximum Digit	0 = Not Set (Call will wait for the timer in PRG 20-03-04 before being sent out of the system.) 1 ~ 24 = 1 ~ 24 digit length	0

Program No.	Program Name	Input Data	Default
26-03-01	ARS Dial Treatments - Treatment Code	Maximum 36 characters	No Setting
20-03-04	System Options for Single Line Telephones - Dial Sending Start Time for SLT or ARS	0 ~ 64800 seconds	1

ARS COS

Program No.	Program Name	Input Data	Default
11-09-01	Trunk Access Code - Trunk Access Code	Dial (Up to four digits)	0
14-05-01 *	Trunk Group - Trunk Group Setup	Trunk Port 1 ~ 128 Trunk Group No. 0 ~ 50 Priority 1 ~ 128	Refer to the Programming Manual for the default values.
26-04-01 *	ARS Class of Service - Class	0 ~ 16 0 = No Class	0
26-01-01 *	Automatic Route Selection (ARS/F-Route) Service - ARS Service	0 = Disabled (ARS service is OFF.) 1 = Enabled (ARS service is ON.)	0
26-01-06 *	Automatic Route Selection (ARS/F-Route) Service - Class of Service Match Access	0 = Disabled (ARS service is OFF.) 1 = Enabled (ARS service is ON.)	0
26-01-07	Automatic Route Selection (ARS/F-Route) Service - F-Route Access COS Reference	0 = F-Route 1 = ARS	0
26-02-01 *	Dial Analysis Table for ARS/LCR - Dial	Maximum of 16 digits (0 ~ 9, *, #, @)	No Setting
26-02-02 *	Dial Analysis Table for ARS/LCR - ARS Service Type	0 = No Service (Call Restricted) 1 = Route to Trunk Group 2 = Select F-Route Access	0
26-02-03 *	Dial Analysis Table for ARS/LCR - Additional Data/Service Number	If Service Type 1 (in 26-02) : Select Trunk Group Number 0 ~ 50 (Trunk Group Number 0 = No Route) 101 ~ 150 If Service Type 2 (in 26-02) : F-Route Time Schedule Not Used = 0 ~ 100 (F-Route Table Number). Refer to Programming Manual.. F-Route Time Schedule Used = 0 ~ 100 (F-Route Selection Number). Refer to Programming Manual..	0
26-02-04 *	Dial Analysis Table for ARS/LCR - ARS Class of Service	0 ~ 16 0 = No ARS Class (Call Restricted)	0
26-02-05	Dial Analysis Table for ARS/LCR -	0 = No Dial Treatment Table Added (Call will be sent out of the system as dialed.) 1 ~ 15 = ARS Treatment tables 1 ~ 15	0
26-03-01	ARS Dial Treatments - Treatment Code	Maximum 36 characters	No Setting
44-05-01 *	ARS/F-Route Table - Trunk Group Number	0 = Trunk Group 0 (Call Restricted) 1 ~ 50 = Trunk Group 1 ~ 50	0

Program No.	Program Name	Input Data	Default
44-05-07 *	ARS/F-Route Table - ARS Class of Service	0 ~ 50 0 = No ARS Class (Call Restricted)	0
44-05-08	ARS/F-Route Table - Dial Treatment	0 = No Dial Treatment Table Added (Call will be sent out of the system as dialed.) 1 ~ 15 = ARS Treatment tables 1 ~ 15	0
44-05-09 *	ARS/F-Route Table - Maximum Digit	0 = Not Set (Call will wait for the timer in PRG 20-03-04 before being sent out of the system.) 1 ~ 36 = 1 ~ 36 digit length	0
20-03-04	System Options for Single Line Telephones - Dial Sending Start Time for SLT or ARS	0 ~ 64800 seconds	1
11-09-02	Trunk Access Code - 2nd Trunk Route Access Code	Dial (Up to four digits)	No Setting
12-01-01	Night Mode Function Setup - Manual Night Mode Switching	0 = Off (Manual Night Mode changes are not allowed.) 1 = On (Manual Night Mode changes are allowed.)	1
12-01-02	Night Mode Function Setup - Automatic Night Mode Switching	0 = Off (Automatic Night Mode disabled) 1 = On (Automatic Night Mode enabled)	0
12-02-01	Night Mode Group Assignment for Trunks - Start Time	0000 ~ 2359	Refer to the Programming Manual for the default values.
12-02-02	Night Mode Group Assignment for Trunks - End Time	0000 ~ 2359	Refer to the Programming Manual for the default values.
12-02-03	Night Mode Group Assignment for Trunks - Operation Mode	1 ~ 8 = Night Modes 1 ~ 8	Refer to the Programming Manual for the default values.
12-05-01	Night Mode Group Assignment for Extensions - Night Mode Service Group Number	1 = Night Mode Group 1 2 = Night Mode Group 2 3 = Night Mode Group 3 4 = Night Mode Group 4	1
12-06-01	Night Mode Group Assignment for Trunks - Night Mode Service Group Number	1 = Night Mode Group 1 2 = Night Mode Group 2 3 = Night Mode Group 3 4 = Night Mode Group 4	1
12-07-01	Text Data for Night Mode - Text Message	Maximum 12 Characters (alphanumeric or numeric)	Mode 1 = No Setting Mode 2 = <Night> Mode 3 = <Mid-night> Mode 4 = <Rest> Mode 5 = <Day2> Mode 6 = <Night2> Mode 7 = <Midnight2> Mode 8 = <Rest2>
12-08-01	Night Mode Service Range - Range	2 ~ 8	2
15-06-01	Trunk Access Map for Extensions - Trunk Access Map Number	001 ~ 128	1
15-13-01	Loop Keys - Outgoing Option	0 ~ 50 (0 = Assigns the Loop Key for ARS, 1 ~ 50 = Assigns the Loop Key to the trunk group specified)	0: Programming Function Key No. = 01 ~ 24

Program No.	Program Name	Input Data	Default
15-13-02	Loop Keys - Incoming Option	0 ~ 50 (0 = Assigns the Loop Key to all trunk groups, 1 ~ 50 = Assigns the Loop key to the trunk group specified)	0: Programming Function Key No. = 01 ~ 24
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-08-17	Class of Service Options (Outgoing Call Service) - ARS Override of Trunk Access Map	0 = Off 1 = On	COS 01 ~ 15 = 0
21-02-01	Trunk Group Routing for Extensions - Route Table Number	0 ~ 50 0 = No Setting (Calls will not route.)	1
26-01-02	Automatic Route Selection (ARS/F-Route) Service - Network Outgoing Inter-Digit ARS Time	0 ~ 64800 seconds	30
26-01-03	Automatic Route Selection (ARS/F-Route) Service - ARS Misdialed Number Handling	0 = Route to Trunk Group 1 1 = Play Warning Tone to Dialer	0
26-02-07	Dial Analysis Table for ARS/LCR - Network Specified Parameter Table	0 ~ 16	0
26-11-01	Transit Network ID Table - Transit Network ID (Carrier ID)	0000 ~ 9999 (Fixed four digits or No Setting)	Table No. 1 ~ 4 = No Setting
44-01-01	System Options for ARS/F-Route - ARS/F-Route Time Schedule	0 = Not Used 1 = Used	0
44-02-01	Dial Analysis Table for ARS/F-Route Access - Dial	Up to eight digits (Use line key 1 for a Don't Care digit, @)	No Setting
44-02-02	Dial Analysis Table for ARS/F-Route Access - Service Type	0 = No setting (None) 1 = Extension Call (Own) 2 = ARS/F-Route Table (F-Route) 3 = Dial Extension Analyze Table (Option)	0
44-02-03	Dial Analysis Table for ARS/F-Route Access - Additional Data	1 = Delete Digit = 0 ~ 255 (255 = Delete All Digits) 2 = 0 ~ 100 (0 = No Setting) 3 = Dial Extension Analyze Table Number = 0 ~ 4 (0 = No Setting)	0
44-02-04	Dial Analysis Table for ARS/F-Route Access - Dial Tone Simulation	0 = Off 1 = On	0
44-03-01	Dial Analysis Extension Table - Dial	Up to 36 digits Digits = 1 ~ 9, 0, *, #, @ (Press Line Key 1 for wild character @)	No Setting
44-03-02	Dial Analysis Extension Table - ARS/F-Route Select Table Number	0 ~ 100 (ARS/F-Route Table Number) With Program 44-01 set to 0, Program 44-05 is checked. With Program 44-01 set to 1, Program 44-04 is checked.	0
44-03-03	Dial Analysis Extension Table - ARS/F-Route Select Table Number	0 ~ 100 (ARS/F-Route Table Number) With Program 44-01 set to 0, Program 44-05 is checked. With Program 44-01 set to 1, Program 44-04 is checked.	0
44-03-04	Dial Analysis Extension Table - Next Table Area Number	0 ~ 4	0
44-04-01	ARS/F-Route Selection for Time Schedule - ARS/F-Route Table Number	0 ~ 100 (0 = No Service)	0

Program No.	Program Name	Input Data	Default
44-05-02	ARS/F-Route Table - Delete Digits	0 ~ 255 (255 = Delete All)	0
44-05-03	ARS/F-Route Table - Additional Dial Number Table	0 ~ 100	0
44-05-04	ARS/F-Route Table - Beep Tone	0 = Off 1 = On	0
44-05-05	ARS/F-Route Table - Gain Table Number for Internal Calls	0 ~ 100 0 = No Setting	0
44-05-06	ARS/F-Route Table - Gain Table Number for Tandem Connections	0 ~ 100 0 = No Setting	0
44-05-11	ARS/F-Route Table - Network Specified Parameter Table	0 ~ 16	0
44-06-01	Additional Dial Table - Additional Dial	Up to 36 digits Enter : 1 ~ 9, 0, *, #, Pause (press LK 1 to enter a pause)	No Setting
44-07-01	Gain Table for ARS/F-Route Access - Incoming Transmit	1 ~ 63 (- 15.5 dB ~ + 15.5 dB)	32 (0 dB)
44-07-02	Gain Table for ARS/F-Route Access - Incoming Receive	1 ~ 63 (- 15.5 dB ~ + 15.5 dB)	32 (0 dB)
44-07-03	Gain Table for ARS/F-Route Access - Outgoing Transmit	1 ~ 63 (- 15.5 dB ~ + 15.5 dB)	32 (0 dB)
44-07-04	Gain Table for ARS/F-Route Access - Outgoing Receive	1 ~ 63 (- 15.5 dB ~ + 15.5 dB)	32 (0 dB)
80-03-01	DTMF Tone Receiver Setup - Detect Level	0 = 0 dBm ~ - 25 dBm 1 = - 5 dBm ~ - 30 dBm 2 = - 10 dBm ~ - 35 dBm 3 = - 15 dBm ~ - 40 dBm 4 = - 20 dBm ~ - 45 dBm 5 = - 25 dBm ~ - 50 dBm 6 = - 30 dBm ~ - 55 dBm	Refer to the Programming Manual for the default values.
80-03-02	DTMF Tone Receiver Setup - Start Delay Time	0 ~ 255 (0.25 ms ~ 64 ms)	Refer to the Programming Manual for the default values.
80-03-03	DTMF Tone Receiver Setup - Min. Detect Level	0 ~ 15 DTMF Tone 0 = - 10 dBm (0) to - 25 dBm (15) DTMF Tone 1 = - 15 dBm (0) to - 30 dBm (15) DTMF Tone 2 = - 20 dBm (0) to - 35 dBm (15) DTMF Tone 3 = - 25 dBm (0) to - 40 dBm (15) DTMF Tone 4 = - 30 dBm (0) to - 45 dBm (15) DTMF Tone 5 = - 35 dBm (0) to - 50 dBm (15) DTMF Tone 6 = - 40 dBm (0) to - 55 dBm (15)	Refer to the Programming Manual for the default values.

Program No.	Program Name	Input Data	Default
80-03-04	DTMF Tone Receiver Setup - Max. Detect Level	0 ~ 15 DTMF Tone 0 = 0 dBm (0) to - 15 dBm (15) DTMF Tone 1 = - 5 dBm (0) to - 20 dBm (15) DTMF Tone 2 = - 10 dBm (0) to - 25 dBm (15) DTMF Tone 3 = - 15 dBm (0) to - 30 dBm (15) DTMF Tone 4 = - 20 dBm (0) to - 35 dBm (15) DTMF Tone 5 = - 25 dBm (0) to - 40 dBm (15) DTMF Tone 6 = - 30 dBm (0) to - 45 dBm (15)	Refer to the Programming Manual for the default values.
80-03-05	DTMF Tone Receiver Setup - Forward Twist Level	0 ~ 9 (1 dB ~ 10 dB)	Refer to the Programming Manual for the default values.
80-03-06	DTMF Tone Receiver Setup - Backward Twist Level	0 ~ 9 (1 dB ~ 10 dB)	Refer to the Programming Manual for the default values.
80-03-07	DTMF Tone Receiver Setup - ON Detect Time	1 ~ 255 (15 + 15 ms ~ 3825 ms)	Refer to the Programming Manual for the default values.
80-03-08	DTMF Tone Receiver Setup - OFF Detect Time	1 ~ 255 (15 + 15 ms ~ 3825 ms)	Refer to the Programming Manual for the default values.
12-03-01	Weekly Night Service Switching	Night Mode Service Group Numbers: 01 Sunday = Time Pattern 1 02 Monday = Time Pattern 2 03 Tuesday = Time Pattern 3 04 Wednesday = Time Pattern 4 05 Thursday = Time Pattern 5 06 Friday = Time Pattern 6 07 Saturday = Time Pattern 7	Refer to the Programming Manual for the default values.
12-04-01	Holiday Night Service Switching	Days and Months = 0101 ~ 1231 (e.g. 0101 = Jan. 1; 1231 = Dec. 31) Time Pattern Number = 0 ~ 10 (0 = No Setting)	No Setting
14-07-01	Trunk Access Map Setup	0 = No access 1 = Outgoing access only 2 = Incoming access only 3 = Access only when trunk on Hold 4 = Outgoing access and access when trunk on Hold 5 = Incoming and access when trunk on Hold 6 = Incoming and outgoing access 7 = Full access	Access Map 1 ~ 128 = Trunk Ports 1 ~ 128 assigned with option 7 access (incoming and outgoing access and access when trunk is on Hold).
44-08-01	Time Schedule for ARS/F-Route	Time Number = 01 ~ 20 Start Time = 0000 ~ 2359 End Time = 0000 ~ 2359 Mode = 1 ~ 8	All Schedule Patterns: 0:00 - 0:00, Mode 1

Program No.	Program Name	Input Data	Default
44-09-01	Weekly Schedule for ARS/F-Route - Schedule Pattern Number	1 = Sunday (Pattern 1 ~ 10) 2 = Monday (Pattern 1 ~ 10) 3 = Tuesday (Pattern 1 ~ 10) 4 = Wednesday (Pattern 1 ~ 10) 5 = Thursday (Pattern 1 ~ 10) 6 = Friday (Pattern 1 ~ 10) 7 = Saturday (Pattern 1 ~ 10)	Pattern 1
44-10-01	Holiday Schedule for ARS/F-Route	Date = 0101 ~ 1231 Schedule Pattern Number = 0 ~ 10 0 = No Setting	0

Operation

To place a call using ARS:

- At the Multiline Terminal, press **Speaker** key.
- OR -
At the Single Line Terminal, lift the handset.
 You hear normal Intercom dial tone.
- Dial **0**.
 You hear a second, “stutter” dial tone.
- Dial the outside number.
If you hear another “stutter” dial tone, you must enter your extension ARS Authorization Code.

Background Music

Description

Background Music (BGM) sends music from a customer-provided music source to the Speakers of the Multiline Terminal when the station is idle. A system can have only 1 BGM input, Each 082U-B1 board has one Audio-Input port on RL/Audio jack (RJ61). As system can have One BGM input, effective BGM port needs to be determined at PRG10-60-01.

Conditions

- Background Music stops while the Multiline Terminal is in use.
- Originating a call, answering a voice announcement, a ringing call, or internal paging interrupts Background Music.
- Background Music is not available on Single Line Terminals.
- Refer to Analog Communication Interface (ACI) for detail settings.
- A service code to enable/disable Background Music must be assigned in Program 11-11-18.

Default Settings

Disabled

System Availability

Terminals

All Multiline Terminals

Required Component(s)

Externally provided Music Source.

Related Features

Music on Hold

Guide to Feature Programming

The programs listed below indicate the most commonly used programs required for this feature. The programs are listed in the order that the installer should follow. Refer to the PCPro wizards for further detailed programming.

Program No.	Program Name	Input Data	Default
10-60-01	Audio Port Setup - BGM Channel	0 = Not Used 1 = Slot No.1 2 = Slot No.2 3 = Slot No.3 5 = Slot No.5 6 = Slot No.6 7 = Slot No.7 9 = Slot No.9 10 = Slot No.10 11 = Slot No.11	0
11-11-18	Service Code Setup (for Setup/Entry Operation) - BGM On/Off	0~9, *, # Maximum of 8 digit	725
20-13-30	Class of Service Options (Supplementary Service) - Background Music	0 = Deny (user cannot control background music on their station.) 1 = Allow (user can control background music on their station.)	COS 01 ~ 15 = 1
10-61-01	Relay Port Setup - Relay Port1	0 = No Setting 1 = External MOH 2 = BGM resource 3 = External Speaker 4 = Door Phone	0
10-61-02	Relay Port Setup - Destination Selection	[In case 10-61-01 is 1 or 2] = Not Use [In case 10-61-01 is 3] = 1-3 External Speaker message No [In case 10-61-01 is 4] = 1-6 Door Phone No	0 (Not Used)
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1

Operation

To turn Background Music on or off:

1. Press idle **Speaker** key.
2. Dial **Service Code (default not assigned)**.
3. Press **Speaker** key to hang up.

Barge-In

Description

Barge-In permits an extension user to break into another extension user's established call, including Conference calls. This sets up a Conference-type conversation between the intruding extension and the parties on the initial call. With Barge-In, an extension user can get a message through to a busy co-worker right away.

There are two Barge-In modes: Monitor Mode (Silent Monitor) and Speech Mode. With Monitor Mode, the caller barging in can listen to another user's conversation but cannot participate. With Speech Mode, the caller barging in can listen and join another user's conversation.



The use of monitoring, recording, or listening devices to eavesdrop, monitor, retrieve, or record telephone conversation or other sound activities, whether or not contemporaneous with transmission, may be illegal in certain circumstances under each country law. Legal advice should be sought prior to implementing any practice that monitors or records any telephone conversation. Some countries may require some form of notification to all parties to a telephone conversation, such as using a beep tone or other notification methods or requiring the consent of all parties to the telephone conversation, prior to monitoring or recording the telephone conversation. Some of these laws incorporate strict penalties.

Conditions

- An extension user can barge-in on a conference.
- An extension user cannot barge-in on an Intercom call if one of the intercom callers is using Handsfree Answerback. Both Intercom parties must lift the handset or press **Speaker** key.
- With PRG 20-13-10 set to 0, a barged into call can be placed on hold by the originator of the outside call. Both the outside caller and the extension that barged into the call are placed on hold.
- With PRG 20-13-10 set to 1, a call which is barged into can be placed on Park by the originator of the outside call, but only the outside caller is placed in Park. The extension which barged into the call is dropped.
- Privacy blocks Barge-In attempts.
- Function keys simplify the Barge-In operation.
- When Silent Monitor Mode is used, **Mute** key can be used to activate speech path to the internal and external parties.
- Live Record is not supported on Monitored calls, Conference calls or Internal calls.
- Handset Mute cannot be enabled on a handset if the extension is being silent monitored.
- If Handset Mute is enabled on the handset and then the extension is silent monitored the handset will immediately become un-muted.

Default Settings

Disabled

System Availability

Terminals

Multiline and Single Line Terminals

Required Component(s)

None

Related Features

Call Monitoring

Conference

Hold

Intercom

Off-Hook Signaling

Park

Programmable Function Keys

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-12-08	Service Code Setup (for Service Access) - Barge-In	0~9, *, # Maximum of 8 digit	710
11-16-02	Single Digit Service Code Setup - Barge-In	0~9, *, # Maximum of 1 digit	No Setting
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-13-10	Class of Service Options (Supplementary Service) - Barge-In Monitor	0 = Speech 1 = Monitor	COS 01 ~ 15 = 0
20-13-15	Class of Service Options (Supplementary Service) - Barge-In, Initiate	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-16	Class of Service Options (Supplementary Service) - Barge-In, Receive	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-17	Class of Service Options (Supplementary Service) - Barge-in Tone/Display (Intrusion Tone)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-32	Class of Service Options (Supplementary Service) - Deny Multiple Barge-Ins	0 = Off 1 = On	COS 01 ~ 15 = 0
20-14-11	Class of Service Options for DISA/E&M - DISA/Tie Trunk Barge-In	0 = Off 1 = On	COS 01 ~ 15 = 0

Program No.	Program Name	Input Data	Default
20-18-07	Service Tone Timers - Intrusion Tone Repeat Time	0 ~ 64800 seconds	0
21-01-03	System Options for Outgoing Calls - Trunk Inter-digit Time (External)	0 ~ 64800 seconds	10

Operation

To Barge-In after calling a busy extension:

 The time in PRG 21-01-03 must expire before you can Barge-In.

1. Call a busy extension.
2. Press the **Barge-In** key (PRG 15-07-01 or SC **751**: 34).

To Barge-In without first calling the busy extension:

1. Pick up the handset or press **Speaker** key.
2. Dial **710**.
- OR -
Press the **Barge-In** key (PRG 15-07-01 or SC **751**: 34).
3. Dial busy extension.

 The extension user hears a warning tone.

 The DISA user is rerouted to the defined ring group.

- OR -

The following steps are not available for DISA trunks:

1. Dial the extension number of the busy internal party.
2. Dial the single digit service code or the service code **710**.

To Barge-In to a Conference Call:

1. Pick up the handset or press **Speaker** key and dial the service code (default = **710**).
 If the telephone does not have the proper COS, a warning tone is sent. After the user hangs up, the system automatically places a callback to the extension.
2. Dial the extension number or press a **DSS** key of a telephone within a conference call. When a new call is added to the conference, an intrusion tone is heard by all parties in the Conference, depending on system programming, and all display Multiline Terminals show the joined party. If a Conference is not possible:

 The extension user hears a warning tone.

 The DISA user is rerouted to the defined ring group.

Not available for DISA.

- OR -

1. Dial the extension number of the internal party.
2. Dial the single digit service code or the service code **710**.

Battery Backup - System Memory

Description

The battery on the CPU retains the Clock/Calendar when the CPU encounters a power loss. With a fully charged battery, the settings are retained for approximately three years.

The system programmed memory (Customer Database) is stored in Nonvolatile Memory and can be erased only by performing a First Initialization.

 *For additional storage time and the database and Caller-ID History can be copied to the system drive on the CPU-C1.*

Conditions

- The battery on the CPU-C1 should be removed during long term storage but must be installed (protection against loss of power) just before ETU installation to provide battery backup for System Memory.
- When fully charged, the battery retains System Memory for approximately three years.
- You should replace the CPU-C1 battery every three years.
- During normal operation, the battery is continually recharged using a built-in charging circuit from the CPU-C1.
- Battery backup on the CPU does not protect the following:
 - Callback
 - Off-line Status (for programming system or station assignments)
 - Repeat Redial
 - Trunk Queuing/Camp-On
 - Caller ID History

Default Settings

None

 *The battery must be installed on the CPU-C1 prior to programming a customer database.*

System Availability

Terminals

Not applicable

Required Component(s)

None

Related Features

Battery Backup - System Power

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
90-03-01	Save Data - Save Data	Dial 1 + press Hold (Press Hold only to cancel.)	-

Operation

None

Battery Backup - System Power

Description

An External battery box provides complete system operating power for approximately 1 hour during commercial power outages. Actual time depends on system configuration, traffic conditions, and the capacity of the batteries.

Conditions

- During normal operation, the batteries are continually recharged by a built-in charging circuit.
- External Battery Box can be connected to the system to back up the system in the event of commercial power outage. Refer to the SL2100 System Hardware Manual for further details.

Default Settings

None

System Availability

Terminals

Not applicable

Required Component(s)

IP4WW-Battery Box

Related Features

Battery Backup - System Memory

Programming

None

Operation

None

Built-in Auto-Answering

Description

The system provides maximum 4 channels Built-in Auto-Answering feature without need for any additional hardware on CPU at default. This feature provides easy answering machine function inside the system which supports VRS prompt message and simple voice Mail function. VRS voice prompt or recorded voice message are saved in a flash memory on CPU board.

Conditions

- The 4 channels Built-in Auto-answering is installed by default on a CPU without the need for any additional hardware.
- Total 2 hours message storage with maximum 100 VRS Messages for VRS/Voice Mail without a SDVM () card (option). To use more than 2 hours storage, SDVMS/SDVML card must be installed on the CPU-C1.
- One Voice Prompt language (Australian English) is available at default and it can be replaced to the other language by Web Programming.(Language Pack will be separately supplied.) To use more than two voice prompt languages, SDVMS/SDVML card must be installed on the CPU-C1.
- When voice message is recorded, the notification will be displayed on the operator terminal LCD set in PRG 20-17-01. Any operation (off hook, key depress) at operator terminal will disappear the LCD notification.
- Regarding recorded VRS prompt message or voice message, voice format is PCM and file format is FAT. However upload or download function of these messages are not supported.
- Enable to use as simple VRS (Operator Assistance), such as single digit dialing.

Default Settings

None

System Availability

Terminals

All Multiline Terminals, Analog telephone

Required Component(s)

None

Related Features

Voice Response System (VRS)

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
25-06-01	VRS/DISA One-Digit Code Attendant Setup - Next Attendant Message Number	0 ~ 100 (0 = No Setting) 101 = Voice Mail answers 104 = Refer to PRG 25-04. 105 = Dial the other extension	0
11-10-20	Service Code Setup (for System Administrator) - VRS - Record/Erase Message	0~9, *, # Maximum of 8 digit	616
20-17-01	Operator Extension - Operator's Extension Number	Up to eight digits	101
22-02-01	Incoming Call Trunk Setup - Trunk Service Type	0 = Normal 1 = VRS (second dial tone if no VRS installed) 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delayed VRS 7 = ANI/DNIS 8 = DID (DDI) Mode Switching	0
25-02-01	DID/DISA VRS Message - Message (Talkie) Source		1
40-07-01	Voice Prompt Language Assignment for VRS - Voice Prompt Language Assignment for VRS	01 = US English 02 = UK English 03 = Australian English 04 = French Canadian 05 = Dutch 06 = Mexican Spanish 07 = Latin America Spanish 08 = Italian 09 = German 10 = Madrid Spanish 11 = Norwegian 12 = Parisian French 13 = Brazilian Portuguese 14 = Japanese 15 = Mandarin Chinese 16 = Korean 17 = Iberian Portuguese 18 = Greek 19 = Danish 20 = Swedish 21 = Thai 22 = Mandarin Chinese (Taiwan) 23 = Flemish 24 = Turkish 25 = Arabic 26 = Russian	3

Operation

Set up Built-in Auto-Answering and Simple Voice Mail

< Program >

PRG 22-02-01: 1 (VRS)

PRG 25-02-01: Talkie type: 1 (VRS), Additional data: Message No. 1

PRG 11-10-20: 616 (Record, Erase VAU Message Service Code)

To record VRS prompt message 1

1. Press **Speaker** key +**Dial 616+7+001** at terminal
2. After Beep tone, record your message.
3. Press **Speaker** key and finish recording.

Incoming call and record calling party message

1. Incoming call to specified trunk
2. Calling party is connected to built-in VRS, and hears auto-answering message 1.
3. Calling party dials 1.
4. Calling party records the message (max 2 minutes) after beep tone.
5. Finish the recording.
6. Then following notification will be indicated at operator Multiline Terminal LCD.

VOIC MESSAGE
xx MESSAGE

xx indicates number of recorded messages
(01 - 10)
(01 - 20)

To retrieve recorded message

1. Press **Speaker** key + dial **616 + 5** + message number (001~100) at terminal.
2. Recorded message is played.

To delete recorded message

1. Press **Speaker** key +dial **616 + 3** + message number (001~100) at terminal.
2. Recorded message is deleted.

Call Arrival (CAR) Keys

Description

Call Arrival (CAR) Keys are software extensions available on the Basic and Expanded Port Packages. A Call Arrival Extension assigned to a line key, can appear and ring on an individual station or multiple stations. Call Arrival Keys are busy only when ringing and are not used during talking.

Call Arrival Keys are shared with the Virtual Extensions (VE). In virtual extension mode, the key acts as a secondary extension. Up to 50 CAR/VE keys are provided.

Conditions

- CAR keys and virtual extensions share 50 available ports/extensions.
- The 50 available ports/extensions are assigned per extension for CAR key mode or virtual extension (VE) key mode.
- More than one extension can share a CAR key.
- An extension can have more than one CAR key assigned.
- Up to 32 incoming calls can be queued to busy CAR key.
- If multiple CAR/SIE/VE keys are ringing on a station at the same time, the CAR/SIE/VE key on the lowest Line Key is answered first.
- The system can be programmed to blink the page number of a Self Labeling IP terminal when it receives an incoming call, or switch to the page of the incoming call. Also, a default page can be defined for the Self Labeling IP terminal to change to when it goes idle or when it has answered a call.
- Self Labeling IP terminal screen page switching only applies to idle terminals. If a terminal is not idle, the screen will not switch if another call comes in until the phone goes idle.

Default Settings

None

System Availability

Terminals

All Multiline Terminals

Required Component(s)

None

Related Features

Virtual Extensions

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-04-01	Virtual Extension Numbering - Extension Number	Dial (Up to 8 digits)	All Virtual Extension Port = No Setting
15-01-01	Basic Extension Data Setup - Extension Name		No Setting
15-01-05	Basic Extension Data Setup - Restriction for Outgoing Disable on Incoming Line	0 = Supervise dial detection 1 = Not supervise dial detection	0
15-02-07	Multiline Telephone Basic Data Setup - Automatic Hold for CO Lines	0 = Hold 1 = Disconnect (Cut)	1
15-02-21	Multiline Telephone Basic Data Setup - Virtual Extension Access Mode (when idle Virtual Extension key pressed)	0 = DSS 1 = Outgoing (OTG) 2 = Ignore	2
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
15-08-01	Incoming Virtual Extension Ring Tone Setup - Incoming Ring Pattern	0 ~ 8 0 = Tone Pattern 1 1 = Tone Pattern 2 2 = Tone Pattern 3 3 = Tone Pattern 4 4 = Incoming extension ring tone 5 = Melody1 (2W Digital/IP Multiline Terminal) 6 = Melody2 (2W Digital/IP Multiline Terminal) 7 = Melody3 (2W Digital/IP Multiline Terminal) 8 = Melody4 (2W Digital/IP Multiline Terminal)	0
15-09-01	Virtual Extension Ring Assignment - Ringing	0 = No Ringing 1 = Ring	0
15-10-01	Incoming Virtual Extension Ring Tone Order Setup	0 ~ 8 0 = Tone Pattern 1 1 = Tone Pattern 2 2 = Tone Pattern 3 3 = Tone Pattern 4 4 = Incoming extension ring tone 5 = Melody1 (2W Digital/IP Multiline Terminal) 6 = Melody2 (2W Digital/IP Multiline Terminal) 7 = Melody3 (2W Digital/IP Multiline Terminal) 8 = Melody4 (2W Digital/IP Multiline Terminal)	Priority order: 1 = 0 (Tone Pattern 1) 2 = 1 (Tone Pattern 2) 3 = 2 (Tone Pattern 3) 4 = 3 (Tone Pattern 4)
15-11-01	Virtual Extension Delayed Ring Assignment - Ringing	0 = Immediate Ring 1 = Delayed Ring	0
15-18-01	Virtual Extension Key Enhanced Options - Virtual Extension Key Operation Mode	0 = Release 1 = Land on the key	1
15-18-02	Virtual Extension Key Enhanced Options - Display mode when placing a call on Virtual Extension Key	0 = Secondary Extension Name 1 = Actual Station Name	1
20-04-03	System Options for Virtual Extensions - Call Coverage Delay Interval	0 ~ 64800 seconds	10
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1

Program No.	Program Name	Input Data	Default
20-07-10	Class of Service Options (Administrator Level) - Programmable Function Key Programming (Appearance Level)	0 = Off 1 = On	COS1 ~ 14/COS15 = 1
20-10-08	Class of Service Options (Answer Service) - Virtual Extension Off-Hook Answer	0 = Off (Ringing Line Preference Disabled) 1 = On (Ringing Line Preference Enabled)	COS 01 ~ 15 = 1
20-13-27	Class of Service Options (Supplementary Service) - Busy on Seizing Virtual Extension	0 = Off 1 = On	COS 01 ~ 15 = 1
21-01-15	System Options for Outgoing Calls - Outgoing Disable on Incoming Line (Toll Restriction)	0 = Disable (Off) 1 = Enable (On)	1
23-04-01	Ringing Line Preference for Virtual Extensions - Extension Group Number	0 ~ 50 (0 = No Setting)	0

Operation

To answer a call ringing a Call Arrival (CAR) key:

1. Press the flashing **Call Arrival (CAR)** key.

To place a call to a Call Arrival (CAR) key:

1. Lift the handset, or press **Speaker** key.
2. Dial the CAR key extension, or press the **Call Arrival (CAR)** key.



The operation depends on the setting in PRG 15-02-21.

To program a Call Arrival (CAR) key on a telephone:

1. Press **Speaker** key.
2. Dial **752**.
3. Press the key you want to program.
4. Dial ***03**.
5. Dial the number of the extension you want to appear on the key.
6. Press **Hold** key once for Immediate Ring.



To set for Delayed Ring, skip to step 8.

7. Dial the Mode number in which the key rings.
 - 1 = Day 1
 - 2 = Night 1
 - 3 = Midnight 1
 - 4 = Rest 1
 - 5 = Day 2
 - 6 = Night 2
 - 7 = Midnight 2
 - 8 = Rest 2
8. Press **Hold** key to set up Delayed Ring.
- OR -
 Skip to step 10.

9. Dial the mode number in which the key delay rings.
- 1 = Day 1
 - 2 = Night 1
 - 3 = Midnight 1
 - 4 = Rest 1
 - 5 = Day 2
 - 6 = Night 2
 - 7 = Midnight 2
 - 8 = Rest 2
10. Press **Speaker** key.

Call Duration Timer

Description

Call Duration Timer lets a Multiline Terminal with an LCD time their trunk calls on the telephone display. This helps users that must keep track of their time on the telephone. For incoming trunk calls, the Call Time begins as soon as the user answers the call.

Conditions

- The Call Timer starts over each time the call is retrieved from Hold or Park.
- The Call Duration Timer (Program 20-13-36) is not displayed for inbound ACD calls.

Default Settings

Enabled

System Availability

Terminals

All Multiline Terminals

Required Component(s)

None

Related Features

Alphanumeric Display

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-09-06	Class of Service Options (Incoming Call Service) - Incoming Time Display	0 = Off 1 = On	0
20-13-36	Class of Service Options (Supplementary Service) - Call Duration Timer Display	0 = Off 1 = On	COS 01 ~ 15 = 1
21-01-03	System Options for Outgoing Calls - Trunk Inter-digit Time (External)	0 ~ 64800 seconds	10

Operation

To time your trunk calls:

1. Place a trunk call.



The timer starts automatically.

Call Forwarding

Description

Call Forwarding permits an extension user to redirect their calls to another extension or an off-premise number. Call Forwarding ensures that the user's calls are covered when they are away from their work area. The types of Call Forwarding are:

- Call Forwarding when Busy or Unanswered
Calls to the extension forward when busy or unanswered.
- Call Forwarding Immediate
All calls forward immediately to the destination, and only the destination rings.
- Call Forwarding - Centrex
When using PBX/Centrex trunks, calls to extension perform a Centrex transfer using Immediate, Busy and No Answer Forwarding.
- Call Forwarding with both Ringing
All calls forward immediately to the destination, and both the destination and the forwarded extension ring (not for Voice Mail).
- Call Forwarding when Unanswered
Calls forward only if they are unanswered (Ring No Answer).
- Call Forwarding Follow Me
Refer to [Call Forwarding with Follow Me](#) for more information.
- Personal Answering Machine Emulation
Allows the extension to emulate an answering machine. Refer to SL2100 InMail for more information.

Call Forwarding reroutes calls ringing an extension, including calls transferred from another extension. Call Forwarding can also be split, allowing internal and external calls to forward to different destinations. The extension user can enable Call Forwarding from their telephone. An extension user can also set the forwarding for another extension by using Call Forward for any Extension to Destination. To redirect calls while a user is at another telephone, use Call Forwarding with Follow Me. A periodic VRS announcement can remind users that their calls are forwarded.

Conditions

- Virtual Extensions can be set to Call Forward. PRG 15-02-21 must be set to a 1, to allow the Virtual Extension to place outgoing calls.
- If an extension in a call forward chain has Call Forward with Both Ring, calls do not continue routing to other extensions in the chain.
- If an extension in a call forward chain has Call Forward with Follow Me set, calls do not continue routing to other extensions in the chain.
- If the extension in a Call Forward-Both Ring set to another extension, it will only continue to forward if the Both ring location is forwarded (B/NA or NA) to VM and no where else. In case of use a Centralized Voice Mail in other networks, if the Both ring location sets a different site, the Both ring is not forwarded to the Centralized Voice Mail.
- Call Forwards can be chained allowing calls to forward from one extension to the next. Up to 32 extensions can be linked in a call forward chain.
- Call Forwarding an extension in a Department Group prevents that extension from receiving Department Pilot Calls.
- Ring Groups do not follow Call Forwarding.
- Call Forward Split does not allow for Call Forward with Follow Me.
- If Call Forwarding off premise, a trunk access code must be included in the forwarding number.

- Call Forward with Follow Me allows for a single station to set follow me for multiple stations. When canceling Call Forward with Follow Me, the user must specify the station to cancel or cancel all.
 - The telephone must be in an idle state to enable call forwarding with a Programmable Function Key, or receiving dial tone to enable call forwarding with a service code.
 - Call Forward for any Extension to Destination cannot be set or canceled from a Virtual Extension.
 - Call Forwarding/Do Not Disturb Override allows for Overriding a Call Forwarding or DND setting at another extension.
 - When a call is transferred because of Call Forwarding No Answer, Call Forwarding Busy, or DND, the Reason for Transfer option can display to the transferred extension as to why the call is ringing to their telephone.
 - An extension user can forward their calls to a Department number.
 - A DSS key indicates a Call Forwarding indication for extensions.
 - When DND All and Call Forward are set on the same telephone, call forwarding works. If Busy and No Answer Forwarding are set to different locations, it follows the Busy Forwarding.
 - Function keys simplify Call Forwarding operation.
 - If an extension Class of Service denies Call Forwarding (PRG 20-11-01 ~ PRG 20-11-05, off), the extension can still dial the service code to Set/Cancel Call Forwarding, but it can not set any data.
 - Call Forward Both Ring Split does not work to an off-premise destination.
 - If an IP Terminal has forwarding set and then loses connection, it follows the forwarding.
 - If an IP Terminal has Busy and No Answer Forwarding set to different locations and it loses connection, it follows the Busy Forwarding location.
 - When the following are done in sequence,
 - Call Forwarding Busy/No Answer is set to extension
 - Call Forwarding Immediate is set on extension
 - Call Forwarding Immediate is cancelled on extension
 then,
Call Forwarding Busy/No Answer is set back on the extension.
 - When the following are done in sequence,
 - Call Forwarding No Answer is set to extension
 - Call Forwarding Immediate is set on extension
 - Call Forwarding Immediate is cancelled on extension
 then,
all Call Forwarding is cancelled.
-  Any settings in PRG 24-09-04 and PRG 24-09-05, copies the information to PRG 24-09-02 and PRG 24-09-03 and is changed to Call Forwarding Busy/No Answer.
- When the following are done in sequence,
 - Call Forwarding Busy is set to extension
 - Call Forwarding Immediate is set on extension
 - Call Forwarding Immediate is cancelled on extension
 then,
Call Forwarding Busy/No Answer is set back on the extension.
 - The @ and P characters are not supported in the call forward destination. These characters are only supported on a one touch/DSS key and in speed dial bins.
 - If the terminal is configured for Call Forward Both Ring and DND is activated, the calling station will receive a busy tone. Call Forward Both Ring is not followed.
 - If Program 20-11-30 is set to 0 (Off), the Call FWD setting is displayed on the terminal LCD screen when idle.

Default Settings

Enabled

System Availability

Terminals

Any Station and Virtual Extensions

Required Component(s)

None

Related Features

Call Forwarding, Off-Premise

Call Forwarding with Follow Me

Call Forwarding/Do Not Disturb Override

Central Office Calls, Answering

Department Calling

Direct Station Selection (DSS) Console

Do Not Disturb (DND)

Programmable Function Keys

Voice Response System (VRS)

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-10-06	Service Code Setup (for System Administrator) - Set Trunk to Trunk Transfer per Trunk	0~9, *, # Maximum of 8 digit	733
11-10-07	Service Code Setup (for System Administrator) - Cancel Trunk to Trunk Transfer per Trunk	0~9, *, # Maximum of 8 digit	734
11-10-08	Service Code Setup (for System Administrator) - Set Trunk to Trunk Transfer Destination per Trunk	0~9, *, # Maximum of 8 digit	735
11-10-18	Service Code Setup (for System Administrator) - Off-Premise Call Forward by Door Box	0~9, *, # Maximum of 8 digit	722
11-11-01	Service Code Setup (for Setup/Entry Operation) - Call Forward - All	0~9, *, # Maximum of 8 digit	741
11-11-02	Service Code Setup (for Setup/Entry Operation) - Call Forward - Busy	0~9, *, # Maximum of 8 digit	742
11-11-03	Service Code Setup (for Setup/Entry Operation) - Call Forward - No Answer	0~9, *, # Maximum of 8 digit	743
11-11-04	Service Code Setup (for Setup/Entry Operation) - Call Forward - Busy/No Answer	0~9, *, # Maximum of 8 digit	744
11-11-05	Service Code Setup (for Setup/Entry Operation) - Call Forward - Both Ring	0~9, *, # Maximum of 8 digit	745

Program No.	Program Name	Input Data	Default
11-11-07	Service Code Setup (for Setup/Entry Operation) - Call Forwarding - Follow-Me	0~9, *, # Maximum of 8 digit	746
11-11-08	Service Code Setup (for Setup/Entry Operation) - Do Not Disturb	0~9, *, # Maximum of 8 digit	747
11-11-45	Service Code Setup (for Setup/Entry Operation) - Set/Cancel Call Forward All (Split)	0~9, *, # Maximum of 8 digit	682
11-11-46	Service Code Setup (for Setup/Entry Operation) - Set/Cancel Call Forward Busy (Split)	0~9, *, # Maximum of 8 digit	683
11-11-47	Service Code Setup (for Setup/Entry Operation) - Set/Cancel Call Forward No Answer (Split)	0~9, *, # Maximum of 8 digit	684
11-11-48	Service Code Setup (for Setup/Entry Operation) - Set/Cancel Call Forward Busy/No Answer (Split)	0~9, *, # Maximum of 8 digit	685
11-11-49	Service Code Setup (for Setup/Entry Operation) - Set/Cancel Call Forward Both Ring (Split)	0~9, *, # Maximum of 8 digit	686
11-11-52	Service Code Setup (for Setup/Entry Operation) - Set/Cancel Call Forward All Destination (No Split)	0~9, *, # Maximum of 8 digit	790
11-11-53	Service Code Setup (for Setup/Entry Operation) - Set/Cancel Call Forward Busy Destination (No Split)	0~9, *, # Maximum of 8 digit	791
11-11-54	Service Code Setup (for Setup/Entry Operation) - Set/Cancel Call Forward No Answer Destination (No Split)	0~9, *, # Maximum of 8 digit	792
11-11-55	Service Code Setup (for Setup/Entry Operation) - Call Forward Busy/No Answer Destination (No Split)	0~9, *, # Maximum of 8 digit	793
11-11-58	Service Code Setup (for Setup/Entry Operation) - Call Forward with VAU Personal Greeting	0~9, *, # Maximum of 8 digit	713
11-12-01	Service Code Setup (for Service Access) - Call Forward/Do Not Disturb Override	0~9, *, # Maximum of 8 digit	707
11-16-06	Single Digit Service Code Setup - Do Not Disturb/Call Forward override	0~9, *, # Maximum of 1 digit	No Setting
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-09-01	Class of Service Options (Incoming Call Service) - Second Call for DID/DISA/DIL/E&M Override	0 = Off (2nd call will not be allowed.) 1 = On (2nd call is allowed.)	COS 01 ~ 15 = 1
20-09-07	Class of Service Options (Incoming Call Service) - Call Queuing	0 = Off (Calls are not queued.) 1 = On (Calls are queued.)	COS 01 ~ 15 = 0
20-11-01	Class of Service Options (Hold/Transfer Service) - Call Forward All	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-02	Class of Service Options (Hold/Transfer Service) - Call Forward When Busy	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-03	Class of Service Options (Hold/Transfer Service) - Call Forwarding When Unanswered	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-04	Class of Service Options (Hold/Transfer Service) - Call Forwarding (Both Ringing)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-05	Class of Service Options (Hold/Transfer Service) - Call Forwarding with Follow Me	0 = Off 1 = On	COS 01 ~ 15 = 1

Program No.	Program Name	Input Data	Default
20-11-23	Class of Service Options (Hold/Transfer Service) - CAR/VE Call Forward Set/Cancel	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-05	Class of Service Options (Supplementary Service) - Intercom Off-Hook Signaling	0 = Off (ICM off hook signaling disabled.) 1 = On (ICM off hook signaling enabled.)	COS 01 ~ 15 = 1
20-13-06	Class of Service Options (Supplementary Service) - Automatic Off-Hook Signaling (Automatic Override)	0 = Off (manually) 1 = On (automatically)	COS 01 ~ 15 = 1
24-02-03	System Options for Transfer - Delayed Call Forwarding Time	0 ~ 64800 seconds	10
24-09-01	Call Forward Split Settings - Call Forwarding Type	0 = Call Forwarding Off 1 = Call Forwarding with Both Ringing 2 = Call Forward when No Answer 3 = Call Forwarding All Calls 4 = Call Forwarding when Busy or Not Answered 5 = Call Forwarding when Busy	0
24-09-02	Call Forward Split Settings - CO Call Forwarding Destination for Both Ring, All Call, No Answer	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
24-09-03	Call Forward Split Settings - Intercom Call Forwarding Destination for Both ring, All Call, No Answer	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
24-09-04	Call Forward Split Settings - CO Call Forwarding Busy Destination	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
24-09-05	Call Forward Split Settings - Intercom Call Forwarding Busy Destination	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
24-09-06	Call Forward Split Settings - Call Forwarding Destination for CTX/PBX for All Call, No Answer	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
24-09-07	Call Forward Split Settings - Call Forwarding Destination for CTX/PBX for Busy	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting

Operation

To set Call Forward - Immediate at a forwarding station:

1. Pick up the handset or press **Speaker** key.
2. Dial the Call Forward - Immediate Service Code (default: **741**).
- OR -
At the Multiline Terminal only, press the **Call Forwarding Programmable Function** keys. (PRG 15-07-01, 10 or SC **751**, Key Code 10)
3. Dial **1** (Set).
4. Dial the destination extension or off-premise number.
5. Press **Speaker** key or hang up.

 Refer to [Call Forwarding](#).

 The Call Forwarding Programmable Function key lights.

To cancel Call Forward - Immediate at a forwarding station:

1. Pick up the handset or press **Speaker** key.
2. Dial the Call Forward - Immediate Service Code (default: **741**).
- OR -
At the Multiline Terminal only, press the **Call Forwarding Programmable Function** keys. (PRG 15-07-01, 10 or SC **751**, Key Code 10)
3. Dial **0** (Cancel).
4. Press **Speaker** key or hang up.

 The Call Forwarding Programmable Function key turns off.

To set Call Forward - Busy/No Answer at a forwarding station:

1. Pick up the handset or press **Speaker** key.
2. Dial the Call Forward - Busy/No Answer Service Code (default: **744**).
- OR -
At the Multiline Terminal only, press the **Call Forwarding Programmable Function** keys. (PRG 15-07-01, 13 or SC **751**, Key Code 13)
3. Dial **1** (Set).
4. Dial the destination extension or off-premise number.
5. Press **Speaker** key or hang up.

 Refer to [Call Forwarding](#).

 The Call Forwarding Programmable Function key turns on.

To cancel Call Forward - Busy/No Answer at a forwarding station:

1. Pick up the handset or press **Speaker** key.
2. Dial the Call Forward - Busy/No Answer Service Code (default: **744**).
- OR -
At the Multiline Terminal only, press the **Call Forwarding Programmable Function** keys. (PRG 15-07-01, 13 or SC **751**, Key Code 13)
3. Dial **0** (Cancel).

4. Press **Speaker** key or hang up.



The Call Forwarding Programmable Function key turns off.

To set Call Forward - Both Ring at a forwarding station:

1. Pick up the handset or press **Speaker** key.
2. Dial the Call Forward - Both Ring Service Code (default: **745**).
- OR -
At the Multiline Terminal only, press the **Call Forwarding Programmable Function** keys. (PRG 15-07-01, 14 or SC **751**, Key Code 14)
3. Dial **1** (Set).
4. Dial the destination extension number.
5. Press **Speaker** key or hang up.



The Call Forwarding Programmable Function key turns on.

To cancel Call Forward - Both Ring at a forwarding station:

1. Pick up the handset or press **Speaker** key.
2. Dial the Call Forward - Both Ring Service Code (default: **745**).
- OR -
At the Multiline Terminal only, press the **Call Forwarding Programmable Function** keys. (PRG 15-07-01, 14 or SC **751**, Key Code 14)
3. Dial **0** (Cancel).
4. Press **Speaker** key or hang up.



The Call Forwarding Programmable Function key turns off.

To set Call Forward - Follow Me from the destination station:

1. Pick up the handset or press **Speaker** key.
2. Dial the Call Forward - Follow Me Service Code (default: **746**).
- OR -
At the Multiline Terminal only, press the **Call Forwarding Programmable Function** keys. (PRG 15-07-01, 10 or SC **751**, Key Code 15)
3. Dial **1** (Set).
4. Dial the station number to be forwarded and then the destination number.
5. Press **Speaker** key or hang up.



The Call Forwarding Programmable Function key goes on.

To cancel Call Forward - Follow Me from the destination station:

1. Pick up the handset or press **Speaker** key.
2. Dial the Call Forward - Follow Me Service Code (default: **746**).
- OR -
At the Multiline Terminal only, press the **Call Forwarding Programmable Function** keys. (PRG 15-07-01, 10 or SC **751**, Key Code 15)
3. Dial **0** (Cancel).
4. Dial the station number, which is forwarded, or **0** to cancel all extensions.

5. Press **Speaker** key or hang up.



The Call Forwarding Programmable Function key turns off.

To set Call Forward Immediate for any Extension to Destination:

1. Pick up the handset or press **Speaker** key.
2. Dial the Call Forward Immediate for any Extension to Destination Service Code (Default: **790**).
3. Dial **1** (Set).
4. Dial the extension number to be forwarded and then the destination number.
5. Press **Speaker** key or hang up.

To cancel Call Forward Immediate for any Extension:

1. Pick up the handset or press **Speaker** key.
2. Dial the Call Forward Immediate for any Extension to Destination Service Code (default: **790**).
3. Dial **0** (Cancel).
4. Dial the station number which is forwarded.
5. Press **Speaker** key or hang up.

To set Call Forward Busy/No Answer for any Extension to Destination:

1. Pick up the handset or press **Speaker** key.
2. Dial the Call Forward Busy/No Answer for any Extension to Destination Service Code (default: **793**).
3. Dial **1** (Set).
4. Dial the extension number to be forwarded and then the destination number.
5. Press **Speaker** key or hang up.

To cancel Call Forward Busy/No Answer for any Extension to Destination:

1. Pick up the handset or press **Speaker** key.
2. Dial the Call Forward Busy/No Answer for any Extension to Destination Service Code (default: **793**).
3. Dial **0** (Cancel).
4. Dial the station number, which is forwarded.
5. Press **Speaker** key or hang up.

To set Call Forward - Immediate using a Virtual Extension:

1. Press the idle **Virtual Extension** key.
2. Dial the Call Forward - Immediate Service Code (default: **741**).
3. Dial **1** (Set).
4. Dial the destination extension or off-premise number.
5. Press **Speaker** key or hang up.



Refer to [Call Forwarding](#).

To cancel Call Forward - Immediate at a forwarding station:

1. Press the idle **Virtual Extension** key.

2. Dial the Call Forward - Immediate Service Code (default: **741**).
3. Dial **0** (Cancel).
4. Press **Speaker** key or hang up.

To set Call Forward - Busy/No Answer using a Virtual Extension:

1. Press the idle **Virtual Extension** key.
2. Dial the Call Forward - Busy/No Answer Service Code (Default: **744**).
3. Dial **1** (Set).
4. Dial the destination extension or off-premise number.
5. Press **Speaker** key or hang up.

 Refer to [Call Forwarding](#).

To cancel Call Forward - Busy/No Answer using a Virtual Extension:

1. Press the idle **Virtual Extension** key.
2. Dial the Call Forward - Busy/No Answer Service Code (default: **744**).
3. Dial **0** (Cancel).
4. Press **Speaker** key or hang up.

To set Call Forward - All (Split):

1. Pick up the handset or press **Speaker** key.
2. Dial the Call Forward - Immediate Service Code (default: **682**).
3. Dial **1** (Set).
4. Dial **1** (INT) to set the destination for Internal calls or **2** (EXT) to set the destination for External calls.
5. Dial the destination extension or off-premise number.
6. Press **Speaker** key or hang up.

 Refer to [Call Forwarding](#).

To cancel Call Forward - All (Split) at a forwarding station:

1. Pick up the handset or press **Speaker** key.
2. Dial the Call Forward - All Split Service Code (default: **682**).
3. Dial **0** (Cancel).
4. Dial **0** to cancel all Call Forward All Split destinations, **1** (INT) to cancel the destination for Internal calls, or **2** (EXT) to cancel the destination for External calls.
5. Press **Speaker** key or hang up.

To set Call Forward - Busy (Split):

1. Pick up the handset or press **Speaker** key.
2. Dial the Call Forward - Busy Split Service Code (default: **683**).
3. Dial **1** (Set).
4. Dial **1** (INT) to set the destination for Internal calls or **2** (EXT) to set the destination for External calls.
5. Dial the destination extension or off-premise number.

6. Press **Speaker** key or hang up.



Refer to [Call Forwarding](#).

To cancel Call Forward - Busy (Split):

1. Pick up the handset or press **Speaker** key.
2. Dial the Call Forward - Busy Split Service Code (default: **683**).
3. Dial **0** (Cancel).
4. Dial **0** to cancel all Call Forward Busy Split destinations, **1** (INT) to cancel the destination for Internal calls, or **2** (EXT) to cancel the destination for External calls.
5. Press **Speaker** key or hang up.

To set Call Forward - No Answer (Split):

1. Pick up the handset or press **Speaker** key.
2. Dial the Call Forward - No Answer Split Service Code (default: **684**).
3. Dial **1** (Set).
4. Dial **1** (INT) to set the destination for Internal calls or **2** (EXT) to set the destination for External calls.
5. Dial the destination extension or off-premise number.
6. Press **Speaker** key or hang up.



Refer to [Call Forwarding](#).

To cancel Call Forward - No Answer (Split):

1. Pick up the handset or press **Speaker** key.
2. Dial the Call Forward - No Answer Split Service Code (default: **684**).
3. Dial **0** (Cancel).
4. Dial **0** to cancel all Call Forward No Answer Split destinations, **1** (INT) to cancel the destination for Internal calls, or **2** (EXT) to cancel the destination for External calls.
5. Press **Speaker** key or hang up.

To set Call Forward - Busy/No Answer (Split):

1. Pick up the handset or press **Speaker** key.
2. Dial the Call Forward - Busy/No Answer Split Service Code (default: **685**).
3. Dial **1** (Set).
4. Dial **1** (INT) to set the destination for Internal calls or **2** (EXT) to set the destination for External calls.
5. Dial the destination extension or off-premise number.
6. Press **Speaker** key or hang up.



Refer to [Call Forwarding](#).

To cancel Call Forward - Busy/No Answer (Split):

1. Pick up the handset or press **Speaker** key.
2. Dial the Call Forward - Busy/No Answer Split Service Code (default: **685**).
3. Dial **0** (Cancel).

4. Dial **0** to cancel all Call Forward Busy/No Answer Split destinations, **1** (INT) to cancel the destination for Internal calls, or **2** (EXT) to cancel the destination for External calls.
5. Press **Speaker** key or hang up.

To set Call Forward - Both Ring (Split):

1. Pick up the handset or press **Speaker** key.
2. Dial the Call Forward - Both Ring Split Service Code (default: **686**).
3. Dial **1** (Set).
4. Dial **1** (INT) to set the destination for Internal calls or **2** (EXT) to set the destination for External calls.
5. Dial the destination extension.



Call Forward - Both Ring (Split) does not support Off-Premise destinations.

6. Press **Speaker** key or hang up.



Refer to [Call Forwarding](#).

To cancel Call Forward - Both Ring (Split):

1. Pick up the handset or press **Speaker** key.
2. Dial the Call Forward - Both Ring Split Service Code (default: **686**).
3. Dial **0** (Cancel).
4. Dial **0** to cancel all Call Forward Both Ring Split destinations, **1** (INT) to cancel the destination for Internal calls, or **2** (EXT) to cancel the destination for External calls.
5. Press **Speaker** key or hang up.

Call Forwarding with Follow Me

Description

While at a co-worker's desk, a user can have Call Forwarding with Follow Me redirect their calls to the co-worker's extension. This helps an employee who gets detained at a co-worker's desk longer than expected. To prevent losing important calls, the employee can activate Call Forwarding with Follow Me from the co-worker's telephone.

Call Forwarding with Follow Me reroutes calls from the destination extension. To reroute calls from the initiating (forwarding) extension, use Call Forwarding.

Conditions

- Call Forwarding an extension in a Department Group prevents that extension from receiving Department Pilot Calls.
- Multiple Stations can set Call Forward Follow Me to one station.
- Calls to extensions with DND active do not follow Call Forwarding programming. DIL calls ring an idle Department Group member, and then follow PRG 22-08 programming then PRG 22-05 programming.
- Once Call Forwarding with Follow Me is activated on an extension, any Forwarding assigned in PRG 24-09 for that extension or Follow Me destination is not followed.

Default Settings

Enabled

System Availability

Terminals

All Terminals

Required Component(s)

None

Related Features

Do Not Disturb (DND)

Programmable Function Keys

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-11-07	Service Code Setup (for Setup/Entry Operation) - Call Forwarding - Follow-Me	0~9, *, # Maximum of 8 digit	746
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-11-05	Class of Service Options (Hold/Transfer Service) - Call Forwarding with Follow Me	0 = Off 1 = On	COS 01 ~ 15 = 1

Operation

To activate Call Forward Follow Me from a Multiline Terminal:

- At a Multiline Terminal, other than your own, press **Speaker** key and dial Service Code (**746**, PRG 11-11-07).
- OR -
Press the **Call Forward Follow Me** key (PRG 15-07-01 or SC **751**: Code 15).
- Dial **1** to set.
- Dial the Extension to forward.



The Multiline Terminal with display indicates on the display of the telephone which Call Forward Follow Me is set. Also, the Programmed Follow Me Flexible Line Key flashes (if assigned) when Follow Me is set.

To cancel Call Forward Follow Me from your own Multiline Terminal:

- At your Multiline Terminal, press **Speaker** key and dial Service Code (**746**, PRG 11-11-07).
- OR -
Press the **Call Forward Follow Me** key (PRG 15-07-01 or SC **751**: Code 15).
- Dial **0** to cancel.
- Dial **0** (Cancel All Forward Follow Me).
- OR -
Dial the extension number with Follow Me set.

To activate Call Forward Follow Me from a Single Line Terminal:

- At a Single Line Terminal, other than your own, lift the handset and dial the Service Code (**746**, PRG 11-11-07).
- Dial **1** to set.
- Dial the extension to forward.

To cancel Call Forward Follow Me from your own Single Line Terminal:

- At your Single Line Terminal, lift the handset and dial Service Code (**746**, PRG 11-11-07).
- Dial **0** to cancel.

3. Dial **0** (Cancel All Forward Follow Me).
- **OR** -
Dial the extension number with Follow Me set.

Call Forwarding, Off-Premise

Description

Off-Premise Call Forwarding allows an extension user to forward their calls to an off-site location. By enabling Call Forward, Off-Premise, the user can stay in touch by having the system forward their calls while they are away from the office. The forwarding destination can be any telephone number the user enters, such as a mobile phone, home office, and hotel or meeting room. Off-Premise Call Forwarding can route the off-site telephone number over a specific trunk or through a trunk group, Automatic Route Selection or Trunk Group Routing.

Off-Premise Call Forwarding reroutes the following types of incoming calls:

- Ringing intercom calls from co-worker's extensions
- Calls routed from the VRS or Voice Mail ¹
- Direct Inward Lines ¹
- DISA and DID calls to the forwarded extension ¹
- Transferred calls ¹

¹ Off-Premise Call Forwarding can reroute an incoming trunk call only if the outgoing trunk has disconnect supervision enabled (refer to the Programming section).

Off-Premise Call Forwarding does not reroute Call Arrival (CAR) Keys, Virtual Extension keys or Ring Group calls (i.e., trunk ringing according to Ring Group assignments made in PRG 22-04 and PRG 22-05).

Conditions

- If a call that forwards Off-Premise goes out on a trunk assigned as TIE or DID, and the called party does not answer before the timer in PRG 34-07-05, the call recalls to the station that performed the transfer.
- Call Forwarding Off-Premise requires loop start trunks with disconnect supervision.
- The trunk access code and the outside telephone number combined cannot exceed 24 digits.
- Call Forwarding an extension in a Department Group prevents that extension from receiving Department Pilot Calls.
- If a Programmable Function key is not defined for Call Forwarding (10 ~ 15), the DND key flashes to indicate that the extension is call forwarded.
- DID calls to an extension with Off-Premise Call Forwarding set do not recall if there is no answer.
- Door Boxes must be programmed for the calls to be transferred Off-Premise.
- The outside number Call Forwarding dials can only be a number normally allowed by the forwarded extension Toll Restriction.
- If Fixed Messaging for VRS is enabled in PRG 40-10-01, callers to an extension forwarded off-premise hear, "Please hold on, your call is being rerouted."
- When a station is in DND and any Call Forwarding Off Premise is set, the call forwards immediately.
- Call Forwarding, Off-Premise is not supported when using Alternate Trunk Group Routing.

Default Settings

Disabled

System Availability

Terminals

All Stations

Required Component(s)

None

Related Features

Call Forwarding

Code Restriction/Toll Restriction

Direct Inward Dialing (DID)

Do Not Disturb (DND)

Door Box

Virtual Extensions

Voice Response System (VRS)

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-09-01	DTMF, Dial Tone Detection Setup - DTMF, Dial Tone Detection	0 = Common use for both analog extensions and trunks 1 = Use for analog extensions (DTMF Receivers) 2 = Use for analog trunks (DTMF receivers/Dial tone detection/ Caller ID detection)	Resource 01 - 140 = 0
11-07-01	Department Group Pilot Numbers - Extension Group Pilot Number	Dial (Up to 8 digits)	Group Number 1 ~ 49 = No Setting Group Number 50 = 3999
11-11-01	Service Code Setup (for Setup/Entry Operation) - Call Forward - All	0~9, *, # Maximum of 8 digit	741
11-11-02	Service Code Setup (for Setup/Entry Operation) - Call Forward - Busy	0~9, *, # Maximum of 8 digit	742
11-11-03	Service Code Setup (for Setup/Entry Operation) - Call Forward - No Answer	0~9, *, # Maximum of 8 digit	743
11-11-04	Service Code Setup (for Setup/Entry Operation) - Call Forward - Busy/No Answer	0~9, *, # Maximum of 8 digit	744
11-11-05	Service Code Setup (for Setup/Entry Operation) - Call Forward - Both Ring	0~9, *, # Maximum of 8 digit	745
11-11-45	Service Code Setup (for Setup/Entry Operation) - Set/Cancel Call Forward All (Split)	0~9, *, # Maximum of 8 digit	682
11-11-46	Service Code Setup (for Setup/Entry Operation) - Set/Cancel Call Forward Busy (Split)	0~9, *, # Maximum of 8 digit	683

Program No.	Program Name	Input Data	Default
11-11-47	Service Code Setup (for Setup/Entry Operation) - Set/Cancel Call Forward No Answer (Split)	0~9, *, # Maximum of 8 digit	684
11-11-48	Service Code Setup (for Setup/Entry Operation) - Set/Cancel Call Forward Busy/No Answer (Split)	0~9, *, # Maximum of 8 digit	685
11-11-49	Service Code Setup (for Setup/Entry Operation) - Set/Cancel Call Forward Both Ring (Split)	0~9, *, # Maximum of 8 digit	686
11-11-52	Service Code Setup (for Setup/Entry Operation) - Set/Cancel Call Forward All Destination (No Split)	0~9, *, # Maximum of 8 digit	790
11-11-53	Service Code Setup (for Setup/Entry Operation) - Set/Cancel Call Forward Busy Destination (No Split)	0~9, *, # Maximum of 8 digit	791
11-11-54	Service Code Setup (for Setup/Entry Operation) - Set/Cancel Call Forward No Answer Destination (No Split)	0~9, *, # Maximum of 8 digit	792
11-11-55	Service Code Setup (for Setup/Entry Operation) - Call Forward Busy/No Answer Destination (No Split)	0~9, *, # Maximum of 8 digit	793
14-01-13	Basic Trunk Data Setup - Trunk-to-Trunk Transfer	0 = Disable (No) 1 = Enable (Yes)	1
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-09-01	Class of Service Options (Incoming Call Service) - Second Call for DID/DISA/DIL/E&M Override	0 = Off (2nd call will not be allowed.) 1 = On (2nd call is allowed.)	COS 01 ~ 15 = 1
20-09-07	Class of Service Options (Incoming Call Service) - Call Queuing	0 = Off (Calls are not queued.) 1 = On (Calls are queued.)	COS 01 ~ 15 = 0
20-11-12	Class of Service Options (Hold/Transfer Service) - Call Forwarding Off Premise (External Call Forwarding)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-05	Class of Service Options (Supplementary Service) - Intercom Off-Hook Signaling	0 = Off (ICM off hook signaling disabled.) 1 = On (ICM off hook signaling enabled.)	COS 01 ~ 15 = 1
20-13-06	Class of Service Options (Supplementary Service) - Automatic Off-Hook Signaling (Automatic Override)	0 = Off (manually) 1 = On (automatically)	COS 01 ~ 15 = 1
21-03-01	Trunk Group Routing for Trunks - Route Table Number	0 ~ 50 (0 = No Setting)	1
24-02-07	System Options for Transfer - Trunk-to-Trunk Transfer Release Warning Tone	0 ~ 64800 seconds	1800
24-09-01	Call Forward Split Settings - Call Forwarding Type	0 = Call Forwarding Off 1 = Call Forwarding with Both Ringing 2 = Call Forward when No Answer 3 = Call Forwarding All Calls 4 = Call Forwarding when Busy or Not Answered 5 = Call Forwarding when Busy	0

Program No.	Program Name	Input Data	Default
24-09-02	Call Forward Split Settings - CO Call Forwarding Destination for Both Ring, All Call, No Answer	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
24-09-03	Call Forward Split Settings - Intercom Call Forwarding Destination for Both ring, All Call, No Answer	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
24-09-04	Call Forward Split Settings - CO Call Forwarding Busy Destination	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
24-09-05	Call Forward Split Settings - Intercom Call Forwarding Busy Destination	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
24-09-06	Call Forward Split Settings - Call Forwarding Destination for CTX/PBX for All Call, No Answer	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
24-09-07	Call Forward Split Settings - Call Forwarding Destination for CTX/PBX for Busy	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
25-07-07	System Timers for VRS/DISA - Long Conversation Warning Tone Time	0 ~ 64800 seconds	1800
25-07-08	System Timers for VRS/DISA - Long Conversation Disconnect Time	0 ~ 64800 seconds	30

Trunk-to-Trunk Forwarding - Normal (0) Trunks

Program No.	Program Name	Input Data	Default
11-10-06	Service Code Setup (for System Administrator) - Set Trunk to Trunk Transfer per Trunk	0~9, *, # Maximum of 8 digit	733
11-10-07	Service Code Setup (for System Administrator) - Cancel Trunk to Trunk Transfer per Trunk	0~9, *, # Maximum of 8 digit	734
11-10-08	Service Code Setup (for System Administrator) - Set Trunk to Trunk Transfer Destination per Trunk	0~9, *, # Maximum of 8 digit	735

Program No.	Program Name	Input Data	Default
13-01-01	Speed Dialing Function Setup - Speed Dialing Auto Outgoing Call Mode	0 = Trunk Outgoing Mode (Use trunk group assigned in PRG 13-05.) 1 = Intercom Outgoing Mode (Follow the system routing for the trunk access code entered.)	0
13-04-01	Speed Dialing Number and Name - Number	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
14-01-26	Basic Trunk Data Setup - Automatic Trunk-to-Trunk Transfer Mode	0 = Normal Transfer (Normal) 1 = Step Transfer (Step)	0
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-07-05	Class of Service Options (Administrator Level) - Set/Cancel Automatic Trunk-to-Trunk Transfer	0 = Off 1 = On	COS1 ~ 14/COS15 = 0
22-02-01	Incoming Call Trunk Setup - Trunk Service Type	0 = Normal 1 = VRS (second dial tone if no VRS installed) 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delayed VRS 7 = ANI/DNIS 8 = DID (DDI) Mode Switching	0
24-02-11	System Options for Transfer - No Answer Step Transfer	0 ~ 64800 seconds	10
24-02-12	System Options for Transfer - No Answer Trunk-to-Trunk Transfer	0 ~ 64800 seconds	0
24-04-01	Automatic Trunk-to-Trunk Transfer Target Setup - Speed Dial Area Number	-	999

Trunk-to-Trunk Forwarding - DID (3) Trunk Forwarding by Department Groups



Refer to [Departmental Calling](#) for additional Department Group programming.

Program No.	Program Name	Input Data	Default
11-07-01	Department Group Pilot Numbers - Extension Group Pilot Number	Dial (Up to 8 digits)	Group Number 1 ~ 49 = No Setting Group Number 50 = 3999
11-11-25	Service Code Setup (for Setup/Entry Operation) - Automatic Transfer Setup for Each Extension Group	0~9, *, # Maximum of 8 digit	602
11-11-26	Service Code Setup (for Setup/Entry Operation) - Automatic Transfer Cancellation for Each Extension Group	0~9, *, # Maximum of 8 digit	603
11-11-27	Service Code Setup (for Setup/Entry Operation) - Destination of Automatic Transfer Each Extension Group	0~9, *, # Maximum of 8 digit	604

Program No.	Program Name	Input Data	Default
13-01-01	Speed Dialing Function Setup - Speed Dialing Auto Outgoing Call Mode	0 = Trunk Outgoing Mode (Use trunk group assigned in PRG 13-05.) 1 = Intercom Outgoing Mode (Follow the system routing for the trunk access code entered.)	0
13-04-01	Speed Dialing Number and Name - Number	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
14-01-04	Basic Trunk Data Setup - Transmit Gain Level for Conference and Transfer Calls	1 ~ 63 (- 15.5 dB ~ + 15.5 dB in 0.5 dB intervals)	32 (0 dB)
14-01-05	Basic Trunk Data Setup - Receive Gain Level for Conference and Transfer Calls	1 ~ 63 (- 15.5 dB ~ + 15.5 dB in 0.5 dB intervals)	32 (0 dB)
14-06-01	Trunk Group Routing - Trunk Group	0 = Not Set 001 ~ 050 = Trunk group No. 101 ~ 150 = 100 + Networking System No. 1001 ~ 1050 = 1000 + Route Table No.	Refer to the Programming Manual for the default values.
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
16-02-01	Department Group Assignment for Extensions	Department Groups = 1 ~ 50 Priority Order = 1 ~ 200	Refer to the Programming Manual for the default values.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-11-17	Class of Service Options (Hold/Transfer Service) - Department Group Trunk-to-Trunk Transfer (Each Telephone Group Transfer)	0 = Off 1 = On	COS 01 ~ 15 = 1
24-05-01	Department Group Transfer Target Setup - Speed Dial Area Number	0 ~ 999	999

Trunk-to-Trunk Forwarding - DID (3) Trunk Forwarding Using DID Translation Table



Refer to [Direct Inward Dialing \(DID\)](#) for additional DID programming.

Program No.	Program Name	Input Data	Default
22-11-05	DID Translation Table - Transfer Destination Number 1	0 = No setting 1 ~ 50 = Incoming Ring Group 101 = Not Used 102 = InMail 103 = Not Used 201 ~ 250 = Department Group 400 = VRS 401 = DISA 501 ~ 599 = DISA(VRS Message) 1000-1999 = Common ABB Dial (000-999)	0

Program No.	Program Name	Input Data	Default
22-11-06	DID Translation Table - Transfer Destination Number 2	0 = No setting 1 ~ 50 = Incoming Ring Group 101 = Not Used 102 = InMail 103 = Not Used 201 ~ 250 = Department Group 400 = VRS 401 = DISA 501 ~ 599 = DISA(VRS Mes- sage) 1000-1999 = Common ABB Dial (000-999)	0

Operation

To activate Call Forwarding Off-Premise non-split:

- At a Multiline Terminal, press **Speaker** key.
- **OR** -
At a Single Line Terminal, lift the handset.
- Dial the Call Forwarding Service Code.
- **OR** -
At a Multiline Terminal only, press the **Call Forwarding Programmable Function** keys (PRG 15-07-01, PRG 15-07-10 ~ PRG 15-07-15 or SC **751** Key Code 10 ~ 15).
- Dial **1** (Set).
- Dial the Trunk Access Code (default: **0**) + Number (**0** + 2142622000).

 Trunk access codes are **0** (ARS/Trunk Group Routing), 704 + Line Group (1 ~ 9, 01 ~ 50) or #0 + Line number (e.g., 05 or 005 for line 5).

 Your DND or Call Forwarding (Device) Programmable Function key flashes.

To cancel Call Forwarding Off-Premise non-split:

- At a Multiline Terminal, press **Speaker** key.
- **OR** -
At a Single Line Terminal, lift the handset.
- Dial the Call Forward Access Code (default not assigned).
- Dial **0** (Cancel).

To activate Call Forwarding Off-Premise Split:

- At a Multiline Terminal, press **Speaker** key.
- **OR** -
At a Single Line Terminal, lift the handset.
- Dial the Call Forwarding Service Code.
- Dial **1** (Set).
- Dial **1** (Internal) or **0** (External).
- Dial Trunk Access Code (default: **0**) + number (**0** + 2142622000).

 Trunk access codes are **0** (ARS/Trunk Group Routing), 704 + Line Group (1 ~ 9, 01 ~ 50) or #0 + Line number (e.g., 05 or 005 for line 5).

 Your DND or Call Forwarding (Device) Programmable Function key flashes.

To cancel Call Forwarding Off-Premise Split:

1. At the Multiline Terminal, press **Speaker** key.
- OR -
At a Single Line Terminal, lift the handset.
2. Dial the Call Forward Access Code (default not assigned).
3. Dial **0** (Cancel).

 *If Internal and External are set both are canceled.*

 *Your DND or Call Forwarding (Device) Programmable Function key flashes.*

Off-Premise Call Forwarding for Door Boxes

 *These operations are performed at the Door Box Ringing Extension only.*

To activate Call Forwarding for a Door Box:

 *This option only works for ISDN PRI or BRI Trunks.*

1. At the Multiline Terminal, press **Speaker** key + dial SC **722**.
- OR -
At the Multiline Terminal only, press the **Call Forward (Device)** key (PRG 15-07-01 or SC **751**, code 54).
- OR -
At the Single Line Terminal, lift the handset + dial **722**.
2. Dial the Door Box number (**1 ~ 6**).
3. Dial the Speed Dialing number where the calls should be forwarded.
4. Press **Speaker** key (or hang up at the Single Line Terminal) to hang up.

To cancel Call Forwarding Off-Premise for a Door Box:

1. At the Multiline Terminal, press **Speaker** key + dial SC **722**.
- OR -
At the Multiline Terminal only, press the **Call Forward (Device)** key (PRG 15-07-01 or SC **751**, code 54).
- OR -
At the Single Line Terminal, lift the handset + dial **722**.
2. Dial **0** (Cancel).

Trunk-to-Trunk Forwarding

Set the Destination and Forward the Line:

1. Lift the handset.
2. Dial **735**.
3. Dial trunk port number (**001 ~ 128**) to be defined.
4. Select the mode (**1 ~ 8**) to be defined.
5. Enter the telephone number, which is the destination of the forwarded trunk.

 *The number is stored in the Speed Dial bin number assigned in PRG 24-04-01. This entry overwrites any existing number defined in the bin.*

6. Press **Hold** key to accept the entry.

7. Repeat from step 3 to define another mode entry or press **Speaker** key to hang up.

Cancel the Line Forwarding:

1. Lift the handset.
2. Dial **735**.
3. Dial trunk port number (**001 ~ 128**) to be defined.
4. Select the mode (**1 ~ 8**) to be defined.
5. Press **Exit** key.
6. Press **Speaker** key to hang up.

Automatic Trunk-to-Trunk Transfer (Step Transfer)

(follows the predefined destination in PRG 24-04-01) Set Automatic Trunk Forwarding:



The Speed Dial bin must be defined in PRG 13-04-01 for the line to forward.

1. Lift the handset.
2. Dial **733**.
3. Dial trunk port number to be used (**001 ~ 128**).
4. Press **Speaker** key to hang up.

Cancel Automatic Trunk Forwarding:

1. Lift the handset.
2. Dial **734**.
3. Dial trunk port number to be used (**001 ~ 128**).
4. Press **Speaker** key to hang up.

Department Group Line Forwarding

Method 1

Set the Destination and Forward the Line:

1. Lift the handset.
2. Dial **604**.
3. Dial the Department Group number (**01 ~ 50**) to be defined.
4. Select the time mode (**1 ~ 8**) to be defined.
5. Enter the telephone number, which is the destination of the forwarded trunk.
 *The number is stored in the Speed Dial bin number assigned in PRG 24-04-01. This entry overwrites any existing number defined in the bin.*
6. Press **Hold** key to accept the entry.
7. Repeat from step 3 to define another time mode entry or press **Speaker** key to hang up.

Cancel the Line Forwarding:

1. Lift the handset.
2. Dial **604**.
3. Dial the Department Group number (**01 ~ 50**) to be defined.

4. Select the time mode (**1 ~ 8**) to be defined.
5. Press **Exit** key.
6. Press **Speaker** key to hang up.

Method 2 (follows the pre-defined destination in PRG 24-05-01)

Set Automatic Trunk Forwarding:



The Speed Dial bin must be defined in PRG 13-04-01 for the line to forward.

1. Lift the handset.
2. Dial **602**.
3. Dial the Department Group number (**01 ~ 50**) to be defined.
4. Press **Speaker** key to hang up.

Cancel Automatic Trunk Forwarding:

1. Lift the handset.
2. Dial **603**.
3. Dial the Department Group number (**01 ~ 50**) to be defined.
4. Press **Speaker** key to hang up.

Call Forwarding/Do Not Disturb Override

Description

An extension user can override Call Forwarding or Do Not Disturb at another extension. This is helpful, for example, to dispatchers and office managers that always need to get through.

Conditions

The Do Not Disturb Override will only work if the phone has no forwarding on it.

Default Settings

Disabled

System Availability

Terminals

Any Station

Required Component(s)

None

Related Features

Programmable Function Keys

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-12-01	Service Code Setup (for Service Access) - Call Forward/Do Not Disturb Override	0~9, *, # Maximum of 8 digit	707
11-16-06	Single Digit Service Code Setup - Do Not Disturb/Call Forward override	0~9, *, # Maximum of 1 digit	No Setting
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-13-04	Class of Service Options (Supplementary Service) - Call Forward/DND Override (Bypass Call)	0 = Off 1 = On	COS 01 ~ 15 = 1

Operation

To override an extension Call Forwarding or Do Not Disturb:

1. Call the forwarded or DND extension.
2. Press the **Override** key (PRG 15-07 or SC **751**: 37) or dial **707**.

Call Monitoring

Description

Call Monitoring allows selected Multiline Terminal Users to monitor another user's conversation without the ability to participate. A programmable audible alert tone can be sent to that station user. Without the audible alert (silent monitor), no indication is provided to either the monitored station or the outside party.



The use of monitoring, recording, or listening devices to eavesdrop, monitor, retrieve, or record telephone conversation or other sound activities, whether or not contemporaneous with transmission, may be illegal in certain circumstances under each country law. Legal advice should be sought prior to implementing any practice that monitors or records any telephone conversation. Some countries may require some form of notification to all parties to a telephone conversation, such as using a beep tone or other notification methods or requiring the consent of all parties to the telephone conversation, prior to monitoring or recording the telephone conversation. Some of these laws incorporate strict penalties.

Call Monitoring with Coaching Ability

Call Monitoring with Coaching Ability allows for the transmit path to be opened to only the monitored station, to provide the Coaching ability for the person that is performing the Call Monitoring. Pressing **Mute** key toggles the Coaching ability on and off.

Conditions

- An extension set as an operator in Program 20-17-01 cannot be monitored using the ACD Call Monitor (*15 Feature key).
- While using the ACD Call Monitor (*15 Feature key), if the monitored extension places the call on hold or transfers the call monitoring is stopped.
- The ACD Call Monitoring (*15 Feature key) is supported on trunk calls and is not supported on internal calls.
- If an extensions class of service has Program 20-13-06 or Program 20-09-07 enabled, the ACD Call Monitoring (*15 Feature key) does not work.
- No alert tone is provided to callers when using the ACD Call Monitor (*15 Feature key) feature.
- Speech path is not supported for the ACD Call Monitor (*15 Feature key) feature even when Program 20-13-10 is enabled.
- A maximum of 32 extensions can be monitored using the ACD Call Monitor (*15 Feature Key) feature.
- Call Monitoring is allowed for internal calls.
- An extension user cannot Monitor an Intercom call if one of the Intercom callers is using Hands-free Answerback. Both Intercom parties must lift the handset or press **Speaker** key.
- An extension user cannot monitor a conference, however an extension programmed for Call Monitor can barge in to a conference.
- With PRG 20-13-10 set to 0, a call, which has been barged into, can be placed on hold by the originator of the outside call. Both the outside caller and the extension, which is monitoring the call, are placed on hold.
- The handset and microphone are muted during Call Monitoring.
- Live Record does not work for Call Monitor calls.

- While being monitored, an extension cannot receive Voice Over.
- When a monitored extension places a call on hold, Call Monitor is automatically finished.
- With PRG 20-13-10 set to 1, a call which is being Monitored can be placed on park by the originator of the outside call, but only the outside caller is placed in park. The extension which is monitoring the call is dropped.
- When PRG 20-13-10 is set to 0 (OFF), coaching is not permitted. When PRG 20-13-10 is set to 1 (ON), PRG 20-13-45 takes effect.
- When Silent Monitor Mode is used, Mute can be used to activate speech path to the internal and external parties.

Default Settings

Disabled

System Availability

Terminals

All Terminals

Required Component(s)

None

Related Features

Barge-In

Conference

Hold

Intercom

Park

Programmable Function Keys

InMail

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-12-08	Service Code Setup (for Service Access) - Barge-In	0~9, *, # Maximum of 8 digit	710
11-16-02	Single Digit Service Code Setup - Barge-In	0~9, *, # Maximum of 1 digit	No Setting
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.

Program No.	Program Name	Input Data	Default
20-02-27	System Options for Multiline Telephones – ACD Monitor for Business Mode	0 = Off (ACD Mode) 1 = On (Business Mode)	0
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-09-07	Class of Service Options (Incoming Call Service) – Call Queuing	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-10	Class of Service Options (Supplementary Service) - Barge-In Monitor	0 = Speech 1 = Monitor	COS 01 ~ 15 = 0
20-13-15	Class of Service Options (Supplementary Service) - Barge-In, Initiate	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-16	Class of Service Options (Supplementary Service) - Barge-In, Receive	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-17	Class of Service Options (Supplementary Service) - Barge-in Tone/Display (Intrusion Tone)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-32	Class of Service Options (Supplementary Service) - Deny Multiple Barge-Ins	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-45	Class of Service Options (Supplementary Service) - Mute Key Mode while Call Monitoring	0 = Off 1 = On	COS 01 ~ 15 = 1
20-14-11	Class of Service Options for DISA/E&M - DISA/Tie Trunk Barge-In	0 = Off 1 = On	COS 01 ~ 15 = 0
20-18-07	Service Tone Timers - Intrusion Tone Repeat Time	0 ~ 64800 seconds	0
21-01-03	System Options for Outgoing Calls - Trunk Inter-digit Time (External)	0 ~ 64800 seconds	10

Operation

The call must be set up for about 10 seconds before it can be Monitored. Listen for busy/ring or busy tone.

To Call Monitor after calling a busy extension:

1. Call a busy extension.
2. Press the **Barge-In** key (PRG 15-07 or SC **751**: 34).
- **OR** -
The following steps are not available for DISA.
 1. Dial the extension number of the busy internal party.
 2. Dial the single digit service code or the service code **710**.

To Call Monitor without first calling the busy extension:

1. Press **Speaker** key or lift handset.
2. Dial **710** or press the **Barge-In** key (PRG 15-07 or SC **751**: 34).
3. Dial a busy extension.



If Monitoring is not possible:

- the extension user hears a warning tone.
- the DISA user is rerouted to the defined ring group.

To Call Monitor using Coaching Ability:

1. Call a busy extension.
2. Press the **Barge-In** key (Program 15-07 or SC 751 :34).
3. Press **MIC** or **Feature + 1** to toggle Coaching Ability on and off to the monitored station.

- OR -

1. Dial the extension number of the busy party.
2. Dial the single digit service code or the service code **710**.
3. Press **MIC** or **Feature + 1** to toggle Coaching Ability on and off.

To Call Monitor using Coaching Ability without first calling the busy extension:

1. Press **Speaker** or lift the handset.
2. Dial **710** or press the **Barge-In** key (Program 15-07 or SC 751 :34).
3. Dial a busy extension.
4. Press **MIC** or **Feature + 1** to toggle Coaching Ability on and off to the monitored station.

To Call Monitor after calling a busy extension using ACD Call Monitor:

1. Call a busy extension.
2. Press the ACD Terminal Speech Monitor key (Program 15-07 or SC 752 : *15).

Call Redirect

Description

Call Redirect allows a Multiline Terminal user to transfer a call to a pre-defined destination (such as an operator, voice mail, or another extension) without answering the call. This can be useful if you are on a call and another rings in to your extension. By pressing the Call Redirect key, the call is transferred, allowing you to continue with your current call.

This feature works with the following calls:

- Normal trunk call
- DID
- DISA
- DIL
- ICM

The following calls cannot be redirected with the feature:

- ACD
- Transferred
- Department Group (all ring mode)
- Door Box
- Virtual Extension

Conditions

- After pressing the Call Redirect key, the call does not recall to the extension.
- The predefined destination must be an extension number or voice mail pilot number.
- When a call is Redirected to another phone it does not follow the forwarding on that phone.
- If the call redirect is set to go to an extension that has power cut from Ecology mode the call redirect key will not operate when pressed.
- Call Redirect is not supported for calls across AspireNet.

Default Settings

Enabled

System Availability

Terminals

All Multiline Terminals

Required Component(s)

None

Related Features

None

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-11-16	Class of Service Options (Hold/Transfer Service) - Call Redirect	0 = Off 1 = On	COS 01 ~ 15 = 1

Operation

To redirect a ringing call:

With an incoming call ringing your extension, press the **Call Redirect** key (PRG 15-07 or SC **751**: 49 + Destination Extension Number) without lifting the handset.

Call Waiting/Camp-On

Description

With Call Waiting, an extension user may call a busy extension and wait in line (Camp-On) without hanging up. When the user Camps-On, the system signals the busy extension with two beeps indicating the waiting call. The call goes through when the busy extension becomes free. Call Waiting helps busy extension users know when they have additional waiting calls. It also lets callers wait in queue for a busy extension without being forgotten.

Conditions

- Call Arrival (CAR) Key (virtual extension) keys do not support Call Waiting/Camp-On Programmable Function keys (code 35).
- If an extension user Camps-On and then hangs up, the system converts the Camp-On to a callback.
- Off-Hook Signaling gives an extension the ability to block a caller from dialing **750** to Camp-On and/or DID callers from automatically camping on.
- Function keys simplify Call Waiting/Camp-On operation.
- An extension user may be able to Transfer a call to a busy extension.
- Trunk Queuing lets an extension user camp-on to a trunk.
- Call Queuing must also be disabled to disable Call Waiting.

Default Settings

Enabled

System Availability

Terminals

Multiline Terminals and Single Line Terminals

Required Component(s)

None

Related Features

Callback

Off-Hook Signaling

Programmable Function

Keys Transfer

Trunk Queuing/Camp On

Guide to Feature Programming

The programs listed below indicate the most commonly used programs required for this feature. The programs are listed in the order that the installer should follow. Refer to the PCPro wizards for further detailed programming.

- When a * is listed next to the Program Number it indicates a program that **MUST** be set (from a default state) for this feature to be enabled.

Call Waiting

Program No.	Program Name	Input Data	Default
15-02-12	Multiline Telephone Basic Data Setup - Off-Hook Signaling	0 = Muted Off-Hook Ringing 1 = No Off-Hook Ringing 3 = Beep in Speaker (SP) 4 = Beep in Handset (HS) 5 = Speaker and Handset Beep	5
20-09-01	Class of Service Options (Incoming Call Service) - Second Call for DID/DISA/DIL/E&M Override	0 = Off (2nd call will not be allowed.) 1 = On (2nd call is allowed.)	COS 01 ~ 15 = 1
20-09-07	Class of Service Options (Incoming Call Service) - Call Queuing	0 = Off (Calls are not queued.) 1 = On (Calls are queued.)	COS 01 ~ 15 = 0
20-13-05	Class of Service Options (Supplementary Service) - Intercom Off-Hook Signaling	0 = Off (ICM off hook signaling disabled.) 1 = On (ICM off hook signaling enabled.)	COS 01 ~ 15 = 1
20-13-06	Class of Service Options (Supplementary Service) - Automatic Off-Hook Signaling (Automatic Override)	0 = Off (manually) 1 = On (automatically)	COS 01 ~ 15 = 1
20-18-06	Service Tone Timers - Interval of Call Waiting Tone	1 ~ 64800 seconds	10

Below is a chart that shows setting data for certain call waiting scenarios.

		Busy Signal: No call forwarding	Ring Back Signal: Caller queues at called Station	Busy forwarding immediately upon Busy
Internal Call to	Station on Internal Call	20-09-07 = Off 20-13-06 = Off 24-09-05 = Off	20-13-06 = On ^{*1}	20-09-07 = Off 20-13-06 = Off 24-09-05 = On
	Station on Trunk call	20-09-07 = Off 20-13-06 = Off 24-09-05 = Of	20-13-06 = On ^{*1}	20-09-07 = Off 20-13-06 = Off 24-09-05 = On
DID Call to	Station on Internal Call	20-09-01 = Off 20-09-07 = Off 24-09-04 = Off	20-09-01 = On 20-09-07 = On	20-09-01 = Off 20-09-07 = Off 24-09-04 = On
	Station on Trunk Call	20-09-01 = Off 20-09-07 = Off 24-09-04 = Off	20-09-01 = On 20-09-07 = On	20-09-01 = Off 20-09-07 = Off 24-09-04 = On

Analog Trunk Call to	Station on Inter- nal Call	N/A	20-09-01 = On 24-09-04 = Off	20-09-01 = Off 20-09-07 = Off 24-09-04 = On
	Station on Trunk Call	N/A	20-09-01 = On 24-09-04 = Off	20-09-01 = Off 20-09-07 = Off 24-09-04 = On

*1. If the internal caller wants to hear Ringing signal rather than the Ring Busy Signal go to PRG 80-01-02 with PCPro or Web Pro. Using the copy feature copy all the attributes of Service Tone **14 (ICM Ringback)** to service tone **39 (Ring Busy)**. If the caller wants to hear regular Busy signal, copy all of the attributes of Service Tone **6 (Busy)** to Service Tone **39 (Ring Busy)**.

Camp On

Program No.	Program Name	Input Data	Default
11-12-04	Service Code Setup (for Service Access) - Set Camp-On	0~9, *, # Maximum of 8 digit	750
11-12-05	Service Code Setup (for Service Access) - Cancel Camp-On	0~9, *, # Maximum of 8 digit	770
11-16-05	Single Digit Service Code Setup - Camp-On	0~9, *, # Maximum of 1 digit	#
15-07-01	Programmable Function Keys	09 = Night Mode Service key	Refer to the programming manual for the default values and for all other available options in this command.
20-13-35	Class of Service Options (Supplementary Service) - Block Camp On	0 = Off (Camp On blocked.) 1 = On (Camp On allowed.)	COS 01 ~ 15 = 0
11-11-23	Service Code Setup (for Setup/Entry Operation) - Second Call for DID/DISA/DIL	0~9, *, # Maximum of 8 digit	679
11-12-47	Service Code Setup (for Service Access) - Call Waiting Answer/Split Answer	0~9, *, # Maximum of 8 digit	794
15-02-06	Multiline Telephone Basic Data Setup - Hold Key Operating Mode	0 = Normal (Common) 1 = Exclusive Hold 2 = Park Hold	0
20-01-08	System Options - Trunk Queuing Callback Time	0 ~ 64800 seconds	15
20-01-09	System Options - Callback/Trunk Queuing Cancel Time	0 ~ 64800 seconds	64800
20-03-01	System Options for Single Line Telephones - SLT Call Waiting Answer Mode	0 = Hook Flash (Hooking) 1 = Hook Flash + Service Code 794	0
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1

Operation

To Camp-On a busy extension:

1. Call the busy extension.
2. Dial **750** or press the **Camp-On** key (PRG 15-07 or SC **751**: 35).
3. Do not hang up.



To camp-on to a trunk, refer to [Trunk Queuing/Camp-On](#).

To cancel a Camp-On request:

1. Hang up.
2. At a Multiline Terminal, press **Speaker** key and dial **770**.
- OR -
At a Multiline Terminal, press the **Camp-On** key (PRG 15-07 or SC **751**: 35).
- OR -
At the Single Line Terminal, lift the handset and dial **770**.

To Split (answer a waiting call) at a Single Line Terminal:

Listen for Call Waiting tones.

1. Hookflash and dial **794** to repeatedly split between the two calls.



The operation depends on the setting in PRG 20-03-01.



This operation is valid only before the caller performs the camp-on operation (refer To Camp-on a busy extension - step 2).

Callback

Description

When an extension user calls a co-worker that does not answer or is busy, they can leave a Callback request for a return call. The user does not have to repeatedly call the unanswered extension back, hoping to find it idle.

The system processes Callback requests as follows:

1. Caller at extension A leaves a Callback at extension B.



Caller can place or answer additional calls in the meantime.

2. When extension B becomes idle, the system rings extension A. This is the Callback ring.
3. Once caller A answers the Callback ring, the system rings (formerly busy or unanswered) extension B.



If caller A does not answer the Callback ring, the system cancels the Callback.

4. As soon as caller B answers, the system sets up an Intercom call between A and B.

Callback Automatic Answer determines how an extension user answers the Callback ring. When Callback Automatic Answer is enabled, a user answers the Callback ring when they lift the handset. When Callback Automatic Answer is disabled, the user must press the ringing line appearance to answer the Callback ring.

Conditions

- An extension can leave only one Callback request at a time.
- Call Arrival(CAR) Key (virtual extension) keys do not support Call Waiting/Camp-On Programmable Function keys (code 35).
- If an extension user initiates a Callback but does not hang up, their extension Camps-On to the busy extension.
- Function Keys simplify Callback operation.
- The Callback feature is not available when calling a busy station from a Wireless DECT (SIP) handset.

Default Settings

Enabled

System Availability

Terminals

All Stations

Required Component(s)

None

Related Features

Call Waiting/Camp-On

Programmable Function Keys

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-12-05	Service Code Setup (for Service Access) - Cancel Camp-On	0~9, *, # Maximum of 8 digit	770
11-12-44	Service Code Setup (for Service Access) - Callback Test for SLT	0~9, *, # Maximum of 8 digit	799
11-16-05	Single Digit Service Code Setup - Camp-On	0~9, *, # Maximum of 1 digit	#
15-02-11	Multiline Telephone Basic Data Setup - Callback Automatic Answer	0 = Off 1 = On	1
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-01-07	System Options - Callback Ring Duration Time	0 ~ 64800 seconds	15
20-01-09	System Options - Callback/Trunk Queuing Cancel Time	0 ~ 64800 seconds	64800

Operation

To place a Callback:

1. Call unavailable (busy or unanswered) extension.
2. Dial **750** or press the **Callback** key (PRG 15-07 or SC **751**: 35).
3. Hang up.
4. Lift the handset when busy extension calls you back.



If the unavailable extension was unanswered (not busy), the Callback goes through after your co-worker uses their telephone for the first time.



If you have Callback Automatic Answer, you automatically place a call to the formerly busy extension when you lift the handset. If you do not have Callback Automatic Answer, you must press the ringing line appearance to place the call.

To cancel a Callback:

1. At the Multiline Terminal, press **Speaker** key and dial **770**.
- OR -
At the Multiline Terminal, press the **Camp-On** key (PRG 15-07 or SC **751**: 35).
- OR -
At the Single Line Terminal, lift the handset and dial **770**.

To test Callback at a Single Line Terminal:

1. Lift the handset.
2. Dial **799**.
3. Hang up.
4. When the telephone rings, lift the handset.



You hear the Hold tone.

5. Hang up.

Caller ID Call Return

Description

The Caller ID Call Return feature allows the voice mail system to use Caller ID information captured with the message to call and connect the person that left the message with the voice mail user that is checking messages.

Conditions

- A caller using a telephone without Softkeys, calling from outside the system, or from a remote system is prompted to hear Caller ID information and return a call.
- Return Call is available for subscriber messages and public messages.
- Return Call is accessible to a subscriber during and after message playback.
- Return Call is available for new and old messages.
- Return Call is accessible to a subscriber using Softkeys in Softkey mode or using DTMF in voice conversation Mode.
- When a subscriber listens to a message from a Softkey equipped telephone, and Caller ID information is unavailable, the voice mail system leaves the second line of the LCD blank. When Caller ID is disabled on the system, voice mail displays the message count.
- Voice mail continues to display Caller ID on the LCD while the post-message playback menu is still displayed on a telephone equipped with Softkeys.
- Live Record is not available when using Return Call.
- To use this feature for long distance calls, ARS must be programmed for the voice mail ports set to dial out. Refer to the SL2100 Programming Manual for detailed programming instructions.
- Use PRG 14-01-22 Caller ID to Voice Mail to enable or disable on a per trunk basis the ability to send the Caller ID digits to voice mail.
- After the call is ended by either party, the voice mail user is disconnected.

Default Settings

None

System Availability

Terminals

All Multiline Terminals

Required Component(s)

InMail

Related Features

InMail

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
14-01-22	Basic Trunk Data Setup - Caller ID to Voice Mail	0 = Disable (Caller ID not sent to VM.) 1 = Enable (Caller ID is sent to VM.)	1
14-02-10	Analog Trunk Data Setup - Caller ID	0 = Off (Caller ID not displayed.) 1 = On (Caller ID is displayed.)	1
15-02-04	Multiline Telephone Basic Data Setup - Redial (Speed Dial) Control	0 = Common and Individual Speed Dialing 1 = Group Speed Dialing	0

Operation

None

Caller ID

Description

Caller ID allows a display terminal to show an incoming caller's telephone number (called the Directory Number or DN) and optional name. The Caller ID information is available as pre-answer display. With the pre-answer display, the user previews the caller's number before picking up the ringing line.



On the CPU for Caller ID (also used for DTMF receivers and Call Progress Tone Detection) 24 (2W Digital Multiline Terminal Configuration) resources are available. The EXIFB provides an additional 48 resources.

Second Call Display

While busy on a call, the telephone display can show the identity of an incoming trunk or Intercom call. For incoming trunk calls, the display shows the Caller ID or the trunk name if Caller ID is not installed. For incoming Intercom calls, the display shows the calling extension name.

Caller ID supports the Telco Called Number Identification (CNI) and Called Number Delivery (CND) service, when available.

The telephone display can show up to 12 Caller ID digits (for non-ACD calls).

Once installed and programmed, Caller ID is enabled for all trunk calls, including:

- Ring Group calls
- Calls transferred from another extension
- Calls transferred from the VRS
- Calls transferred from Voice Mail (unscreened)
- Direct Inward Lines (DILs)

Caller ID temporarily stores 50 calls (total of abandoned and answered/unanswered). New calls replace old calls when the buffer fills.

Temporary Memory

An unanswered call causes the Call History key (PRG 15-07 or SC **751**: 08) to flash, indicating a new call was placed in the temporary memory. If enabled in programming, the telephone display shows CHECK LIST.

This Caller ID data from the temporary memory can be saved in either Speed Dial bins or in One-Touch keys making them available for placing future calls.

Cursor Key Operation (When set PRG 15-02-60: 0)

Pressing the **Left Cursor Key** twice (on equipped terminals) displays the Incoming Call History.

By pressing the Left Cursor Key the user can access the Redial and Incoming Call History menus. The flow chart below shows the menu access sequence. If the terminal is not allowed to have the Dial Preview feature, these menus cannot be accessed.

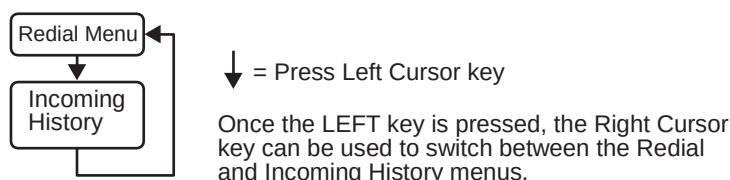


Figure 1-2 Left Cursor Key Operation Flow Chart

Cursor Key Operation (When set PRG 15-02-60: 1 or 2)

Pressing the **Left Cursor** key displays the Received Call History.

Caller ID Digits to Voice Mail

A Caller ID trunk can send Remote Log-On Protocol with Caller ID digits to the voice mail. When a trunk 001 receives the Caller ID as 12345, the protocol becomes ***60001*12345*.

Outputting Caller ID Data

The system includes the Caller ID data on the SMDR report. The report provides the incoming call DN in the DIALED NUMBER field. The CLASS field shows PIN (just like all other incoming calls).

Caller ID data can also output to a PC or other type of computer through the 1st Party TAPI driver. This allows for off-line database lookups. In a customer service department, for example, the computer could search for a caller's records and display their account status even before a customer service representative picked up the telephone.

Display Reason for No Caller ID Information

With Caller ID enabled, the system provides information for analog calls that do not detect the Caller ID information. If the Caller ID information is restricted, the telephone display shows PRIVATE. If the system cannot provide Caller ID information because Telco information is not detected, the display shows NO CALLER INFO.

Option to Enable Caller ID Name for SLT

System programming provides an option for Single Line Terminals to display Caller ID.

Caller ID Sender Queuing Added

The SL2100 system can provide Caller ID (calling party number) to a Single Line Terminal with a display.

The system can queue incoming calls to the Single Line Terminal if the system Caller ID sender resources are busy. Refer to PRG 20-19-05 in the *SL2100 Programming Manual*.

If the Single Line Terminal user lifts their handset while an incoming call is waiting in queue, they hear silence (no dial tone) and cannot dial out. When the Single Line Terminal user goes back on-hook, the system immediately sends the queued call to the Single Line Terminal without Caller ID.

Option Available for FSK or DTMF Type for Single Line Terminal

An option (PRG 15-03-11) is available for the Caller ID which allows you to select either FSK or DTMF as the Caller ID type to be received by a Single Line Terminal.

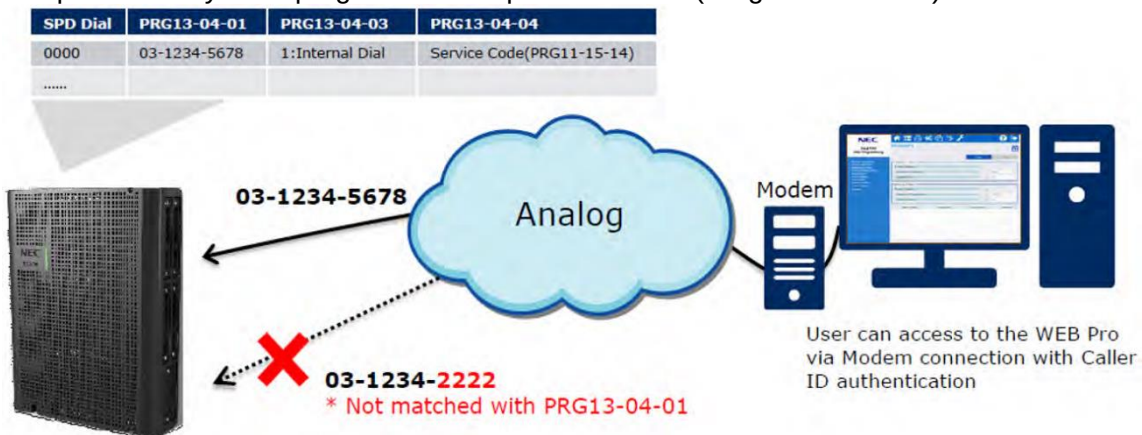
Option Available for FSK or DTMF Type from Analog Trunk

An option (PRG 14-02-16) is available for the Caller ID which allows you to select the type of Caller ID signal from an analog trunk - FSK or DTMF.

Caller ID Authentication for Modem Access

Service

- SL2100 provides Caller ID Authentication for Modem Access.
If there is an incoming call from an outside line on the modem extension, modem access will be possible only if the programmed telephone number (Program 13-04-01) and Caller ID match.



How to authenticate via Modem Access

- Set Caller ID information in Program 13-04-01.
- Set Program 13-04-03 Transfer Mode to 1: Internal Dial.
- Set Program 13-04-04 Destination Number to Modem Access Service Code (Program 11-15-14).
- Set Program 11-15-14 to desired Modem Access Service Code.

Conditions

- To activate this Caller ID authentication, Program 11-10-43 needs to be OFF.
- Program 90-54-01 should be set to 80.

Conditions

- To have pre-answer Caller ID from the voice mail, the call must be an unscreened transfer.
- Caller ID is provided by the CPU-C1. The EXIFB-C1, which plugs into the Chassis, can provide additional resources for Caller ID if needed.
- Caller ID Name can display up to 12 characters.
- Caller ID Number can display up to 11 numbers.
- A Caller ID Number with more than 12 digits follows PRG 20-19-01 (first 10 or the last 10 digits).
- Caller ID information can be stored in Speed Dialing or One-Touch bins.
- Caller ID can be displayed for incoming calls and transferred calls.
- ARS can block outgoing Caller ID information on a call-by-call basis. To do this, insert the Caller ID block code (e.g., .141) in the ARS Dial Treatments.
- Trunks with Privacy Release enabled display Caller ID until the call is answered. To view it after the call has been picked up, press the line key, which sets the call to private mode. To keep the call on Privacy Release, press **Help + Exit** keys.
- An extension user can display the Caller ID information for a call in Park if Automatic Handsfree in PRG 15-02-08 is set to 0 (Preselect).
- An extension user can display the Caller ID information for multiple incoming calls without answering the call by pressing the line key if Automatic Handsfree in PRG 15-02-08 is set to 0 (Pre-select).
- Caller ID information outputs on the SMDR report.
- The system can send Caller ID digits to the voice mail if allowed in PRG 14-01-22.
- When there are more than 20 characters set in PRG 20-20 : Message Setup for Non-Caller ID Data, either the first or last character is missing (based on the entry in PRG 20-19-01).
- If PRG 20-09-06: Class of Service Options (Incoming Call Service): Incoming Time Display is set to

1 (On), the first line displays the time and date.

- PRG 15-07-01 button (63) when enabled, removes the CPN from the setup message when making an outbound ISDN call, this is a toggle enable/disable button and can be used on a Call-by-Call basis. PRG 14-01-20, PRG 14-01-21 and PRG 20-08-15 are used for analog trunks only and can only be set on a per trunk/Class of Service basis.
- SLT cannot block an incoming call based on the incoming Caller ID information on a station-by-station basis.
- The CPU has 24 (2W Digital Multiline Terminal Configuration) resources for DTMF receiving and Dial Tone detection. When an EXIFB is installed on the CPU there are additional 48 resources available for Controlling chassis.
- When PRG 10-09-01 is set to 0 (Common) and PRG 14-02-10 (Caller ID) is set to 1 (Yes), all DTMF/Dial Tone Detection resources are always allocated to analog trunks, not analog extensions. However, if PRG 14-02-10 (Caller ID) is set to 0 (No), all DTMF/Dial Tone Detection resources can be used for both analog trunks and analog extensions.
- For the Caller ID List to show calls to a station that received a busy tone, PRG 15-02-57 must be set 1 (On).
- When PRG 15-02-57 is set to 1 (On) and PRG 15-02-34 is set to 0 (Trunk), only outside calls are shown in the Caller ID List.
- Caller ID history is not updated for a phone which is in power cutting mode from the ecology feature. Once power is restored to the phone the caller ID history will start functioning again.

Default Settings

Disabled

System Availability

Terminals

All Multiline Terminals with a display and Single Line Terminals equipped to receive Caller ID

Required Component(s)

3COIDB-C1

2BRIDB-C1

1PRIDB-C1

Related Features

Abbreviated Dialing/Speed Dial

Automatic Route Selection (ARS/F-Route)

Call Arrival (CAR) Keys

Caller ID Call Return

Conference, Voice Call/Privacy Release

Park

Station Message Detail Recording

InMail

System Caller Log

Guide to Feature Programming

The programs listed below indicate the most commonly used programs required for this feature. The programs are listed in the order that the installer should follow. Refer to the PCPro wizards for further detailed programming.

- When a * is listed next to the Program Number it indicates a program that **MUST** be set (from a default state) for this feature to be enabled.

Program No.	Program Name	Input Data	Default
20-09-02 *	Class of Service Options (Incoming Call Service) - Caller ID Display	0 = Off (Caller ID not displayed.) 1 = On (Caller ID is displayed.)	COS 01 ~ 15 = 1
14-02-10 *	Analog Trunk Data Setup - Caller ID	0 = Off (Caller ID not displayed.) 1 = On (Caller ID is displayed.)	1
15-03-09	Single Line Telephone Basic Data Setup - Caller ID Function	0 = Disable (Caller ID not displayed.) 1 = Enable (Caller ID is displayed.)	1

Program No.	Program Name	Input Data	Default
14-01-22	Basic Trunk Data Setup - Caller ID to Voice Mail	0 = Disable (Caller ID not sent to VM.) 1 = Enable (Caller ID is sent to VM.)	1
14-01-24	Basic Trunk Data Setup - Trunk-to-Trunk Outgoing Caller ID through Mode	0 = Disable (Caller ID not forwarded out.) 1 = Enable (Caller ID is forwarded out.)	0
20-02-08	System Options for Multiline Telephones - LCD Display Holding Time	0 ~ 64800 seconds	5
10-02-04	Location Setup - Area Code	Dial (up to six digits) : 0 ~ 9, *, #	No Setting
10-02-05	Location Setup - Trunk Access Code	Dial (up to eight digits) : 0 ~ 9, *, #	No Setting
10-09-01	DTMF, Dial Tone Detection Setup - DTMF, Dial Tone Detection	0 = Common use for both analog extensions and trunks 1 = Use for analog extensions (DTMF Receivers) 2 = Use for analog trunks (DTMF receivers/Dial tone detection/Caller ID detection)	Resource 01 ~ 140 = 0
14-01-20	Basic Trunk Data Setup - Block Outgoing Caller ID	0 = Prevent (No) 1 = Allow (Yes)	0
14-01-21	Basic Trunk Data Setup - Caller ID Block Code	Dial (up to eight digits)	1831
15-02-08	Multiline Telephone Basic Data Setup - Automatic Handsfree	0 = Preselect 1 = One-Touch (Automatic Handsfree)	1
15-02-40	Multiline Telephone Basic Data Setup - Additional Dial for Caller ID Call Return	Up to four digits (0, 1 ~ 9, #, *)	No Setting
15-02-57	Multiline Telephone Basic Data Setup - Caller Log on busy	0 = Off 1 = On	0
15-03-10	Single Line Telephone Basic Data Setup - Caller Name	0 = Disable 1 = Enable	1
15-03-11	Single Line Telephone Basic Data Setup - Caller ID Type	0 = FSK 1 = DTMF	0
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-08-15	Class of Service Options (Outgoing Call Service) - Block Outgoing Caller ID	0 = Off 1 = On	COS 01 ~ 15 = 0
20-09-04	Class of Service Options (Incoming Call Service) - Notification for Incoming Call List Existence	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-06	Class of Service Options (Supplementary Service) - Automatic Off-Hook Signaling (Automatic Override)	0 = Off (manually) 1 = On (automatically)	COS 01 ~ 15 = 1
20-19-01	System Options for Caller ID - Caller ID Displaying Format	0 = First 10 digits (Upper) 1 = Last 10 digits (Lower)	0
20-19-05	System Options for Caller ID - Caller ID Sender Queuing Time (Sender Wait)	0 ~ 64800 seconds	0
20-20-01	Message Setup for Non-Caller ID Data - Private Call	24 Alphanumeric Characters	PRIVATE
20-20-02	Message Setup for Non-Caller ID Data - Call from Out of Service Area	24 Alphanumeric Characters	OUT OF AREA
20-20-03	Message Setup for Non-Caller ID Data - Call Information with Error	24 Alphanumeric Characters	NO CALLER INFO

Program No.	Program Name	Input Data	Default
90-03-01	Save Data - Save Data	Dial 1 + press Hold (Press Hold only to cancel.)	-
90-04-01	Load Data - Load Data	Dial 1 + press Hold (Press Hold only to cancel.)	-
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.

Operation

Storing a Number (When set 15-02-60:0)

To store a Caller ID number in a Speed Dial bin:

(Following operation is available for 2W Digital Multiline Terminal/ IP Multiline Terminal Only.)

1. With a Multiline Terminal in an idle condition the display shows:

```

1-01 FRI 09:00AM
301 STA 301
LIST DIR ICM PROG

```

2. Press the **List** softkey.

- OR -

Press the **Left Cursor** key twice and skip step 3. The display shows:

```

LIST MENU
Redial CID

```

3. Press the **CID** softkey (Caller ID). The display shows:

```

##: xxxxxxxxxxxxxx
mm-dd hh:mm
↑ ↓ Store DEL

```

= List Number

xx = Caller ID number

mm-dd hh:mm = incoming date and time

↑ = Preview List

↓ = Next List

Store = Store in List

DEL = Delete from List

4. Press the **STORE** softkey. The display shows:

```
## :      xxxxxxxxxxxxxx
      mm-dd hh:mm
STA Abb
```

= List Number

xx = Caller ID number

mm-dd hh:mm = incoming date and time

STA = Store in Station Speed Dial bin.

ABB = Store in System Speed Dial bin.

5. Press the **STA** or **ABB** softkey. The display shows:

```
Store to ABB: COMMON
ENTER BIN
```

6. Dial the Speed Dial bin in which the number is to be stored. If you press **Hold** key, the next available Speed Dial bin will be used. The display shows:

```
ABB XXXX
xxxxxxxxxxxxxxxx
```



If all Speed Dial bins are used, the display shows "TABLE IS FULL".

7. Press **Hold** key. The display shows:

```
ABB XXXX
-
```

8. Enter the name to be associated with the stored number.

Table 1-5 Keys for Entering Names

Use this keypad digit . . .	When you want to. . .
1	Enter characters: 1 @ [¥] ^ _ ` { } → ← Á Â Ã Ä Å Æ Ç È É Ê Ë Ì Í Î Ï Ñ Ò Ó Ô Õ Ö × Ø Ù Ú Û Ü Ý Þ ß à á â ã
2	Enter characters: A-C, a-c, 2.
3	Enter characters: D-F, d-f, 3.
4	Enter characters: G-I, g-i, 4.
5	Enter characters: J-L, j-l, 5.
6	Enter characters: M-O, m-o, 6.
7	Enter characters: P-S, p-s, 7.
8	Enter characters: T-V, t-v, 8.
9	Enter characters: W-Z, w-z, 9.
0	Enter characters: 0 ! " # \$ % & ' () * + , - . / : ; < = > ? [\] ^ _ ` { } ~ ¡ ¢ £ ¤ ¥ ¦ § ¨ © ª « ¬ ® ¯ ° ± ² ³ ´ µ ¶ · ¸ ¹ º » ¼ ½ ¾
*	Enter characters: * + , - . / : ; < = > ? [\] ^ _ ` { } ~ ¡ ¢ £ ¤ ¥ ¦ § ¨ © ª « ¬ ® ¯ ° ± ² ³ ´ µ ¶ · ¸ ¹ º » ¼ ½ ¾
#	# = Accepts an entry (only required if two letters on the same key are needed - ex: TOM). Pressing # again = Space. (In system programming mode, use the right arrow Softkey instead to accept and/or add a space.)
Clear/Back or DND (2W Digital/IP Multiline Terminal)	Clear the character entry one character at a time.
Flash	Clear all the entries from the point of the flashing cursor and to the right.

9. Press **Hold** key. The display shows:

```
SET ABB
```

10. Press **Speaker** key.



The telephone returns to idle.

Storing a Number (When 15-02-60: 1 or 2)

To store a Caller ID number in a Common Speed Dial bin:

(Following operation is available for 2W Digital Multiline Terminal/ IP Multiline Terminal Only.)

1. With a Multiline Terminal in an idle condition the display shows:

```
1-17 TUE 10:52AM
Check List
Menu Dir VM:00 CL:xx
```

2. **CL** soft key. The display shows the Calling History:

```
Total:xx New:xx
Unans:xx Ans:xx
All Unan Del Exit
```

3. Press **All** Soft Key. The display shows first available caller number.

```
01: nnnnnnnn
Today 11:26
Call Store Del More
```

4. Press **Up/Down Cursor** Key to choose the number.

```
##: yyyyyyyy
Today 11:26
Call Store Del More
```

5. Press **Store** key to choose the number.

```
01: nnnnnnnn
Today 11:26
STA Abb
```

6. Press **Abb** key to select an Abbreviated dial to store the number.

```
01: nnnnnnnn
Today 11:26
ABB ABBg
```

7. Press **ABB** key to select Common Abbreviated dial to store the number.

```
Store to ABB:Common
Enter Bin
```

8. Dial the Speed dial bin in which the number is to be stored. If you press **Hold** key, the next available Speed Dial bin will be used. The display shows:

```

ABB  xxxx
                                nnnnnnnnn
  
```

9. Press **Hold** key. The display shows:

```

ABB  xxxx
                                -
  
```

10. Enter the name to be associated with the stored number.

```

ABB  xxxx
                                - z z z z z z z z
  
```

11. Press **Hold** key to set completed.

```

Set ABB
  
```

12. Press **Speaker** key to return to idle.

To store a Caller ID number in a One-Touch key:

(Following operation is available for 2W Digital Multiline Terminal/ IP Multiline Terminal Only.)

1. With a telephone in an idle condition the display shows:

```

          1-01 FRI 09:00AM
301          STA 301
LIST  DIR  ICM  PROG
  
```

2. Press the **List** softkey.

- OR -

Press the **Left Cursor** key twice and skip step 3. The display shows:

```

LIST MENU
Redial CID
  
```

3. Press the **CID** softkey (Caller ID). The display shows:

```

##:          xxxxxxxxxxxxxxxx
          mm-dd hh:mm
↑          ↓          Store DEL
  
```

= List Number

xx = Caller ID number

mm-dd hh:mm = incoming date and time

↑ = Preview List

↓ = Next List

Store = Store in List

DEL = Delete from List

4. Press the **STORE** softkey. The display shows:

```
## :      xxxxxxxxxxxxxx
      mm-dd hh:mm
STA Abb
```

= List Number

xx = Caller ID number

mm-dd hh:mm = incoming date and time

STA = Store in Station Speed Dial bin.

Abb = Store in System Speed Dial bin.

5. Press the **STA** softkey. The display shows:

```
Store to Personal ABB
ENTER BIN
```

6. Press the **One-Touch** key in which the number is to be stored or dial **1~9, 0**. If you press **Hold** key, the next available **One-Touch** key will be used. The display shows:

```
Store to Personal ABB
Insert      9? (Y:1, N:0)
```



If all One-Touch keys are used, the display shows "TABLE IS FULL".

7. Press **1** (Yes) to add 9 or 0 for Trunk Access Code. The display shows:
- OR -
 Press **0** (No) for not adding Trunk Access Code. The display shows:

```
SPD 01
      9XXXXXXXXXX
```

8. Press **Hold** key. The display shows:

```
SPD01
      -
```

9. Enter the name to be associated with the stored number. Refer to [Table 1-5 Keys for Entering Names](#).

10. Press **Hold** key. The display shows:

```
SPD Program
```

11. Press **Speaker** key.



The telephone returns to an idle condition.

Temporary Memory

An unanswered call causes the **Call History** key (PRG 15-07 or SC **751: 08**) to flash, indicating a new call was placed in the temporary memory. If enabled in programming, the telephone display shows CHECK LIST.

1. Press the **Call History** key (PRG 15-07 or SC **751: 08**) or press the **List** softkey and CID.

- OR -

Press the **Left Cursor** key twice.

 *The last addition to the list is displayed.*

2. Press the **ARROW DOWN** softkey to scroll through the list of numbers in memory.
3. Press the **DEL** softkey to delete the entry and scroll to the next entry.
4. The **Call History** key remains on as long as entries remain in memory.
5. To place a call back to a number in the temporary memory list, with the number to be dialed displayed, press a line or **Speaker** key. (Refer to [Table 1-5 Keys for Entering Names.](#))

 *The outgoing call is placed.*

To display Caller ID for a call in Park:

 *PRG 15-02-08 is set to 0 (preselect) for this feature.*

1. With PRG 15-02-08 set to 0 (preselect) and a call in park, press the **PARK** key. (PRG 15-07 or SC **752: *04**.
With PRG 15-02-08 set to **1** (One-Touch) and a call in park, press **Flash** key then the **PARK** key (PRG 15-07 or SC **752: *04**).

Checking your Answered/Unanswered Caller ID Calls

To review the last 50 outside calls your extension received:

1. At a display Multiline Terminal, press the **List** softkey.

- OR -

Press the **Left Cursor** key twice and skip step 2.

2. Press the **CID** key.

 *1st row of your display shows the Caller ID number. If the Caller ID includes a name, you can press **Help** key to view the number. The 2nd row shows the date and time of the call.*

 *Press the up and down softkeys to see the list of calls available in the buffer.*

3. If the Caller ID includes a name, you can press **Help** key to view the number of the caller.
4. To call the displayed number, press a **line** key.
- OR -
To erase the displayed number without returning the call, press the **DEL** softkey.
5. Press **Speaker** key to hang up.

Caller ID - Flexible Ringing

Description

The Caller ID - Flexible Ringing feature provides several different options for rerouting calls based on the Caller ID received.

Reject/Reroute “Private” Caller ID Calls

When an analog trunk call is received with “Private” Caller ID information, the SL2100 can reject the call by playing a VRS message or it can route the call to an alternative extension or incoming ring group programmed in PRG 22-18-01.

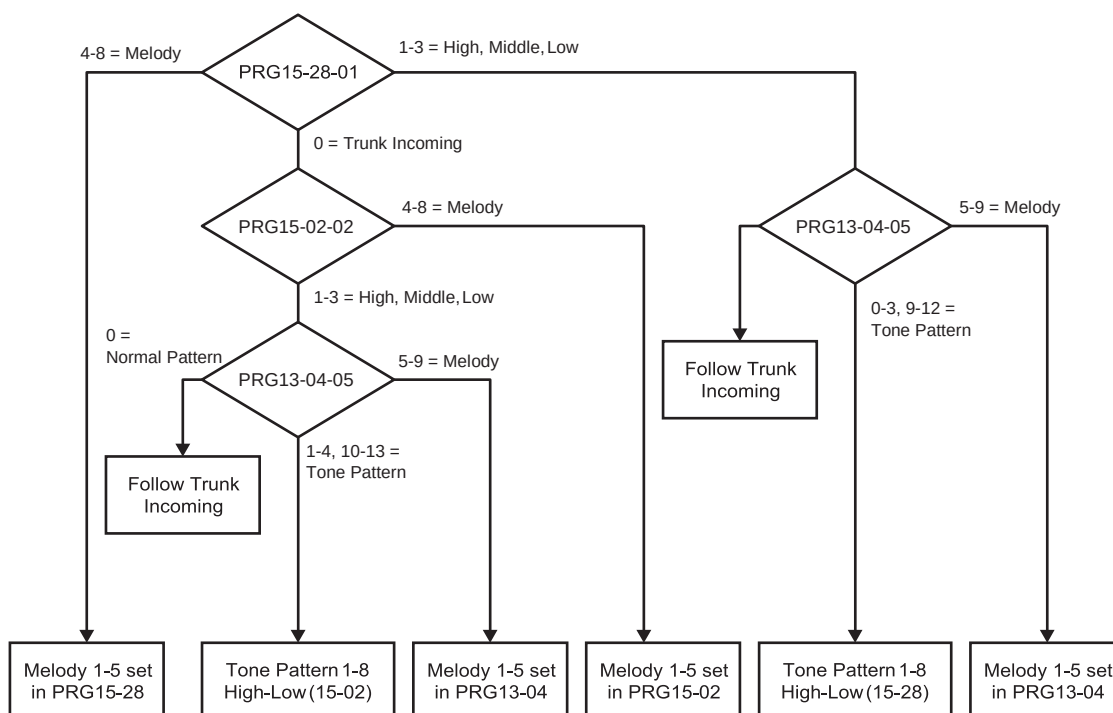
Reject/Reroute Based on Entry in SPD Table

When an analog, ISDN or IP trunk call is received with regular Caller ID information, the SL2100 can reject the call by playing a VRS message if the Caller ID number matches the Speed Dial group number programmed in PRG 22-16-01 and Speed Dial entry in PRG 13-02-01 and PRG 13-04-01. The analog, ISDN or IP trunk call can also be routed to an alternative extension or incoming ring group if the Caller ID number matches the common or group Speed Dial table (PRG 13-04).

This option can block calls on all trunks or it can be set on a per-trunk basis.

Programming Examples for Flexible Ringing by Caller ID:

Various ring tone patterns and melodies for incoming calls are available when using PRG13-04-05; Flexible Ringing by Caller ID or PRG22-18-03; Private Caller ID. For more detail about Flexible Ringing by Caller ID, refer below chart.



- To refuse the “Private” Caller ID incoming call:
 PRG 14-01-27: 1 (reject)
 PRG 20-07-24: 1 (Enable for COS)
 PRG 22-18-01: 0 (no transfer)
 PRG 40-10-06: 2 (VRS message 2)

then,

Turn on the Private Call Refuse mode using the service code (PRG 11-10-32) or Programmable Function Key (code 86).

- To transfer the “Private” Caller ID incoming call to extension 301 as ring pattern 2:
PRG 14-01-27: 1 (reject)
PRG 22-18-01: 1 (extension number)
PRG 22-18-02: 301 (extension 301)
PRG 22-18-03: 2 (ring pattern 2)

then,

Turn on the Private Call Refuse mode using the service code (PRG 11-10-32) or Programmable Function Key (code 86).

- To transfer the “Private” Caller ID incoming call to incoming ring group 2 as ring pattern 3:
PRG 14-01-27: 1 (reject)
PRG 22-18-01: 2 (incoming ring group)
PRG 22-18-02: 2 (group 2)
PRG 22-18-03: 3 (ring pattern 3)

then,

Turn on the Private Call Refuse mode using the service code (PRG 11-10-32) or Programmable Function Key (code 86).

- To reject the call with “2142622000” Caller ID incoming call:
PRG 14-01-27: 1 (reject)
PRG 20-07-25: 1 (Enable for COS)
PRG 22-16: 32 (Speed Dial group 32)
PRG 13-02; Group 32: 900 - 919
PRG 13-04-01; Table 900: 2142622000

then,

Turn on the Caller ID Refuse mode using the service code (PRG 11-10-34) or Programmable Function Key (code 87).

- To transfer the call with “2142622000” Caller ID incoming call to extension 301 as ring pattern 1:
PRG 13-04-01: 2142622000
PRG 13-04-03: 1 (extension number)
PRG 13-04-04: 301 (extension 301)
PRG 13-04-05: 1 (tone pattern 1)
- To transfer the call with “2142622000” Caller ID incoming call to incoming ring group 2 as ring pattern 2:
PRG 13-04-01: 2142622000
PRG 13-04-03: 2 (incoming ring group)
PRG 13-04-04: 2 (group 2)
PRG 13-04-05: 2 (tone pattern 2)

Conditions

- Caller ID Matching. The SL2100 compares the Caller ID and programmed Speed Dial and allows/denies as indicated below.
- The Speed Dial table is searched from the starting number and the first match result is used.
- The maximum number of VRS message channels that can be used simultaneously is 16. These channels are also shared with the voice mail.
- This feature does not work with incoming trunk calls via networking (from another system). In this case, the refuse/routing program must be programmed in the system that has those trunks. Routing to the other system’s extension is available.
- When PRG 13-04 is used; it will override the setting in PRG 22-02-01: Incoming Call Trunk Setup.

- PRG 13-04 will follow Common or Group Speed Dial numbers.

Caller ID Matching Rule:

The system compares the Caller ID and programmed Speed Dial with these rules below.

Table 1-6 Caller ID Matching Rule

Caller ID	Speed Dial	Result
2142622000	2142622000	Matched
2142622000	21426220009	Matched
2142622000	214	Matched
2622000	2142622000	Unmatched
2142622000	2622000	Unmatched



The Speed Dial table is searched from the starting number and the first match result is used.

Default Settings

Not Installed

System Availability

Terminals

All Terminals

Required Component(s)

None

Related Features

Central Office Calls, Answering

Direct Inward Dialing (DID)

Voice Response System (VRS)

Guide to Feature Programming

The programs listed below indicate the most commonly used programs required for this feature. The programs are listed in the order that the installer should follow. Refer to the PCPro wizards for further detailed programming.

- When a * is listed next to the Program Number it indicates a program that **MUST** be set (from a default state) for this feature to be enabled.

Caller ID Flexible Routing

Program No.	Program Name	Input Data	Default
13-04-01 *	Speed Dialing Number and Name - Number	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
13-04-03 *	Speed Dialing Number and Name - Transfer Mode	0 = Not Used (Calls will not be routed based off a users caller ID.) 1 = Internal Dial (Calls will be routed to an internal number specified in PRG 13-04-04.) 2 = Incoming Ring Group (Calls will be routed to a ring group specified in PRG 13-04-04.) 3 = Remote Monitor (Used for the security feature and not Flexible Caller ID routing.)	0
13-04-04 *	Speed Dialing Number and Name - Transfer Destination Number	If Transfer mode is (Refer to 13-04-03) : 1 = Internal Dial Mode 1 ~ 9, 0, *, #, P, R, @ P = Pause R = Recall @ = Additional Digits when using ISDN functionality (Maximum 36 Characters) 2 = Incoming Ring Group 0 ~ 50 (IRG Number) 3 = Remote Monitor Dial (Up to 8 digits)	No Setting
13-04-05	Speed Dialing Number and Name - Incoming Ring Pattern	0 = Normal System Ring Pattern 1 ~ 4 = Tone Pattern 1 ~ 4 5 ~ 9 = Scale Pattern 1 ~ 5 10 ~ 13 = Tone Pattern 5 ~ 8	0

Caller ID Refuse for Specific Numbers

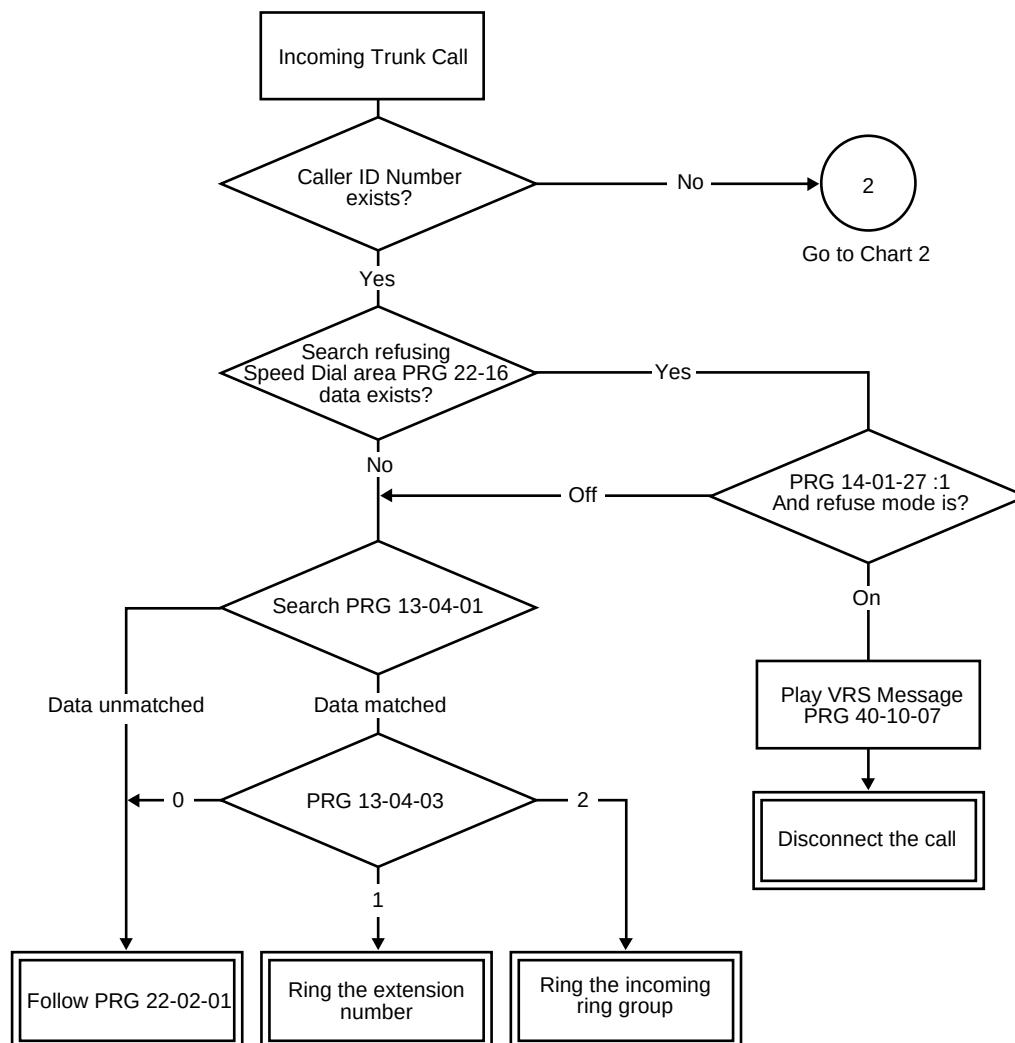
Program No.	Program Name	Input Data	Default
14-01-27 *	Basic Trunk Data Setup - Caller ID Refuse Setup	0 = Disable (CID refuse will not function.) 1 = Enable	0
22-16-01 *	Private Call Refuse Target Area Setup - Speed Dial Group Number	0 ~ 50 0 = No Group Assigned (Caller ID refuse will not function.)	0
13-02-01 *	Group Speed Dialing Bins	0 ~ 999 = Speed dial bins 0 ~ 999	0
13-04-01 *	Speed Dialing Number and Name - Number	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting

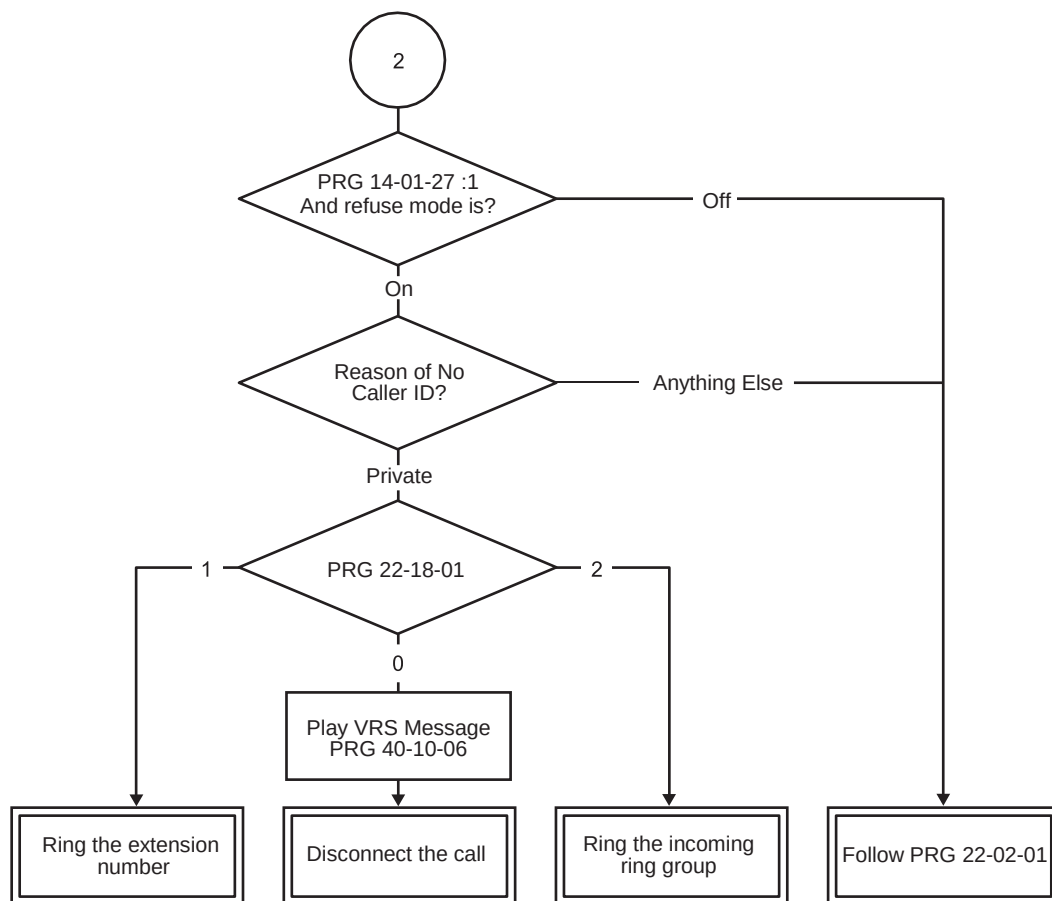
Program No.	Program Name	Input Data	Default
40-10-07 *	Voice Announcement Service Option - Set VRS Message for Caller ID Refuse (VRS Msg CID)	0 = No Message Played 1 ~ 100 = VRS Message 1 ~ 100 101 = VRS Fixed message (Message will only play if PRG 40-10-01 is enabled.)	0
15-07-01	Programmable Function Keys	87 = Caller ID Refuse	Refer to the programming manual for the default values and for all other available options in this command.
11-10-34	Service Code Setup (for System Administrator) - Set Caller ID Refuse	0~9, *, # Maximum of 8 digit	748
20-07-25	Class of Service Options (Administrator Level) - Set/Cancel Caller ID Refuse	0 = Off (User cannot control the feature.) 1 = On	COS1 ~ 14/COS15 = 1

Caller ID Refuse for "Private" Numbers

Program No.	Program Name	Input Data	Default
14-01-27 *	Basic Trunk Data Setup - Caller ID Refuse Setup	0 = Disable (CID refuse will not function.) 1 = Enable	0
22-18-01	Private Call Assignment Setup - Transfer Mode	0 = Not Defined (Private call will not transfer to a user in the system, can be routed to VRS message in PRG 40-10-06.) 1 = Internal Dial (Specified in PRG 22-18-02) 2 = Incoming Ring Group (Specified in PRG 22-04)	0
22-18-03 *	Private Call Assignment Setup - Incoming Ring Pattern	Incoming Ring Pattern (0 ~ 13) 0 = Normal pattern 1 ~ 4 = Tone pattern (1 ~ 4) 5 ~ 9 = Scale pattern (1 ~ 5) 10 ~ 13 = Tone pattern (5 ~ 8)	0
40-10-06 *	Voice Announcement Service Option - Set VRS Message for Private Call Refuse (VRS Msg Private Call)	0 = No Message Played 1 ~ 100 = VRS Message 1 ~ 100 101 = VRS Fixed message (Message will only play if PRG 40-10-01 is enabled.)	0
15-07-01	Programmable Function Keys	86 = Private Call Refuse	Refer to the programming manual for the default values and for all other available options in this command.
11-10-32	Service Code Setup (for System Administrator) - Set Private Call Refuse	0~9, *, # Maximum of 8 digit	646
20-07-24	Class of Service Options (Administrator Level) - Set/Cancel Private Call Refuse	0 = Off (User cannot control the feature.) 1 = On	COS1 ~ 14/COS15 = 1

The Caller ID - Flexible Ringing Flowchart below helps define programming:





Operation

None

Central Office Calls, Answering

Description

The system provides flexible routing of incoming CO (trunks) calls to meet the exact site requirements. This lets trunk calls ring and be answered at any combination of system extensions. A maximum of 128 trunks are available. For additional information on making trunks ring, refer to [Ring Groups](#).

Delayed Ringing

Extensions in a Ring Group can have delayed ringing for trunks. If the trunk is not answered at its original destination, it rings the DIL No Answer Ring Group (this ring group applies to DIL or non-DIL trunks). This could help a secretary that covers calls for their boss. If the boss does not answer the call, it rings the secretary's telephone after a programmable interval.

Universal Answer

Universal Answer allows an employee to answer a call by going to any Multiline Terminal and dialing a unique Universal Answer code. The employee does not have to know the trunk number or dial any other codes to pick up the ringing trunk. You normally set up Universal Answer along with Universal Night Answer (refer to [Night Service](#)). When a Universal Night Answer call rings the External Paging, an employee can answer the call from the first available telephone. You might also want to use Universal Answer in a noisy warehouse or machine shop where the volume of normal telephone ringing is not adequate. After hearing the ringing over the Paging, an employee can then easily pick up the call from a shop telephone.

The Automatic Off-Hook Answer of Universal Answer Call options (PRG 20-10-07) determines whether or not the extension has the Auto Answer feature for ringing calls. This option allows a user to simply lift the handset to answer a ringing call; dialing the service code is not necessary.

Additional Trunk Ring Tones

Various ring tone patterns and melodies for incoming calls are available (PRG 22-03-01); Ring Tone Patterns 1~8 and Melodies 1~5 (2W Digital/IP Multiline Terminal Mode) can be configurable, refer below chart.

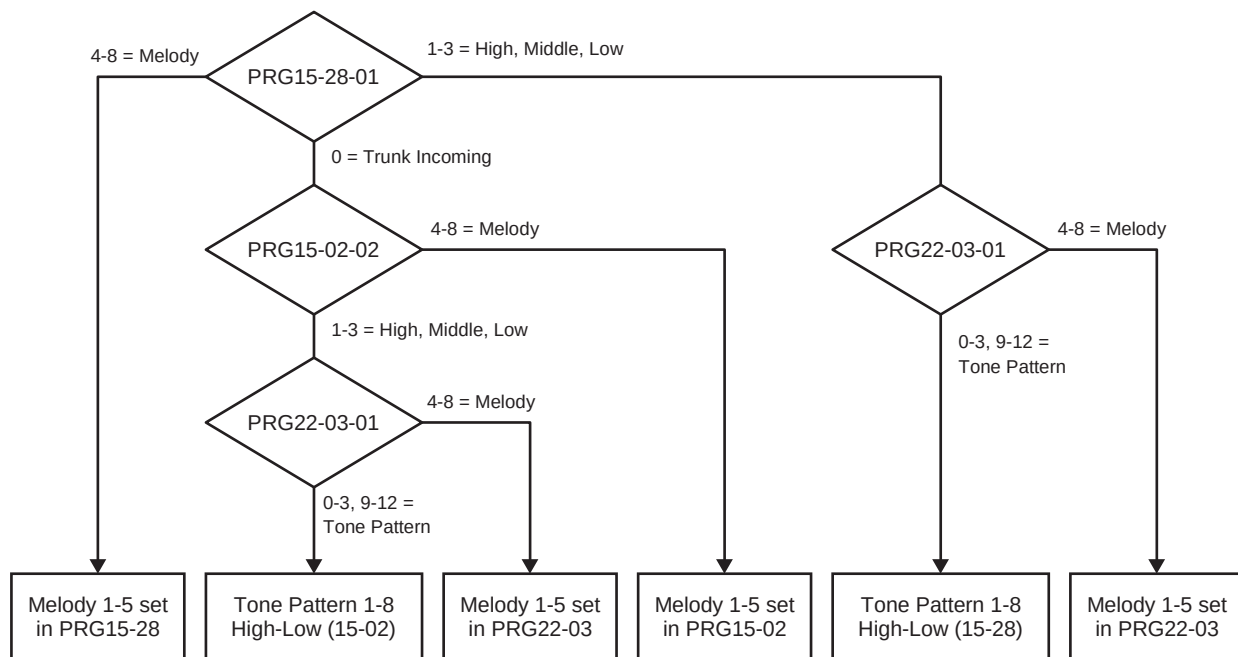


Figure 1-3 <W Digital/IP Multiline Terminal Mode>

Sidetone Volume Setup

This option allows system programming for the Multiline Terminal side tone volume. There are two levels, based on whether the connected trunk is a digital trunk or analog trunk.

Conditions

- Ringing calls can be picked up regardless of access map programming.
- An extension user can answer an outside call just by lifting the handset.
- Long Conversation Cutoff can disconnect incoming and outgoing CO calls after a set time period. Using the Warning Tone for Long Conversation feature allows users on outgoing calls to hear a warning tone prior to the call disconnecting.
- Line keys simplify answering outside calls.
- If the Absent text message was set by the originating extension, the destination extension displays the assigned text message instead of the Reason for Transfer message.
- If an extension is assigned to a Trunk Access Map that has no access for a trunk, the extension can still retrieve parked calls on that trunk. The extension can also Group Call Pickup and Direct Call Pickup calls ringing another extension on that trunk.
- To adjust for proper audio quality, refer to PRG 81-07 and PRG 81-17.
- If a Central Office call is placed on HOLD and the Multiline Terminal does not have Direct Trunk Appearance or an available Loop Key for this call, the call cannot be retrieved until the HOLD recall timer expires. To prevent this, Direct Trunk Appearances or additional Loop Keys must be assigned to the Multiline Terminal.

Default Settings

Enabled

System Availability

Terminals

All Terminals

Required Component(s)

Any Trunk ETU (i.e., 3COIDB-C1, 2BRIDB-C1, 1PRIDB-C1, etc.)

Related Features

Automatic Call Distribution (ACD)

Call Forwarding

Direct Inward Dialing (DID)

Direct Inward Line (DIL)

Direct Inward System Access (DISA)

Directed Call Pickup

Do Not Disturb (DND)

Group Call Pickup

ISDN Compatibility

Line Preference

Long Conversation Cutoff

Night Service

Programmable Function Keys

Selectable Display Messaging

Warning Tone for Long Conversation

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-03-XX	ETU Setup	-	Refer to Programming Manual.
11-11-13	Service Code Setup (for Setup/Entry Operation) - Display Language Selection for Multiline Terminal	0~9, *, # Maximum of 8 digit	678
11-12-30	Service Code Setup (for Service Access) - Specified Trunk Answer	0~9, *, # Maximum of 8 digit	672
11-12-43	Service Code Setup (for Service Access) - Answer No-Ring Line (Universal Answer)	0~9, *, # Maximum of 8 digit	#9

Program No.	Program Name	Input Data	Default
14-01-02	Basic Trunk Data Setup - Transmit Level	1 ~ 63 (- 15.5 dB ~ + 15.5 dB in 0.5 dB intervals)	32 (0 dB)
14-01-03	Basic Trunk Data Setup - Receive Level	1 ~ 63 (- 15.5 dB ~ + 15.5 dB in 0.5 dB intervals)	32 (0 dB)
14-02-02	Analog Trunk Data Setup - Ring Detect Type	0 = Normal/delayed 1 = Immediate Ringing	1
14-05-01	Trunk Group - Trunk Group Number	1 ~ 128 = Trunk Port 0 ~ 50 = Trunk Group No. 1 ~ 128 = Priority	Refer to the Programming Manual for the default values.
14-06-01	Trunk Group Routing - Trunk Group	0 = Not Set 001 ~ 050 = Trunk group No. 101 ~ 150 = 100 + Networking System No. 1001 ~ 1050 = 1000 + Route Table No.	Refer to the Programming Manual for the default values.
14-07-01	Trunk Access Map Setup - Access Map	0 = No access 1 = Outgoing access only 2 = Incoming access only 3 = Access only when trunk on Hold 4 = Outgoing access and access when trunk on Hold 5 = Incoming access and access when trunk on Hold 6 = Incoming and Outgoing access 7 = Full access	Access Map 1~128 = Trunk Ports 1~128 assigned with option 7 access (incoming and outgoing access and access when trunk is on Hold).
15-01-05	Basic Extension Data Setup - Restriction for Outgoing Disable on Incoming Line	0 = Supervise dial detection 1 = Not supervise dial detection	0
15-02-01	Multiline Telephone Basic Data Setup - Display Language Selection	1 = English 2 = German 3 = French 4 = Italian 5 = Spanish 6 = Dutch 7 = Portuguese 8 = Norwegian 9 = Danish 10 = Swedish 11 = Turkish 12 = Latin American Spanish 13 = Romanian 14 = Polish 16 = Russian 17 = Simplified Chinese 18 = Traditional Chinese	1
15-02-02	Multiline Telephone Basic Data Setup - Trunk Ring Tone	1 = High (2W Digital/IP Multiline Terminal, DR700) 2 = Middle (2W Digital/IP Multiline Terminal, DR700) 3 = Low (2W Digital/IP Multiline Terminal, DR700) 4 = Melody1 (2W Digital/IP Multiline Terminal, DR700) 5 = Melody2 (2W Digital/IP Multiline Terminal, DR700) 6 = Melody3 (2W Digital/IP Multiline Terminal, DR700) 7 = Melody4 (2W Digital/IP Multiline Terminal, DR700) 8 = Melody5 (2W Digital/IP Multiline Terminal, DR700)	2

Program No.	Program Name	Input Data	Default
15-02-22	Multiline Telephone Basic Data Setup - Multiple Incoming From Intercom and Trunk	0 = Disable 1 = Enable	1
15-03-03	Single Line Telephone Basic Data Setup - Terminal Type	0 = Normal 1 = Special	0
15-06-01	Trunk Access Map for Extensions - Trunk Access Map Number	001 ~ 128	1
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
15-13-01	Loop Keys - Outgoing Option	0 ~ 50 (0 = Assigns the Loop Key for ARS, 1 ~ 50 = Assigns the Loop Key to the trunk group specified)	0: Programming Function Key No. = 01 ~ 32
15-13-02	Loop Keys - Incoming Option	0 ~ 50 (0 = Assigns the Loop Key to all trunk groups, 1 ~ 50 = Assigns the Loop key to the trunk group specified)	0: Programming Function Key No. = 01 ~ 32
15-28-01	Trunk Incoming Ring Tone of Extension Setup - Trunk Incoming Ring Tone	0 ~ 8 0 = Trunk incoming ring tone (2W Digital/IP Multiline Terminal) 1 = High (2W Digital/IP Multiline Terminal) 2 = Middle (2W Digital/IP Multiline Terminal) 3 = Low (2W Digital/IP Multiline Terminal) 4 = Melody1 (2W Digital/IP Multiline Terminal) 5 = Melody2 (2W Digital/IP Multiline Terminal) 6 = Melody3 (2W Digital/IP Multiline Terminal) 7 = Melody4 (2W Digital/IP Multiline Terminal) 8 = Melody5 (2W Digital/IP Multiline Terminal)	0
20-02-09	System Options for Multiline Telephones - Disconnect Supervision	0 = Disable (Off) 1 = Enable (On)	1
20-02-15	System Options for Multiline Telephones - Caller ID Display Mode	0 = Name and Number (Both) 1 = Name 2 = Number	0
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-10-07	Class of Service Options (Answer Service) - Automatic Off-Hook Answer	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-13	Class of Service Options (Supplementary Service) - Continued Dialing (DTMF) Signal on ICM Call	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-23	Class of Service Options (Supplementary Service) - Display the Reason for Transfer	0 = Off 1 = On	COS 01 ~ 15 = 0
21-01-15	System Options for Outgoing Calls - Outgoing Disable on Incoming Line (Toll Restriction)	0 = Disable (Off) 1 = Enable (On)	0
21-01-16	System Options for Outgoing Calls - Supervise Dial Detection Timer	0 ~ 64800 seconds	20
21-01-17	System Options for Outgoing Calls - Restriction Digit in Outgoing Disable on Incoming Line	Digits 1 ~ 9	4

Program No.	Program Name	Input Data	Default
22-01-01	System Options for Incoming Calls - Incoming Call Priority	0 = Intercom Call Priority 1 = Trunk Call Priority	1
22-01-02	System Options for Incoming Calls - Incoming Call Ring No Answer Alarm	0 = Disable (Off) 1 = Enable (On)	0
22-01-03	System Options for Incoming Calls - Ring No Answer Alarm Time	0 ~ 64800 seconds	60
22-01-04	System Options for Incoming Calls - DIL No Answer Recall Time	0 ~ 64800 seconds 0 = No Overflow	0
22-02-01	Incoming Call Trunk Setup - Trunk Service Type	0 = Normal 1 = VRS (second dial tone if no VRS installed) 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delayed VRS 7 = ANI/DNIS 8 = DID (DDI) Mode Switching	0
22-03-01	Trunk Ring Tone Range - Ring Tone Pattern	0 = Tone 1 1 = Tone 2 2 = Tone 3 3 = Tone 4 4 = Melody 1 (2W Digital/IP Multiline Terminal Mode) 5 = Melody 2 (2W Digital/IP Multiline Terminal Mode) 6 = Melody 3 (2W Digital/IP Multiline Terminal Mode) 7 = Melody 4 (2W Digital/IP Multiline Terminal Mode) 8 = Melody 5 (2W Digital/IP Multiline Terminal Mode) 9 = Tone 5 (2W Digital/IP Multiline Terminal Mode) 10 = Tone 6 (2W Digital/IP Multiline Terminal Mode) 11 = Tone 7 (2W Digital/IP Multiline Terminal Mode) 12 = Tone 8 (2W Digital/IP Multiline Terminal Mode)	0
22-04-01	Incoming Extension Ring Group Assignment - Extension Number	Maximum eight Digits	Group01 has 101, 102, 103, 104, 105, 106, 107, and 108 (First 8 ports ringing)
22-05-01	Incoming Trunk Ring Group Assignment - Incoming Group Number	0 = No Setting 01 ~ 50 = Incoming Group 102 = VMI 103 = Centralized VM	1
22-06-01	Normal Incoming Ring Mode - Incoming Group Number	0 = No Ring 1 = Ring	1
22-07-01	DIL Assignment - Number of Transferring Destination	Maximum of 8 digits (0 ~ 9, *, #)	No Setting
22-08-01	DIL/IRG No Answer Destination - Incoming Ring Group Number	0 = No Setting 01 ~ 50 = Incoming Ring group 102 = VM 103 = Centralized VM	Group01 has 101, 102, 103, 104, 105, 106, 107, and 108 (First 8 ports ringing)

Program No.	Program Name	Input Data	Default
82-08-01 (MF Level)	Sidetone Volume Setup - Sidetone Volume	Input Data (Digital Sidetone Level : Analog Sidetone Level) 0 (- 54 dB : - 54 dB) 1 (- 48 dB : - 54 dB) 2 (- 42 dB : - 54 dB) 3 (- 36 dB : - 48 dB) 4 (- 30 dB : - 42 dB) 5 (- 24 dB : - 36 dB) 6 (- 18 dB : - 30 dB) 7 (- 12 dB : - 24 dB) 8 (- 12 dB : - 18 dB) 9 (- 12 dB : - 12 dB)	9

Operation

To answer an incoming trunk call:

1. Lift the handset.

To use Universal Answer to answer a call ringing over the Paging system:

1. Go off-hook.



Depending on system programming, this may answer the call and you can skip step 2.

2. Dial **#9**.



If you hear error tone, your extension Class of Service prevents Universal Answer.

To listen to the incoming trunk ring choices:

1. Press **Speaker** key.
2. Dial **711 + 2**.
3. Select the ringing (**1~8**) you want to check.
4. Go back to step 3 to listen to additional choices or press **Speaker** key to hang up.

To change the ringing of your incoming trunk:

1. Press **Speaker** key.
2. Dial **720 + 2**.
3. Select the ringing (**1~8**).
4. Press **Speaker** key to hang up.

Central Office Calls, Placing

Description

The system provides flexibility in the way each extension user can place outgoing trunk calls. This lets you customize the call placing options to meet site requirements and each individual's needs. To place a call the user can:

- Press Line Keys
- Press a Trunk Group key
- Press a Trunk Group Routing (dial **0**) key
- Dial a code for a specific trunk (**#0** + the trunk number)
- Dial a code for a Trunk Group (**704** + group number)
- Dial a code for Trunk Group Routing or ARS (**0**)
- Dial an Alternate Trunk Route Access Code (which you must define)
- Press or Use a Speed Dial bin

Trunk Port Disable

The system provides a service code (default: **645**) which can be used by an extension user to block a trunk for outgoing calls. The user which busied out the trunk still has access to it. All other users are blocked from seizing it to place an outgoing call. The trunk, however, can still be answered by any users programmed with the trunk access.

Sidetone Volume Setup

Allows the system programming for the Multiline Terminal side tone volume. There are two levels, based on whether the connected trunk is a digital trunk or analog trunk.

Conditions

- Dial Pulse (10pps/20pps) is not supported.
- If the trunk name seize display is enabled in programming, the Call Timer starts automatically after the user places a trunk call. Disabling the trunk name seize display also disables the Call Timer.
- The system can automatically select the correct type of line to use based on the number dialed and the time.
- With Automatic Handsfree, an extension user can press a line key to place a trunk call without lifting the handset or pressing **Speaker** key. Users without Automatic Handsfree can preselect a line key before lifting the handset or pressing **Speaker** key.
- Long Conversation Cutoff can disconnect incoming and outgoing CO calls after a set time period. Using the Warning Tone for Long Conversation feature allows users on outgoing calls to hear a warning tone prior to the call disconnecting.
- An extension Toll Class of Service may prevent them from dialing certain numbers.
- Dialing 0 or any other trunk access code after dialing an extension results in termination of the intercom call and a trunk is seized.
- Setting PRG 14-02-11 to On may cause a slight delay in dial tone while loop current is returned.
- When Account Codes are enabled, the user must press the * three times before the * character is passed to the Telco. The system recognizes the initial * as the beginning of an Account Code entry, the second * as the end of an Account Code entry, and the third * will be passed to Telco.
- To adjust for proper audio quality, refer to PRG 81-07 and PRG 81-17.
- If a Central Office call is placed on HOLD and the Multiline Terminal does not have Direct Trunk Appearance or an available Loop Key for this call, the call cannot be retrieved until the HOLD recall timer expires. To prevent this, Direct Trunk Appearances or additional Loop Keys must be assigned to the Multiline Terminal.

Default Settings

Enabled

System Availability

Terminals

All Multiline Terminals

Required Component(s)

Any Trunk ETU (i.e., 3COIDB-C1, 2BRIDB-C1, 1PRIDB-C1, etc.)

Related Features

Alphanumeric Display

Automatic Route Selection (ARS/F-Route)

Code Restriction/Toll Restriction

Dial Tone Detection

Handsfree Answerback/Forced Intercom Ringing

Long Conversation Cutoff

Microphone Cutoff

Programmable Function Keys

Trunk Group Routing

Trunk Groups

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-03-XX	ETU Setup	-	Refer to Programming Manual.
11-09-01	Trunk Access Code - Trunk Access Code	Dial (Up to four digits)	0
11-09-02	Trunk Access Code - 2nd Trunk Route Access Code	Dial (Up to four digits)	No Setting
11-10-27	Service Code Setup (for System Administrator) - Trunk Port Disable for Outgoing Calls	0~9, *, # Maximum of 8 digit	645
11-11-13	Service Code Setup (for Setup/Entry Operation) - Display Language Selection for Multiline Terminal	0~9, *, # Maximum of 8 digit	678
11-12-01	Service Code Setup (for Service Access) - Call Forward/Do Not Disturb Override	0~9, *, # Maximum of 8 digit	707

Program No.	Program Name	Input Data	Default
11-12-14	Service Code Setup (for Service Access) - Trunk Group Access	0~9, *, # Maximum of 8 digit	704
14-01-01	Basic Trunk Data Setup - Trunk Name	Up to 12 characters	Trunk Port Number 1 = Line 001 Trunk Port Number 2 = Line 002 : Trunk Port Number 128 = Line 128
14-01-02	Basic Trunk Data Setup - Transmit Level	1 ~ 63 (- 15.5 dB ~ + 15.5 dB in 0.5 dB intervals)	32 (0 dB)
14-01-03	Basic Trunk Data Setup - Receive Level	1 ~ 63 (- 15.5 dB ~ + 15.5 dB in 0.5 dB intervals)	32 (0 dB)
14-01-07	Basic Trunk Data Setup - Outgoing Calls	0 = Deny (No) 1 = Allow (Yes)	1
14-01-10	Basic Trunk Data Setup - DTMF Tones for Outgoing Calls	0 = Disable (No) 1 = Enable (Yes)	0
14-02-05	Analog Trunk Data Setup - Dial Tone Detection for Manually Accessed Trunks	0 = Dial Tone Detection Not Used 1 = Dial Tone Detection Used	0
14-02-11	Analog Trunk Data Setup - Next Trunk in Rotary if No Dial Tone	0 = Disable (No) 1 = Enable (Yes)	0
14-05-01	Trunk Group - Trunk Group Number	1 ~ 128 = Trunk Port 0 ~ 50 = Trunk Group No. 1 ~ 128 = Priority	Refer to the Programming Manual for the default values.
14-06-01	Trunk Group Routing - Trunk Group	0 = Not Set 001 ~ 050 = Trunk group No. 101 ~ 150 = 100 + Networking System No. 1001 ~ 1050 = 1000 + Route Table No.	Refer to Programming Manual.
14-07-01	Trunk Access Map Setup - Access Map	0 = No access 1 = Outgoing access only 2 = Incoming access only 3 = Access only when trunk on Hold 4 = Outgoing access and access when trunk on Hold 5 = Incoming access and access when trunk on Hold 6 = Incoming and Outgoing access 7 = Full access	Access Map 1 ~ 128 = Trunk Ports 1 ~ 128 assigned with option 7 access (incoming and outgoing access and access when trunk is on Hold).
15-02-01	Multiline Telephone Basic Data Setup - Display Language Selection	1 = English 2 = German 3 = French 4 = Italian 5 = Spanish 6 = Dutch 7 = Portuguese 8 = Norwegian 9 = Danish 10 = Swedish 11 = Turkish 12 = Latin American Spanish 13 = Romanian 14 = Polish 16 = Russian 17 = Simplified Chinese 18 = Traditional Chinese	1

Program No.	Program Name	Input Data	Default
15-02-08	Multiline Telephone Basic Data Setup - Automatic Handsfree	0 = Preselect 1 = One-Touch (Automatic Handsfree)	1
15-03-03	Single Line Telephone Basic Data Setup - Terminal Type	0 = Normal 1 = Special	0
15-06-01	Trunk Access Map for Extensions - Trunk Access Map Number	001 ~ 128	1
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
15-13-01	Loop Keys - Outgoing Option	0 ~ 50 (0 = Assigns the Loop Key for ARS, 1 ~ 50 = Assigns the Loop Key to the trunk group specified)	0: Programming Function Key No. = 01 ~ 32
15-13-02	Loop Keys - Incoming Option	0 ~ 50 (0 = Assigns the Loop Key to all trunk groups, 1 ~ 50 = Assigns the Loop key to the trunk group specified)	0: Programming Function Key No. = 01 ~ 32
20-02-06	System Options for Multiline Telephones - Preselection Time	0 ~ 64800 seconds	5 (seconds)
20-02-09	System Options for Multiline Telephones - Disconnect Supervision	0 = Disable (Off) 1 = Enable (On)	1
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-07-12	Class of Service Options (Administrator Level) - Trunk Port Disable	0 = Off 1 = On	COS1 ~ 14/COS15 = 1
20-08-02	Class of Service Options (Outgoing Call Service) - Trunk Outgoing Calls	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-13	Class of Service Options (Supplementary Service) - Continued Dialing (DTMF) Signal on ICM Call	0 = Off 1 = On	COS 01 ~ 15 = 1
21-01-15	System Options for Outgoing Calls - Outgoing Disable on Incoming Line (Toll Restriction)	0 = Disable (Off) 1 = Enable (On)	0
21-01-16	System Options for Outgoing Calls - Supervise Dial Detection Timer	0 ~ 64800 seconds	20
21-01-17	System Options for Outgoing Calls - Restriction Digit in Outgoing Disable on Incoming Line	Digits 1 ~ 9	4
21-02-01	Trunk Group Routing for Extensions - Route Table Number	0 ~ 50 0 = No Setting (Calls will not route.)	1
21-15-01	Individual Trunk Group Routing for Extensions - Route Table Number	0 ~ 50 0 = No Setting (Calls will not route.)	0
24-02-07	System Options for Transfer - Trunk-to-Trunk Transfer Release Warning Tone	0 ~ 64800 seconds	1800
24-02-10	System Options for Transfer - Disconnect Trunk-to-Trunk	0 ~ 64800 seconds	0

Program No.	Program Name	Input Data	Default
82-08-01 (MF Level)	Sidetone Volume Setup - Sidetone Volume	Input Data (Digital Sidetone Level : Analog Sidetone Level) 0 (- 54 dB : - 54 dB) 1 (- 48 dB : - 54 dB) 2 (- 42 dB : - 54 dB) 3 (- 36 dB : - 48 dB) 4 (- 30 dB : - 42 dB) 5 (- 24 dB : - 36 dB) 6 (- 18 dB : - 30 dB) 7 (- 12 dB : - 24 dB) 8 (- 12 dB : - 18 dB) 9 (- 12 dB : - 12 dB)	9

Operation

To place a call over a trunk group:

1. Go off-hook.
2. Dial **704**.
3. Dial trunk group number (**01~50**).
4. Dial the number.
- **OR** -
 1. At the Multiline Terminal, press the **trunk group** key (PRG 15-07-01 or SC **751:*02** + group).
 2. Dial the number.

To place a call using Trunk Group Routing:

1. Go off-hook.
2. Dial **0**.
 *If your system has an Alternate Trunk Route Access code, you may dial that instead.*
3. Dial the number.
- **OR** -
 1. At the Multiline Terminal, press the **Trunk Group Routing** key (PRG 15-07-01 or SC **752:*02** plus trunk group).
 2. Dial the number.

To place a call over a specific trunk:

1. Dial **#0**.
2. Dial the line number (e.g., 005 for line 5).
3. Dial the number.
- **OR** -
 1. At the Multiline Terminal, press the line key (PRG 15-07-01 or SC **752: *01 001~128**).
 2. Dial the number.

To busy out a trunk from outbound usage:

1. Press **Speaker** key + dial **645** + Trunk Number (**001~128**) + **1**.



The user which busied out the trunk still has access to it. All other users are blocked from seizing it to place an outgoing call. The trunk, however, can still be answered by any user programmed with the trunk access.

To Remove a Trunk from a Busied Out State:

1. Press **Speaker** key + dial **645** + Trunk Number (**001~128**) + **0**.

Class of Service

Description

Class of Service (COS) sets various features and dialing options (called items) for extensions. The system allows any number of extensions to share the same Class of Service. An extension can have a different Class of Service for each of the Night Service modes. This lets you program a different set of dialing options for daytime operation, nighttime operation and even during lunch breaks. An extension Class of Service can be changed in system programming or via a Service Code (normally **677**). There are 15 available Classes of Service.

Conditions

- Before assigning a new COS, make sure the new COS matches the old COS or you may enable options, which the extension should not have or remove options, which it should have.
- An extension can have a different Class of Service for each Service mode. At default, the Mode names are assigned as follows:
 - Mode 1 = No setting
 - Mode 2 = Night
 - Mode 3 = Midnight
 - Mode 4 = Rest
 - Mode 5 = Day2
 - Mode 6 = Night2
 - Mode 7 = Midnight2
 - Mode 8 = Rest2
- If a user dials a number not programmed in ARS, PRG 26-01-03 determines if the system should route over the trunk group settings defined in PRG 21-02 or play an error tone.
- When using ARS Class of Service, with PRG 26-01-03 set to (1) "Play Warning Tone", any trunk pointed or transferred to a virtual that is Call Forward Off-Premise will not complete. For a virtual to Call Forward Off-Premise, PRG 26-01-03 must be set to "Route to trunk group" and the call will follow the trunk group settings of the trunk, assigned in PRG 21-03.
- When using ARS Class of Service, with PRG 26-01-03 set to (1) "Play Warning Tone" or transferred to a virtual that is Call Forward Off-Premise will always follow ARS Class 1 routing properties.

Default Settings

- The attendant (extension 101) has Class of Service 15 in all Night Service modes. All other extensions have Class of Service 1 in all Night Service modes.

If changing Class of Service via Service Code:

- An extension can use Service Code **677** to change another extension Class of Service (PRG 20-13-28 = 1).
- An extension can automatically block another extension attempt to change their Class of Service via Service Code **677** (PRG 20-13-28 = 0).
- The default Service Code for this option is **677** (PRG 11-11-24 = **677**).

System Availability

Terminals

All Stations

Required Component(s)

None

Related Features

Night Service

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-11-24	Service Code Setup (for Setup/Entry Operation) - Change Station Class of Service	0~9, *, # Maximum of 8 digit	677
11-19-01	Remote Conference Pilot Number Setup - Remote Conference Group Pilot Number	Dial (Up to 8 digits)	No Remote Conference Pilot Numbers assigned to any Conference Group (1-4)
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-07-01	Class of Service Options (Administrator Level) - Manual Night Service Enabled	0 = OFF (User cannot control manual night mode.) 1 = ON (User can control manual night mode.)	COS 1 ~ 15 = 1
20-07-02	Class of Service Options (Administrator Level) - Changing the Music on Hold Tone	0 = Off 1 = On	COS 1 ~ 15 = 1
20-07-03	Class of Service Options (Administrator Level) - Time Setting	0 = Off 1 = On	COS 1 ~ 15 = 1
20-07-04	Class of Service Options (Administrator Level) - Storing Speed Dialing Entries	0 = Off (Deny) 1 = On	COS 1 ~ 15 = 1
20-07-05	Class of Service Options (Administrator Level) - Set/Cancel Automatic Trunk-to-Trunk Transfer	0 = Off 1 = On	COS1 ~ 14/COS15 = 0
20-07-06	Class of Service Options (Administrator Level) - Charging Cost Display	0 = Off 1 = On	COS1 ~ 14/COS15 = 0/1
20-07-10	Class of Service Options (Administrator Level) - Programmable Function Key Programming (Appearance Level)	0 = Off 1 = On	COS 1 ~ 15 = 1
20-07-11	Class of Service Options (Administrator Level) - Forced Trunk Disconnect (analog trunk only)	0 = Off 1 = On	COS 1 ~ 15 = 1
20-07-12	Class of Service Options (Administrator Level) - Trunk Port Disable	0 = Off 1 = On	COS 1 ~ 15 = 1
20-07-13	Class of Service Options (Administrator Level) - VRS Record (VRS Msg Operation)	0 = Off 1 = On	COS1 ~ 14/COS15 = 0/1
20-07-14	Class of Service Options (Administrator Level) - VRS General Message Play	0 = Off 1 = On	COS1 ~ 14/COS15 = 0/1
20-07-15	Class of Service Options (Administrator Level) - VRS General Message Record/Delete	0 = Off 1 = On	COS1 ~ 14/COS15 = 0/1
20-07-18	Class of Service Options (Administrator Level) - SMDR Printout Accumulated Extension Data	0 = Off 1 = On	COS 1 ~ 15 = 1
20-07-19	Class of Service Options (Administrator Level) - SMDR Printout Department Group (STG) Data	0 = Off 1 = On	COS 1 ~ 15 = 1
20-07-20	Class of Service Options (Administrator Level) - SMDR Printout Accumulated Account Code Data	0 = Off 1 = On	COS 1 ~ 15 = 1

Program No.	Program Name	Input Data	Default
20-07-23	Class of Service Options (Administrator Level) - CO MSG Waiting Indication Callback Number Programming	0 = Off 1 = On	COS 1 ~ 15 = 0
20-07-24	Class of Service Options (Administrator Level) - Set/Cancel Private Call Refuse	0 = Off (User cannot control the feature.) 1 = On	COS 1 ~ 15 = 1
20-07-25	Class of Service Options (Administrator Level) - Set/Cancel Caller ID Refuse	0 = Off (User cannot control the feature.) 1 = On	COS 1 ~ 15 = 1
20-07-26	Class of Service Options (Administrator Level) - Dial-In Mode Switch	0 = Off (Station cannot control DDI switching.) 1 = On (Station can control DDI switching.)	COS 1 ~ 15 = 1
20-07-27	Class of Service Options (Administrator Level) - Do-Not-Call Administrator	0 = Off 1 = On	COS 1 ~ 15 = 0
20-07-30	Class of Service Options (Administrator Level) - Date Setting	0 = Off 1 = On	COS 1 ~ 15 = 1
20-07-31	Class of Service Options (Administrator Level) - System Wide call forward clear	0 = Off 1 = On	COS 1 ~ 14/COS 15 = 0/1
20-07-34	Class of Service Options (Administrator Level) - Clear Alarm	0 = Off 1 = On	COS 1 ~ 14/COS 15 = 0/1
20-07-35	Class of Service Options (Administrator Level) - Save Statistical Information of RTP	0 = Off 1 = On	COS 1 ~ 14/COS 15 = 0/1
20-08-01	Class of Service Options (Outgoing Call Service) - Intercom Calls	0 = Off 1 = On	COS 01 ~ 15 = 1
20-08-02	Class of Service Options (Outgoing Call Service) - Trunk Outgoing Calls	0 = Off 1 = On	COS 01 ~ 15 = 1
20-08-03	Class of Service Options (Outgoing Call Service) - System Speed Dialing	0 = Off (Deny) 1 = On	COS 01 ~ 15 = 1
20-08-04	Class of Service Options (Outgoing Call Service) - Group Speed Dialing	0 = Off (Deny) 1 = On	COS 01 ~ 15 = 1
20-08-05	Class of Service Options (Outgoing Call Service) - Dial Number Preview (Preset Dial)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-08-06	Class of Service Options (Outgoing Call Service) - Toll Restriction Override	0 = Off 1 = On	COS 01 ~ 15 = 0
20-08-07	Class of Service Options (Outgoing Call Service) - Repeat Redial	0 = Off 1 = On	COS 01 ~ 15 = 1
20-08-08	Class of Service Options (Outgoing Call Service) - Toll Restriction Dial Block	0 = Off 1 = On	COS 01 ~ 15 = 1
20-08-09	Class of Service Options (Outgoing Call Service) - Hotline/Extension Ringdown	0 = Off 1 = On	COS 01 ~ 15 = 1
20-08-10	Class of Service Options (Outgoing Call Service) - Signal/Voice Call	0 = Off 1 = On	COS 01 ~ 15 = 1
20-08-11	Class of Service Options (Outgoing Call Service) - Protect for the Call Mode Switching from Caller	0 = Off 1 = On	COS 01 ~ 15 = 0
20-08-12	Class of Service Options (Outgoing Call Service) - Department Group Step Calling	0 = Off 1 = On	COS 01 ~ 15 = 1
20-08-13	Class of Service Options (Outgoing Call Service) - Set Calling Party Number	0 = Off (when set to Off the system will not send any outbound calling party information.) 1 = On (when set to ON the system will send calling party information for the station or trunk.)	COS 01 ~ 15 = 1
20-08-14	Class of Service Options (Outgoing Call Service) - Call Address Information	0 = Off 1 = On	COS 01 ~ 15 = 0

Program No.	Program Name	Input Data	Default
20-08-15	Class of Service Options (Outgoing Call Service) - Block Outgoing Caller ID	0 = Off 1 = On	COS 01 ~ 15 = 0
20-08-16	Class of Service Options (Outgoing Call Service) - Display E911 Dialed Extension Name and Number	0 = Off 1 = On	COS 01 ~ 15 = 0
20-08-17	Class of Service Options (Outgoing Call Service) - ARS Override of Trunk Access Map	0 = Off 1 = On	COS 01 ~ 15 = 0
20-08-19	Class of Service Options (Outgoing Call Service) - Hotline for SPK	0 = Off 1 = On	COS 01 ~ 15 = 0
20-08-20	Class of Service Options (Outgoing Call Service) - Hot Key Pad	0 = Off 1 = On	COS 01 ~ 15 = 0
20-08-21	Class of Service Options (Outgoing Call Service) - Automatic Trunk Seizing by Pressing SPK Key	0 = Off 1 = On	COS 01 ~ 15 = 0
20-08-22	Class of Service Options (Outgoing Call Service) - Voice Over to Busy Virtual Extension	0 = Off 1 = On	COS 01 ~ 15 = 0
20-08-23	Class of Service Options (Outgoing Call Service) - Display indication for security sensor detection	0 = Off 1 = On	COS 01 ~ 15 = 0
20-08-24	Class of Service Options (Outgoing Call Service) - Display indication for emergency call by remote inspection	0 = Off 1 = On	COS 01 ~ 15 = 0
20-09-01	Class of Service Options (Incoming Call Service) - Second Call for DID/DISA/DIL/E&M Override	0 = Off (2nd call will not be allowed.) 1 = On (2nd call is allowed.)	COS 01 ~ 15 = 1
20-09-02	Class of Service Options (Incoming Call Service) - Caller ID Display	0 = Off 1 = On	COS 01 ~ 15 = 1
20-09-03	Class of Service Options (Incoming Call Service) - Sub Address Identification	0 = Off 1 = On	COS 01 ~ 15 = 0
20-09-04	Class of Service Options (Incoming Call Service) - Notification for Incoming Call List Existence	0 = Off 1 = On	COS 01 ~ 15 = 0
20-09-05	Class of Service Options (Incoming Call Service) - Signal/Voice Call	0 = Off 1 = On	COS 01 ~ 15 = 1
20-09-06	Class of Service Options (Incoming Call Service) - Incoming Time Display	0 = Off 1 = On	COS 01 ~ 15 = 0
20-09-07	Class of Service Options (Incoming Call Service) - Call Queuing	0 = Off (Calls are not queued.) 1 = On (Calls are queued.)	COS 01 ~ 15 = 0
20-09-09	Class of Service Options (Incoming Call Service) - Deny Collect Call Receiving	0 = Off 1 = On	COS 01 ~ 15 = 0
20-09-11	Class of Service Options (Incoming Call Service) - ISDN Malicious Call Trace (MCT)	0 = Off 1 = On	COS 01 ~ 15 = 0
20-09-13	Class of Service Options (Incoming Call Service) - DND Active While Ringing	0 = Immediate 1 = Next call	COS 01 ~ 15 = 0
20-10-01	Class of Service Options (Answer Service) - Group Call Pickup (Within Group)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-10-02	Class of Service Options (Answer Service) - Group Call Pickup (Another Group)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-10-03	Class of Service Options (Answer Service) - Group Call Pickup for Specific Group	0 = Off 1 = On	COS 01 ~ 15 = 1
20-10-04	Class of Service Options (Answer Service) - Telephone Call Pickup	0 = Off 1 = On	COS 01 ~ 15 = 1
20-10-05	Class of Service Options (Answer Service) - Directed Call Pickup for Own Group	0 = Off 1 = On	COS 01 ~ 15 = 1
20-10-06	Class of Service Options (Answer Service) - Meet-Me Conference and Paging	0 = Off 1 = On	COS 01 ~ 15 = 1

Program No.	Program Name	Input Data	Default
20-10-07	Class of Service Options (Answer Service) - Automatic Off-Hook Answer	0 = Off 1 = On	COS 01 ~ 15 = 0
20-10-08	Class of Service Options (Answer Service) - Virtual Extension Off-Hook Answer	0 = Off (Ringing Line Preference Disabled) 1 = On (Ringing Line Preference Enabled)	COS 01 ~ 15 = 1
20-10-09	Class of Service Options (Answer Service) - Call Pickup Callback	0 = Off 1 = On	COS 01 ~ 15 = 1
20-10-10	Class of Service Options (Answer Service) - Answer Preset	0 = Off 1 = On	COS 01 ~ 15 = 0
20-11-01	Class of Service Options (Hold/Transfer Service) - Call Forward All	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-02	Class of Service Options (Hold/Transfer Service) - Call Forward When Busy	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-03	Class of Service Options (Hold/Transfer Service) - Call Forwarding When Unanswered	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-04	Class of Service Options (Hold/Transfer Service) - Call Forwarding (Both Ringing)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-05	Class of Service Options (Hold/Transfer Service) - Call Forwarding with Follow Me	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-06	Class of Service Options (Hold/Transfer Service) - Unscreened Transfer (Ring Inward Transfer)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-07	Class of Service Options (Hold/Transfer Service) - Transfer Without Holding	0 = Off 1 = On	COS 01 ~ 15 = 0
20-11-08	Class of Service Options (Hold/Transfer Service) - Transfer Information Display	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-09	Class of Service Options (Hold/Transfer Service) - Group Hold Initiate	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-10	Class of Service Options (Hold/Transfer Service) - Group Hold Answer	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-11	Class of Service Options (Hold/Transfer Service) - Automatic On-Hook Transfer	0 = Off 1 = On	COS 01 ~ 15 = 0
20-11-12	Class of Service Options (Hold/Transfer Service) - Call Forwarding Off Premise (External Call Forwarding)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-13	Class of Service Options (Hold/Transfer Service) - Operator Transfer After Hold Callback	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-14	Class of Service Options (Hold/Transfer Service) - Trunk-to-Trunk Transfer Restriction	0 = Off 1 = On	COS 01 ~ 15 = 0
20-11-15	Class of Service Options (Hold/Transfer Service) - VRS Personal Greeting (Message Greeting)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-16	Class of Service Options (Hold/Transfer Service) - Call Redirect	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-17	Class of Service Options (Hold/Transfer Service) - Department Group Trunk-to-Trunk Transfer (Each Telephone Group Transfer)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-18	Class of Service Options (Hold/Transfer Service) - Transfer Recall on Receiving CoS	0 = Off 1 = On	COS 01 ~ 15 = 0
20-11-19	Class of Service Options (Hold/Transfer Service) - Hold/Extended Park	0 = Off 1 = On	COS 01 ~ 15 = 0
20-11-20	Class of Service Options (Hold/Transfer Service) - No Callback	0 = Off 1 = On	COS 01 ~ 15 = 0
20-11-21	Class of Service Options (Hold/Transfer Service) - Restriction for Tandem Trunking on Hang Up	0 = Allow 1 = Deny	COS 01 ~ 15 = 0

Program No.	Program Name	Input Data	Default
20-11-22	Class of Service Options (Hold/Transfer Service) - Restricted Unsupervised Conference	0 = Allow 1 = Deny	COS 01 ~ 15 = 0
20-11-23	Class of Service Options (Hold/Transfer Service) - CAR/VE Call Forward Set/Cancel	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-24	Class of Service Options (Hold/Transfer Service) - Trunk Park Hold Mode	0 = Non Exclusive Hold (Off) 1 = Exclusive Hold (On)	COS 01 ~ 15 = 1
20-11-25	Class of Service Options (Hold/Transfer Service) - Transfer Park Call	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-26	Class of Service Options (Hold/Transfer Service) - Station Park Hold mode	0 = Off 1 = On	COS 01 ~ 15 = 0
20-11-27	Class of Service Options (Hold/Transfer Service) - Call Park Search	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-28	Class of Service Options (Hold/Transfer Service) - Both Ring Enhancement	0 = Normal 1 = Enhanced	COS 01 ~ 15 = 0
20-11-30	Class of Service Options (Hold/Transfer Service) - Disable Call FWD Indication on LCD	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-31	Class of Service Options (Hold/Transfer Service) - Transfer to Remote Conference	0 = Off 1 = On	COS 01 ~ 15 = 0
20-12-02	Class of Service Options (Charging Cost Service) - Advice of Charge (ISDN-AOC)	0 = Off 1 = On	COS 01~15 = 0
20-12-03	Class of Service Options (Charging Cost Service) - Cost Display (TTU)	0 = Off 1 = On	COS 01~15 = 1
20-13-01	Class of Service Options (Supplementary Service) - Long Conversation Alarm	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-02	Class of Service Options (Supplementary Service) - Long Conversation Cutoff (Incoming)	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-03	Class of Service Options (Supplementary Service) - Long Conversation Cutoff (Outgoing)	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-04	Class of Service Options (Supplementary Service) - Call Forward/DND Override (Bypass Call)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-05	Class of Service Options (Supplementary Service) - Intercom Off-Hook Signaling	0 = Off (ICM off hook signaling disabled.) 1 = On (ICM off hook signaling enabled.)	COS 01 ~ 15 = 1
20-13-06	Class of Service Options (Supplementary Service) - Automatic Off-Hook Signaling (Automatic Override)	0 = Off (manually) 1 = On (automatically)	COS 01 ~ 15 = 1
20-13-07	Class of Service Options (Supplementary Service) - Message Waiting	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-08	Class of Service Options (Supplementary Service) - Conference	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-09	Class of Service Options (Supplementary Service) - Privacy Release	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-10	Class of Service Options (Supplementary Service) - Barge-In Monitor	0 = Speech 1 = Monitor	COS 01 ~ 15 = 0
20-13-11	Class of Service Options (Supplementary Service) - Room Monitor, Initiating Extension	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-12	Class of Service Options (Supplementary Service) - Room Monitor, Extension Being Monitored	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-13	Class of Service Options (Supplementary Service) - Continued Dialing (DTMF) Signal on ICM Call	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-14	Class of Service Options (Supplementary Service) - Department Calling (PLT No Called Extension)	0 = Off 1 = On	COS 01 ~ 15 = 1

Program No.	Program Name	Input Data	Default
20-13-15	Class of Service Options (Supplementary Service) - Barge-In, Initiate	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-16	Class of Service Options (Supplementary Service) - Barge-In, Receive	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-17	Class of Service Options (Supplementary Service) - Barge-in Tone/Display (Intrusion Tone)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-18	Class of Service Options (Supplementary Service) - Programmable Function Key Programming (General Level)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-19	Class of Service Options (Supplementary Service) - Selectable Display Messaging (Text Messaging)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-20	Class of Service Options (Supplementary Service) - Account Code/Toll Restriction Operator Alert (Restricted Operation Transfer)	0 = Off (Call restricted.) 1 = On (Call routed to operator.)	COS 01 ~ 15 = 0
20-13-21	Class of Service Options (Supplementary Service) - Extension Name	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-22	Class of Service Options (Supplementary Service) - Busy Status Display (Called Party Status)	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-23	Class of Service Options (Supplementary Service) - Display the Reason for Transfer	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-24	Class of Service Options (Supplementary Service) - Privacy Release by Pressing Line Key	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-26	Class of Service Options (Supplementary Service) - Group Listen	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-27	Class of Service Options (Supplementary Service) - Busy on Seizing Virtual Extension	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-28	Class of Service Options (Supplementary Service) - Allow Class of Service to be Changed	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-29	Class of Service Options (Supplementary Service) - Paging Display	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-30	Class of Service Options (Supplementary Service) - Background Music	0 = Deny (user cannot control background music on their station.) 1 = Allow (user can control background music on their station.)	COS 01 ~ 15 = 1
20-13-31	Class of Service Options (Supplementary Service) - Connected Line Identification (COLP)	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-32	Class of Service Options (Supplementary Service) - Deny Multiple Barge-Ins	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-33	Class of Service Options (Supplementary Service) - ACD Supervisor's Position Enhancement	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-34	Class of Service Options (Supplementary Service) - Block Manual Off-Hook Signaling	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-35	Class of Service Options (Supplementary Service) - Block Camp On	0 = Off (Camp On blocked.) 1 = On (Camp On allowed.)	COS 01 ~ 15 = 0
20-13-36	Class of Service Options (Supplementary Service) - Call Duration Timer Display	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-38	Class of Service Options (Supplementary Service) - Headset Ringing for SLT	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-40	Class of Service Options (Supplementary Service) - Do Not Disturb	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-41	Class of Service Options (Supplementary Service) - Voice Mail Message Indication on DSS	0 = Off 1 = On	COS 01 ~ 15 = 0

Program No.	Program Name	Input Data	Default
20-13-42	Class of Service Options (Supplementary Service) - Extension Data Swap Enabling	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-43	Class of Service Options (Supplementary Service) - Disconnected Supervision	0 = Off 1 = On	1
20-13-45	Class of Service Options (Supplementary Service) - Mute Key Mode while Call Monitoring	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-46	Class of Service Options (Supplementary Service) - Remote Conference	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-47	Class of Service Options (Supplementary Service) - Station Number Display	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-48	Class of Service Options (Supplementary Service) - Station Name Display	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-49	Class of Service Options (Supplementary Service) - BLF Indication on CO Incoming State	0 = Off (Disabled) 1 = On (Enabled)	COS 01 ~ 15 = 0
20-13-51	Class of Service Options (Supplementary Service) - Number and Name appear in the Directory	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-52	Class of Service Options (Supplementary Service) - VoIPDB All DSP Busy Display	0 = Disable 1 = Enable	COS 01 ~ 15 = 1
20-13-53	Class of Service Options (Supplementary Service) - Language Selection for specific extension	0 = Disable 1 = Enable	COS 01 ~ 15 = 0
20-13-54	Class of Service Options (Supplementary Service) - Call waiting for standard SIP terminal	0 = Disable 1 = Enable	COS 01 ~ 15 = 0
20-13-55	Class of Service Options (Supplementary Service) - Intercom Call to Room Monitor	0 = Off 1 = On	COS 01 ~ 15 = 0
20-14-01	Class of Service Options for DISA/E&M - First Digit Absorption (Delete First Digit Dialed)	0 = Off 1 = On	COS 01 ~ 15 = 0
20-14-02	Class of Service Options for DISA/E&M - Trunk Group Routing/ARS Access	0 = Off 1 = On	COS 01 ~ 15 = 0
20-14-03	Class of Service Options for DISA/E&M - Trunk Group Access	0 = Off 1 = On	COS 01 ~ 15 = 1
20-14-04	Class of Service Options for DISA/E&M - Outgoing System Speed Dial	0 = Off 1 = On	COS 01 ~ 15 = 0
20-14-05	Class of Service Options for DISA/E&M - Operator Calling	0 = Off 1 = On	COS 01 ~ 15 = 1
20-14-06	Class of Service Options for DISA/E&M - Internal Paging	0 = Off 1 = On	COS 01 ~ 15 = 1
20-14-07	Class of Service Options for DISA/E&M - External Paging	0 = Off 1 = On	COS 01 ~ 15 = 1
20-14-08	Class of Service Options for DISA/E&M - Direct Trunk Access	0 = Off 1 = On	COS 01 ~ 15 = 0
20-14-09	Class of Service Options for DISA/E&M - Forced Trunk Disconnect <Not for ISDN T-point>	0 = Off 1 = On	COS 01 ~ 15 = 0
20-14-10	Class of Service Options for DISA/E&M - Call Forward Setting by Remote via DISA	0 = Off 1 = On	COS 01 ~ 15 = 0
20-14-11	Class of Service Options for DISA/E&M - DISA/Tie Trunk Barge-In	0 = Off 1 = On	COS 01 ~ 15 = 0
20-14-12	Class of Service Options for DISA/E&M - Retrieve Park Hold	0 = Off 1 = On	COS 01 ~ 15 = 1

Operation

To change an extension Class of Service (via Service Code 677) :

1. Press **Speaker** key.
2. Dial **677**.
3. Dial the extension number you want to change.
 -  *You see: MODE1: nn*
 -  *Press **Hold** key to leave the current value unchanged.*
 -  *The extension you dial may be set to block your attempt to change their Class of Service.*
4. Enter the Day 1 Mode Class of Service for the extension you selected in step 3 and press **Hold** key.
 -  *You see: MODE2: nn*
 -  *Press **Hold** key to leave the current value unchanged.*
5. Enter the Night 1 Mode Class of Service for the extension you selected in step 3 and press **Hold** key.
 -  *You see: MODE3: nn*
 -  *Press **Hold** key to leave the current value unchanged.*
6. Enter the Midnight 1 Mode Class of Service for the extension you selected in step 3 and press **Hold** key.
 -  *You see: MODE4: nn*
 -  *Press **Hold** key to leave the current value unchanged.*
7. Enter the Rest 1 Mode Class of Service for the extension you selected in step 3 and press **Hold** key.
 -  *You see: MODE5: nn*
 -  *Press **Hold** key to leave the current value unchanged.*
8. Enter the Day 2 Mode Class of Service for the extension you selected in step 3 and press **Hold** key.
 -  *You see: MODE6: nn*
 -  *Press **Hold** key to leave the current value unchanged.*
9. Enter the Night 2 Mode Class of Service for the extension you selected in step 3 and press **Hold** key.
 -  *You see: MODE7: nn*
 -  *Press **Hold** key to leave the current value unchanged.*

10. Enter the Midnight 2 Mode Class of Service for the extension you selected in step 3 and press **Hold** key.

 *You see: MODE8: nn*

 *Press **Hold** key to leave the current value unchanged.*

11. Enter the Rest 2 Mode Class of Service for the extension you selected in step 3 and press **Hold** key.

 *You see: Enter Station#*

12. Go to step 3 and enter another extension number.

- OR -

Press **Speaker** key to hang up.

Clock/Calendar Display/Time and Date

Description

The system uses Clock/Calendar Display/Time and Data for:

- Central Office Calls (Access Maps)
- Class of Service (Class)
- Direct Inward Lines
- Display Telephones
- Night Service (Automatic)
- Programmable Trunk Parameters
- Ring Groups
- Station Message Detail Recording
- System Reports
- Toll Restriction (Class)
- Trunk Group Routing
- Voice Mail
- Voice Response System

Daylight Savings changes are made automatically based on the time Zone setting in PRG 10-01-09. Version 3.00 or higher:

If daylight saving time needs to be disabled, select proper GMT offset setting between No.421 to 444 in PRG 10-01-09.

Example of New York without daylight: Set 441 (UTC/GMT-04:00) in PRG10-01-09.

Clock Adjustment

The system can be programmed to automatically adjust the system clock on a nightly basis. This feature allows you to make adjustments should the system cabinet regularly lose or gain time.

Conditions

- The system retains the Clock/Calendar Display after a power failure or system reset.
- Changing the time may change the current Class of Service (COS) service depending on the COS mode setup.
- You can program the system to automatically switch modes.
- Single Line Terminals cannot set the time and date.
- Changing the system time automatically changes the InMail time.

Default Settings

Enabled

System Availability

Terminals

All Multiline Terminals with a display

Required Component(s)

None

Related Features

Class of Service

Night Service

Single Line Terminals

InMail

Voice Mail Integration (Analog)

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-01-01	Time and Date - Year	16 ~ 35	No Setting
10-01-02	Time and Date - Month	01 ~ 12	No Setting
10-01-03	Time and Date - Day	01 ~ 31	No Setting
10-01-05	Time and Date - Hour	00 ~ 23	No Setting
10-01-06	Time and Date - Minute	00 ~ 59	No Setting
10-01-07	Time and Date - Second	00 ~ 59	No Setting
10-01-09	Time and Date - Time Zone	Refer to Programming Manual.	309
20-02-07	System Options for Multiline Telephones - Time and Date Display Mode		4
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-07-03	Class of Service Options (Administrator Level) - Time Setting	0 = Off 1 = On	COS 1 ~ 15 = 1

Operation

The date must be set in system programming (10-01).

To set the system Time:

1. Press **Speaker** key.
2. Dial **728**.
3. Dial two digits for the hour (24 hour clock, 13 = 1:00 PM).
4. Dial two digits for the minutes (00~59).
5. Press **Speaker** key to hang up.

Code Restriction/Toll Restriction

Description

Code Restriction/Toll Restriction limits the numbers an extension user may dial. By allowing extensions to place only certain types of calls, you can better control long distance costs. The system applies Code Restriction according to the Code Restriction Class. The system allows for up to 15 Code Restriction Classes and 128 extensions.

Conditions

- If a Code Restriction Class has the same entries in both a permit and restriction table, the system does not restrict the call.
- Code Call Digit counting may prevent users from taking advantage of long distance automated services like ACD and automated Technical Service.
- Code Restriction is applied when accessing ARS.
- If PRG 21-01-10 is programmed with an entry other than 0, a call cannot have a talk path unless the user dials at least the number of digits entered in this option when placing an out going call. This means that an entry of 4 or higher in this program causes a problem when dialing 999 or 112. Since these are only 3-digit numbers, the call does not have a talk path, preventing the emergency dispatcher from hearing the caller. This option should be kept at its default setting of 0 to prevent any problem with dialing 999 or 112.
- Common Permit Code Table
Use the Common Permit Code Table when you have numbers you want all Code Restriction Classes to dial. To let all users dial 999 or 112, for example, put 999 & 112 in the Common Permit Code Table. The Common Permit Code Table overrides the Restrict Code and Common Restrict Code Tables. The system provides 10 tables, with 10 entries in each table. Each code is four digits maximum, using 0~9, #, * and **Flash** key (as a wild card).
- Common Restrict Code Table
The Common Restrict Code Table lets you globally restrict certain numbers for all Code Restriction Classes. Be sure you do not allow the codes you want to restrict in the Permit Code Table or the Common Permit Code Table. The system provides 10 tables, with 10 entries in each table. Each code is four digits maximum, using 0~9, #, * and **Flash** key (as a wild card).
- Restrict Code Table
When you want Code Restriction to allow most calls and restrict only selected calls, use the Restrict Code Table. To block only 1-900 calls, for example, enter 1900 in the Restrict Code Table. (If the same Code Restriction Class has both Permit and Restrict Code Tables, the system restricts calls that you enter only in the Restrict Code Table. Calls entered in both tables are not restricted.) The system provides four tables, with 60 entries (restricted codes) in each table. A restricted code is 12 digits maximum, using 0~9, #, * and **Flash** key (as a wild card).
- Permit Code Table
The Permit Code Table lets you set up Code Restriction so that users can dial only selected (permitted) telephone numbers. Use this table when you want to restrict most calls. To allow all users to dial only area code 01203, for example, enter 01203 in the Permit Code Table. 01203 + (digits) are the only numbers users can dial. (If the same Code Restriction Class has both Permit and Restrict Code Tables, the system restricts calls that you enter only in the Restrict Code Table. Calls entered in both tables are not restricted.) The system provides four tables, with 200 entries (permitted codes) in each table. A permitted code is 12 digits maximum, using 0~9, #, * and **Flash** key (as a wild card).

- **International Call Restriction**
International Call Restriction lets you limit the international calls an extension user may dial. You can build a restrict table to prevent only certain calls, or you can build a permit table to allow only certain calls. To allow most international calls, use the International Call Restrict Table. To prevent most international calls, use the International Call Allow Table. The system provides 10 International Call Restrict tables with up to four digits in each table entry and 20 International Call Allow tables, with up to six digits in each table entry. Valid entries are 0~9, #, * and **Flash** key (for a wild card).
- **Code Restriction for Speed Dialing**
Speed Dialing can bypass or follow Code Restriction. If you allow many users to program Speed Dialing, consider code restricting the numbers they dial. If only administrators can program Speed Dialing, Code Restriction may not be necessary. You can separately restrict Group and Common Speed Dialing.
- **Toll Digit Counting**
Use Call Digit Counting to limit the number of digits local callers can dial. You can use this option to prevent users from accessing local dial-up services. For example, set the Maximum Number of Digits in Local Calls to seven to limit local callers to dialing local numbers only. The system provides four tables in which you can make entries for this option. The range is 4~30 digits.
- **Code Call Digit Counting**
With Code Call Digit Counting, you can limit the number of digits long distance callers can dial. This lets you prevent callers from dialing extensively into long distance dial-up services. You can make four entries (4~30 digits).
- **Toll Free Trunks**
Certain trunks can be completely unrestricted, such as the company president's Private Line. Users can place calls on Code Free Trunks anytime - to anywhere, without inadvertently being Code restricted.
- **PBX Call Restriction**
Code Restriction programming lets you enable/disable PBX Call Restriction and enter PBX access codes. You only need to do this if your system is behind a PBX and you have trunks programmed for behind PBX operation. Refer to [PBX Compatibility](#) feature for the specifics.
- A user can temporarily override an extension's Code Restrictions.
- The system allows or denies outgoing access to trunks depending on Code Restriction.
- When using DISA, additional programming is required for Code Restriction (DISA, refer to PRG 25-10).
- A user can temporarily block their extension Code Restriction access, preventing unwanted calls from being placed on their telephone while they are away from their desk.
- A phone and a trunk will have a Restriction Class. The higher class applies for outgoing calls. For example:
 - When trunk class is 01 and station class 02, Toll Restriction Class 02 is applied.
 - When trunk class is 15 and station class 03, Toll Restriction Class 15 is applied.

Default Settings

Disabled

System Availability

Terminals

All Stations

Required Component(s)

None

Related Features

Central Office Calls, Placing

Code Restriction Override/Toll Restriction Override

Code Restriction, Dial Block/Toll Restriction, Dial Block

Direct Inward System Access (DISA)

PBX Compatibility/Behind PBX

Multiple Trunk Types

Guide to Feature Programming

The programs listed below indicate the most commonly used programs required for this feature. The programs are listed in the order that the installer should follow. Refer to the PCPro wizards for further detailed programming.

- When a * is listed next to the Program Number it indicates a program that **MUST** be set (from a default state) for this feature to be enabled.

Program No.	Program Name	Input Data	Default
14-01-08	Basic Trunk Data Setup - Toll Restriction	0 = Restriction Disabled (Toll restriction will not be applied to calls on this trunk.) 1 = Restriction Enabled (Toll restriction will be applied to calls on this trunk.)	1
21-04-01 *	Toll Restriction Class for Extensions - Restriction Class	1 ~ 15 = Toll Class 1 ~ 15	2
21-21-01	Toll Restriction for Trunks (Seized Trunk Basis Setting) - Restriction Class	1 ~ 15 = Toll Class 1 ~ 15	1
15-02-30	Multiline Telephone Basic Data Setup - Toll Restriction Class	0 = Virtual Extension (Follows virtual extension Toll Class in PRG 21-04.) 1 = Real Extension (Follows physical stations Toll Class in PRG 21-04.)	1
21-05-01	Toll Restriction Class - International Call Restriction Table	0 = Unassign (No international restrict table applied.) 1 = Assign (Table in PRG 21-06-01 is applied.)	Class No1, 6 ~ 15 : 0 Class No2 ~ 5 : 1
21-06-01	Toll Restriction Table Data Setup - International Call Restriction Table	Maximum of 4 digits to be assigned	All Table = No Setting
21-05-02	Toll Restriction Class - International Call Permit Code Table	0 = Unassign (No international permit table applied.) 1 = Assign (Table in PRG 21-06-02 is applied.)	Class No1, 3 ~ 15 : 0 Class No2 : 1
21-06-02	Toll Restriction Table Data Setup - International Call Permit Code Table	Maximum of 6 digits to be assigned	All Table = No Setting
21-05-04	Toll Restriction Class - Maximum Number of Digits Table Assignment	0 = No Table Applied 1 ~ 4 = Tables 1 ~ 4 (Defined in PRG 21-06-03)	Class No1 ~ 2, 6 ~ 15 : 0 Class No3 : 1 Class No4 : 2 Class No5 : 3

Program No.	Program Name	Input Data	Default
21-06-03	Toll Restriction Table Data Setup - Maximum Number of Digits Table Assignment	4 ~ 30 = 4 ~ 30 digits	Tables 1~ 4 = 30
21-05-05	Toll Restriction Class - Common Permit Code Table	0 = Unassign (No common permit table applied.) 1 = Assign (Table in PRG 21-06-04 is applied.)	Class No1, 8 ~ 15 : 0 Class No2 ~ 7 : 1
21-06-04	Toll Restriction Table Data Setup - Common Permit Code Table	Maximum of 4 digits to be assigned	Table1 = 000 Table2-10 = No Setting
21-05-06	Toll Restriction Class - Common Restriction Table	0 = Unassign (No common restrict table applied.) 1 = Assign (Table in PRG 21-06-05 is applied.)	Class No1, 6 ~ 15 : 0 Class No2 ~ 5 : 1
21-06-05	Toll Restriction Table Data Setup - Common Restriction Table	Maximum of 12 digits to be assigned	All Table = No Setting
21-05-07 *	Toll Restriction Class - Permit Code Table	0 = No Permit Table Assigned 1 ~ 4 = Permit Tables 1 ~ 4 (assigned in PRG 21-06-06)	Class No1 ~ 2, 6 ~ 15 : 0 Class No3 : 1 Class No4 : 2 Class No5 : 3
21-06-06 *	Toll Restriction Table Data Setup - Permit Code Table	Maximum of 12 digits to be assigned	All Table = No Setting
21-05-08 *	Toll Restriction Class - Restriction Table	0 = No Permit Table Assigned 1 ~ 4 = Restrict Tables 1 ~ 4 (assigned in PRG 21-06-07)	0
21-06-07 *	Toll Restriction Table Data Setup - Deny Restriction Table	Dial Maximum of 12 digits to be assigned	All Table = No Setting
21-05-09	Toll Restriction Class - Restriction for Common Speed Dials	0 = Does Not Restrict 1 = Following Restriction Check	0
21-05-10	Toll Restriction Class - Restriction for Group Speed Dials	0 = Does Not Restrict 1 = Following Restriction Check	0
21-05-11	Toll Restriction Class - Intercom Call Restriction	0 = Disable (ICM call not restricted.) 1 = Enable (ICM call restricted.)	0
21-05-12	Toll Restriction Class - PBX Call Restriction	0 = Disable (PBX/CTX call not restricted.) 1 = Enable (PBX/CTX call restricted.)	Class 1 ~ 6 = 0 Class 7 = 1 Class 8 ~ 15 = 0
21-06-08	Toll Restriction Table Data Setup - PBX Access Code	Maximum of 2 digits to be assigned	Table 1~4 = No Setting
20-13-20	Class of Service Options (Supplementary Service) - Account Code/Toll Restriction Operator Alert (Restricted Operation Transfer)	0 = Off (Call restricted.) 1 = On (Call routed to operator.)	COS 01 ~ 15 = 0
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-08-02	Class of Service Options (Outgoing Call Service) - Trunk Outgoing Calls	0 = Off 1 = On	COS 01 ~ 15 = 1
21-01-10	System Options for Outgoing Calls - Dial Digits for Toll Restriction Path	0 ~ 36	0
21-01-15	System Options for Outgoing Calls - Outgoing Disable on Incoming Line (Toll Restriction)	0 = Disable (Off) 1 = Enable (On)	0
21-01-16	System Options for Outgoing Calls - Supervise Dial Detection Timer	0 ~ 64800 seconds	20
21-01-17	System Options for Outgoing Calls - Restriction Digit in Outgoing Disable on Incoming Line	Digits 1 ~ 9	4

Program No.	Program Name	Input Data	Default
35-02-01	SMDR Output Options - Toll Restricted Call	0 = Not Displayed 1 = Displayed	1

Operation

To place a trunk call if your system is Code Restricted:

1. Place call normally.



If your Code Restriction Class does not allow the number you dial, your call is cut off.

Code Restriction Override/Toll Restriction Override

Description

Code Restriction Override/Toll Restriction Override lets a user temporarily bypass the Code Restriction for an extension. This helps a user that must place an important call that Code Restriction normally prevents. For example, you could set up Code Restriction to block 100 calls and then provide a Code Restriction Override code to your attendant and executives. When the attendant or executive needs to place a 100 call, they just:

- Press **Speaker** key, dial a service code, and enter their override code.
- Press **Speaker** key and dial a trunk access code (e.g., 0 or # 0 002).
- Place the 100 call without restriction.

You can assign a different Code Restriction Override code to each extension. Or, extensions can share the same override code.

Code Restriction Override overrides all Code Restriction programming. Walking Code Restriction allows you to assign a Code Restriction level for each user. When a call is placed using Walking Code Restriction, the restriction for the call is based on the Code Restriction level defined in PRG 21-05-xx and PRG 21-06-xx.

Conditions

- Off-Premise notification and external extensions require access to outside lines.
- In the Class heading in the SMDR report, POTA indicates that the call was placed using Temporary Code Restriction Override.
- Code Restriction Override and Walking Code Restriction temporarily overrides an extension Code Restriction.
- Users will hear, "Your call cannot go through. Please call the operator" when they dial a number that Code Restriction prevents.
- Walking Toll Restriction ID table supports maximum 500 tables.

Default Settings

Disabled

Related Features

Central Office Calls, Placing

Code Restriction/Toll Restriction

Station Message Detail Recording

Voice Response System (VRS)

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-11-34	Service Code Setup (for Setup/Entry Operation) - Temporary Toll Restriction Override	0~9, *, # Maximum of 8 digit	775
11-11-36	Service Code Setup (for Setup/Entry Operation) - Toll Restriction Override	0~9, *, # Maximum of 8 digit	663
20-08-06	Class of Service Options (Outgoing Call Service) - Toll Restriction Override	0 = Off 1 = On	COS 01 ~ 15 = 0
21-01-07	System Options for Outgoing Calls - Toll Restriction Override Time	0 ~ 64800 seconds	10
21-07-01	Toll Restriction Override Password Setup - Password	Four Digits (Fixed)	No Setting
21-14-01	Walking Toll Restriction Password Setup - User ID	Dial (Six digits)	No Setting
21-14-02	Walking Toll Restriction Password Setup - Walking Toll Restriction Class Number	1 ~ 15	1
35-02-01	SMDR Output Options - Toll Restricted Call	0 = Not Displayed 1 = Displayed	1
35-02-02	SMDR Output Options - PBX Calls	0 = Not Displayed 1 = Displayed	1
35-02-03	SMDR Output Options - Trunk Number or Name	0 = Name 1 = Number	1
35-02-04	SMDR Output Options - Summary (Daily)	0 = Not Displayed 1 = Displayed	1
35-02-05	SMDR Output Options - Summary (Weekly)	0 = Not Displayed 1 = Displayed	1
35-02-06	SMDR Output Options - Summary (Monthly)	0 = Not Displayed 1 = Displayed	1
35-02-07	SMDR Output Options - Toll Charge Cost	0 = Not Displayed 1 = Displayed	1
35-02-08	SMDR Output Options - Incoming Call	0 = Not Displayed 1 = Displayed	1
35-02-09	SMDR Output Options - Extension Number or Name	0 = Name 1 = Number	1
35-02-10	SMDR Output Options - All Lines Busy (ALB) Output	0 = Not Displayed 1 = Displayed	0
35-02-11	SMDR Output Options - Walking Toll Restriction Table Number	0 = Not Output 1 = Output	1
35-02-12	SMDR Output Options - DID Table Name Output	0 = Not Displayed 1 = Displayed	0
35-02-13	SMDR Output Options - CLI Output When DID to Trunk	0 = Not Displayed 1 = Displayed	0
35-02-14	SMDR Output Options - Date	0 = Not Displayed 1 = Displayed	0
35-02-15	SMDR Output Options - CLI/DID Number Switching	0 = CLI (CLIP) 1 = DID Calling Number 2 = Calling Party Name	0
35-02-16	SMDR Output Options - Trunk Name or Received Dialed Number	0 = Trunk Port Name 1 = Received Dialed Number 2 = Both 3 = Both (8digits)	0
35-02-17	SMDR Output Options - Print Account Code or Caller Name of Incoming Call	0 = Account Code 1 = Called Party Name	0

Program No.	Program Name	Input Data	Default
35-02-18	SMDR Output Options - Print Mode for Caller Name of Incoming Call	0 = Normal 1 = Line Feed	0

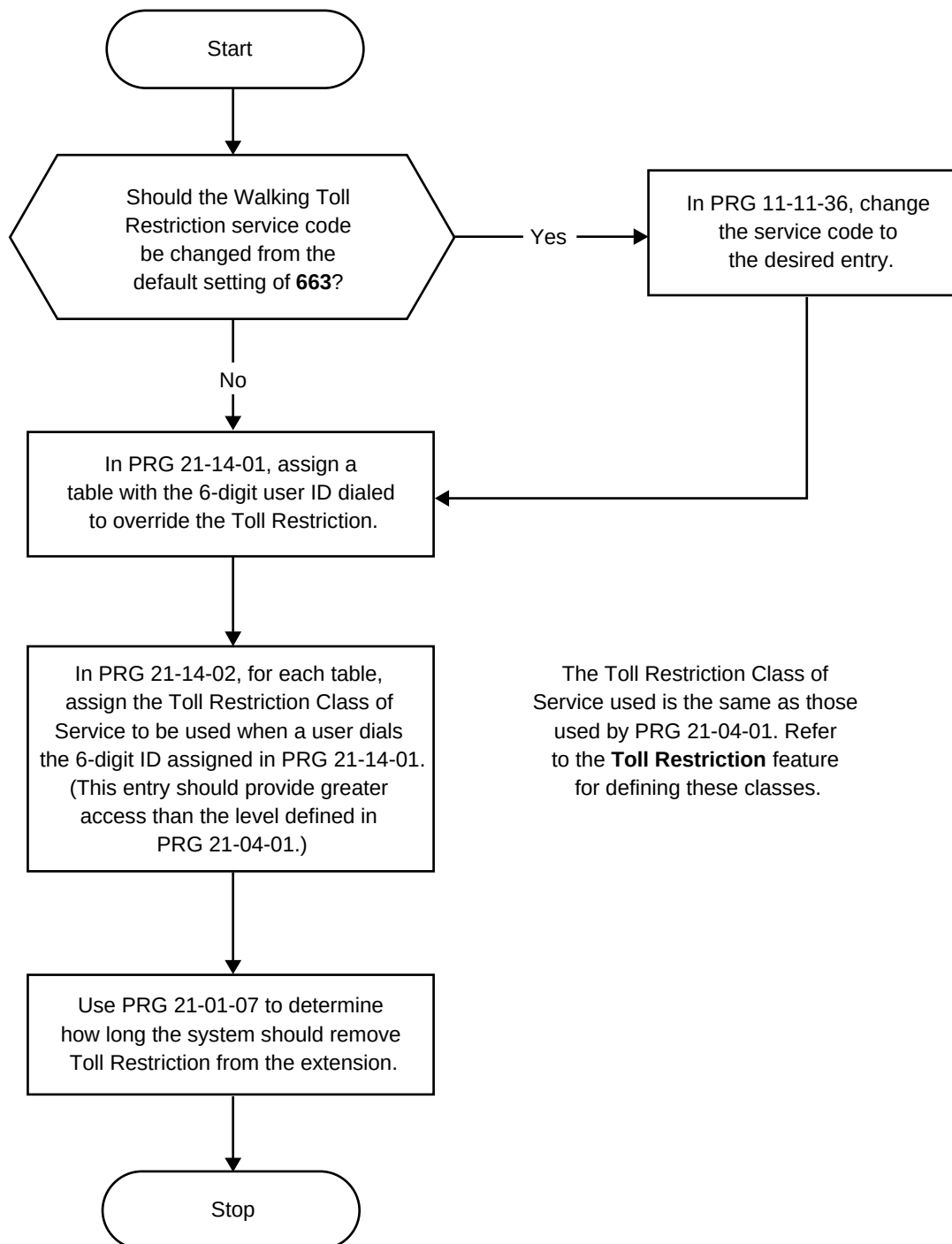


Figure 1-4 Walking Code Restriction

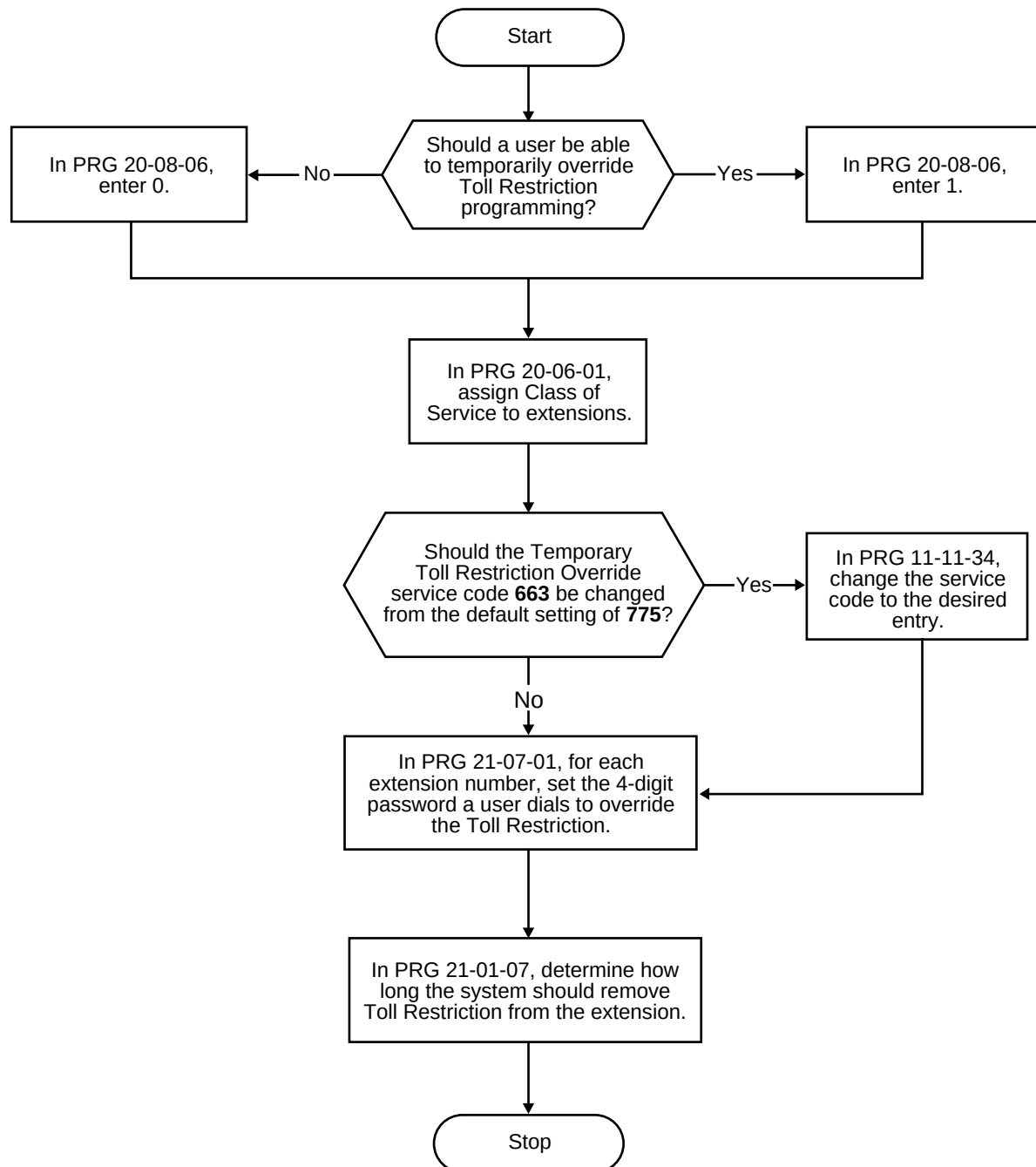


Figure 1-5 Temporary Code Restriction Override

Operation

To temporarily override a restricted extension Code Restriction:

 You can override restriction for only one call at a time.

1. At the Multiline Terminal, press **Speaker** key.
- OR -
At Single Line Terminal, lift the handset.
2. Dial **775**.

3. Dial the 4-digit Code Restriction Override code.



If you wait too long before going to the next step, you may have to repeat the procedure. After dialing the service code, the display indicates the override codes as they are being entered. As the last digit is entered, the display is cleared and ICM dial tone is heard.



You hear an error tone if you dial your code incorrectly.

4. Press idle line key or dial trunk access code.
5. Dial the number without any restriction.

To use your Walking Code Restriction level at an extension:



You can override restriction for only one call at a time.

1. At the Multiline Terminal, press **Speaker** key.
- OR -
At the Single Line Terminal, lift the handset.
2. Dial **663** and dial the 6-digit Walking Toll Restriction Class of Service code.



After dialing the service code, the display indicates the override codes as they are being entered. As the last digit is entered, the display is cleared and ICM dial tone is heard.



You hear an error tone if you dial your code incorrectly.

3. Press idle line key or dial trunk access code.
4. Dial the number.



The call is allowed or denied based on the user's Toll Restriction Class of Service level.

Code Restriction, Dial Block/Toll Restriction, Dial Block

Description

Code Restriction, Dial Block/Toll Restriction, Dial Block lets a user temporarily block dialing on an extension. This helps a user block his or her phone from being used by another person while they are away from their desk. A user would need to enter a 4-digit personal code to enable/disable this feature.

Dial Block can also be set by the supervisor's access code. If Dial Block is set by an extension user, the supervisor cannot release it. Additionally, if Dial Block is set by the supervisor's code, the extension user cannot release it.

Important: This function works by password and Class of Service control (the supervisor is not an assigned extension). If Dial Block is available for all Classes of Service, everyone may become a supervisor if they know the Dial Block password.

Conditions

- If the system is reset by a first initialize, the Dial Block feature is cleared.
- This feature is not available for ISDN S-Bus extensions.
- Both PRG 21-09-01 (Code Restrict Class) and PRG 21-10 (Dial Block Restriction Class per Extension) can be set at the same time. However the system gives priority to the setting in PRG 21-10.
- Dial Block can temporarily block an extension Code Restriction setting by changing to a predefined table that has more restrictions.

Default Settings

Disabled

System Availability

Terminals

None

Required Component(s)

None

Related Features

None

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-10-17	Service Code Setup (for System Administrator) - Dial Block by Supervisor	0~9, *, # Maximum of 8 digit	601
11-11-33	Service Code Setup (for Setup/Entry Operation) - Dial Block	0~9, *, # Maximum of 8 digit	600
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-08-08	Class of Service Options (Outgoing Call Service) - Toll Restriction Dial Block	0 = Off 1 = On	COS 01 ~ 15 = 1
21-07-01	Toll Restriction Override Password Setup - Password	Four Digits (Fixed)	No Setting
21-09-01	Dial Block Setup - Toll Restriction Class With Dial Block	1 ~ 15	15
21-09-02	Dial Block Setup - Supervisor Password	0 ~ 9, *, # (4-digit fixed)	No Setting
21-10-01	Dial Block Restriction Class Per Extension - Toll Restriction Class	0, 1 ~ 15 (0 = No Setting)	0
90-19-01	Dial Block Release - Delete IP Telephone	[Release ?] : Dial 1 + press Hold (Press Hold only to cancel.)	-

Operation

To set Dial Block:

- At the Multiline Terminal, press **Speaker** key.
- OR -
At the Single Line Terminal, lift the handset.
- Dial **600** (default).
- Dial the 4-digit Dial Block Code (as set in programming).
- Dial **1**.



Confirmation tone is heard.

- Press **Speaker** key or replace the handset to hang up.

To release Dial Block:

- At the Multiline Terminal, press **Speaker** key.
- OR -
At the Single Line Terminal, lift the handset.
- Dial **600**.
- Dial the 4-digit Dial Block code.
- Dial **0**.



Confirmation tone is heard.

- Press **Speaker** key or replace the handset to hang up.

To set Dial Block from another extension:

1. At the Multiline Terminal, press **Speaker** key.
- **OR** -
At the Single Line Terminal, lift the handset.
2. Dial **601** (default).
3. Dial the 4-digit Supervisor Dial Block code (as set in programming).
4. Dial the extension number to blocked.
5. Dial **1**.



Confirmation tone is heard.

6. Press **Speaker** key or replace the handset to hang up.

To release Dial Block from another extension:

1. At the Multiline Terminal, press **Speaker** key.
- **OR** -
At the Single Line Terminal, lift the handset.
2. Dial **601**.
3. Dial the 4-digit Supervisor Dial Block code.
4. Dial the extension number to be released from Dial Block.
5. Dial **0**.



Confirmation tone is heard.

6. Press **Speaker** key or replace the handset to hang up.

Conference

Description

Conference lets an extension user add additional inside and outside callers to their conversation. With Conference, a user can set up a multiple-party telephone meeting without leaving the office. The CPU provides 32 conference ports, allowing any number of internal or external parties to be conferenced together for a limit of 16 parties. This means that one extension can conference up to 15 internal and/or external parties together (the originator would be the 16th party reaching the maximum of 16). While this Conference call is active, another user can initiate a separate Conference also for a limit of 16 parties, or any number of conferences can be initiated with any number of parties (up to 16) until all 32 Conference ports are busy.

Conditions

- Split allows a user to alternate (i.e., switch) between their callers in Conference. This allows a dispatcher, for example, to control a telephone meeting between themselves, a customer and a service technician. The dispatcher can meet together with all parties, privately set up a service strategy with the technician and then meet again to set the schedule.
- Split cycles through the Conference in the same order in which the Conference was initially set up. If a user places an outside call, conferences extension 200 followed by extension 201, Split cycles from the trunk, to 200 and finally to 201. The Split cycle then repeats.
- If a user's extension has Barge-In ability enabled, they can also Barge-In on an established Conference. This permits, for example, an attendant or supervisor to join a Conference in an emergency. It also allows a co-worker to leave a conference - and then rejoin the telephone meeting when it is convenient to do so.



If a user's extension has Barge-In monitor enabled (PRG 20-13-10), they can Silent Monitor a conference already in progress.

- A Class of Service option is available which allows or denies an extension user from automatically setting up a Conference/Tandem Trunking call upon hanging up the telephone.
- An extension with Barge-In ability can Transfer a call into an existing Conference. This allows, for example, an attendant to locate co-workers and then Transfer them into an existing telephone meeting. There is no need for the attendant to locate all the parties at the same time and sequentially add them into the Conference. Transfer Call Into Conference Code (624).
- When set for Conference, with an active call, the user presses **DND/CONF** key or **Conf** softkey or **Conf** key (PRG 15-07 or SC **751** : 7) (2W Digital Multiline Terminal/IP Multiline Terminal), places a second call, then presses Conf twice. All the calls are then connected.
- Users can Barge-In on a Conference call if allowed in programming.
- DISA users may use the Barge-In feature on a Conference call if they know the service code and are permitted in their DISA Class of Service.
- Meet Me Conference lets an extension user set up a Conference via Paging.
- A user can set up an Unsupervised Trunk-to-Trunk Conference and then drop out of the call, allowing the remaining parties to continue the conversation. Establish two trunk calls press **Hold** key and dial **#8**.
- The system allows a call to be transferred into a Conference call.
- When the Conference Originator hangs up with a conference on Hold, or when trying to add another caller, all internal calls are dropped.
- When in a conference call between an outside user and multiple Internal users, the conference is terminated if any of the internal conference users press hold.

- Conferencing when talking on a Virtual Extension:
 - While talking on a Virtual Extension, if the station has an internal call on Hold, a conference call cannot be established.
 - While talking on a Virtual Extension, if the station receives an intercom call (call to its actual station number), a conference call cannot be established.
 - While talking on a Virtual Extension, if the station has a call on Hold, a conference call cannot be established.
- With SL2100 system, Standard SIP Terminals can initiate a conference call using Conference key on the terminal.

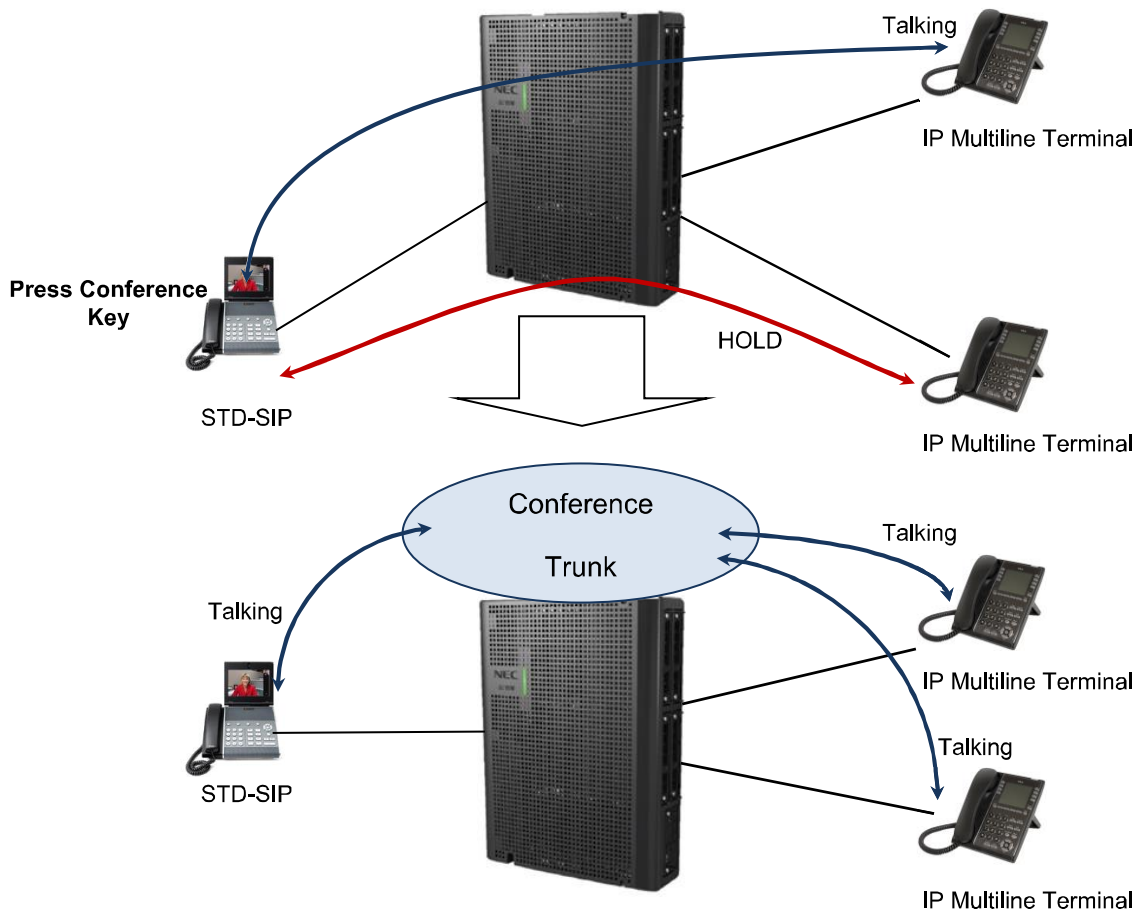


Figure 1-6 Standard SIP Conference

- PRG 20-13-08 must be enabled for the Class of Service the Standard SIP Terminal is in.
- A DSP Resource is required to be assigned for each Standard SIP Phone or **IP Multiline Terminal** that is a part of the conference.

Member 1	Member 2	Member 3	Necessary number of DSP
Std-SIP	IP7WW-12/24TXH-B TEL	IP7WW-12/24TXH-B TEL	1
Std-SIP	Std-SIP	IP7WW-12/24TXH-B TEL	2
Std-SIP	IP Multiline Terminal	Std-SIP	3

- Video calls are not supported.
- The following conference features are not supported with Standard SIP:
 - Barge-in to Conference
 - Split between the parties in conference
 - Transfer a Call into a Conference

Default Settings

Enabled

System Availability

Terminals

Standard SIP Phone

Multiline and Single Line Terminals

Required Component(s)

None

Related Features

None

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-12-08	Service Code Setup (for Service Access) - Barge-In	0~9, *, # Maximum of 8 digit	710
11-12-47	Service Code Setup (for Service Access) - SLT Call Waiting Answer/Split Answer	0~9, *, # Maximum of 8 digit	794
11-12-57	Service Code Setup (for Service Access) - Unsupervised Conference/Tandem Trunking	0~9, *, # Maximum of 8 digit	#8
11-12-58	Service Code Setup (for Service Access) - Transfer Into Conference	0~9, *, # Maximum of 8 digit	624
11-16-02	1-digit Service Code Setup - Barge-In	0~9, *, # Maximum of 1 digit	No Setting
14-01-04	Basic Trunk Data Setup - Transmit Gain Level for Conference and Transfer Calls	1 ~ 63 (- 15.5 dB ~ + 15.5 dB in 0.5 dB intervals)	32 (0 dB)
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-11-21	Class of Service Options (Hold/Transfer Service) - Restriction for Tandem Trunking on Hang Up	0 = Allow 1 = Deny	COS 01 ~ 15 = 0
20-13-08	Class of Service Options (Supplementary Service) - Conference	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-10	Class of Service Options (Supplementary Service) - Barge-In Monitor	0 = Speech 1 = Monitor	COS 01 ~ 15 = 0

Program No.	Program Name	Input Data	Default
20-13-15	Class of Service Options (Supplementary Service) - Barge-In, Initiate	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-16	Class of Service Options (Supplementary Service) - Barge-In, Receive	0 = Off 1 = On	COS 01 ~ 15 = 0
20-14-11	Class of Service Options for DISA/E&M - DISA/Tie Trunk Barge-In	0 = Off 1 = On	COS 01 ~ 15 = 0

Operation

Conference Procedure:

Standard SIP Phone [ITX-1DE-1W TEL]

1. Establish an intercom or a trunk call.
2. Press Conf key to hold the first call.
3. Establish second call (intercom or trunk), which to be added in the conference.
4. When called party answers, press Conf key.
5. Repeat steps 2-4 to add more parties in the conference.

To establish a Conference:

Multiline Terminal

1. Establish intercom or trunk call.
2. Press Conf softkey or Conf key (PRG 15-07 or SC **751** : 7) on Programmable Function key.
3. Dial the extension you want to add.
- OR -
 Access outside call.
- OR -
 Retrieve call from Park orbit.

 *To get the outside call, you can either press a line key or press **Speaker** key and dial **0**, the Trunk Access Code + the trunk number (default #0). You can optionally go back to step 2 to add more parties to your Conference.*
4. When called party answers, press Conf softkey or Conf key (IP7WW-12/24TXH-B1/IP7[]-8IPLD-C1 TEL) twice.

 *If you cannot add additional parties to your Conference, you have exceeded the system Conference limit.*

 *If the call being added is busy/unanswered:
With an outside call, press the line key for a call previously added to the Conference. The unanswered call drops and the initiator is back into the Conference call.*

 *Adding an Intercom call to an outside Conference call: Press Conf softkey or Confkey on Programmable Function key twice to re-establish the Conference.*

 *With only Intercom calls in the Conference: Press Conf softkey or Conf key on Programmable Function key twice to re-establish the Conference. If the voice mail answers, there is no way to drop that extension out. You must drop the Conference call.*
5. Repeat steps 2~4 to add more parties.

Single Line Terminal

1. Establish intercom or trunk call.
2. Hookflash and dial **#1**.
3. Dial extension you want to add.
- **OR** -
Access trunk call.
- **OR** -
Retrieve call from Park orbit.
4. Hookflash and repeat step 3 to add more parties.
- **OR** -
Hookflash twice to set up the Conference.

To Split (alternate) between the parties in Conference:

Multiline Terminal

1. Press Conf softkey or Conf key (PRG 15-07 or SC **751** : 7) on Programmable Function key.
2. Dial Split service code (**794**).



Repeat this procedure to alternate between the remaining parties in the Conference. Press the Conf softkey or Conf key on Programmable Function key twice to set up the Conference again.

Single Line Terminal

1. Hookflash and dial **794**.



Repeat this procedure to alternate between the remaining parties in the Conference. Hookflash twice to set up the Conference again.

To drop an outside call from the Conference:

1. Press **Hold** key to place the conference call on hold.
2. Hang up.



The lines involved in the Conference ring back separately to the telephone.

3. Answer and disconnect the unwanted outside call.
4. To re-establish the Conference, answer the remaining call by pressing Conf softkey or Conf key on Programmable Function key after each call is answered. Press Conf softkey or Conf key on Programmable Function key twice when all calls have been answered.

To exit a Conference with internal and outside conference members without affecting the other parties:

Multiline Terminal

1. Hang up.



*If you press **Hold** while on a call with two outside callers, the outside callers hear what is programmed in PRG 10-04-01.*

Single Line Telephone

1. Hang up.



If you are not permitted to use Tandem Trunking, outside callers may hear Music on Hold.

To exit a Conference when all conference members are outside parties without affecting the other parties:

Multiline Terminal

1. Press **Hold** key.
2. Dial **#8**.
3. Hang up.

Single Line Telephone

1. Hookflash and dial **#8**.
2. Hang up.

To Barge-In to Conference Call:

1. Pick up the handset or press **Speaker** key and dial the service code (default = **710**).



If the telephone does not have the proper COS, a warning tone is sent. After the user hangs up, the system automatically places a Callback to the extension.

2. Dial the extension number or press a **DSS** key of a telephone within a Conference call.



When a new call is added to the conference, an intrusion tone is heard by all parties in the Conference, depending on system programming, and all display Multiline Terminals show the joined party. If a Conference is not possible:

- the extension user hears a warning tone
- the DISA user is rerouted to the defined ring group

- OR -

The following steps are not available for DISA:

1. Dial the extension number of the internal party.
2. Dial the single digit service code, if programmed.



*Instead of the single digit service code, the service code **710** can also be dialed at this point.*

To Transfer a Call into a Conference:

1. While on a call, press **Hold** key.
2. Dial the Transfer to Conference service code (**PRG 11-12-58**, default = **624**).



If the telephone does not have the proper COS, a warning tone is sent. After the user hangs up, the system automatically places a Callback to the extension.



The display shows the line Number, Number/Name and Extension Name/Number.

3. Dial the extension number or press a **DSS** key of a telephone in a Conference call.



If an error tone is heard, Barge-In is disabled for the extension and the call cannot go through. Retrieve the call by pressing the flashing line Key or hang up and the call recalls the extension.



When the call is transferred into the Conference, an intrusion tone is heard by all parties in the conference, depending on the entries in PRG 20-13-17 and PRG 80-01, and all display Multiline Terminals show the joined party.



To cancel the transfer, press the flashing line Key to retrieve the call.

4. Hang up.

Conference, Remote

Description

The Remote Conference feature enhances the Conference feature by allowing outside parties to dial a Remote Conference pilot number and a Conference Group number to connect to a Conference call. The conference circuits on the CPU are used to join each party to the conference. A maximum of 16 conference participants is possible for one Conference. However, the conference call cannot be split over the CPU's conference blocks. This could limit the number of participants if other conference circuits are in use.

A maximum of 4 simultaneous Remote Conference calls is possible. The conference call is password protected so that any user joining the conference would be required to enter a password before being connected.

- One terminal or trunk needs one conference channel to participate in the conference.
- The conference call cannot be split over the CPU's two conference blocks, limiting the number of conference participants to 16.

Conditions

- Networking calls cannot be transferred to remote Conference.
- Remote Conference port cannot be transferred.

Default Setting

Not defined

System Availability

Terminals

Standard SIP Phone

Multiline and Single Line Terminals

Required Component(s)

SL2100 REMOTE CONF-01 LIC (License Code 0047)

Related Features

Barge-In



The Barge-In feature cannot be used for an extension user on a Remote Conference call.

Call Forward



The Remote Conference pilot number can not be set as the destination for Call Forward.

Hold

Using Hold while on a Remote Conference call is not possible.

Transfer

Transfer to Remote Conference is supported.

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-19-01	Remote Conference Pilot Number Setup - Remote Conference Group Pilot Number	Dial (Up to 8 digits)	No Remote Conference Pilot Numbers assigned to any Conference Group (1-4)
14-01-02	Basic Trunk Data Setup - Transmit Level	1 ~ 57 (- 15.5 dB ~ + 12.5 dB in 0.5 dB intervals)	32 (0 dB)
14-01-03	Basic Trunk Data Setup - Receive Level	1 ~ 57 (- 15.5 dB ~ + 12.5 dB in 0.5 dB intervals)	32 (0 dB)
14-01-04	Basic Trunk Data Setup - Transmit Gain Level for Conference and Transfer Calls	1 ~ 57 (- 15.5 dB ~ + 12.5 dB in 0.5 dB intervals)	32 (0 dB)
14-01-05	Basic Trunk Data Setup - Receive Gain Level for Conference and Transfer Calls	1 ~ 57 (- 15.5 dB ~ + 12.5 dB in 0.5 dB intervals)	32 (0 dB)
14-02-09	Analog Trunk Data Setup - Busy Tone Detection	0 = Disable (No) 1 = Enable (Yes)	1
15-02-06	Multiline Telephone Basic Data Setup - Hold Key Operating Mode	0 = Normal (Common) 1 = Exclusive Hold 2 = Park Hold	0
20-11-11	Class of Service Options (Hold/Transfer Service) - Automatic On-Hook Transfer	0 = Off 1 = On	COS 01 ~ 15 = 0
20-11-31	Class of Service Options (Hold/Transfer Service) - Transfer to Remote Conference	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-46	Class of Service Options (Supplementary Service) - Remote Conference	0 = Off 1 = On	COS 01 ~ 15 = 1
20-34-01	Remote Conference Group Setup - Conference Name	Up to 12 characters	Group1 = Conf1 Group2 = Conf2 Group3 = Conf3 Group4 = Conf4
20-34-02	Remote Conference Group Setup - Password	4 digits Fixed (0 ~ 9, @ = wild character)	Group1 = 1111 Group2 = 2222 Group3 = 3333 Group4 = 4444
20-34-03	Remote Conference Group Setup - Max participants	0 ~ 16	8
20-34-04	Remote Conference Group Setup - Max Conference Duration	0 ~ 64800 seconds	7200
20-34-05	Remote Conference Group Setup - End Tone Alert Time	0 ~ 64800 seconds	300

Operation

To joining a Remote Conference Call:

1. Internal Extension:
Lift the handset and dial the extension number of the Remote Conference pilot number (assigned in PRG 11-19-01).
- OR -
External Party:
Dial the telephone number for the Remote Conference pilot number (assigned in PRG 11-19-01).
 - When using a sub address, dial the Remote Conference pilot number as the Subaddress.
2. The password is requested by the VRS (Please enter your security code.).
3. Dial the password of the conference group.
4. If the password matches, the participant becomes part of the Remote Conference.
If the password does not match, a warning tone is heard.
 - A busy tone will also be heard if the maximum number of Remote Conference participants has been reached or if a conference resource cannot be secured.
 - As the maximum time for the conference nears, the system will provide an end tone to the participants according to the timer in PRG 20-34-05. Once this timer expires, if the conference is still ongoing, the call will be disconnected by the system.

Transferring a Call into a Remote Conference Call:

1. With an active call, press the **Transfer** key.
2. Dial the **Conference Pilot number** (Program 11-19-01) then hang up. The caller is prompted to enter the conference password.



PRG 20-11-11 must be enabled for Automatic On Hook Transfer.

- OR -

1. With an active call, press the **Hold** key. (Both Normal Hold and Exclusive Hold are supported as per PRG 15-02-06)
- OR -
With an active call, press the **Hold** key and Dial Group Hold service code (**732**) as defined in PRG 11-12-33)
2. Dial the **Conference Pilot number**, then press the **Transfer** Key. The caller is prompted to enter the conference password.
 - Warning Tone is heard if VRS channels are full.

Automated Attendant Transfer the Call into a Remote Conference Call:

1. Automated Attendant answer the trunk call.
2. Dial the **Remote Conference Pilot number**.
 - Dial action table can also be used to transfer the call, Only unscreened transfer is supported.
 - If VRS channels are full, User will connect to Remote Conference and Remote Conference Prompts repeats again.
 - If Remote Conference members are full, User will connect to Remote Conference and Remote Conference Prompts repeats again.

If PRG 20-11-31 is Disabled, User will connect to Remote Conference and Remote Conference Prompts repeats again.
3. The caller is prompted to enter the password.

4. If the password matches, the participant becomes part of the Remote Conference.
If the password does not match the trunk call is disconnected.

Table 1-7 Different combinations of program 20-13-46 and program 20-11-31 for Operator and User.

Operator	User to be Transferred	
	20-13-46: ON	20-13-46: OFF
20-13-46: ON 20-11-31: ON	Transfer to Remote Conference	Operator hears busy tone
20-13-46: ON 20-11-31: OFF	After Calling to Remote Conference, Operator hears VRS message	After Calling to Remote Conference, Operator hears VRS message
20-13-46: OFF 20-11-31: ON	After Calling to Remote Conference, Operator hears Warning Tone	After Calling to Remote Conference, Operator hears Warning Tone
20-13-46: OFF 20-11-31: OFF	After Calling to Remote Conference, Operator hears the Warning Tone	After Calling to Remote Conference, Operator hears the Warning Tone

Conference - Remote Conference Recording

Description

The Remote Conference Recording feature enhances the built in conference capabilities of the SL2100 by allowing the recording of conference calls. The recording feature is configured per conference to start automatically or manually. All participants are provided a Prompt stating recording and intrusion tone. If a participant joins after recording of a conference has started they will receive a prompt stating recording and intrusion tone. Recordings are stored in an InMail mailbox. Due to one conference resource being used when recording, a maximum of 15 conference participants is possible for one Conference.

Conditions

- Automatic Recording starts when the first person is joined in the conference.
- The recording time limit is set by multiplying Program 47-01-03 x 10 with a maximum recording limit of 65 minutes.
- Recording requires one additional conference resource to record per conference. This means the maximum number of conference participants when using the recording feature is 15.
- A conference should always be assigned for one additional participant, up to the maximum of 16, to account for the conference circuit needed for recording.
- Conference recordings will follow the notification and Email forwarding setting of the destination mailbox.
- Conference recordings cannot be stored in an InMail Group Mailbox.
- Recorded conference can be downloaded or deleted from the system using the User Pro login for the mailbox the recordings are stored in.
- Manual recording can only be performed from a multiline telephone.
- When using manual recording with Function key #10 then only the user that started the call recording can stop it by pressing the #10 key. If other internal users, that have joined the conference, have the #10 key assigned then it will show red to indicate recording, they can not stop the recording by pressing their #10 key.
- A total of 32 combined callers can participate in Remote Conferences if conference resources are available.
- "Recording" is displayed on the LCD of the initiator.
- Conference Recording Key lights RED for automatic or manual.

Default Settings

None

System Availability

Terminals

To initiate Manual Recording- Multiline Terminals are supported

For Automatic Recording- All type of terminals are supported

Required Component(s)

None

Related Features

Conference - Remote

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
15-07-01	Programmable Function Keys	Line Key 1 ~ 32 0 ~ 99, #00~ #99 (Normal Function Code 751 by default) * 00 ~ * 99 (Appearance Function Code) (Service Code 752 by default)	Refer to the Programming Manual for the default values.
20-34-03	Remote Conference Group Setup - Max participants	0 ~ 16	8
20-34-08	Remote Conference Group Setup - Conference Group Setup - Automatic Recording	0 = Disable 1 = Enable	0
20-34-09	Remote Conference Group Setup - Conference Group Setup - Destination Mail Box	Enter mailbox number: 1 ~ 128	No Setting
47-01-03	InMail System Options - Incoming Message Length	1 ~ 4095 seconds	120 seconds

Operation

Manual Recording a Remote Conference Call:

1. From a multiline terminal press the line key assigned as the conference record key (Program 15-07-01 or SC **751**: #10).
2. Prompt stating recording and intrusion tone is heard by all participant. All participants that join later will also hear these notifications.
3. To end the recording press the line key assigned as the conference record key.
- OR -
When all participants hang up the recording stops.

Conference, Voice Call/Privacy Release

Description

Voice Call Conference lets extension users in the same work area join in a trunk Conference. To initiate a Voice Call Conference, an extension user just presses the Meet-Me Conference key and tells their co-workers to join the call. The system releases the privacy on the trunk, and other users can just press the trunk line key to join the call. Line keys assigned for the trunk blink indicating that privacy has been released, and others can join the current call.

Voice Call Conference does not use the telephone system features to announce the call. The person initiating the Voice Call Conference just announces it verbally. A tone, indicating others have joined the conference, can be provided.

The CPU provides 32 Conference circuits, to allow internal or external parties to be conferenced together up to a limit of 16.

Privacy Mode Toggle Option

The Privacy Mode Toggle option allows an extension user to quickly change an outside call from the non-private mode to the private mode. If the outside call is on a line key, the user just presses the line key to switch from non-private mode to private mode. For systems using the Privacy Mode Toggle option, trunks initially have the privacy released. The remainder of the call is private. If the call is on a Loop Key, the user presses their Meet-Me Conference function key instead. Unlike pressing the line key, pressing the Meet-Me Conference key toggles back and forth between private and non-private mode for the call.

Conditions

- Call Arrival (CAR) Keys and Virtual Extensions do not support Voice Call Conference Programmable Function keys.
- Voice Call Conference requires a Meet-Me Conference function key and trunk line keys.
- This feature is not available on Single Line Terminals.
- With Caller ID enabled, a call with Privacy Release shows the Caller ID until the call is answered. It can be viewed again by pressing the line key, though this sets the call to Private mode. To keep the call on Privacy Release, press the Help + Exit keys.

Default Settings

Disabled

System Availability

Terminals

All Multiline Terminals

Required Component(s)

None

Related Features

Caller ID

Conference

Programmable Function Keys

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
14-01-19	Basic Trunk Data Setup - Privacy Mode Toggle Option	0 = Disable (No) 1 = Enable (Yes)	0
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-13-09	Class of Service Options (Supplementary Service) - Privacy Release	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-17	Class of Service Options (Supplementary Service) - Barge-in Tone/Display (Intrusion Tone)	0 = Off 1 = On	COS 01 ~ 15 = 1
31-01-04	System Options for Internal/External Paging - Privacy Release Time	0 ~ 64800 seconds	90 seconds

Operation

To join a Voice Call Conference (if invited):

- After Conference request, press indicated line key.

 A **Conf** indication is displayed on both telephones.

 A trunk with privacy release or Voice Call Conference blinks.

To exit a Voice Call Conference without affecting the other parties:

- Press **Speaker** key to hang up.

To toggle between Private and Non-Private mode:

- Press the **Meet-Me Conference** key (PRG 15-07-01, SC **751**: 32).

- OR -

Press the **Trunk Line** key. (This toggles from Non-Private to Private. To go back to Non-Private, the **Meet-Me Conference** key above must be pressed.)

Continued Dialing

Description

Continued Dialing allows an extension user to dial a call, wait for the called party to answer and then dial additional digits. This helps users that need services like Voice Mail, automatic banking and Other Common Carriers (OCCs).

There are two types of Continued Dialing:

Continued Dialing for Intercom Calls

Depending on an extension Class of Service, a Multiline Terminal user may be able to dial additional digits after their Intercom call connects. In systems with Voice Mail, for example, Continued Dialing lets extension users dial the different options after the Voice Mail answers. Without Continued Dialing, extension users cannot access these Voice Mail options.

Continued Dialing for Trunk Calls

Continued Dialing gives a user access to outside services like automatic banking, an outside Automated Attendant, bulletin boards and Other Common Carriers (OCCs). After the outside service answers, the user can dial digits for whatever options the services allow. Without Continued Dialing, the system Toll Restriction cuts off the call after a specific number of dialed digits. See Programming below for additional information.



Continued Dialing may make the system more susceptible to toll fraud.

Conditions

- The ability to use Continued Dialing on trunk calls is set by Toll Restriction programming.
- Continued Dialing for intercom calls only applies to calls made to analog type devices.
- With Pulse to Tone Conversion, users can place calls to services over Dial Pulse trunks-and then dial DTMF digits after the service answers.

Default Settings

Enabled

System Availability

Terminals

All Multiline Terminals

Required Component(s)

None

Related Features

Pulse to Tone Conversion

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
15-03-03	Single Line Telephone Basic Data Setup - Terminal Type	0 = Normal 1 = Special	0
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-13-13	Class of Service Options (Supplementary Service) - Continued Dialing (DTMF) Signal on ICM Call	0 = Off 1 = On	COS 01 ~ 15 = 1
21-04-01	Toll Restriction Class for Extensions - Restriction Class	1 ~ 15 = Toll Class 1 ~ 15	2
21-05-04	Toll Restriction Class - Maximum Number of Digits Table Assignment	0 = No Table Applied 1 ~ 4 = Tables 1 ~ 4 (Defined in PRG 21-06-03)	Class No1 ~ 2, 6 ~ 15 : 0 Class No3 : 1 Class No4 : 2 Class No5 : 3
21-06-03	Toll Restriction Table Data Setup - Maximum Number of Digits Table Assignment		Tables 1~4 = 30

Operation

To use Continued Dialing:

1. Place an intercom or trunk call.
2. Continue dialing after the call connects.

Data Line Security

Description

Data Line Security protects any station port from receiving audible tones (such as Camp-On or Override) and denies a station from barging in while busy to prevent disruption of data transmission when using a modem or facsimile machine.

Conditions

- When a Multiline Terminal and a Single Line Terminal are assigned for Data Line Security, Tone Override/Voice Override and Call Alert notification tone are not heard over the handset speaker.
- Data Line Security protects a station from Barge-in, even when Barge-In is allowed in Class of Service.
- When any Multiline Terminal or Single Line Terminal calls a station with Data Line Security, a constant busy tone is heard.

Default Settings

None

System Availability

Terminals

All Terminals

Required Component(s)

None

Related Features

None

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
15-02-12	Multiline Telephone Basic Data Setup - Off-Hook Ringing	0 = Muted Off-Hook Ringing 1 = No Off-Hook Ringing 3 = Beep in Speaker (SP) 4 = Beep in Handset (HS) 5 = Speaker and Handset Beep	5
20-09-05	Class of Service Options (Incoming Call Service) - Signal/Voice Call	0 = Off 1 = On	COS 01 ~ 15 = 1

Program No.	Program Name	Input Data	Default
20-09-06	Class of Service Options (Incoming Call Service) - Incoming Time Display	0 = Off 1 = On	COS 01 ~ 15 = 0
20-09-07	Class of Service Options (Incoming Call Service) - Call Queuing	0 = Off (Calls are not queued.) 1 = On (Calls are queued.)	COS 01 ~ 15 = 0
20-13-05	Class of Service Options (Supplementary Service) - Intercom Off-Hook Signaling	0 = Off (ICM off hook signaling disabled.) 1 = On (ICM off hook signaling enabled.)	COS 01 ~ 15 = 1
20-13-06	Class of Service Options (Supplementary Service) - Automatic Off-Hook Signaling (Automatic Override)	0 = Off (manually) 1 = On (automatically)	COS 01 ~ 15 = 1
20-13-35	Class of Service Options (Supplementary Service) - Block Camp On	0 = Off (Camp On blocked.) 1 = On (Camp On allowed.)	COS 01 ~ 15 = 0

Operation

None

Delayed Ringing

Description

Delayed Ringing allows programmed secondary answering positions to ring on incoming calls after a programmed time. This feature applies to CO/PBX lines, Secondary Incoming Extensions, Virtual Extensions, and Call Arrival Keys.

Conditions

- An extension user can answer an outside call just by lifting the handset (depending on programming).
- Terminals must have CO line appearance for a trunk call to be answered on the telephone.

Default Settings

None

System Availability

Terminals

All Terminals

Required Component(s)

None

Related Features

Call Arrival (CAR) Keys

Central Office Calls, Answering

Secondary Incoming Extension

Virtual Extensions

Video Conference with Web RTC

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
14-07-01	Trunk Access Map Setup - Access Map	0 = No access 1 = Outgoing access only 2 = Incoming access only 3 = Access only when trunk on Hold 4 = Outgoing access and access when trunk on Hold 5 = Incoming access and access when trunk on Hold 6 = Incoming and Outgoing access 7 = Full access	Access Map 1~128 = Trunk Ports 1~128 assigned with option 7 access (incoming and outgoing access and access when trunk is on Hold).
15-06-01	Trunk Access Map for Extensions - Trunk Access Map Number	001 ~ 128	1
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
15-09-01	Virtual Extension Ring Assignment - Ringing	0 = No Ringing 1 = Ring	0
15-11-01	Virtual Extension Delayed Ring Assignment - Ringing	0 = Immediate Ring 1 = Delayed Ring	0
20-04-03	System Options for Virtual Extensions - Call Coverage Delay Interval	0 ~ 64800 seconds	10
22-01-04	System Options for Incoming Calls - DIL No Answer Recall Time	0 ~ 64800 seconds 0 = No Overflow	0
22-02-01	Incoming Call Trunk Setup - Trunk Service Type	0 = Normal 1 = VRS (second dial tone if no VRS installed) 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delayed VRS 7 = ANI/DNIS 8 = DID (DDI) Mode Switching	0
22-08-01	DIL/IRG No Answer Destination - Incoming Ring Group Number	0 = No Setting 01 ~ 50 = Incoming Group 102 = VMI 103 = Centralized VM	Group01 has 101, 102, 103, 104, 105, 106, 107, and 108 (First 8 ports ringing)

Operation

To answer Delay Ringing calls:

- Go off-hook.
- **OR** -
Press the **Answer** key.
- **OR** -
Press the flashing key.
 Either the Trunk key or CAR/SIE/VE key.

To program a CAR/SIE/VE key on a phone:

1. Press **Speaker** key.
2. Dial **752**.
3. Press the key you want to program.
4. Dial ***03**.
5. Dial the number of the extension you want to appear on the key.
6. Press **Hold** key once for Immediate Ring (skip to step 8 for Delayed Ring).
7. Dial the mode number in which the key will ring.
 - 1 = Day 1
 - 2 = Night 1
 - 3 = Midnight 1
 - 4 = Rest 1
 - 5 = Day 2
 - 6 = Night 2
 - 7 = Midnight 2
 - 8 = Rest 2
8. Press **Hold** key for a second time for Delayed Ring, or skip to step 10.
9. Dial the mode number in which the key will delay ring.
 - 1 = Day 1
 - 2 = Night 1
 - 3 = Midnight 1
 - 4 = Rest 1
 - 5 = Day 2
 - 6 = Night 2
 - 7 = Midnight 2
 - 8 = Rest 2
10. Press **Speaker** key.

Delayed IRG Ringing

Description

Ver.2.00 or higher, Delayed IRG Ringing allows to program the delayed ring time within the Incoming Ring Group (PRG 22-04). Each ringing extension user within the Incoming Ring Group (IRG) can be set for the delayed ringing one by one.

Following features are supported with Delayed IRG Ringing (PRG 22-04):

1. Normal Incoming Call/Normal Incoming Call including Virtual Extension call
2. Normal/DIL Incoming Call when no answer
3. VRS/DISA Call when the Dial Tone is time over or the wrong dialing
4. VRS/DISA Call when no answer
5. DID call when set the transfer destination to IRG
6. DID Call when no answer
7. Press Service Code (PRG 11-15-09) to transfer the trunk call to IRG

Conditions

Delayed IRG Ringing

- When the delayed ringing sets for virtual extension, it rings after the expiry of delay timer for IRG delay time (PRG 22-04-02) and virtual extension delay time (PRG 20-04-03/PRG 20-31-03).
- If the pilot extension in the Multi-Device Group set for the delayed ringing, all the members extension in the Multi-Device Group will not audibly ringing, only line key will flash and PRG 22-04-02 will not effective. To answer the call line key must be pressed.

Transferred from IRG/DIL incoming call

- When IRG is set as transfer target for DIL/IRG No Answer Destination (PRG 22-08-01), it rings according to the setting of PRG 22-04-02. In this case, it rings after the expiry of delay timer for IRG delay time (PRG 22-04-02) and Normal/DIL incoming call no answer timer (PRG 20-04-03/PRG 20-31-03).
- When the setting of DIL/IRG No Answer Destination timer (PRG 22-01-04/PRG 20-31-08) is shorter than the setting of delayed ring timer (PRG 22-04-02), below table will be follow:
PRG 22-01-04 (Normal, DIL incoming call no answer Timer): 10 (sec)
PRG 22-08-01 is set to IRG2 for particular trunk.

Trunk type	PRG 22-04-01 (IRG1)	PRG 22-04-02 for IRG 1	PRG 22-04-01 (IRG2)	PRG 22-04-02 for IRG 2	Result
ISDN	100	15	102	0	Ext 100 will rings after 15 second and after 5second ext 101 will ring. If the call is unanswered the call will transfer to IRG2. Ext 102 will ring after 5 second of ext 100 and 10 second of Ext 101.
	101	20			
SIP	100	15	102	0	Ext 100 will rings after 15 second and after 5second ext 101 will ring. If the call is unanswered the call will transfer to IRG2. Ext 102 will ring after 5 second of ext 100 and 10 second of Ext 101.
	101	20			
Analog	100	15	102	0	Ext 100 and 101 will not ring and after 20 seconds ext 102 will ring.
	101	20			

- When the terminal is not ringing, the incoming call history is not saved. And, before the terminal is ringing, the automatic off-hook answer does not work.

Transferred from VRS/DISA incoming call

- When IRG is set as transfer target for VRS/DISA Transfer Ring Group with incorrect dialing (PRG 25-03-01), it rings according to the setting of PRG 22-04-02. In this case, it rings after the expiry of delay timer for IRG delay time (PRG 22-04-02) and the VRS/DISA Dial Tone Time (PRG 25-07-01).
- When IRG is set as transfer target for VRS/DISA Transfer Ring Group with no answer/busy (PRG 25-04-01), it rings according to the setting of PRG 22-04-02. In this case, it rings after the expiry of delay timer for IRG delay time (PRG 22-04-02) and the VRS/DISA No Answer Time (PRG 25-07-02).

Transferred from DID incoming call

- When IRG is set as transfer target for Dial-In transfer Target 1/2 (PRG 22-11-05/06), it rings according to the setting of PRG 22-04-02.
- When IRG is set as transfer target for Dial-In transferred Destination (PRG 22-12-01), it rings according to the setting of PRG 22-04-02. In this case, it rings after the expiry of delay timer for IRG delay time (PRG 22-04-02) and the DID No Answer Time (PRG 22-01-06).

Transferred by Service Code

- When the call is transferred to IRG using the service code set in PRG 11-15-09, it rings according to the setting of PRG 22-04-02.

An extension facing on a SIP (Tie Line) over the networking can not assign to the IRG members.

Default Settings

None

System Availability**Terminals**

All Terminals

Required Component(s)

None

Related Features

Direct Inward Line (DIL)

Direct Inward System Access (DISA)

Direct Inward Dialing (DID)

Ring Groups

Transfer

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-15-09	Service Code Setup, Administrative (for Special Access) - Transfer to Incoming Ring Group	0~9, *, # Maximum of 8 digit	No Setting
15-11-01	Virtual Extension Delayed Ring Assignment - Ringing	0 = Immediate Ring 1 = Delayed Ring	0
20-04-03	Virtual Extension System Options - Call Coverage Delay Interval	0 ~ 64800 seconds	10
20-31-03	Timer Class Timer Settings - Call Coverage Delay Interval Time (Virtual Extension Key)	0 ~ 64800 seconds	10
20-31-08	Timer Class Timer Settings - DIL/Incoming Ring Group No Answer Time	0 ~ 64800 seconds	0
20-31-09	Timer Class Timer Settings - DID Ring - No - Answer Time	0 ~ 64800 seconds	20
20-31-17	Timer Class Timer Settings - DID/DISA No Answer Time (Disconnect or IRG or VM)	0 ~ 64800 seconds	0
22-01-04	Incoming Call System Options - Normal, DIL incoming call no answer Timer	0 ~ 64800 seconds 0 = No overflow	0
22-01-06	Incoming Call System Options - DID (DDI) no answer time	0 ~ 64800 seconds	0
22-02-01	Incoming Call Trunk Setup - Trunk Service Type	0 = Normal 1 = VRS (second dial tone if no VRS installed) 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delayed VRS 7 = ANI/DNIS 8 = DID (DDI) Mode Switching	0
22-04-01	Incoming Ring Group Extension Assignment - Extension Number	Maximum eight Digits	Group01 has 101, 102, 103, 104, 105, 106, 107, and 108 (First 8 ports ringing)
22-04-02	Incoming Ring Group Extension Assignment - Delayed Ring	0 ~ 60 seconds	0
22-05-01	Incoming Trunk Ring Group Assignment - Incoming Ring Group Number	0 = No Setting 01 ~ 50 = Incoming Group 102 = VMI 103 = Centralized VM	1
22-06-01	Normal Incoming Ring Mode - Ring Mode	0 = Not ringing 1 = Ringing	1
22-08-01	DIL/IRG No Answer Destination - Incoming Ring Group Number	0 = No Setting 01 ~ 50 = Incoming Ring group 102 = VM 103 = Centralized VM	Group01 has 101, 102, 103, 104, 105, 106, 107, and 108 (First 8 ports ringing)
22-11-01	DID Translation Table - Received Number	Maximum of 8 digits (0 ~ 9, *, #)	Refer to the Programming Manual.
22-11-02	DID Translation Table - Target	Maximum 36 digits (0 ~ 9, *, #)	Refer to the Programming Manual.
22-11-04	DID Translation Table - Transfer Operation Mode	0 = No setting 1 = Busy 2 = No Answer 3 = Busy/No Answer	0

Program No.	Program Name	Input Data	Default
22-11-05	DID Translation Table - Transfer Target 1	0 = No setting 01 ~ 50 = Incoming Ring Group 102 = VM 201 ~ 250 = Department Group 400 = VRS 401 = DISA 501 ~ 599 = DISA/VRS Message 1000 ~ 1999 = Common ABB Dial (000 ~ 999)	0
22-11-06	DID Translation Table - Transfer Target 2	0 = No setting 01 ~ 50 = Incoming Ring Group 102 = VM 103 = Centralized VM 201 ~ 250 = Department Group 400 = VRS 401 = DISA 501 ~ 599 = DISA/VRS Message 1000 ~ 1999 = Common ABB Dial (000 ~ 999)	0
22-11-11	DID Translation Table - Fall over IRG	0 = Disable (Calls will not be routed to PRG 22-12.) 1 = Enable (Calls will be routed to PRG 22-12.)	0
22-12-01	DID Intercept Ring Group - Incoming Ring Group Number	0 = No setting 01 ~ 50 = Incoming Ring group 102 = VM 103 = Centralized VM	1
25-03-01	VRS/DISA Transfer Ring Group With Incorrect Dialing - Incoming Group Number	0 = Disconnect 01 ~ 50 = Incoming Ring Group 102 = VMI 103 = Centralized VM 104 = Assign the Speed Dial Number	1
25-04-01	VRS/DISA Transfer Ring Group With No Answer/Busy - Incoming Group Number	Ring Groups: 1 ~ 50 Trunk Ports: 001 ~ 128 Day/Night Mode: 1 ~ 8 0 = Disconnect 1 ~ 100 = Incoming Ring Group 102 = In-Skin/External Voice Mail or InMail 103 = Centralized VM 104 = Speed Dial Bin (table Program 25-15-01)	0
25-07-01	VRS/DISA Service System Timers - DUD Dial Tone	0 ~ 64800 seconds	10
25-07-02	VRS/DISA Service System Timers - DUD/DISA No Answer Time	0 ~ 64800 seconds	0

Operation

Example

To set up the Delayed IRG Ringing via Normal Incoming Call:

< Program >

- PRG 22-02-01: 0 (Normal)
- PRG 22-05-01(Incoming Trunk Ring Group): Trunk Port 1 - IRG 1
- PRG 22-04:

Index1: Incoming Ring Group No. (1 ~ 50)	Index2: Incoming Ring Group Extension Members (01 ~ 48)	PRG 22-04-01: Extension Number	PRG 22-04-02: Delayed Ring time (sec.)
1	1	101	0
	2	102	3
	3	103	5

1. Incoming call to trunk port1.
2. Ext.101 rings.
3. Ext.102 rings 3 sec later.
4. After that, Ext.103 rings 2 sec later.

To set up the Delayed IRG Ringing including Virtual extension via Normal Incoming Call:

< Program >

- PRG 22-02-01 (Trunk Service Type): 0 (Normal)
- PRG 22-05-01 (Incoming Trunk Ring Group): Trunk Port 1 - IRG 1
- PRG 22-04:

Index1: Incoming Ring Group No. (1 ~ 50)	Index2: Incoming Ring Group Extension Members (01 ~ 48)	PRG 22-04-01: Extension Number	PRG 22-04-02: Delay Ring Interval (sec.)
1	1	101	0
	2	102	3
	3	201 (with Virtual Extension)	5

- PRG15-07:

Index1: Extension Number	Index2: Function Key (01 ~ 48)	PRG 15-07-01: Function Number	PRG 15-07-02: Additional Data
110	LK9	*3	201
111	LK9	*3	201

- PRG15-09:

Index1: Extension Number	Index2: Function Key (01 ~ 48)	Index3: Day/Night Mode (1 ~ 8)	PRG 15-09-01: Ring Data
110	LK9	1	1 (Ring)
111	LK9	1	1 (Ring)

- PRG15-11-01:

Index1: Extension Number	Index2: Function Key (01 ~ 48)	Index3: Day/Night Mode (1 ~ 8)	PRG 15-11-01: Delayed Ring
110	LK9	1	0 (Not Ring)
111	LK9	1	1 (Ring)

- PRG20-04-03(Call Coverage Delay Interval): 5 (sec.)

1. Incoming call to trunk port1.
2. Ext.101 rings.
3. Ext.102 rings 3 sec later.

4. After 2 sec, Ext.110 and Ext.111 ring.

To set up the Delayed IRG Ringing via Normal/DIL Incoming Call when no answer:

< Program >

- PRG 22-01-04 (Normal, DIL incoming call no answer Timer): 10 (sec)
- PRG 22-02-01 (Trunk Service Type): 0...Normal
- PRG 22-05-01 (Incoming Ring Group): Trunk Port1: 1
- PRG 22-08-01 (DIL/IRG No Answer Destination): Trunk Port1: 2
- PRG 22-04:

Index1: Incoming Ring Group No. (1 ~ 50)	Index2: Incoming Ring Group Extension Members (01 ~ 48)	PRG 22-04-01: Extension Number	PRG 22-04-02: Delay Ring Interval (sec.)
1	1	101	0
2	1	102	0
	2	103	3

1. Incoming call to trunk port1.
2. Then Ext.101 rings.
3. Ext.102 rings 10 sec later.
4. After that Ext.103 rings 3 sec later.

To set up the Delayed IRG Ringing via VRS/DISA Call when dial tone time over or wrong dial:

< Program >

- PRG 22-02-01 (Trunk Service Type): Trunk port1 - 2 (DISA)
- PRG 25-03-01 (Incoming Ring Group No.): 1 (IRG 1)
- PRG 25-07-01 (VRS/DISA Dial Tone sending timer): 10 (sec)
- PRG 22-04:

Index1: Incoming Ring Group No. (1 ~ 50)	Index2: Incoming Ring Group Extension Members (01 ~ 48)	PRG 22-04-01: Extension Number	PRG 22-04-02: Delay Ring Interval (sec.)
1	1	101	0
	2	102	3

1. Incoming call to trunk (DISA) port1 and automatically answer with unique dial tone.
2. Dial the 6-digit DISA password.
3. Wait without any additional dials.
4. Then, Ext.101 rings 10 sec later.
5. After that Ext.102 rings 3 sec later.

To set up the Delayed IRG Ringing via VRS/DISA Call when no answer or busy:

< Program >

- PRG 22-01-04 (Normal, DIL incoming call no answer Timer): 10 (sec)
- PRG 22-02-01 (Trunk Service Type): 2 (DISA)
- PRG 25-04-01 (VRS/DISA Transfer Ring Group With No Answer/Busy): 1 (Incoming Ring Group 1)
- PRG 25-07-02 (VRS/DISA No answer Time): 10 (sec)
- PRG 22-04:

Index1: Incoming Ring Group No. (1 ~ 50)	Index2: Incoming Ring Group Extension Members (01 ~ 48)	PRG 22-04-01: Extension Number	PRG 22-04-02: Delay Ring Interval (sec.)
1	1	101	0
	2	102	3

1. Incoming call to trunk (DISA) port1 and automatically answer with unique dial tone.
2. Dial the 6-digit DISA password.
3. Dial 105.
4. Ext.105 rings.
5. Then, Ext.101 rings 10 sec later.
6. After that Ext.102 rings 3 sec later.

To set up the Delayed IRG Ringing via DID call when set the transfer destination to Incoming Ring Group:

< Program >

- PRG 22-02-01 (Trunk Service Type): 3 (DID)
- PRG 22-09-01 (Dial-In Receive Digits): 4
- PRG 22-11-01 (DID Receive number): 1234
- PRG 22-11-02 (DID Target Dial): 100
- PRG 22-11-04 (Transfer Operation Mode): 1 (Busy)
- PRG 22-11-05 (Transfer Target): 1 (IRG 1)
- PRG 22-04:

Index1: Incoming Ring Group No. (1 ~ 50)	Index2: Incoming Ring Group Extension Members (01 ~ 48)	PRG 22-04-01: Extension Number	PRG 22-04-02: Delay Ring Interval (sec.)
1	1	101	0
	2	102	3

1. Ext.100 talking with Ext.105.
2. Then, call to DID trunk with dial 77288881234 (dial convert to call Ext.100).
3. However the Ext.100 is busy and the call is transfer to IRG No.1.
4. Ext.101 in IRG No.1 rings.
5. Ext.102 rings 3 sec later.

To set up the Delayed IRG Ringing via DID Call when no answer or busy:

< Program >

- PRG 22-02-01 (Trunk Service Type): 3 (DID)
- PRG 22-09-01 (Dial-In Receive Digits): 4
- PRG 22-11-01 (DID Receive number): 1234
- PRG 22-11-02 (DID Target Dial): 100
- PRG 22-11-04 (Transfer Operation Mode): 2 (No Answer)
- PRG 22-11-05 (Transfer Target): 1 (IRG 1)
- PRG 22-12-01 (DID Intercept Ring Group): 1 (IRG 1)
- PRG 22-01-06 (DID ring no answer time): 5 (sec)
- PRG 22-04:

Index1: Incoming Ring Group No. (1 ~ 50)	Index2: Incoming Ring Group Extension Members (01 ~ 48)	PRG 22-04-01: Extension Number	PRG 22-04-02: Delay Ring Interval (sec.)
1	1	101	0
	2	102	3

1. Call to DID trunk with dial 77288881234 (dial convert to call Ext.100).
2. Ext.100 rings.
3. After 5 sec, Ext.101 in IRG No.1 rings.
4. Ext.102 rings 3 sec later.

To set up the Delayed IRG Ringing via Press Service Code xxx (PRG 11-15-09) to transfer the trunk call to Incoming Ring Group:

< Program >

- PRG 22-04:

Index1: Incoming Ring Group No. (1 ~ 50)	Index2: Incoming Ring Group Extension Members (01 ~ 48)	PRG 22-04-01: Extension Number	PRG 22-04-02: Delayed Ring time (sec.)
1	1	101	0
	2	102	3

- PRG 11-15-09 (Service Code to Transfer to Incoming Ring Group): 888
1. While on the call, press Transfer key and dial 888.
 2. A confirmation tone is heard.
 3. Hang up.
 4. Ext.101 rings.
 5. Ext.102 rings 3 sec later.

Department Calling

Description

With Department Calling, an extension user can call an idle extension in a preprogrammed Department Group (50 Department Groups available) by dialing the group pilot number. For example, this would let a caller dial the Sales department just by knowing the Sales department pilot number. The caller does not have to know any of the Sales department extension numbers.

Two types of routing are available with Department Calling: Priority Routing and Circular Routing. With Priority Routing, an incoming call routes to the highest priority extensions first. Lower priority extensions ring only if all higher priority extensions are busy. With Circular Routing, each call rings a new extension.

Overflow Routing

Department Calling also provides overflow routing for extensions within the group. If a user directly dials a busy extension within a Department Group, the system can optionally route the call to the first available group member. The system follows PRG 22-15-01 ~ 22-15-07 for playing the periodic VRS message.

Department Calling also allows for each Department group to transfer calls to a predefined Speed dial bin (PRG 24-05-01) immediately or after a Delayed time (PRG 24-02-08). Internal and transferred calls are not supported for Delayed transfer.

DID and Overflow Routing

Three types of Overflow are supported for DID calls:

- Immediate Transfer:
This feature can be enabled or disabled by using a (58) key programmed in PRG 15-07. It can also be done by using the service codes in PRG 11-11-25 (set) and PRG 11-11-26 (cancel). When this feature is activated, any DID calls pointed directly to the Pilot Number go immediately to the transfer destination and do not ring anyone in the group. To set up the destination you use PRG 24-05 and PRG 13-04. Once these programs are set, the access code assigned in PRG 11-11-27 can be used to change the destination as needed.
- Delay:
This feature can be enabled or disabled by using a (59) key programmed in PRG 15-07. It can also be done by using service codes assigned in PRG 11-11-28 (set) and PRG 11-11-29 (cancel). When this feature is activated, any DID calls pointed directly to the Pilot follow one of the two patterns:
 - If all available members are busy or logged out, the call goes immediately to the transfer destination.
 - If agents are logged in and not busy, the call comes in and hunts through the idle members until the timer in PRG 24-02-08 expires. Once this time expires, the call is routed to the transfer destination assigned in PRG 24-05 and PRG 13-04. Once these programs are assigned, the access code assigned in PRG 11-11-27 can be used to change the destination as needed.
- DND:
This feature can be enabled by using a (60) key programmed in PRG 15-07 or by using service codes assigned in PRG 11-11-30 (set) and PRG 11-11-31 (cancel). When this feature is activated any DID pointed directly to the Pilot gets a busy tone and the call does not route.

User Log Out/Log In

An extension user can log out and log in to a Department Calling Group. By logging out, the user removes their extension from the group. Once logged out, Department Calling bypasses their extension. When they log back in, Department Calling routes to their extension normally. All users can

dial a code to log in or log out of their Department Calling Group. A Multiline Terminal can optionally have a function key programmed to login/logout.

Enhanced Hunting (Set at PRG 16-01-10)

Department Calling is enhanced with expanded hunting abilities. Hunting sets the conditions under which calls to a Department Group pilot number will cycle through the members of the group. The hunting choices are:

- No Hunting
If all members of the department group are busy the caller will not queue to the department group.
- Busy
When all members of the department group are busy the caller will queue for the department group. When one of the stations becomes available the queue call starts to ring the available station.
- No Answer
When the highest priority department group member is busy the caller will queue to the department group. When the terminal becomes available queue calls start to ring.
- Busy/No Answer
Queuing when both Busy and No Answer condition occur.

If all members of the Department Group are busy, an incoming or transferred call to the group pilot number queues for an available member. Each group has a queue that can hold any number of waiting calls. If a display telephone is waiting in queue, the user sees: WAITING (group name). If a transferred call in queue is an outside call, and the system has DSP daughter board installed with the VRS, the queued caller hears, "Please hold on. All lines are busy. Your call will be answered when a line becomes free."

The VRS can also transfer calls to Department Groups. Refer to [Voice Response System \(VRS\)](#) for information on setting up the VRS.

The system prevents hunting to a Department Group extension if it is:

- Busy on a call
- In Do Not Disturb
- Call Forwarded
- Logged Out

Conditions

- When a DIL rings to a Department Group, the DIL may follow overflow programming (PRG 22-01-04 and PRG 22-08-01).
- If all agents are logged out and an intercom call to the Department Group is made you get a busy signal.
- Extensions in a Department Group which have Call Forwarding enabled are not included in the call hunt. The extension to which the user is forwarded does not receive the hunted calls. When you use the automatic Department Step calling (PRG 16-01-03) it hunts only to members with the same or lower priority.
- Easily step call to an idle Department Group member if the member called is busy.
- A virtual extension can be programmed to receive multiple calls which can camp-on to the extension - no analog port is required.
- An extension user can Transfer a call to a Department Group Pilot number. If unanswered, the call recalls (depending on programming) the transferring extension after the Transfer Recall Time (PRG 24-02-04).
- Voice mail uses one Department Group for voice mail.
- When PRG 16-01-05 is set to (1) Automatic, all telephones in the Department group Ring for ICM calls & DID calls Directed to the Department Group Pilot Number only.
- The Overflow feature is only supported for DID calls pointed directly to the Pilot Number. POTS lines and transferred DIDs ignore the Overflow settings.

- When a Department Group is assigned as the VM Department Group in PRG 45-01-01 it will only work as priority mode no matter what PRG 16-01-02 is set to for that Department Group.
- PRG 16-01-05 (Extension Group All Ring Mode Operation) does not work to a Secondary Department Group.

Default Settings

Disabled

Priority Routing

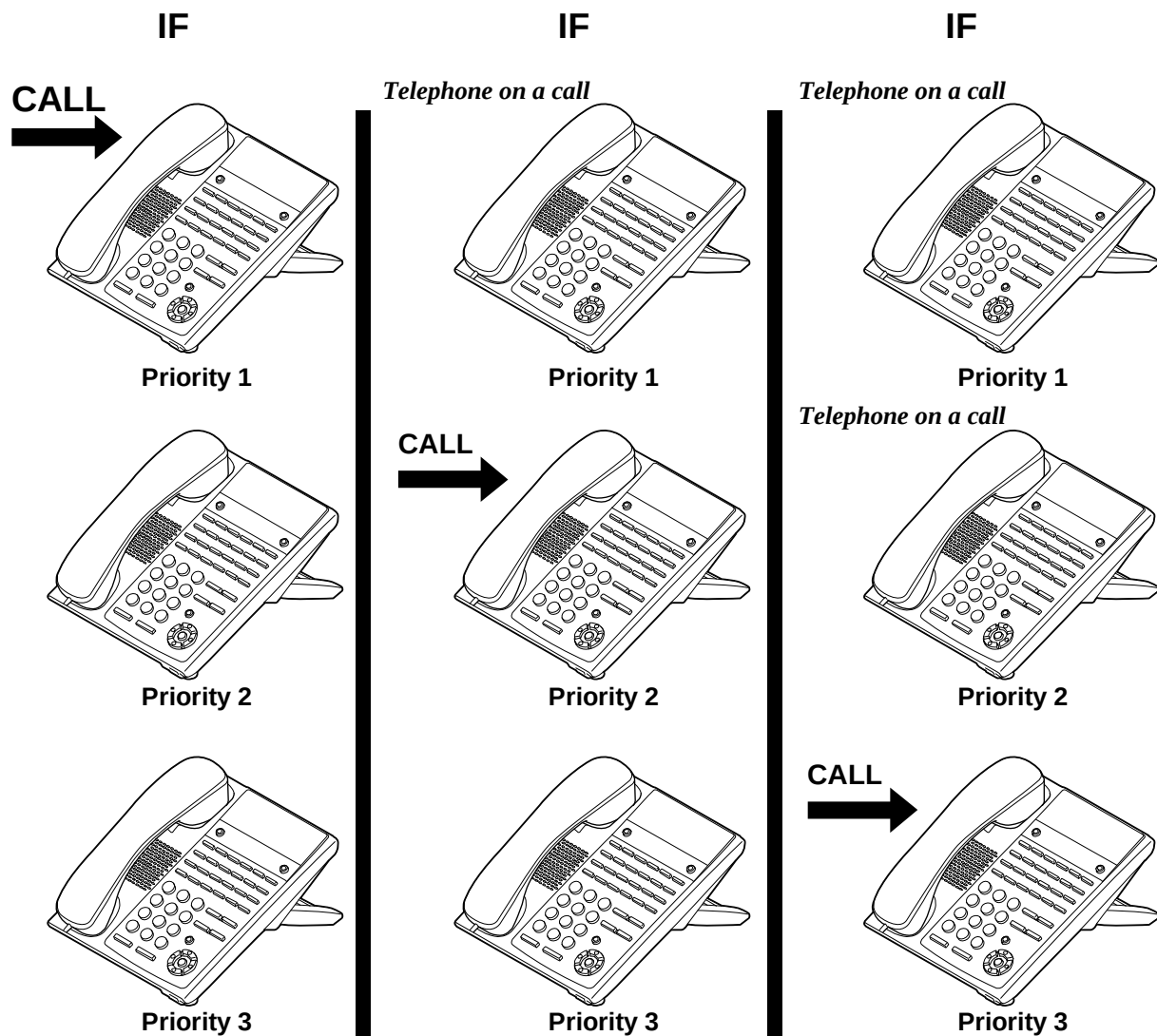


Figure 1-7 Department Calling Priority Call Routing

Circular Routing

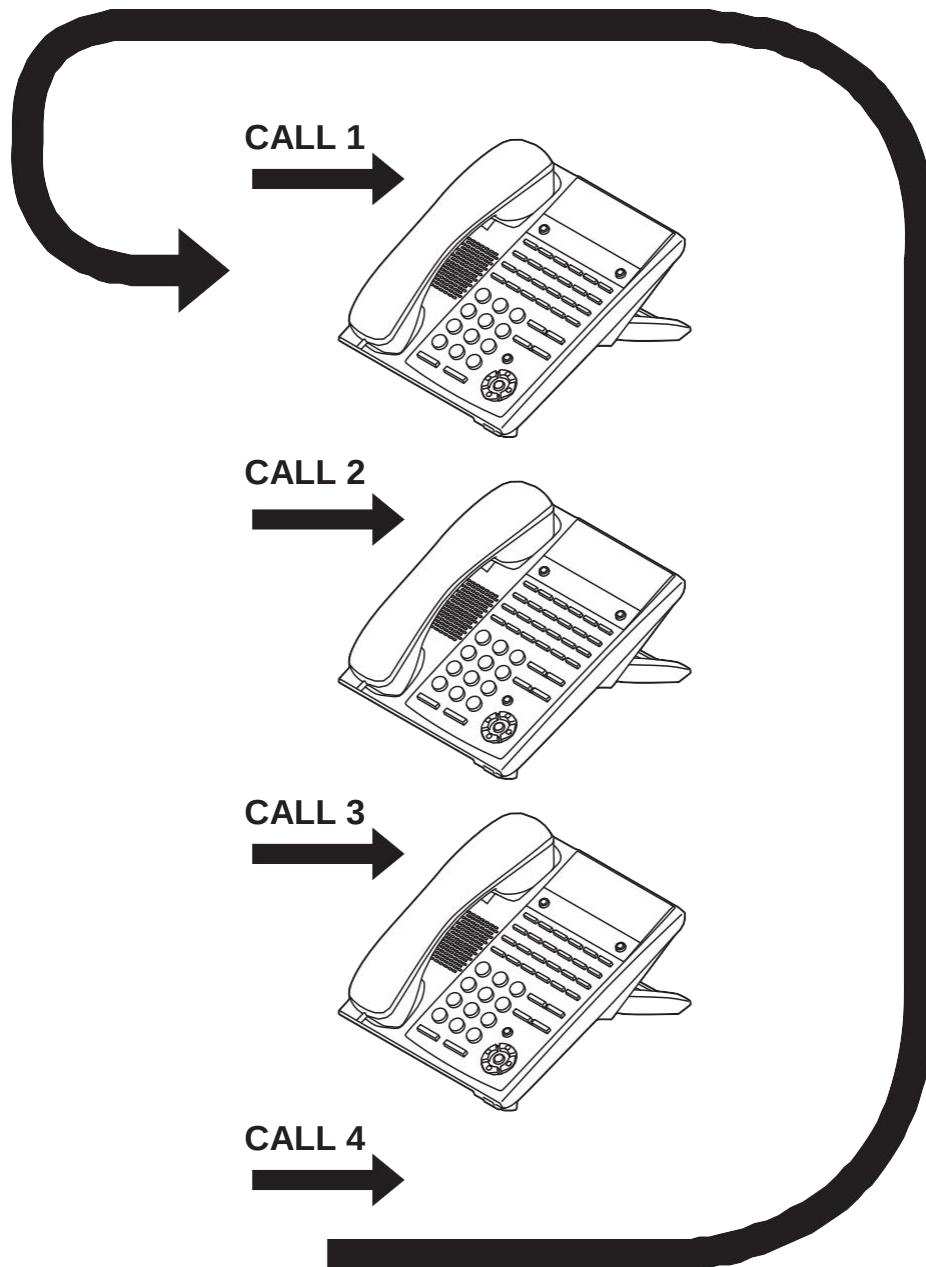


Figure 1-8 Department Calling Circular Routing

System Availability

Terminals

All Terminals

Required Component(s)

VRS for Messaging

Related Features

Call Forwarding

Department Step Calling

Transfer

InMail

Voice Response System (VRS)

Guide to Feature Programming

The programs listed below indicate the most commonly used programs required for this feature. The programs are listed in the order that the installer should follow. Refer to the PCPro wizards for further detailed programming.

- When a * is listed next to the Program Number it indicates a program that **MUST** be set (from a default state) for this feature to be enabled.

Program No.	Program Name	Input Data	Default
11-07-01 *	Department Group Pilot Numbers - Extension Group Pilot Number	Dial (Up to 8 digits)	Group Number 1 ~ 49 = No Setting Group Number 50 = 3999
16-01-01	Department Group Basic Data Setup - Department Name	Maximum 12 characters	No Setting
16-01-02	Department Group Basic Data Setup - Department Calling Cycle	0 = Normal Routing (Priority) 1 = Easy - UCD Routing (Circular)	0
16-01-03	Department Group Basic Data Setup - Department Routing when Busy (Auto Step Call)	0 = Normal (Intercom caller hears busy tone.) 1 = Circular (Intercom caller routes to an idle group member.)	0
16-01-04	Department Group Basic Data Setup - Hunting Mode	0 = Stop at last member (non-loop) 1 = Circular	0
16-01-05	Department Group Basic Data Setup - Extension Group All Ring Mode Operation	0 = Manual (Ring the extensions one at a time when the service code are pressed.) 1 = Automatic (Ring all extensions.)	0
16-01-06	Department Group Basic Data Setup - STG Withdraw Mode	0 = Disabled (Call will camp on to the group.) 1 = Automatic (Call follows PRG 22-11-11.)	0
16-01-07	Department Group Basic Data Setup - Call Recall Restriction for STG	0 = Disabled (Call will recall.) 1 = Enabled (Call will not recall.)	0
16-01-08	Department Group Basic Data Setup - Maximum Queuing number for Department Group Call	0 ~ 32 0 = No Queuing	0
16-01-09	Department Group Basic Data Setup - Department Hunting No Answer Time	0 ~ 64800 seconds	15
16-01-10	Department Group Basic Data Setup - Enhanced Hunt Type	0 = No hunting 1 = Hunting When Busy 2 = Hunting When Not Answered 3 = Hunting When Busy or No Answer	0

Program No.	Program Name	Input Data	Default
16-02-01 *	Department Group Assignment for Extensions	1 ~ 50	(Refer to the programming manual for the default values of all extensions.)
16-02-02	Department Group Priority Assignment	1 ~ 50 = Department Group 1 ~ 200 = Priority	(Refer to the programming manual for the default values of all extensions.)
15-07-01	Programmable Function Keys - Programmable Function Keys	36 = Step Call 46 = Department Group Log Out 58 = Automatic Transfer at Department Group Call 59 = Delayed Transfer at Department Group Call 60 = DND at Department Group Call	Refer to the programming manual for the default values and for all other available options in this command.
24-05-01	Department Group Transfer Target Setup - Speed Dial Area Number	0 ~ 999	999
24-02-08	System Options for Transfer - Delayed Transfer Time for all Department Groups	0 ~ 64800 seconds	10
13-04-01	Speed Dialing Number and Name - Number	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
16-03-01	Secondary Department Group	Maximum of 8 digits (0 ~ 9, *, #)	No Setting
11-16-10	Single Digit Service Code Setup - Department Group All Ring Mode	0~9, *, # Maximum of 1 digit	No Setting
11-11-25	Service Code Setup (for Setup/Entry Operation) - Automatic Transfer Setup for Each Extension Group	0~9, *, # Maximum of 8 digit	602
11-11-26	Service Code Setup (for Setup/Entry Operation) - Automatic Transfer Cancellation for Each Extension Group	0~9, *, # Maximum of 8 digit	603
11-11-27	Service Code Setup (for Setup/Entry Operation) - Destination of Automatic Transfer Each Extension Group	0~9, *, # Maximum of 8 digit	604
11-11-28	Service Code Setup (for Setup/Entry Operation) - Delayed Transfer for Every Extension Group	0~9, *, # Maximum of 8 digit	605
11-11-29	Service Code Setup (for Setup/Entry Operation) - Delayed Transfer Cancellation for Each Extension Group	0~9, *, # Maximum of 8 digit	606
11-12-09	Service Code Setup (for Service Access) - Change to STG (Department Group) All Ring	0~9, *, # Maximum of 8 digit	No Setting
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-09-07	Class of Service Options (Incoming Call Service) - Call Queuing	0 = Off (Calls are not queued.) 1 = On (Calls are queued.)	COS 01 ~ 15 = 0
20-11-17	Class of Service Options (Hold/Transfer Service) - Department Group Trunk-to-Trunk Transfer (Each Telephone Group Transfer)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-06	Class of Service Options (Supplementary Service) - Automatic Off-Hook Signaling (Automatic Override)	0 = Off (manually) 1 = On (automatically)	COS 01 ~ 15 = 1

Program No.	Program Name	Input Data	Default
20-13-14	Class of Service Options (Supplementary Service) - Department Calling (PLT No Called Extension)	0 = Off 1 = On	COS 01 ~ 15 = 1
22-07-01	DIL Assignment - Number of Transferring Destination	Maximum of 8 digits (0 ~ 9, *, #)	No Setting
24-02-05	System Options for Transfer - Message Wait Ring Interval Time	0 ~ 64800 seconds	30
22-02-01	Incoming Call Trunk Setup - Trunk Service Type	Incoming Type for Day/Night Mode (1 ~ 8): 0 = Normal 1 = VRS (second dial tone if no VRS installed) 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delayed VRS 7 = ANI/DNIS 8 = DID(DDI) Mode Switching	0
16-03-02	Secondary Department Groups Priority	0 ~ 999 = Priority 0 ~ 999	0

Operation

To call a department group:

1. Go off-hook.
2. Dial department extension number.



The system routes the call to the first free telephone in the department group.

3. **Optional:** To manually ring all members of the group, dial the single digit service code assigned for All Member Ring (PRG 11-16-10).

To log out of your Department Calling Group:



While you are logged out, Department Calling cannot route calls to your extension.

1. Press **Speaker** key.
2. Dial **650 + 1**.
- OR -
Press **Department Calling Log In** key (PRG 15-07-01 or SC 751: 46).



The key lights while you are logged out.

To log back in to your Department Calling Group:



When you log back in, Department Calling routes calls to your extension.

1. Press **Speaker** key.

2. Dial **650 + 0**.
- OR -
Press **Department Calling Log** In key (PRG 15-07-01 or SC 751: 46).



The key goes out when you log back in.

To change the Department Group Overflow Destination:

1. Press **Speaker** key.
2. Dial **604 + Department Group** (01 ~ 50).
3. Dial **01 ~ 08** (Refer to PRG 24-05).
4. Dial the destination the calls **route to**.
5. Press **Hold** key.

Department Step Calling

Description

After calling a busy Department Calling Group member, an extension user can have Department Step Calling quickly call another member in the group. The caller does not have to hang up and place another Intercom call if the first extension called is unavailable. Department Step Calling also allows an extension user to cycle through the members of a Department Group.

Conditions

- If required, use this option to change the Department Step Calling Single Digit Service Code (default code = 2).
- A function key for Department Step Calling can be assigned (code 36).
- In PRG 20-08-12, enable (1) or disable (0) an extension ability to use Department Step Calling.
- When using department group step calling and ecology mode there must be at least two terminals functioning for the step call feature to work.

Default Settings

Enabled

System Availability

Terminals

All Stations

Required Component(s)

None

Related Features

Department Calling

Programmable Function Keys

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-12-07	Service Code Setup (for Service Access) - Step Call	0~9, *, # Maximum of 8 digit	708
11-16-01	Single Digit Service Code Setup - Step Call	0~9, *, # Maximum of 1 digit	2

Program No.	Program Name	Input Data	Default
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-08-12	Class of Service Options (Outgoing Call Service) - Department Group Step Calling	0 = Off 1 = On	COS 01 ~ 15 = 1

Operation

To make a Step Call:

1. Place a call to a busy Department Group member.
- **OR** -
Place a call to a Department Group pilot number.
2. Dial Department Step Code (2) to call the next available Department Group member.
3. Repeat step 2 to call other Department Group members.



You step through Department Groups set in PRG 16-02-01.

DHCP Client

Description

DHCP Client will access an external DHCP server every time the LAN cable is connected to the CPU or when the System is powered up.

The System can receive the following information from the DHCP server:
IP Address, Subnet Mask, and Default Gateway.

Conditions

- The DHCP Server should be configured to provide the system the same IP address every time. For example in the DHCP server extend the lease time to infinite or setup the server to provide the same IP address based on the systems MAC Address.
- DHCP client can set following programs automatically; however other IP related programs (such as PRG 84-26) have to set manually as required.
 - IP Addresses: PRG 10-12-01 (CPU)
 - Subnet Masks: PRG 10-12-02 (CPU)
 - Default Gateway: PRG 10-12-03
- DHCP Client (PRG 10-63) and existing DHCP Server feature (PRG 10-13) can not be used at the same time.

Default Settings

Disabled

System Availability

Required Component(s)

IP7[]-CPU-C1

IP7WW-VOIPDB-C1

Related Features

None

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-63-01	DHCP Client Setting - DHCP Client Mode	0 = Disabled 1 = Enabled	0

Program No.	Program Name	Input Data	Default
10-12-01	CPU Network Setup - IP Address	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	192.168.0.10
10-12-02	CPU Network Setup - Subnet Mask	128.0.0.0 192.0.0.0 224.0.0.0 240.0.0.0 248.0.0.0 252.0.0.0 254.0.0.0 255.0.0.0 255.128.0.0 255.192.0.0 255.224.0.0 255.240.0.0 255.248.0.0 255.252.0.0 255.254.0.0 255.255.0.0 255.255.128.0 255.255.192.0 255.255.224.0 255.255.240.0 255.255.248.0 255.255.252.0 255.255.254.0 255.255.255.0 255.255.255.128 255.255.255.192 255.255.255.224 255.255.255.240 255.255.255.248 255.255.255.252 255.255.255.254 255.255.255.255	255.255.255.0
10-12-03	CPU Network Setup - Default Gateway	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0
10-12-09	CPU Network Setup - IP Address (VoIPDB)	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	172.16.0.10
10-12-10	CPU Network Setup - Subnet Mask (VoIPDB)	128.0.0.0 192.0.0.0 224.0.0.0 240.0.0.0 248.0.0.0 252.0.0.0 254.0.0.0 255.0.0.0 255.128.0.0 255.192.0.0 255.224.0.0 255.240.0.0 255.248.0.0 255.252.0.0 255.254.0.0 255.255.0.0 255.255.128.0 255.255.192.0 255.255.224.0 255.255.240.0 255.255.248.0 255.255.252.0 255.255.254.0 255.255.255.0 255.255.255.128 255.255.255.192 255.255.255.224 255.255.255.240 255.255.255.248 255.255.255.252 255.255.255.254 255.255.255.255	Refer to the programming manual for all the possible valid subnet mask entries. (default = 255.255.0.0)

Operation

None

Dial Pad Confirmation Tone

Description

For an extension with Dial Pad Confirmation Tone enabled, the user hears a beep each time they press a key. This is helpful for Intercom calls and Dial Pulse trunk calls, since these calls provide no Call Progress tones.

Conditions

- Dial Pad Confirmation Tone does not apply to Single Line Terminals.
- Dial Pad Confirmation Tone is not canceled when dialing in handset mode.
- Dial Pad Confirmation Tone is canceled when dialing in handsfree mode, but only for internal calls. The tone is still heard for external dialing.

Default Settings

Disabled

System Availability

Terminals

All Multiline Terminals

Required Component(s)

None

Related Features

None

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-11-19	Service Code Setup (for Setup/Entry Operation) - Key Touch Tone On/Off	0~9, *, # Maximum of 8 digit	724

Operation

To enable/disable Dial Pad Confirmation Tone:

1. Pick up the handset or press **Speaker** key.
2. Dial **724**.

Dial Tone Detection

Description

If a trunk has Dial Tone Detection enabled, the system monitors for dial tone from the Telco or PBX when a user places a call on that trunk. If the user accesses the trunk directly (by pressing a line key or dialing #0 and the trunk number), the system drops the trunk if dial tone does not occur. If the user accesses the trunk via a Trunk Group (by dialing a trunk group code or automatically using a feature like Last Number Redial), the system can drop the trunk or optionally skip to the next trunk in the group. Refer to the chart under Programming for more information.

Conditions

None

Default Settings

Disabled for manually dialed calls; enabled for automatically dialed calls.

System Availability

Terminals

All Stations

Required Component(s)

None

Related Features

Abbreviated Dialing/Speed Dial

Automatic Route Selection (ARS/F-Route)

Central Office Calls, Placing

Last Number Redial

Save Number Dialed

Trunk Group Routing

Trunk Groups

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-09-01	DTMF, Dial Tone Detection Setup - DTMF, Dial Tone Detection	0 = Common use for both analog extensions and trunks 1 = Use for analog extensions (DTMF Receivers) 2 = Use for analog trunks (DTMF receivers/Dial tone detection/ Caller ID detection)	Resource 01 ~ 140 = 0
14-02-05	Analog Trunk Data Setup - Dial Tone Detection for Manually Accessed Trunks	0 = Dial Tone Detection Not Used 1 = Dial Tone Detection Used	0
14-02-11	Analog Trunk Data Setup - Next Trunk in Rotary if No Dial Tone	0 = Disable (No) 1 = Enable (Yes)	0
21-01-04	System Options for Outgoing Calls - Dial Tone Detection	0 ~ 64800 seconds	5
21-01-05	System Options for Outgoing Calls - Disconnect Time when Dial Tone not Detected	0 ~ 64800 seconds	3
21-01-06	System Options for Outgoing Calls - Dial Pause at First Digit	0 ~ 64800 seconds	1

Table 1-8 Dial Tone Detection Program Interaction

Method	14-02-05	14-02-11	Result if dial tone not present . . .
Press a line key - or - Dial #0 + Trunk number	0	0	Trunk hangs (does not disconnect)
	0	1	Trunk hangs (does not disconnect)
	1	0	Trunk drops
	1	1	Trunk drops
Dial a Trunk Group code - or - Automatically through a feature	0	0	Trunk hangs (does not disconnect)
	0	1	Trunk reroutes after time-out
	1	0	Trunk drops
	1	1	Trunk reroutes after time-out

Operation

Dial Tone Detection is automatic if enabled in programming.

Dialing Number Preview

Description

Dialing Number Preview lets a display Multiline Terminal user dial and review a number before the system dials it. Dialing Number Preview helps the user avoid dialing errors.

Conditions

- An extension user cannot edit the displayed number.
- To place an outgoing call, an extension user must have outgoing access to a line or trunk group key.

Default Settings

Enabled

System Availability

Terminals

All Display Multiline Terminals

Required Component(s)

None

Related Features

Central Office Calls, Placing

Voice Response System (VRS)

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-08-05	Class of Service Options (Outgoing Call Service) - Dial Number Preview (Preset Dial)	0 = Off 1 = On	COS 01 ~ 15 = 1

Operation

To use Dial Number Preview to place a call (Multiline Terminal only) (When set PRG 15-02-60:0)

1. Do not lift the handset or press **Speaker** key.
2. To preview any number, dial the number you wish to call.
To preview a Speed Dial - System/Group number, press the **Left Cursor** key and dial the Speed Dial - System/Group bin number you want to call.

 *The number is displayed.*

3. To dial out the displayed trunk number, press a **Line/Trunk Group** key.

 *If the previewed number as a trunk access code (e.g., 0), you can press **Speaker** key instead.*

- OR -

To dial an Intercom number, press **Speaker** key.

- OR -

To cancel the number without dialing it out, press **Hold** key.

To use Dial Number Preview to place a call by Directory Dialing (Multiline Terminal only) (When set PRG 15-02-60: 1 or 2)

1. Do not lift the handset or press **Speaker** key.
2. To preview any number, dial the number you wish to call.
- OR -
To preview a Speed Dial - System/Group number,
 1. Press **Down Cursor** key and press 1st character you want to search.
 2. Press **Up Cursor** key or **Down Cursor** key to select the destination name.
 3. Press **Enter Cursor** key to confirm a name and number.

 *The number and name is displayed.*

3. To dial out the displayed trunk number, press a **Line/Trunk Group** key.

 *If the previewed number as a trunk access code (e.g., 0), you can press **Speaker** key instead.*

- OR -

To dial an Intercom number, press **Speaker** key.

- OR -

To cancel the number without dialing it out, press **Hold** key.

Digital Trunk Clocking

Description

The SL2100 CPU has a built-in clock source for all digital trunk units. Digital trunk units are connected via an internal PLO (Phase Locked Oscillator) to derive Primary Clock from the network in priority order. If priority is set up incorrectly, or if two primary clocks are coming in, slips may occur causing improper data synchronization. The Phase Locked Oscillator (PLO) equipped with the SL2100 CPU is the timing source for all digital trunk units in the system. The PLO synchronizes the system and clocks signals from another office. When the SL2100 is a clock receiver office, the PLO generates the clock signal according to the source clock signals received from the source office within the network. The source clock signals are extracted from digital trunk units and are supplied to the PLO.

The PLO synchronization source priorities are as follows:

1. 1PRIDB-C1
2. 2BRIDB-C1
3. IP7[]-CPU-C1

Conditions

- If multiple PRIs exist, the system chooses the first one that synchronized with the carrier.
- If there are multiple PRIs and the one being used for the source goes down, the system begins to count forward in slot numbers looking for the next available PRI.
- If multiple BRIs exist and no 1PRIDB-C1 exists, the SL2100 CPU chooses the first BRI that synchronized with the carrier.
- If there is one 1PRIDB-C1 and the one being used for the source goes down, the SL2100 CPU looks to see if there are any BRIs installed in the system. If there are no BRIs, the SL2100 CPU becomes the new synchronization source. The reason for this is when a 1PRIDB-C1 is installed in the system.

Default Settings

None

System Availability

Terminals

None

Required Component(s)

CPU

2BRIDB-C1 - OR - 1PRIDB-C1

Related Features

ISDN Compatibility

Feature Examples

Digital Trunk Clocking Examples:

If PRI and BRI exist, the system synchronizes with PRI. In this example, the PRI in slot01 was the first priority to synchronize with the carrier; therefore, it is the PLO synchronization source.

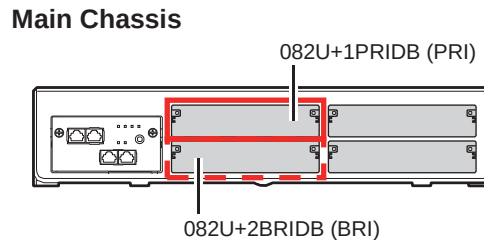


Figure 1-9 Digital Trunk Clocking Example 1

If multiple BRIs exist and becomes no PRI exists, the system chooses the first BRI that synchronized with the carrier. In this example, the BRI in slot02 synchronized with the carrier first and became the PLO synchronization source.

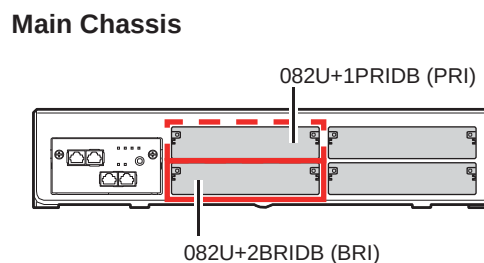


Figure 1-10 Digital Trunk Clocking Example 2

In this scenario, the PRI was the clocking source until it went down. There are no other BRIs in the system. The CPU now becomes the PLO synchronization source.

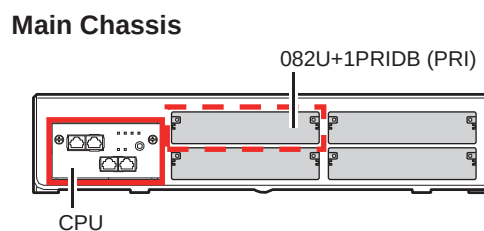


Figure 1-11 Digital Trunk Clocking Example 3

Guide to Feature Programming

Refer to [ISDN Compatibility](#).

Operation

Refer to the related features for details.

Direct Inward Dialing (DID)

Description

Direct Inward Dialing (DID) lets outside callers directly dial system extensions. DID saves time for callers who know the extension number they wish to reach. To place a DID call, the outside caller dials the local exchange and additional digits to ring the telephone system extension. For example, DID number 926-5400 can directly dial extension 400. The caller does not have to rely on attendant or secretary call screening to complete the call.



Direct Inward Dialing requires DID service from Telco.

In addition to direct dialing of system extensions, DID provides:

- DID Dialed Number Translation
- Flexible DID Service Compatibility
- DID Intercept
- DID Camp-On

There are 20 DID Translation tables that can be divided between 1000 entries.

DID Dialed Number Translation

DID allows different tables for DID number translation. This gives you more flexibility when buying DID service from Telco. If you cannot buy the exact block of numbers you need (e.g., 301~556), use the translation tables to convert the digits received. For example, a translation table could convert digits 501~756 to extension numbers 301~556.

The SL2100 system has 1000 DID Translation Table entries that you can allocate among the 20 DID Translation Tables. One translation is made in each entry. For a simple installation, you can put all 800 entries in the same table. For more flexibility, you can optionally distribute the 1000 entries among the 20 tables.

In addition to number conversion, each DID Translation Table entry can have a name assigned to it. When the DID call rings the destination extension, the programmed name displays.

Flexible DID Service Compatibility

With three-digit service, the Telco sends three digits to the system for translation. Be sure to program your system for compatibility with the provided Telco service. For example, if the Telco sends four digits, make sure you set up the translation tables to accept four digits.

DID Camp-On

DID Camp-On sets what happens to DID calls to busy extensions when you have Busy Intercept disabled. With DID Camp-On enabled, a call to a busy extension camps-on for the DID Ring No Answer Time. It then diverts to the programmed DID Intercept extension ring group or Voice Mail. Without DID Camp-On, the caller to the busy extension hears only busy tone.

DID Routing Through the VRS

DID calls can optionally route through the VRS. The DID caller hears an initial Automated Attendant Greeting explaining their dialing options. If the caller misdials, they hear a second greeting with additional instructions. For example, the first Automated Attendant Greeting can be, "Thank you for calling. Please dial the extension number you wish to reach or dial **9** for the operator." If the caller inadvertently dials an extension that does not exist, they could hear, "The extension you dialed is unavailable. Please dial **9** for assistance or dial **#** to leave a message so we can call you back."

You assign Automated Attendant greetings (i.e., VRS Messages) to the numbers in each Translation Table. This provides you with extensive flexibility when determining which greetings the system should play for which dialed numbers. You could, for example, set up 926 5401 through 926 5449 to route to extensions 401~449, and have 926 5450 route to the automated attendant.

 *If you translate a DID so that it hits a specific VRS message, you must disable PRG 25-01-02. Otherwise, the outside caller waits while hearing the DISA dial tone.*

The system allows an extension to be defined as a 1-digit number that can be dialed by the outside caller on a DID/DISA trunk using the VRS. The outside caller can access the desired extension/department group by dialing only one digit after the system answers the call. If the same number is used as the first digit of an extension number and the 1-digit access code for DID/DISA, the outside caller cannot access the extension.

Example:

If 2 is defined as a 1-digit access code to department group 300, outside callers cannot access extensions 200~299 directly.

SMDR Includes Dialed Number

The SMDR report can optionally print the trunk name (entered in system programming) or the number the incoming caller dialed (i.e., the dialed DID digits). This gives you the option to analyze the SMDR report based on the number your callers dial. (This option also applies to an ISDN trunk.)

DID Intercept

DID Intercept automatically reroutes DID calls under certain conditions. There are three DID Intercepts:

- Vacant Number Intercept
If a caller dials an extension that does not exist or misdials, Vacant Number Intercept can reroute the call to the programmed DID Intercept extension ring group or Voice Mail. Without Vacant Number Intercept, the caller hears error tone after misdialing.
- Busy Intercept
Busy Intercept determines DID routing when a DID caller dials a busy extension. If Busy Intercept is enabled, the call immediately routes to the programmed DID Intercept extension ring group or Voice Mail. If Busy Intercept is disabled, the call follows DID Camp-On programming.
- Ring-No-Answer Intercept
Ring-No-Answer Intercept sets the routing options for DID calls that ring unanswered at the destination extension. With Ring-No-Answer Intercept enabled, the unanswered call reroutes to the DID Intercept extension ring group or Voice Mail after the DID Ring-No-Answer Time. If Ring-No-Answer Intercept is disabled, the unanswered call rings the destination until the outside caller hangs up.

Delayed DID

Delayed DID allows a user a programmed time to answer a call. If the call is not answered in this time, the system automatically answers the call. An outside party hears a voice message, music, or dial tone according to the following conditions:

- If a VRS is installed, the system sends a prerecorded message from the VRS.
- If a customer-provided audio system (example: tape recorder) is connected, an error message or music can be played for the caller.
- If equipment is not connected for an announcement, the system sends a unique dial tone to the outside caller.

This feature is not available for the normal incoming call on ISDN trunks.

DID Intercept Destination for Each DID Number

With this feature the system allows you to program a DID Intercept destination for a DID number which receives no answer or busy call. The system can be programmed to use a trunk ring group, the VRS

or the voice mail as the programmed destination. Each vacant number intercept for a DID number can have two destinations. The first destination is for an invalid DID number, busy or no answer extension. The second destination is for a no answer trunk ring group.

 *If the first programmed destination is a Ring Group and the second Destination is Voice Mail, the call does not forward to VoiceMail.*

For busy or no answer intercept calls, a third destination can be defined in PRG 22-12. If the first and third destinations are programmed but the second destination is not, the incoming call goes to the third destination after the first destination. If the first and second destinations are not programmed, but the third destination is, the call goes directly to the third destination.

This feature works for DID trunks with a trunk service type 3 in PRG 22-02. Other types of trunks may use the DID table, but the DID intercept feature is not yet supported.

With the DID Intercept for each DID number feature, when the primary destination (PRG 22-11-05) is set to Voice Mail, the Voice Mail protocol is:

1. Busy Intercept = Forward Busy
2. Ring-No-Answer Intercept = Forward RNA

When the secondary destination (PRG 22-11-06) is set to Voice Mail, the Voice Mail protocol is based on the first destination routing. When the incoming call is forwarded to the first destination by a busy intercept, the Voice Mail protocol forwards busy calls. When the incoming call is routed to the first destination by a ring-no-answer intercept, the protocol forwards ring-no-answer. The Voice Mail transfers the calls to the mailbox number defined in PRG 22-11-02.

 *Any valid DID number must be entered in the DID table (PRG 22-11 or PRG 22-17-01). If a valid DID number is not entered, there is no ring destination for any incoming calls to that number (the calls do not ring any extension in the system).*

 *If the first programmed destination is a Ring Group and the second Destination is Voice Mail, the call does not forward to VoiceMail.*

Calls Can Follow Ring Group Programming for Transferring Calls

An option has been added to PRG 22-11 which allows you to determine if the DID routing should use the programmed ring group entry in PRG 22-12-01 when transferring calls from a busy or no answer number.

If DID digits match with the conversion table but there is no extension, no Voice Mail, or Voice Mail did not boot up, use PRG 22-11-11 to decide what to do with the incoming call. Go to (1) normal ring (default) or (0) caller hears a Busy Tone.

DID Call by Time Schedule

DID Call by Time Schedule allows for 500 programmed DID Conversion table entries (PRG 22-17-01) that can be routed based on Time Patterns. Each DID Conversion table has a maximum of eight programmable Time Patterns and each Time Pattern can reference one of the 1000 different Dial-In Conversion table entries in PRG 22-11-01.

Example 1 (Automatic Change)

	00:00	09:00	12:00	13:00	18:00	00:00
	└───	└───	└───	└───	└───	└───
Time Pattern						
PRG 22-17	1	2	3	4	5	
PRG 22-11-01	1	2	3	2	1	
PRG 22-11-02	100 incoming	101 incoming	102 incoming	101 incoming	100 incoming	

PRG 22-11-01 and PRG 22-11-02		
Table No.	Receive Dial	Transfer Dial
1	No setting	100
2	No setting	101
3	No setting	102

PRG 22-17					
Table No.	Receive Dial	Time Pattern	Start Time	End Time	PRG 22-11
1~500	1111	1	00:00	09:00	1
		2	09:00	12:00	2
		3	12:00	13:00	3
		4	13:00	18:00	2
		5	18:00	00:00	1
		6	00:00	00:00	0
		7	00:00	00:00	0
		8	00:00	00:00	0

Table 1-9 Example 2 (Manual Change)

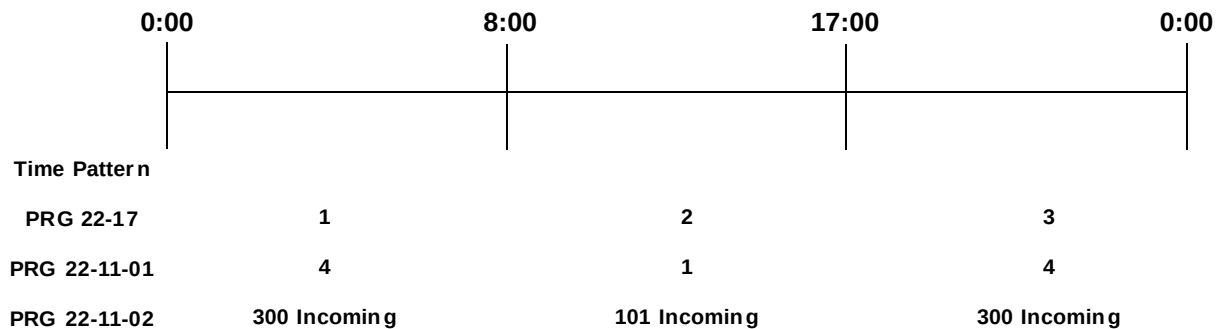
PRG 22-17					
Table No.	Receive Dial	Time Pattern	Start Time	End Time	PRG 22-11
1~500	1111	1	00:00	00:00	1
		2	00:00	00:00	2
		3	00:00	00:00	3
		4	00:00	00:00	0
		5	00:00	00:00	0
		6	00:00	00:00	0
		7	00:00	00:00	0
		8	00:00	00:00	0

DID Call by Day of Week Schedule

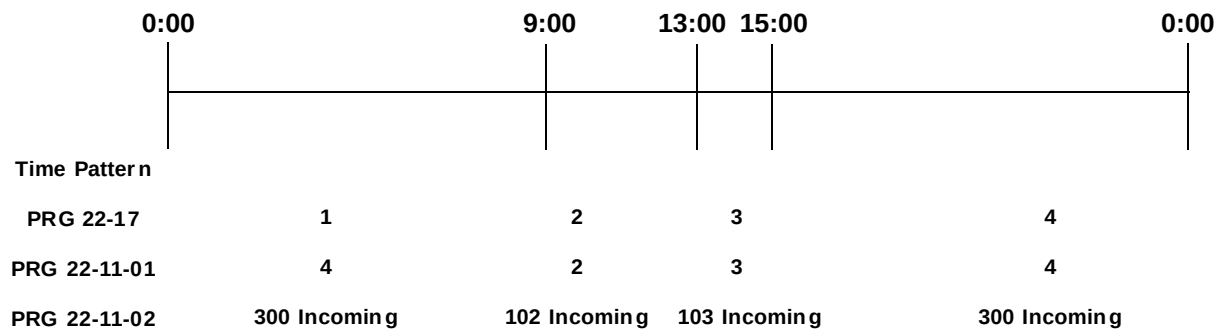
DID Call by weekly schedule allows for 500 programmed DID Conversion table entries (PRG 22-17-01, PRG 22-17-05) that can be routed based on Day of Week Patterns. Each DID Conversion table has a maximum of eight programmable Time Patterns and Day of Week Pattern can reference one of the 1000 different Dial-In Conversion table entries in PRG 22-11-01.

Setting Example)

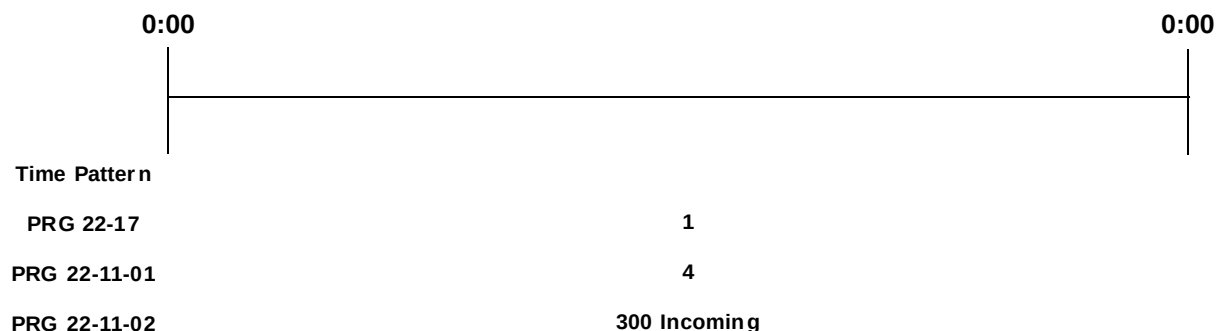
Monday - Friday : PRG 22-17-05 : 1 (On)



Saturday : PRG 22-17-05 : 1 (On)



Sunday : PRG 22-17-05 : 1 (On)



PRG 22-11-01 and PRG 22-11-02		
Table No.	Receive Dial	Transfer Dial
1	734	101
2	734	102
3	734	103

PRG 22-11-01 and PRG 22-11-02		
Table No.	Receive Dial	Transfer Dial
4	734	300

Table 1-10 Monday -Friday

PRG 22-17						
Table No.	Received Dial	Time Pattern	02: Start Time	03: End Time	04: PRG 22-11	05: Day
1	734	1	00:00	08:00	4 (Ext.300)	Mon-Fri:1 (on)
	734	2	08:00	17:00	1 (Ext.101)	
	734	3	17:00	00:00	4 (Ext.300)	

Table 1-11 Saturday

PRG 22-17						
Table No.	Received Dial	Time Pattern	02: Start Time	03: End Time	04: PRG 22-11	05: Day
2	734	1	00:00	09:00	4 (Ext.300)	Sat: 1 (on)
	734	2	09:00	13:00	2 (Ext.102)	
	734	3	13:00	15:00	3 (Ext.103)	
	734	4	15:00	00:00	4 (Ext.300)	

Table 1-12 Sunday

PRG 22-17						
Table No.	Received Dial	Time Pattern	02: Start Time	03: End Time	04: PRG 22-11	05: Day
3	734	1	00:00	00:00	4 (Ext.300)	Sun: 1 (on)

Conditions

- DID service must be purchased from your local telephone company.
- DID Intercept for each DID number works for DID trunks with a trunk service type 3 in PRG 22-02. Other types of trunks may use the DID table, but the DID intercept feature for each DID number is not yet supported.
- When a call is transferred because of Call Forwarding No Answer, Call Forwarding Busy, or DND, the reason for Transfer option can display to the transferred extension when the call is ringing to their telephone.
- Direct Inward Lines (DILs) also provide a way for outside callers to dial a system extension, virtual extension, or Department Group directly.
- DISA also allows outside callers to dial system extensions directly.
- The Off-Hook Signaling provide DID calls with signaling options. Refer to Off-Hook Signaling for specific details.
- DID trunks do not ring external page speakers. Only trunks defined as normal in PRG 22-02-01 ring external page speakers.
- To simplify answering DID calls, assign function keys as line keys for the DID trunks.
- SMDR can print trunk port names or received dialed number for DID trunks. If enabled, DNIS digits can be printed on the SMDR reports instead of the trunk name.

- When defining trunks as DID or DID Mode in PRG 22-02-01, DID translation (PRG 22-11 or PRG 22-17) must be used, even if the incoming digits match the extension number.
- When using DID Call by Time Schedule and breaking out the Time Patterns, set the start time to 00:00 and end time to 00:00 for this feature to operate correctly. Refer to [DID Call by Time Schedule](#) for more details.
- DID Call by Time Schedule Priority is given to the pattern that is set **manually**. However, when a time pattern changes with the time schedules set in PRG 22-17, the pattern applied by the Manual change is canceled and the Time Pattern is given priority.
- When Transfer Operation Mode is set to busy, call queuing must be turned off for it to work.

Default Settings

Disabled

Related Features

Central Office Calls, Answering

Direct Inward Line (DIL)

Direct Inward System Access (DISA)

Off-Hook Signaling

Paging, External

Programmable Function Keys

Station Message Detail Recording

Transfer

Guide to Feature Programming

The programs listed below indicate the most commonly used programs required for this feature. The programs are listed in the order that the installer should follow. Refer to the PCPro wizards for further detailed programming.

- When a * is listed next to the Program Number it indicates a program that **MUST** be set (from a default state) for this feature to be enabled.

DID Line Service

Program No.	Program Name	Input Data	Default
14-05-01 *	Trunk Group - Trunk Group Number	Trunk Port 1 ~ 128 = Priority 1 ~ 128 0 ~ 50 = Trunk Group	1

Program No.	Program Name	Input Data	Default
22-02-01 *	Incoming Call Trunk Setup - Trunk Service Type	0 = Normal 1 = VRS (second dial tone if no VRS installed) 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delayed VRS 7 = ANI/DNIS 8 = DID (DDI) Mode Switching	0
22-09-01	DID Basic Data Setup - Dial-In Receive digit	1 ~ 8	2
22-09-02	DID Basic Data Setup - Received Vacant Number Operation	0 = Disconnect (call denied) 1 = Transfer (call routed to PRG 22-12)	0
22-13-01	DID Trunk Group to Translation Table Assignment - Translation Table	0 ~ 20 (0 = No Setting)	1
22-10-01	DID Translation Table Setup	0 ~ 1000 (0 = No Setting)	1st: 1 Start - 1, End - 200 2 Start - 201, End - 400 3 Start - 401, End - 600 4 Start - 601, End - 800 5 ~ 20 Start - 0, End - 0 2nd: 1 ~ 20 Start - 0, End - 0
22-11-01 *	DID Translation Table - Received Number	Maximum of 8 digits (0 ~ 9, *, #)	Refer to the Programming Manual.
22-11-02 *	DID Translation Table - Target Number	Maximum 36 digits (0 ~ 9, *, #)	Refer to the Programming Manual.
22-11-03	DID Translation Table - DID Name	Maximum 12 characters	No Setting
22-11-04	DID Translation Table - Transfer Operation Mode	0 = No Transfer 1 = Busy 2 = No Answer 3 = Busy/No Answer	0
22-11-05	DID Translation Table - Transfer Destination Number 1	0 = No setting 01 ~ 50 = Incoming Ring Group 102 = VM 201 ~ 250 = Department Group 400 = VRS 401 = DISA 501 ~ 599 = DISA/VRS Message 1000 ~ 1999 = Common ABB Dial (000 ~ 999)	0
22-11-06	DID Translation Table - Transfer Destination Number 2	0 = No setting 01 ~ 50 = Incoming Ring Group 102 = VM 103 = Centralized VM 201 ~ 250 = Department Group 400 = VRS 401 = DISA 501 ~ 599 = DISA/VRS Message 1000 ~ 1999 = Common ABB Dial (000 ~ 999)	0
22-11-11	DID Translation Table - Incoming Ring Group Transfer	0 = Disable (Calls will not be routed to PRG 22-12.) 1 = Enable (Calls will be routed to PRG 22-12.)	0
22-12-01	DID Intercept Ring Group - Incoming Ring Group Number	0 = No setting 01 ~ 50 = Incoming Ring group 102 = VM 103 = Centralized VM	1
22-01-06	System Options for Incoming Calls - DID Ring-No-Answer Time	0 ~ 64800 seconds	20

Program No.	Program Name	Input Data	Default
22-01-07	System Options for Incoming Calls - DID Incoming Ring Group No Answer Time	0 ~ 64800 seconds	20
22-11-08	DID Translation Table - Maximum Number of DID Calls	0 ~ 128 (0 = No limit) 0 = No Limit (Can receive as many calls as you have available trunks.)	0
22-11-09	DID Translation Table - Music on Hold Source	0 = IC/MOH Port 1 = BGM Port	0

DDI Mode Switching

Program No.	Program Name	Input Data	Default
22-02-01 *	Incoming Call Trunk Setup - Trunk Service Type	0 = Normal 1 = VRS (second dial tone if no VRS installed) 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delayed VRS 7 = ANI/DNIS 8 = DID (DDI) Mode Switching	0
14-05-01	Trunk Group - Trunk Group Number	1 ~ 128 = Trunk Port 0 ~ 50 = Group Number 1 ~ 128 = Priority	1
22-09-01	DID Basic Data Setup - Dial-In Receive digit	1 ~ 8	2
22-17-01 *	Dial-In Conversion Table Area Setup for Time Pattern - Received Dial	Up to eight digits	No Setting
22-17-04 *	Dial-In Conversion Table Area Setup for Time Pattern - Dial-In Conversion Table Number	1 ~ 1000 (These are the table entries in PRG 22-11.)	0
22-11-01	DID Translation Table - Received Number	Maximum eight digits (0 ~ 9, *, #, @)	Refer to the Programming Manual.
22-11-02 *	DID Translation Table - Target Number	Maximum 36 digits (0 ~ 9, *, #, @)	Refer to the Programming Manual.
20-07-26 *	Class of Service Options (Administrator Level) - Dial-In Mode Switch	0 = Off (Station cannot control DDI switching.) 1 = On (Station can control DDI switching.)	COS1 ~ 14/COS15 = 1
15-07-01	Programmable Function Keys	88 = Dial In Mode Switching	Refer to the programming manual for the default values and for all other available options in this command.

Direct Call by Time Schedule:

Program No.	Program Name	Input Data	Default
11-10-35	Service Code Setup (for System Administrator) - Dial-In Mode Switching	0~9, *, # Maximum of 8 digit	609

Program No.	Program Name	Input Data	Default
12-04-01	Holiday Night Service Switching	Night Mode Service Group No.; 01-04 Days and Months: 0101 ~ 1231 (e.g. 0101 = Jan. 1; 1231 = Dec. 31) Time Pattern Number: 0 ~ 10 (0 = No Setting)	No Setting
15-07-01	Programmable Function Keys	Line Key 1 ~ 24 0 ~ 99 (Normal Function Code 751 by default) * 00 ~ * 99 (Appearance Function Code) (Service Code 752 by default)	Refer to the programming manual for the default values and for all other available options in this command.
20-07-26	Class of Service Options (Administrator Level) - Dial-In Mode Switch	0 = Off (Station cannot control DDI switching.) 1 = On (Station can control DDI switching.)	COS1 ~ 14/COS15 = 1
22-02-01	Incoming Call Trunk Setup - Trunk Service Type	0 = Normal 1 = VRS (second dial tone if no VRS installed) 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delayed VRS 7 = ANI/DNIS 8 = DID (DDI) Mode Switching	0
22-11-02	DID Translation Table - Target Number	Maximum 36 digits (0 ~ 9, *, #, @)	Refer to the programming manual for the default values.
22-17-01	Dial-In Conversion Table Area Setup for Time Pattern - Received Dial	Up to eight digits	No Setting
22-17-02	Dial-In Conversion Table Area Setup for Time Pattern - Start of Time	0000 ~ 2359 (Time)	0000
22-17-03	Dial-In Conversion Table Area Setup for Time Pattern - End of Time	0000 ~ 2359 (Time)	0000
22-17-04	Dial-In Conversion Table Area Setup for Time Pattern - Dial-In Conversion Table Number	1 ~ 1000 (These are the table entries in PRG 22-11.)	0
22-17-05	Dial-In Conversion Table Area Setup for Time Pattern - Day of week	1: Sun 2: Mon 3: Tue 4: Wed 5: Thu 6: Fri 8: Sun 9: Holiday 0 = Off 1 = On	1
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-09-01	Class of Service Options (Incoming Call Service) - Second Call for DID/DISA/DIL/E&M Override	0 = Off (2nd call will not be allowed.) 1 = On (2nd call is allowed.)	COS 01 ~ 15 = 1
20-13-23	Class of Service Options (Supplementary Service) - Display the Reason for Transfer	0 = Off 1 = On	COS 01 ~ 15 = 0
21-01-02	System Options for Outgoing Calls - Intercom Interdigit Time	0 ~ 64800 seconds	10

Program No.	Program Name	Input Data	Default
22-04-01	Incoming Extension Ring Group Assignment - Extension Number	Maximum eight Digits	Group01 has 101, 102, 103, 104, 105, 106, 107, and 108 (First 8 ports ringing)
22-11-07	DID Translation Table - Call Waiting	0 = Disable (No) 1 = Enable (Yes)	0
25-04-01	VRS/DISA Transfer Ring Group With No Answer/ Busy - Incoming Group Number	0 = Disconnect 01 ~ 50 = Incoming Ring Group 102 = VMI 103 = Centralized VM 104 = Assign the Speed Dial Number	0
25-05-01	VRS/DISA Error Message Assignment - VRS Message Number	0 ~ 100 (0 = No Setting)	0
25-06-02	VRS/DISA One-Digit Code Attendant Setup - Destination Number	Up to eight digits  <i>Must be a valid extension number that is programmed in command 11-02 or 11-04.</i>	No Setting
25-07-01	System Timers for VRS/DISA - VRS/DISA Dial Tone Time	0 ~ 64800 seconds	10 seconds
25-07-02	System Timers for VRS/DISA - VRS/DISA No Answer Time	0 ~ 64800 seconds	0
25-07-04	System Timers for VRS/DISA - Calling Time to Automatic Answering Telephone Set	0 ~ 64800 seconds	10 seconds
25-07-05	System Timers for VRS/DISA - Duration Time for Guidance Message by Automatic Answering Telephone Set	0 ~ 64800 seconds	10 seconds
25-07-11	System Timers for VRS/DISA - VRS/DISA Answer Delay Time	0 ~ 64800 seconds	0 second
25-07-13	System Timers for VRS/DISA - VRS/DISA Busy Tone Interval	0 ~ 64800 seconds	5 seconds
25-07-14	System Timers for VRS/DISA - Delayed VRS Answer Time	0 ~ 64800 seconds	10 seconds
25-01-01	VRS/DISA Line Basic Data Setup - VRS/DISA Dial - In Mode	0 = Extension Number Service Code Specify (Intercom) 1 = Use Dial Conversion Table	0
25-01-03	VRS/DISA Line Basic Data Setup - VRS/DISA Transfer Alarm	0 = Normal (Off) 1 = Alarm (On)	0
25-02-01	DID/DISA VRS Message - Message (Talkie) Source		0
25-03-01	VRS/DISA Transfer Ring Group With Incorrect Dialing - Incoming Group Number	0 = Disconnect 01 ~ 50 = Incoming Ring Group 102 = VMI 103 = Centralized VM 104 = Assign the Speed Dial Number	1

Operation

DID calls ring extensions like normal trunk calls.

To Activate DID Call by Time Schedule:

1. At any display Multiline Terminal, press **Speaker** key.

2. Dial the Dial-In Mode Switching Service Code (Default = Not assigned).
- OR -
Press the **Dial-In Mode Switching Programmable Function** key (PRG 15-07-01, **88**, or SC **751** Key Code **88**).
3. Dial **1 ~ 500** (table number).
4. Dial the Time Pattern 1~8.

Table 1-13 LED Flash Patterns

Time Pattern	LED Appearance
Pattern 1	Off
Pattern 2	On
Pattern 3	Slow Flash
Pattern 4	Fast Flash
Patterns 5~8	Off

Direct Inward Line (DIL)

Description

A Direct Inward Line (DIL) is a trunk that rings an extension, virtual extension or Department Group directly. Since DILs only ring one extension or group (i.e., the DIL destination), employees always know which calls are for them. For example, a company operator can have a Direct Inward Line for International Sales Information. When outside callers dial the DIL telephone number, the call rings the operator on the International Sales line key. The DIL does not ring other extensions.

There are 128 available trunks, 50 Department Groups, 128 extensions and 50 virtual extensions.

DIL Delayed Ringing

Extensions in a Ring Group can have delayed ringing for another extension DIL. If the DIL is not answered at its original destination, it rings the DIL No Answer Ring Group. This could help a Technical Service department, for example, that covers calls for an Inside Sales department. If the Inside Sales calls are not answered, they ring into the Technical Service department.

Conditions

- If unanswered, a DIL without delayed ringing rings an extension until the outside party hangs up.
- If a DIL rings a Department Group and all agents are busy, the system routes the call as follows:
 1. The trunk rings the overflow destination assigned in PRG 22-08.
 2. If there is no PRG 22-08 assignment, the call rings according to the Ring Group assignments in PRG 22-04 and PRG 22-05.
 3. If none of the destinations in steps 1~2 above are available, the call continues to ring until a destination becomes free.
- The DIL follows call forwarding programming, even to voice mail.
- When a call is transferred by Call Forwarding - No Answer, Call Forwarding - Busy, or DND, the Reason for Transfer can display at the transferred extension.
- You can place DILs in trunk groups to make outgoing DIL calls easier.
- If a DIL destination extension is in DND, an incoming call rings according to Ring Group programming (PRG 22-08 then PRG 22-05).
 - If a user puts the telephone in Do Not Disturb, calls routed to the telephone in DND do not follow call forwarding.
- A user can activate Group Call Pickup to intercept a DIL ringing another extension.
- Program a name for a DIL in PRG 14-01-01. This makes it easier to identify the incoming call.
- If a Multiline Terminal is busy, a second incoming DIL call provides Call Alert Notification, depending on chassis programming. The second DIL call waits in line for the user to answer the call. The outside caller hears ringback tone while this occurs.
- If an extension has a line key for a DIL, the call rings the key. If not, the call rings an available line appearance. For other extensions, the DIL indicates busy.
- A DIL rings its assigned extension without Ring Group programming. A DIL only rings its assigned extension. It does not ring other extensions in a Ring Group.

Default Settings

Disabled

System Availability

Terminals

All Terminals

Required Component(s)

None

Related Features

Call Forwarding

Central Office Calls, Answering

Central Office Calls, Placing

Department Calling

Do Not Disturb (DND)

Group Call Pickup

Name Storing

Off-Hook Signaling

Paging, External

Programmable Function Keys

Ring Groups

Transfer

Guide to Feature Programming

The programs listed below indicate the most commonly used programs required for this feature. The programs are listed in the order that the installer should follow. Refer to the PCPro wizards for further detailed programming.

- When a * is listed next to the Program Number it indicates a program that **MUST** be set (from a default state) for this feature to be enabled.

Program No.	Program Name	Input Data	Default
22-02-01 *	Incoming Call Trunk Setup - Trunk Service Type	0 = Normal 1 = VRS (second dial tone if no VRS installed) 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delayed VRS 7 = ANI/DNIS 8 = DID (DDI) Mode Switching	0

Program No.	Program Name	Input Data	Default
22-07-01 *	DIL Assignment - Number of Transferring Destination	Maximum of 8 digits (0 ~ 9, *, #)	No Setting
22-01-04	System Options for Incoming Calls - DIL No Answer Recall Time	0 ~ 64800 seconds 0 = No Overflow	0
22-08-01	DIL/IRG No Answer Destination - Incoming Ring Group Number	0 = No Setting 01 ~ 50 = Incoming Group 102 = VMI 103 = Centralized VM	Group01 has 101, 102, 103, 104, 105, 106, 107, and 108 (First 8 ports ringing)
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-09-01	Class of Service Options (Incoming Call Service) - Second Call for DID/DISA/DIL/E&M Override	0 = Off (2nd call will not be allowed.) 1 = On (2nd call is allowed.)	COS 01 ~ 15 = 1
20-13-23	Class of Service Options (Supplementary Service) - Display the Reason for Transfer	0 = Off 1 = On	COS 01 ~ 15 = 0
22-04-01	Incoming Extension Ring Group Assignment - Extension Number	Maximum eight Digits	Group01 has 101, 102, 103, 104, 105, 106, 107, and 108 (First 8 ports ringing)

Operation

To answer a call on your Direct Inward Line:

1. Lift the handset.
2. Press the flashing line key for DIL on the Multiline Terminal.
 - Pressing the flashing line key puts the first call on hold and answers the second incoming call. This can be repeated until all incoming calls are answered.
 - If you have Ringing Line Preference, lift the handset to answer the call.
 - If you do not answer the call, it may ring other extensions (i.e., the DIL No Answer Ring Group).

To place a call on your Direct Inward Line:

1. Lift the handset.
2. At the Multiline Terminal, press the line key for DIL.
 - **OR** -
 - Dial #0 and the DIL trunk number (e.g., 05).
 - **OR** -
 - Dial **704** and the DIL trunk group number (e.g., 05).
 - **OR** -
 - Dial **0** for Trunk Group Access.
3. Dial the number.

Direct Inward System Access (DISA)

Description

DISA permits outside callers to directly dial system extensions, trunks and selected features. This could help an employee away from the office that wants to directly dial co-workers or use the company trunks for long distance calls. To use DISA, the employee:

- Dials the telephone number that rings the DISA trunk
- Waits for the DISA trunk to automatically answer with a unique dial tone
- Dials the 6-digit DISA password (access code)
- Waits for a second unique dial tone
- Accesses a system trunk, uses a selected feature or dials a system extension

DISA calls ring system extensions like other outside calls. If an extension has a line key for the DISA trunk, the call rings that key.

You can set DISA operation differently for each Night Service mode. For example, a trunk can be a normal trunk during the day and a DISA trunk at night. You can also set the routing for DISA trunks when the caller dials a busy or unanswered extension, dials incorrectly or forgets to dial.

DISA allows 15 users, 15 DISA Classes of Service and 128 trunks.

DISA Class of Service

DISA Class of Service provides features and dialing restrictions for DISA callers. This allows you to control the ability of the DISA callers dialing into your system. When a DISA caller first accesses the system, they can be prompted to enter a DISA password before proceeding. The system associates the password entered with a specific user number, which in turn has a Class of Service. If the Class of Service allows the action (such as making outgoing trunk calls), the call goes through. If the DISA Class of Service does not allow the action, the system prevents the call. The DISA Class of Service options are:

- **Trunk Group Routing/ARS Access**
When a DISA caller dials into the system, they may be able to dial **0** and place outside calls. Any toll charges are incurred by the system. The call follows the system Trunk Group Access or Automatic Route Selection - whichever is enabled.
- **Trunk Group Access**
DISA callers may be able to access a specific trunk group for outgoing calls through the system. To access a Trunk Group, the user dials Service Code **704** followed by the Trunk Group number (Trunk Groups 1~50). This allows the DISA caller to place an outgoing call over the selected group. Trunk Group Access bypasses the system Trunk Group Routing/ARS/Trunk Access Maps. As with dial **0** access, any toll charges are incurred by the system.
- **Speed Dial - System/Group/Station**
The System Speed Dial dialing bins may be available to DISA callers. This could save the DISA caller time when dialing. To access the System Speed Dialing bins, the caller dials Service Code **#2** and the System Speed Dial Bin number.
- **Operator Calling**
A DISA caller may be able to dial **9** for the system operator.
- **Paging**
Internal and External Paging may be available to DISA callers. This allows co-workers in adjacent facilities, for example, to broadcast announcements to each other.

- **Direct Trunk Access**
DISA callers may be able to select a specific trunk for outgoing calls through the system. To directly access a trunk, the user dials Service Code **#0** followed by the trunk number (e.g., 001). This allows the DISA caller to place an outgoing call over the selected trunk. Direct Trunk Access bypasses the system Trunk Group Routing/ARS/Trunk Access Maps. As with dial **0** access, any toll charges are incurred by the system.
- **Call Forward**
DISA callers may be able to set Call Forwarding to redirect extension calls to another extension. Call Forwarding ensures that the user's calls are covered when they are away from their work area.
- **DISA Barge-In**
The DISA Barge-In option allows a DISA caller to break into another extension user's established call. This sets up a three-way conversation between the intruding party and the two parties on the initial call.

DISA Toll Restriction

The digits a DISA caller dials for an outgoing call may be subject to the system Toll Restriction. For example, Toll Restriction can prevent users from dialing a 1-900 service. When an incoming DISA caller tries to use system trunks to dial 1-900, Toll Restriction denies the call.

DISA Operating Modes

The DISA Operating Modes determine what happens when a DISA caller forgets to dial, calls a busy or unanswered extension or dials incorrectly. The system can either drop the call or send it to a preset Ring Group (called the DISA Transfer Destination).

Department Calling with Overflow Message

If a DISA caller dials a busy Department Calling Group, the system can periodically play the voice prompt, *"Please hold on. All lines are busy. Your call will be answered when a line becomes free."* while the caller waits. The interval between the voice prompts is the VRS Waiting Message Interval Time. When an extension in the Department Group becomes available, the call automatically goes through. If the Department Calling Group remains busy past the DISA No Answer Time, the DISA call routes to the overflow destination or disconnects. (What happens to the unanswered call is set by the DISA Operating Mode). The Overflow Message requires a VRS.

Warning Tone for Long DISA Calls

You can set up the system to provide a warning tone to DISA callers that have been on a call too long. The warning tone can be just a reminder (which the caller can ignore) or can be followed by a forced disconnect of the call. When the DISA caller hears the warning tone, they have the option of dialing a code to continue the conversation or disconnect.

Trunk Continue/Disconnect Codes

Users have the option to use a Continue or Disconnect service code. The Continue service code extends the conversation for a programmed time. If the user enters the Disconnect service code, the call is immediately disconnected.

Example:

The following example indicates how a call will be handled with the system programmed as follows:

- PRG 14-01-25: **1**
- PRG 20-28-01: **#**
- PRG 20-28-02: **No Setting**
- PRG 20-28-03: **180**
- PRG 24-02-07: **600** (Used only with manually transferred Tandem Trunk calls)
- PRG 24-02-10: **30** (Used only with manually transferred Tandem Trunk calls)
- PRG 25-07-07: **600** (Used only with automatically transferred Tandem Trunk calls or DISA calls)
- PRG 25-07-08: **30** (Used only with automatically transferred Tandem Trunk calls or DISA calls)

1. An external call connects to an external number (either by transferring with Tandem Trunking or by DISA caller).
2. After 10 minutes (Tandem Trunking = PRG 24-02-07 or DISA = PRG 25-07-07), a warning tone is heard and the user dials # (PRG 20-28-01) to extend the conversation.
3. After three minutes (PRG 20-28-03), the warning tone is heard again. After 30 seconds (Tandem Trunking = PRG 24-02-10 or DISA = PRG 25-07-08), the call is disconnected.

Conditions

- The DISA caller must use an analog (DTMF) telephone. DISA is compatible with calling devices that meet the DTMF signaling requirements of EIA Specification RS-464. DISA trunks must be supervised loop start.
- The Continue/Disconnect code must be DTMF.
- With an analog trunk, the Continue/Disconnect code may work using DTMF sounds from the opposite side trunk. With an ISDN trunk, PRG 14-01-25 must be enabled to detect the Continue/ Disconnect code.
- The Continue/Disconnect code is not accepted while dialing a trunk.
- Continue/Disconnect codes do not work if all DTMF receivers are busy.
- When used with the Networking feature, both systems must be programmed the same.
- In a system with ARS enabled:
When a DISA caller dials **0** for an outside call (if allowed), the system routes the call via ARS.
- In a system with ARS disabled:
When a DISA caller dials **0** for an outside call (if allowed), the system uses the routes programmed for Trunk Group Routing.
- Transferred calls on DISA, DID, DIL, ISDN trunks, or from the VRS can display the reason a call is being transferred (Call Forward, Busy, No Answer or DND).
- Long conversation cutoff is controlled separately for manually transferred Tandem Trunk calls, automatically transferred Tandem Trunk calls, and DISA calls.
- Tandem Trunking also uses the Continue/Disconnect codes DISA uses.
- DISA can only be set to call forward to another extension. Call Forward Off-Premise is not supported.
- When the DISA/VRS Ring Group Transfer (PRG 25-03 and PRG 25-04) are set to 104 (Speed Dial Bin), the Speed dial is treated as an internal call no matter what PRG 13-01-01 is set to. If an outside number is required, the trunk access code must be put into the speed dial bin.
- Park Retrieve is not supported using DISA.

Default Settings

Disabled

System Availability

Terminals

Remote Analog DTMF telephones

Required Component(s)

InMail (for Announcements)

Related Features

Automatic Route Selection (ARS/F-Route)

Central Office Calls, Answering

Direct Inward Dialing (DID)

Direct Inward Line (DIL)

Long Conversation Cutoff

Tandem Trunking (Unsupervised Conference)

Transfer

Voice Response System (VRS)

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-09-01	DTMF, Dial Tone Detection Setup - DTMF, Dial Tone Detection	0 = Common use for both analog extensions and trunks 1 = Use for analog extensions (DTMF Receivers) 2 = Use for analog trunks (DTMF receivers/Dial tone detection/ Caller ID detection)	Resource 01 ~ 140 = 0
11-09-02	Trunk Access Code - 2nd Trunk Route Access Code	Dial (Up to four digits)	No Setting
14-01-02	Basic Trunk Data Setup - Transmit Level	1 ~ 63 (- 15.5 dB ~ + 15.5 dB in 0.5 dB intervals)	32 (0 dB)
14-01-03	Basic Trunk Data Setup - Receive Level	1 ~ 63 (- 15.5 dB ~ + 15.5 dB in 0.5 dB intervals)	32 (0 dB)
14-01-13	Basic Trunk Data Setup - Trunk-to-Trunk Transfer	0 = Disable (No) 1 = Enable (Yes)	1
20-01-05	System Options - DTMF Receive Active Time	0 ~ 64800 seconds	10
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-09-01	Class of Service Options (Incoming Call Service) - Second Call for DID/DISA/DIL/E&M Override	0 = Off (2nd call will not be allowed.) 1 = On (2nd call is allowed.)	COS 01 ~ 15 = 1
20-13-23	Class of Service Options (Supplementary Service) - Display the Reason for Transfer	0 = Off 1 = On	COS 01 ~ 15 = 0
20-14-01	Class of Service Options for DISA/E&M - First Digit Absorption (Delete First Digit Dialed)	0 = Off 1 = On	COS 01 ~ 15 = 0
20-14-02	Class of Service Options for DISA/E&M - Trunk Group Routing/ARS Access	0 = Off 1 = On	COS 01 ~ 15 = 0
20-14-03	Class of Service Options for DISA/E&M - Trunk Group Access	0 = Off 1 = On	COS 01 ~ 15 = 1
20-14-04	Class of Service Options for DISA/E&M - Outgoing System Speed Dial	0 = Off 1 = On	COS 01 ~ 15 = 0

Program No.	Program Name	Input Data	Default
20-14-05	Class of Service Options for DISA/E&M - Operator Calling	0 = Off 1 = On	COS 01 ~ 15 = 1
20-14-06	Class of Service Options for DISA/E&M - Internal Paging	0 = Off 1 = On	COS 01 ~ 15 = 1
20-14-07	Class of Service Options for DISA/E&M - External Paging	0 = Off 1 = On	COS 01 ~ 15 = 1
20-14-08	Class of Service Options for DISA/E&M - Direct Trunk Access	0 = Off 1 = On	COS 01 ~ 15 = 0
20-14-09	Class of Service Options for DISA/E&M - Forced Trunk Disconnect <Not for ISDN T-point>	0 = Off 1 = On	COS 01 ~ 15 = 0
20-14-10	Class of Service Options for DISA/E&M - Call Forward Setting by Remote via DISA	0 = Off 1 = On	COS 01 ~ 15 = 0
20-14-11	Class of Service Options for DISA/E&M - DISA/Tie Trunk Barge-In	0 = Off 1 = On	COS 01 ~ 15 = 0
21-15-01	Individual Trunk Group Routing for Extensions - Route Table Number	0 ~ 50 0 = No Setting (Calls will not route.)	0
22-01-11	System Options for Incoming Calls - VRS Waiting Message Interval Time	0 ~ 64800 seconds	20
22-02-01	Incoming Call Trunk Setup - Trunk Service Type	0 = Normal 1 = VRS (second dial tone if no VRS installed) 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delayed VRS 7 = ANI/DNIS 8 = DID (DDI) Mode Switching	0
22-04-01	Incoming Extension Ring Group Assignment - Extension Number	Maximum eight Digits	Group01 has 101, 102, 103, 104, 105, 106, 107, and 108 (First 8 ports ringing)
25-01-01	VRS/DISA Line Basic Data Setup - VRS/DISA Dial - In Mode	0 = Extension Number Service Code Specify (Intercom) 1 = Use Dial Conversion Table	0
25-01-02	VRS/DISA Line Basic Data Setup - DISA User ID	0 = Off 1 = On	0
25-01-03	VRS/DISA Line Basic Data Setup - VRS/DISA Transfer Alarm	0 = Normal (Off) 1 = Alarm (On)	0
25-02-01	DID/DISA VRS Message - Message (Talkie) Source	0 = No talkie 1 = VAU : 1 ~ 100 (VAU Message No.) 3 = SLT : 1 ~ 50 (Station Group No.)	Talkie type = 1 Additional Data = 1
25-03-01	VRS/DISA Transfer Ring Group With Incorrect Dialing - Incoming Group Number	Ring Groups 1 ~ 50 Trunk Ports 001 ~ 128 Day/Night Mode 1 ~ 8 0 = Disconnect 1 ~ 100 = Incoming Ring Group 102 = In-Skin/External Voice Mail or InMail 103 = Centralized VM 104 = Speed Dial Bin (table Program 25-15-01)	1

Program No.	Program Name	Input Data	Default
25-04-01	VRS/DISA Transfer Ring Group With No Answer/ Busy - Incoming Group Number	Ring Groups: 1 ~ 50 Trunk Ports: 001 ~ 128 Day/Night Mode: 1 ~ 8 0 = Disconnect 1 ~ 100 = Incoming Ring Group 102 = In-Skin/External Voice Mail or InMail 103 = Centralized VM 104 = Speed Dial Bin (table Program 25-15-01)	0
25-05-01	VRS/DISA Error Message Assignment - VRS Message Number	0 ~ 100 (0 = No Setting)	0
25-06-01	VRS/DISA One-Digit Code Attendant Setup - Next Attendant Message Number	0 ~ 100 (0 = No Setting) 101 = Voice Mail answers 104 = Refer to 25-04: VRS/DISA Transfer Ring Group with No Answer/ Busy 105 = Dial the other extension	0
25-06-02	VRS/DISA One-Digit Code Attendant Setup - Destination Number	Up to eight digits  <i>Must be a valid extension number that is programmed in command 11-02 or 11-04.</i>	No Setting
25-07-01	System Timers for VRS/DISA - VRS/DISA Dial Tone Time	0 ~ 64800 seconds	10 seconds
25-07-02	System Timers for VRS/DISA - VRS/DISA No Answer Time	0 ~ 64800 seconds	0
25-07-03	System Timers for VRS/DISA - Disconnect after VRS/DISA retransfer to IRG	0 ~ 64800 seconds	60 seconds
25-07-04	System Timers for VRS/DISA - Calling Time to Automatic Answering Telephone Set	0 ~ 64800 seconds	10 seconds
25-07-05	System Timers for VRS/DISA - Duration Time for Guidance Message by Automatic Answering Telephone Set	0 ~ 64800 seconds	10 seconds
25-07-07	System Timers for VRS/DISA - Long Conversation Warning Tone Time	0 ~ 64800 seconds	1800
25-07-08	System Timers for VRS/DISA - Long Conversation Disconnect Time	0 ~ 64800 seconds	30
25-07-09	System Timers for VRS/DISA - DISA Internal Paging Time	0 ~ 64800 seconds	30 seconds
25-07-10	System Timers for VRS/DISA - DISA External Paging Time	0 ~ 64800 seconds	30 seconds
25-07-11	System Timers for VRS/DISA - VRS/DISA Answer Delay Time	0 ~ 64800 seconds	0 second
25-07-13	System Timers for VRS/DISA - VRS/DISA Busy Tone Interval	0 ~ 64800 seconds	5 seconds
25-08-01	DISA User ID Setup - Password	Dial (Fixed - six digits) 0 ~ 9, *, #	DISA User No. 01 = DISA User ID 000001 DISA User No. 02 = DISA User ID 000002 DISA User No. 15 = DISA User ID 000015
25-09-01	Class of Service for DISA Users - Function Class	1 ~ 15	1
25-10-01	Trunk Group Routing for DISA - Route Table Number	0 ~ 50 (0 = No Setting)	1
25-11-01	DISA Toll Restriction Class - Toll Restriction Class	1 ~ 15	2

Program No.	Program Name	Input Data	Default
25-12-01	Alternate Trunk Group Routing for DISA - Route Table Number	0 ~ 50 (0 = No Setting)	1
25-15-01	DISA Transfer Target Setup - DISA Transfer Target Area At Wrong Dial	Speed Dial bin number 0 ~ 999	999
25-15-02	DISA Transfer Target Setup - DISA Transfer Target Area At No Answer or Busy	Speed Dial bin number 0 ~ 999	999

Trunk Continue/Disconnect Codes

Program No.	Program Name	Input Data	Default
14-01-25	Basic Trunk Data Setup - Continued/Discontinued Trunk-to-Trunk Conversation	0 = Disable (No) 1 = Enable (Yes)	0
22-07-01	DIL Assignment - Number of Transferring Destination	Maximum of 8 digits (0 ~ 9, *, #)	No Setting
20-28-01	Trunk to Trunk Conversation - Conversation Continue Code	0 ~ 9, *, # (Set for one digit only)	No Setting
20-28-02	Trunk to Trunk Conversation - Conversation Disconnect Code	0 ~ 9, *, # (Set for one digit only)	No Setting
20-28-03	Trunk to Trunk Conversation - Conversation Continue Time	0 ~ 64800 seconds	0
24-02-07	System Options for Transfer - Trunk-to-Trunk Transfer Release Warning Tone	0 ~ 64800 seconds	1800
24-02-10	System Options for Transfer - Disconnect Trunk-to-Trunk	0 ~ 64800 seconds	0
25-07-07	System Timers for VRS/DISA - Long Conversation Warning Tone Time	0 ~ 64800 seconds	1800
25-07-08	System Timers for VRS/DISA - Long Conversation Disconnect Time	0 ~ 64800 seconds	30

Operation

To place a DISA call into the system:

1. Dial the telephone number that rings the DISA trunk.
2. Wait for the DISA trunk to automatically answer with a unique dial tone.
3. Dial the 6-digit DISA password (access code).
4. Wait for a second unique dial tone.
5. Dial an extension.
 - **OR** -
 - Dial **0** for Trunk Group Routing or ARS.
 - **OR** -
 - Dial Alternate Trunk Route Access Code (if enabled).
 - **OR** -
 - Dial **704** + a trunk group number (**1~50**) for an outside call.
 - **OR** -
 - Dial **#0** + a trunk number (**001~128**) for an outside call.
 - **OR** -
 - Dial **#2** + System Speed Dialing bin number.

- OR -

Dial **9** for the operator.

- OR -

Dial **701** + an Internal Paging Zone number (**0**, **1~9**, **00**, **01~50**).

- OR -

Dial **703** + an External Paging Zone number (**1~3** or **0** for All Call).

- OR -

Dial **710** + a busy extension number to barge in to a call.

To forward extension calls using a DISA call into the system:

1. Dial the telephone number that rings the DISA trunk.
2. Wait for the DISA trunk to automatically answer with a unique dial tone.
3. Dial the 6-digit DISA password (access code).
4. Wait for a second unique dial tone.
5. Dial the Call Forward service code (as defined in PRG 11-11-01 through PRG 11-11-05).
6. Dial the number of the extension to be forwarded.
7. Dial **1** to set Call Forwarding or **0** to cancel Call Forwarding.
8. Dial the extension number to which the calls will be forwarded.

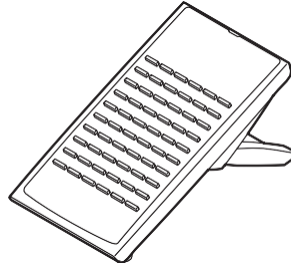
To use the Continue code to extend a DISA call:

1. An external call connects to an external number (either by transferring with Tandem Trunking or by DISA caller).
2. After the programmed time (PRG 25-07-07), a warning tone is heard and the user dials the Continue code (PRG 20-28-01) to extend the conversation.
3. After the programmed time (PRG 20-28-03), the warning tone is heard again. After the programmed time (PRG 25-07-08), the call is disconnected if the Continue code is not dialed again.

Direct Station Selection (DSS) Console

Description

The DSS Console gives a Multiline Terminal user a Busy Lamp Field (BLF) and one-button access to extensions, trunks, and system features. This saves time for users that do a lot of call processing (e.g., attendants, operators, or dispatchers). The DSS Console simplifies:



- Calling extensions and door boxes
- Placing, answering and transferring outside calls (Needs to assign keys)
- Making an External or Internal Page (Needs to assign keys)
- Switching the Night Service mode (Needs to assign keys)
- Activating DSS Console Alternate Answer (Needs to assign keys)

The DSS Console also provides DSS Console Alternate Answer. This lets a Multiline Terminal user with a DSS Console quickly reroute their calls to a co-worker. Transferred and dial 9 calls ring both DSS Consoles and, if the VRS is installed, the main operator hears the message, "Your calls have been forwarded". Central office calls ring both consoles and no message is heard by the operator.

You can also program the DSS Console keys to store Service Codes (up to 36 digits long). This provides the DSS Console user with many of the features available on One-Touch and Programmable Feature Keys. The DSS Console keys can optionally store additional associated digits after the Service Code. For example, if they are Trunk Group 1 ~ 9 then storing 70401 under a DSS Console Key access Trunk Group 1 when the console user presses the key.

The maximum number of consoles allowed per system is 12.

Up to 12 consoles can be connected to the terminal.

DSS Lamp Table Changed to Apply to DSS/Hotline Keys for Multiline Terminals

Using Program 30-05-02 ~ Program 30-05-21 DSS Console Lamp Table, you can assign LED flash patterns for DSS and Hotline keys on Multiline Terminals and DSS Consoles.

ACD/Non-ACD Agent DSS Lamping Available

With the SL2100 system, Programs 30-05-02 ~ 30-05-21 allow a non-ACD DSS console to light indicating the status of both non-ACD agents and ACD agents, but ACD agents do not show ACD status (Logged In/Out, etc.), only idle, busy, etc.

Conditions

- Changing flash patterns for DSS Consoles also changes them for Hotline keys.
- When installing a DSS, the system must auto-detect the console for the LEDs to function correctly. When connecting the DSS to an extension previously defined with another circuit type, undefine the circuit type (enter 00 in PRG 10-03-01 for the extension number), then connect the DSS Console.

- Programmable Function Keys for ACD codes (*10, *12, *13, *14, *15, *16, *17, *18, *19) cannot be programmed on a DSS Console.
 - Programmable Function keys for Trunk Group (* 02) and Virtual Extension (* 03) cannot be programmed on a DSS Console as the system does not allow entry of the additional data required for these keys.
 - A user can use the One-Touch Programmable Function Key (code 01) to have DSS Console keys for Personal Speed Dial and common and group Speed Dial.
 - Lighting status for agents and non- agents does not appear on the same console type. For agent's lighting status, a DSS Console must be programmed as a console in Program 30-01-01. For non-agents, the console must be programmed as a business console.
 - A DSS key indicates only a Call Forwarding indication for extensions forwarded with Immediate Call Forwarding.
 - A DSS Console can have line keys for placing and answering calls.
 - The DSS Console provides one-touch calling and a Busy Lamp Field for Door Boxes. Refer to [Door Box](#) when programming Door Boxes.
 - The DSS Console provides one-touch Night Service switching. Refer to [Night Service](#) when programming Night Service options.
 - Like a One-Touch Key, a user can have DSS Console keys for Direct Station Selection, Trunk Calling, Personal Speed Dial, Speed Dialing, and Service Code access.
 - The DSS Console provides one-touch External and Internal Page zone access. Refer to [Paging, External](#) and [Paging, Internal](#).
 - You can program the DSS Console keys with service codes to provide the functions of many of the Programmable Function keys. The stored service code can have up to three digits, but it can have additional option codes added (e.g. to set Immediate Call Forward for all calls. Trunk Group (* 02) and Virtual Extension (* 03) codes can not be programmed on a DSS Console as the system does not allow entry of the additional data required.
 - The capacity of a console can be expanded for two pages by assigning a Page Switching key (95). The Page Switching key (95) must be assigned on keys 55~60. The LED on the Page Switching key (95) identifies as follows;
 - Red On: DSS Page 1 (Buttons 1~60 are displayed.)
 - Slow Blink (Red): DSS Page 2 (Buttons 61~114 are displayed.)

For example, when the DSS key No.60 is assigned for Page Switching key (95), the remaining DSS keys (No.55 to No.59) can be used for the DSS/One-Touch key. It is possible to use the function of DSS key No.55 to No.60 set as both pages separately.
 - The expanded capacity for DSS Consoles (two pages), is not supported for DSS Consoles in the Monitor Mode.
 - When a Multiline Terminal user is on a call, they can transfer to another station by pressing a DSS key for that station. It is not necessary to press **Transfer** key to transfer to another station using a DSS key.
-  *When a Multiline Terminal user is on a call, they must press **Transfer** key to transfer a call off site with a DSS key.*
- Pauses can be entered in the dial string of a DSS/One Touch button. The pause is entered as P in the dial string and causes the system to wait three seconds before sending the rest of the digits that follow the P (pause). Multiple pauses can be entered.
 - The @ can be entered in the dial string of a DSS/One Touch button. The @ only applies to ISDN and Intercom calls. When using the @, the system waits for the destination to answer (answer supervision), and then sends the rest of the digits.
 - Entering a P (pause) in a DSS/One Touch dial string can be used for CO calls, Intercom calls, or after the @ for ISDN calls.

Default Settings

- No DSS Consoles assigned (in PRG 30-02-01).
- All DSS Console key ranges are ports 1~60.

- Once a DSS Console is enabled, the console keys are DSS keys (PRG 30-03-01).

System Availability

Terminals

All Multiline Terminals

Required Component(s)

None

Related Features

Abbreviated Dialing/Speed Dial

Automatic Call Distribution (ACD)

Call Forwarding

Central Office Calls, Answering

Central Office Calls, Placing

Door Box

Night Service

One-Touch Calling

Paging, External

Paging, Internal

Programmable Function Keys

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-03-01	ETU Setup - ETU Setup (082U-B1) - Terminal Type (B1)	HBI PKG: 0 = No Setting 1 = Multi-Line Telephone 2 = SLT 8 = Door Phone 10 = DSS Console 3 ~ 7, 9, 11, 12 = Not Used ESIU PKG: 0 = No Setting 1 = Multi-Line Telephone 10 = DSS Console	Refer to the Programming Manual for the default values.
15-02-08	Multiline Telephone Basic Data Setup - Automatic Handsfree	0 = Preselect 1 = One-Touch (Automatic Handsfree)	1

Program No.	Program Name	Input Data	Default
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-13-06	Class of Service Options (Supplementary Service) - Automatic Off-Hook Signaling (Automatic Override)	0 = Off (manually) 1 = On (automatically)	COS 01 ~ 15 = 1
20-13-49	Class of Service Options (Supplementary Service) - BLF Indication on CO Incoming State	0 = Off (Disabled) 1 = On (Enabled)	COS 01 ~ 15 = 0
20-17-01	Operator Extension - Operator's Extension Number	Up to eight digits	101
30-01-01	DSS Console Operating Mode - DSS Operation Mode	0 = Business Mode 1 = Hotel Mode	0
30-02-01	DSS Console Extension Assignment - Extension Port connected to DSS	Up to eight digits	No Setting
30-03-01	DSS Console Key Assignment		The DSS keys 001~060 of all DSS consoles = DSS/One-Touch key 101~160 The DSS keys 061~114 of all DSS consoles = No Setting
30-04-01	DSS Console Alternate Answer - DSS Console Alternate Answer	Alternate DSS No. 01 ~ 12 (0 = No setting)	0 = No Setting
30-05-02	DSS Console Lamp Table - Busy Extension	0 ~ 7 (Lamp Pattern Data)	7
30-05-03	DSS Console Lamp Table - DND Extension	0 ~ 7 (Lamp Pattern Data)	3
30-05-04	DSS Console Lamp Table - ACD Agent Busy	0 ~ 7 (Lamp Pattern Data)	7
30-05-05	DSS Console Lamp Table - Out of Schedule (ACD DSS)	0 ~ 7 (Lamp Pattern Data)	0
30-05-06	DSS Console Lamp Table - ACD Agent log Out (ACD DSS)	0 ~ 7 (Lamp Pattern Data)	5
30-05-07	DSS Console Lamp Table - ACD Agent Log In (ACD DSS)	0 ~ 7 (Lamp Pattern Data)	4
30-05-09	DSS Console Lamp Table - Hotel Status Code 1 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	7
30-05-10	DSS Console Lamp Table - Hotel Status Code 2 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	1
30-05-11	DSS Console Lamp Table - Hotel Status Code 3 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	2
30-05-12	DSS Console Lamp Table - Hotel Status Code 4 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	3
30-05-13	DSS Console Lamp Table - Hotel Status Code 5 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	5
30-05-14	DSS Console Lamp Table - Hotel Status Code 6 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	3
30-05-15	DSS Console Lamp Table - Hotel Status Code 7 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	6
30-05-16	DSS Console Lamp Table - Hotel Status Code 8 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	4
30-05-17	DSS Console Lamp Table - Hotel Status Code 9 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	3
30-05-18	DSS Console Lamp Table - Hotel Status Code 0 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	0
30-05-19	DSS Console Lamp Table - Hotel Status Code * (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	4

Program No.	Program Name	Input Data	Default
30-05-20	DSS Console Lamp Table - Hotel Status Code # (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	5
30-05-21	DSS Console Lamp Table - Voice Mail Message Indication	0 ~ 7 (Lamp Pattern Data)	3

Table 1-14 Default Value for PRG 30-03-01

Conversion Table	Received Number	Target Number
DSS001	01 (DSS Key)	101
DSS002	01 (DSS Key)	102
:	:	:
DSS059	01 (DSS Key)	159
DSS060	01 (DSS Key)	160
DSS061 - 114	00 (Blank)	No Setting

Operation

Calling an extension from your DSS Console:

1. Press the **DSS Console** key.



If the call voice-announces, you can make it ring by dialing 1.



If you do not have Handsfree, you must lift the handset to speak.

Extension Busy Lamp Field	
When the DSS key is... On Off Flashing Fast	The assigned extension is... Busy on a call Idle In Do Not Disturb

Answering a trunk call from your DSS Console:

1. Press the flashing **DSS Console** key assigned to the trunk.



If you do not have Handsfree, you must lift the handset to speak.

Transferring a call using your DSS Console (Needs to set at 30-03):

1. Place or answer the call.
2. Press **Transfer** key to transfer the call.
3. Press the **DSS** key for the extension to receive the transfer.
4. (Optional) Announce the call.



If called party does not want the call, press the flashing line key to retrieve it.

Making an External Page using your DSS Console (Needs to set at 30-03):

1. Press the **DSS Console External Page** zone key (1~3).



If the zone you want is busy, try again later.



If you do not have Handsfree, lift the handset to make your announcement.

External Page Busy Lamp Field	
When the DSS key is...	The External Page zone is...
On	Busy
Off	Idle

Making an Internal Page using your DSS Console (Needs to set at 30-03):

1. Press the **DSS Console Internal Page** zone key (Group key 1~50).



If the zone you want is busy, try again later.



If you do not have Handsfree, lift the handset to make your announcement.

Internal Page Busy Lamp Field	
When the DSS key is...	The Internal Page zone is...
On	Busy
Off	Idle

Switching the Night Service mode from your DSS Console (Needs to set at 30-03):

1. Press the **Night Service** key.

Night Service Busy Lamp Field	
When this key is ON...	The system is in the...
DAY	Day 1 Mode
NIGHT	Night 1 Mode
BREAK	Break 1 Mode
NIGHT 2	Night 2 Mode

Using a DSS Console key as a One-Touch or Programmable Function key:



A user can have DSS Console keys programmed as One-Touch keys. These keys can be used for Direct Station Selection, Trunk Calling, Personal Speed Dial, Speed Dialing, and Service Code access. The stored service code cannot be longer than three digits.

1. Press the **DSS Console** key for function.



For example, you can forward your calls by pressing the DSS key + dial 1 + destination. Your the DSS key must have been previously programmed for Call Forward.

Directed Call Pickup

Description

Directed Call Pickup permits an extension user to intercept a call ringing another extension. This allows a user to conveniently answer a call for a co-worker from their own telephone. With Directed Call Pickup, an extension user can pick up:

- Trunk calls (i.e., Ring Group calls)
- Direct Inward Lines
- Transferred trunk calls
- Transferred Intercom calls
- Ringing and voice-announced Intercom calls

Conditions

- Calls which were on hold or transferred which recall the extension can be answered using Directed Call Pickup.
- Personal Park also uses the Directed Call Pickup code.
- Voice Mail Park and Page also uses the Directed Call Pickup code.
- Directed Call Pickup cannot be used to pick up a call ringing at an ACD agent.

Default Settings

Enabled

System Availability

Terminals

All Stations

Required Component(s)

None

Related Features

Call Arrival (CAR) Keys

Department Calling

Group Call Pickup

Hold

Hotline

Park

Secretary Call Pickup

Secondary Incoming Extension

Transfer

Virtual Extensions

InMail

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-12-25	Service Code Setup (for Service Access) - Direct Call Pickup - Own Group	0~9, *, # Maximum of 8 digit	756
11-12-26	Service Code Setup (for Service Access) - Call Pickup for Specified Group	0~9, *, # Maximum of 8 digit	768
11-12-27	Service Code Setup (for Service Access) - Call Pickup	0~9, *, # Maximum of 8 digit	*#
11-12-28	Service Code Setup (for Service Access) - Call Pickup for Another Group	0~9, *, # Maximum of 8 digit	769
11-12-29	Service Code Setup (for Service Access) - Direct Extension Call Pickup	0~9, *, # Maximum of 8 digit	* *
11-12-30	Service Code Setup (for Service Access) - Specified Trunk Answer	0~9, *, # Maximum of 8 digit	672
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-10-05	Class of Service Options (Answer Service) - Directed Call Pickup for Own Group	0 = Off 1 = On	COS 01 ~ 15 = 1

Operation

To use Directed Call Pickup to intercept a call to a co-worker's extension:

1. Pick up the handset or press **Speaker** key.
2. Dial * *.
3. Dial number of extension whose call you want to intercept.



If more than one call is coming in, the system sets the priority for which call it answers first.

Directory Dialing

Description

Directory Dialing allows a Multiline Terminal user to select a co-worker or outside caller from a list of names, rather than dialing the telephone number. There are four types of Directory Dialing:

- SPD-Speed Dials
- EXT-co-worker's Extensions
- STA-Personal Speed Dials
- TELBK-Telephone Book

Conditions

- Directory Dialing sorts and searches directory names in alphabetical order (based on all characters entered of the name) when the system starts up or reboots. The system resorts extension names when:
 - You change PRG 15-01-01 (Extension Numbers and Names).
 - Any user dials **700** and changes their extension name.
- Directory Dialing follows all the programmed options and conditions for Speed Dial-System/Group/Station, Intercom Calling and One-Touch Calling.
- Extension Directory only shows a telephones/VEs that are connected and have a name assigned in PRG 15-01-01.

Default Settings

Enabled

System Availability

Terminals

All Display Multiline Terminals with Softkeys

Required Component(s)

None

Related Features

Abbreviated Dialing/Speed Dial

Last Number Redial

Name Storing

Softkeys

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
20-13-51	Class of Service Options (Supplementary Service) - Number and Name appear in the Directory	0 = Off 1 = On	COS 01 ~ 15 = 1
21-01-02	System Options for Outgoing Calls - Intercom Interdigit Time	0 ~ 64800 seconds	10

Operation

For the Directory Dialing at advance mode (PRG 15-02-60:1 or 2), refer Navigation key feature.

To use Directory Dialing from a Multiline Terminal with an LCD (When set PRG 15-02-60:0):

- Press the **Dir** softkey.
- **OR** -
Press the **Right Cursor** key.
- Press the softkey for the Directory Dialing type:
 - SPD-Speed Dials
 - EXT-co-worker's Extensions
 - STA-Personal Speed Dials
 - TELBK-Telephone Book

 *Directory Dialing follows any feature restrictions that your system may have enabled. For example, if your extension cannot normally use Speed Dial - System/Group/Station, Directory Dialing can not access it either.*
- Dial letter/number range for the party you want to call (e.g., dial 2 for A, B, C or 2).

 *You can enter several letters to help narrow the search.*

 *Press # to enter additional letters on the same key (ex: TOM = 8666#6).*
- Press the **Down Arrow** softkey to jump to that section.
- Press the Volume **▲** or **▼** key to scroll through the list.

 *If you wait too long between your selections, Directory Dialing automatically cancels.*
- Lift the handset or press the **DIAL** softkey or **Speaker** key to place the selected call.

 *If you selected an outside call, it routes according to your system Trunk Group Routing/ARS setup.*

To cancel Directory Dialing:

Press **Exit** key.

Distinctive Ringing, Tones and Flash Patterns

Description

Distinctive Ringing, Tones and Flash Patterns provide extension users with audible and visual call status signals. This lets users tell the type of calls by listening to the ringing/tones and watching the keys. It also helps users monitor the progress of their calls. In addition, Distinctive Ringing lets Multiline Terminal users customize their Intercom and trunk call ringing. This is helpful for users that work together closely. For example, if several co-workers set their Multiline Terminals to ring at different pitches, each co-worker can always tell which calls are for them. You can also customize the tones the system uses for splash tone, confirmation tone, trunk ring tone, Intercom ring tone and Alarm ring tone. Refer to the chart below and the SL2100 Programming Manual for more details.

Table 1-15 Distinctive Ringing: Tones and Flash Patterns

Program	Description
80-01-01~04 Service Tone Setup	Set the frequency of the system splash tone. This is the tone the system uses, for example, to alert the user of an incoming voice-announced Intercom call.
30-05-02~21 DSS Console Lamp Table	Set the DSS and Hotline key flash rates for busy, idle, DND, ACD Agent status and hotel options.

Conditions

- Single Line Terminal users cannot listen to or hear the pitch of the telephone incoming ring.
- If PRG 22-03-01 is set to 0~3 and PRG 15-02-02 is set to 1~3, trunk calls follow the ring pattern in PRG 22-03-01 and the pitch in PRG 15-02-02.
- If PRG 22-03-01 is set to 4~8 and PRG 15-02-02 is set to 1~3, trunk calls follow the ring pattern in PRG 22-03-01.
- If PRG 22-03-01 is set to 0~8 and PRG 15-02-02 is set to 4~8, trunk calls follow the ring pattern in PRG 15-02-02.
- If PRG 15-08 : Incoming Virtual Extension Ring Tone Setup is set to Incoming Ring Tone Extension, then PRG 15-10 : Incoming Virtual Extension Ring Tone Order Setup must have one of the priorities set to Incoming Ring Tone Extension.

- Detail programming of Distinctive Ringing, Tones and Flash Patterns for the multiline terminal, refer below chart.

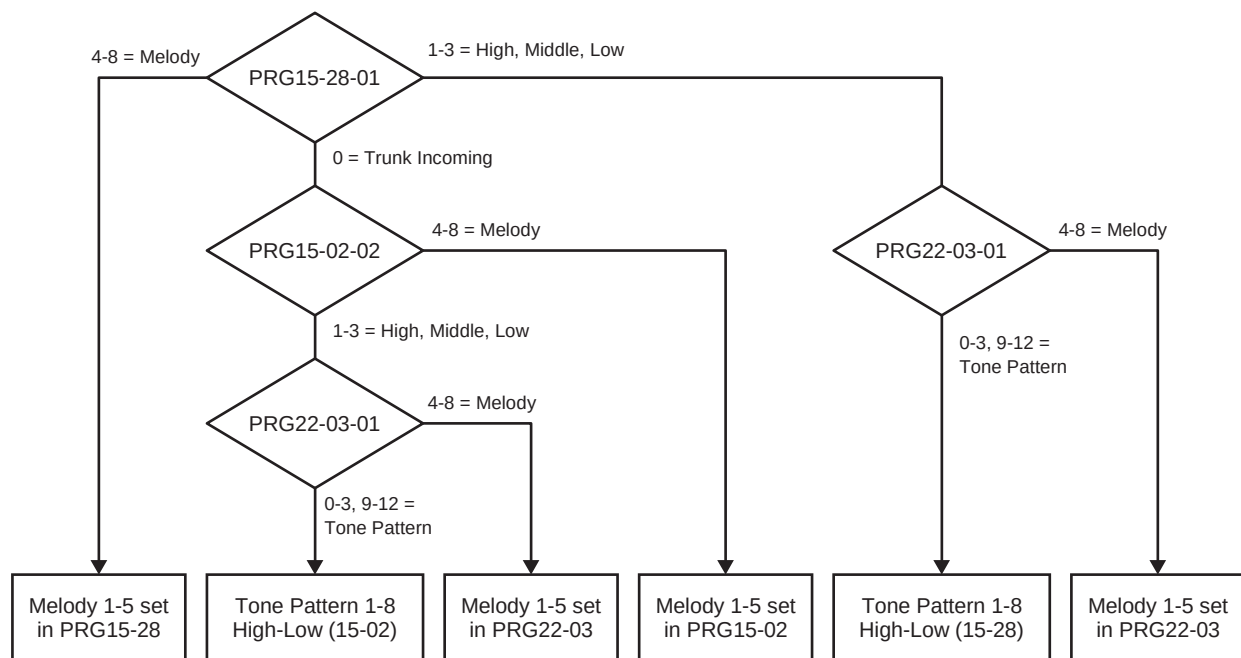


Figure 1-12 < Digital and IP Multiline Terminals >

Tone pattern 5 to 8 are available.

- The following voice mail features require system tones be changed in PRG 80-01-02 to work. Refer to the Programming section of the InMail feature for details.
 - Call Holding
 - Busy Greeting
 - Call Screening
 - Await Answer Transfer
- When a ring group call rings a Single Line Station, the BLF indication shows busy.
- The priority of the Large LED is as follows:
 1. CO Call Ringing
 2. Message Waiting Received
 3. VM Message Waiting
 4. Message Waiting Set
- PRG 15-08 is only effective for Virtual Extensions appearing on a station when the station is set for patterns 1~3 in PRG 15-02-02. When PRG 15-02-02 for the station is set to patterns 4~8, PRG 15-08 for Virtual Extensions is not used.

Default Settings

Enabled

System Availability

Terminals

All Multiline Terminals

Required Component(s)

None

Related Features

Single Line Terminals

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
15-02-02	Multiline Telephone Basic Data Setup - Trunk Ring Tone	1 = High (2W Digital/IP Multiline Terminal) 2 = Medium (2W Digital/IP Multiline Terminal) 3 = Low (2W Digital/IP Multiline Terminal) 4 = Melody 1 (2W Digital/IP Multiline Terminal) 5 = Melody 2 (2W Digital/IP Multiline Terminal) 6 = Melody 3 (2W Digital/IP Multiline Terminal) 7 = Melody4 (2W Digital/IP Multiline Terminal) 8 = Melody5 (2W Digital/IP Multiline Terminal)	2
15-02-03	Multiline Telephone Basic Data Setup - Extension Ring Tone	1 = High (2W Digital/IP Multiline Terminal) 2 = Medium (2W Digital/IP Multiline Terminal) 3 = Low (2W Digital/IP Multiline Terminal) 4 = Melody 1 (2W Digital/IP Multiline Terminal) 5 = Melody 2 (2W Digital/IP Multiline Terminal) 6 = Melody 3 (2W Digital/IP Multiline Terminal) 7 = Melody4 (2W Digital/IP Multiline Terminal) 8 = Melody5 (2W Digital/IP Multiline Terminal)	8
15-02-35	Multiline Telephone Basic Data Setup - Message Waiting Lamp Cycle for Calling Extension	1 = Cycle 1 2 = Cycle 2 3 = Cycle 3 4 = Cycle 4 5 = Cycle 5 6 = Cycle 6 7 = Cycle 7	3
15-02-36	Multiline Telephone Basic Data Setup - Message Waiting Lamp Cycle for Called Extension	1 = Cycle 1 2 = Cycle 2 3 = Cycle 3 4 = Cycle 4 5 = Cycle 5 6 = Cycle 6 7 = Cycle 7	2
15-02-37	Multiline Telephone Basic Data Setup - Voice Mail Message Wait Lamp Color	0 = Green 1 = Red	1

Program No.	Program Name	Input Data	Default
15-02-38	Multiline Telephone Basic Data Setup - Voice Mail Message Wait Lamp Cycle	1 = Cycle 1 2 = Cycle 2 3 = Cycle 3 4 = Cycle 4 5 = Cycle 5 6 = Cycle 6 7 = Cycle 7	2
15-08-01	Incoming Virtual Extension Ring Tone Setup - Incoming Ring Pattern	0 ~ 8 0 = Tone Pattern 1 1 = Tone Pattern 2 2 = Tone Pattern 3 3 = Tone Pattern 4 4 = Incoming extension ring tone 5 = Melody1 (2W Digital/IP Multi-line Terminal) 6 = Melody2 (2W Digital/IP Multi-line Terminal) 7 = Melody3 (2W Digital/IP Multi-line Terminal) 8 = Melody4 (2W Digital/IP Multi-line Terminal)	0
15-10-01	Incoming Virtual Extension Ring Tone Order Setup	0 ~ 8 0 = Tone Pattern 1 1 = Tone Pattern 2 2 = Tone Pattern 3 3 = Tone Pattern 4 4 = Incoming extension ring tone 5 = Melody1 (2W Digital/IP Multi-line Terminal) 6 = Melody2 (2W Digital/IP Multi-line Terminal) 7 = Melody3 (2W Digital/IP Multi-line Terminal) 8 = Melody4 (2W Digital/IP Multi-line Terminal)	Priority order: 1 = 0 (Tone Pattern 1) 2 = 1 (Tone Pattern 2) 3 = 2 (Tone Pattern 3) 4 = 3 (Tone Pattern 4)
20-13-49	Class of Service Options (Supplementary Service) - BLF Indication on CO Incoming State	0 = Off (Disabled) 1 = On (Enabled)	COS 01 ~ 15 = 0
20-15-01	Ring Cycle Setup - Incoming Signal Type : Normal Incoming Call on Trunk	Ringling Cycle Number : 1 ~ 13	3
20-15-02	Ring Cycle Setup - Incoming Signal Type : PBX, CES Incoming Call	Ringling Cycle Number : 1 ~ 13	8
20-15-03	Ring Cycle Setup - Incoming Signal Type : Incoming Internal Call	Ringling Cycle Number : 1 ~ 13	3
20-15-04	Ring Cycle Setup - Incoming Signal Type : DID/ DISA/VRS	Ringling Cycle Number : 1 ~ 13	8
20-15-05	Ring Cycle Setup - Incoming Signal Type : DID/DDI	Ringling Cycle Number : 1 ~ 13	8
20-15-06	Ring Cycle Setup - Incoming Signal Type : Dial-In in the E&M Tie Line	Ringling Cycle Number : 1 ~ 13	12
20-15-07	Ring Cycle Setup - Incoming Signal Type : Door Box Ringing for SLT	Ringling Cycle Number : 1 ~ 13	8
20-15-08	Ring Cycle Setup - Incoming Signal Type : Virtual Extension Ring	Ringling Cycle Number : 1 ~ 13	8
20-15-09	Ring Cycle Setup - Incoming Signal Type : Call-back	Ringling Cycle Number : 1 ~ 13	11
20-15-10	Ring Cycle Setup - Incoming Signal Type : Alarm for SLT	Ringling Cycle Number : 1 ~ 13	5
20-15-11	Ring Cycle Setup - Incoming Signal Type : VRS Waiting Message Incoming Call	Ringling Cycle Number : 1 ~ 13	8

Program No.	Program Name	Input Data	Default
22-03-01	Trunk Ring Tone Range - Ring Tone Pattern	0 = Tone 1 1 = Tone 2 2 = Tone 3 3 = Tone 4 4 = Melody 1 (2W Digital/IP Multiline Terminal) 5 = Melody 2 (2W Digital/IP Multiline Terminal) 6 = Melody 3 (2W Digital/IP Multiline Terminal) 7 = Melody 4 (2W Digital/IP Multiline Terminal) 8 = Melody 5 (2W Digital/IP Multiline Terminal) 9 = Tone 5 (2W Digital/IP Multiline Terminal) 10 = Tone 6 (2W Digital/IP Multiline Terminal) 11 = Tone 7 (2W Digital/IP Multiline Terminal) 12 = Tone 8 (2W Digital/IP Multiline Terminal)	0
80-01-01	Service Tone Setup - Repeat Count	0 ~ 255 (0 = Endless)	Refer to the Programming Manual for the default values.
80-01-02	Service Tone Setup - Tone 6, Internal Busy Tone	0~33 (0 = No Tone) (33 = Default Time Slot)	Refer to Programming Manual.
80-01-02 (06)	Service Tone Setup - Basic Tone Number	0~33 (0 = No Tone) (33 = Default Time Slot)	Refer to Programming Manual.
80-01-02	Service Tone Setup - Tone 14, Intercom Ring-back Tone	0~33 (0 = No Tone) (33 = Default Time Slot)	Refer to Programming Manual.
80-01-02 (14)	Service Tone Setup - Basic Tone Number	0~33 (0 = No Tone) (33 = Default Time Slot)	Refer to Programming Manual.
80-01-02	Service Tone Setup - Tone 39, Special Audible Ring Busy Tone	0~33 (0 = No Tone) (33 = Default Time Slot)	Refer to Programming Manual.
80-01-02 (39)	Service Tone Setup - Basic Tone Number	0~33 (0 = No Tone) (33 = Default Time Slot)	Refer to Programming Manual.

Table 1-16 Basic Tone Table - Tone 06

Tone 06			
Unit	Basic Tone	Duration	Gain Level
1	0 - No Tone	400ms	32
2	1 - 420Hz, -13dB	400ms	32
3	0 - No Tone	0ms	
4	0 - No Tone	0ms	
5	0 - No Tone	0ms	
6	0 - No Tone	0ms	
7	0 - No Tone	0ms	
8	0 - No Tone	0ms	

Table 1-17 Basic Tone Table - Tone 14

Tone 14			
Unit	Basic Tone	Duration	Gain Level
1	27 - 420 (Amplitude Modulated), -13dB	400ms	32
2	0 - No Tone	200ms	32
3	27 - 420 (Amplitude Modulated), -13dB	400ms	32
4	0 - No Tone	2000ms	32
5	0 - No Tone	0ms	
6	0 - No Tone	0ms	
7	0 - No Tone	0ms	
8	0 - No Tone	0ms	

Table 1-18 Basic Tone Table - Tone 39

Tone 39			
Unit	Basic Tone	Duration	Gain Level
1	0 - No Tone	500ms	32
2	11 - 480/620Hz, -13/-13dB	500ms	32
3	0 - No Tone	500ms	32
4	11 - 480/620Hz, -13/-13dB	500ms	32
5	10 - 440/480Hz, -13/-13dB	1000ms	32
6	0 - No Tone	2000ms	32
7	0 - No Tone	0ms	
8	0 - No Tone	0ms	

Operation

To listen to the incoming ring choices:

1. Press **Speaker** key.
2. Dial **711**.
3. Dial **1** to check ringing for intercom calls.
- **OR** -
Dial **2** to check ringing for trunk calls.
4. For Intercom calls, select the pitch you want to check (1 ~ 8).
- **OR** -
For trunk calls, select the pitch (1 ~ 8) you want to check.
5. Go back to step 4 to listen to additional choices or press **Speaker** key to hang up.

To change the pitch of your incoming ring (Multiline Terminal only):

1. Press **Speaker** key.
2. Dial **720**.
3. Dial **1** to change ringing for Intercom calls.
- **OR** -
Dial **2** to change ringing for trunk calls.
4. Select the pitch (1 ~ 8).

5. Press **Speaker** key to hang up.

Do Not Disturb (DND)

Description

Do Not Disturb (DND) blocks incoming calls and Paging announcements. DND permits an extension user to work by the telephone undisturbed by incoming calls and announcements. The user can activate DND while their telephone is idle or while on a call. Once activated, incoming trunk calls still flash the line keys. The user may use the telephone in the normal manner for placing and processing calls.

The class of service option has been added giving the option to apply the DND beginning with the next call.

Six Do Not Disturb options are available at each extension. These options can be accessed via Multiline Terminal Softkeys, DND feature key or DND system access code.

- 1 = Incoming trunk calls blocked.
- 2 = Paging, incoming Intercom, Call Forwards and transferred trunk calls blocked.
- 3 = All calls blocked.
- 4 = Incoming Call Forwards blocked.
- 5 = Room Monitor Set.
- 0 = Do Not Disturb canceled.

Multiline Terminals will display the following to indicate the type of DND that has been set.

- 1 = DND EXTERNAL
- 2 = DND INTERCOM
- 3 = DND ALL
- 4 = DND TRANSFER
- 5 = DND MONITORED

Conditions

- Do Not Disturb access code is programmable via PRG 11-11-08.
- Virtual Extension (VE) do not support DND Programmable Function keys.
- Multiline Terminal users can activate or deactivate Do Not Disturb while on a call. This option is not available for Single Line Terminals.
- When DND and Call Forward are set on the same telephone, call forwarding works. If Busy and No Answer Forwarding are set to different locations, it follows the Busy forwarding.
- If an extension already receiving forwarded calls activates DND option 4, callers to the forwarded extension hear DND tone.
- If an extension activates DND option 4, other extensions can still forward calls to it, but the callers hear DND tone.
- An extension user can override Call Forwarding or Do Not Disturb at another extension using any of the following methods:
 1. PRG 11-12-01 Service Code Setup (for Service Access) - Bypass Call (default: **707**)
 2. PRG 11-16-06 Single Digit Service Code Setup - DND/Call Forward Override Bypass (default: No Setting)
 3. OVRD Softkey
- When a call is transferred because of Call Forwarding No Answer, Call Forwarding Busy, or DND, the Reason for Transfer option can display to the transferred extension while the call is ringing to the user telephone.
- DND modes 1~3 causes calls to follow PRG 22-08 programming, then PRG 22-05 programming even if the extension is forwarded.

- When Selectable Display Messaging is set as DND All, all other DND modes are canceled when Selectable Display Messaging is canceled.
- When DND and any Call Forwarding is set, the call forwards immediately.
- When DND Monitor is enabled it enables Room Monitor.

Default Settings

Enabled for all extensions.

System Availability

Terminals

All Terminals

Required Component(s)

None

Related Features

Call Forwarding

Call Forwarding/Do Not Disturb Override

Central Office Calls, Answering

Direct Inward Line (DIL)

Distinctive Ringing, Tones and Flash Patterns

Selectable Display Messaging

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-11-08	Service Code Setup (for Setup/Entry Operation) - Do Not Disturb	0~9, *, # Maximum of 8 digit	747
11-12-01	Service Code Setup (for Service Access) - Call Forward/Do Not Disturb Override	0~9, *, # Maximum of 8 digit	707
11-16-06	Single Digit Service Code Setup - Do Not Disturb/Call Forward override	0~9, *, # Maximum of 1 digit	No Setting
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1

Program No.	Program Name	Input Data	Default
20-09-13	Class of Service Options (Incoming Call Service) - DND Active While Ringing	0 = Immediate 1 = Next call	COS 01 ~ 15 = 0
20-13-04	Class of Service Options (Supplementary Service) - Call Forward/DND Override (Bypass Call)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-40	Class of Service Options (Supplementary Service) - Do Not Disturb	0 = Off 1 = On	COS 01 ~ 15 = 1

Operation

To activate or deactivate Do Not Disturb while your extension is idle:

Multiline Terminal Using Softkeys (When set PRG 15-02-60: 0)

(This feature is available for 2W Digital/IP Multiline Terminal Only.)

1. Do not lift handset.
2. Press the **Program** softkey.
3. Press the **DND** softkey.
4. Press the **Set** softkey.
5. Choose the following softkey.
Ext Icm All ↓
Cfwto Mon ↓
6. **Ext**=Incoming Trunk Calls Blocked.
ICM=Incoming Intercom, Paging, call forwards and Transferred Trunk Calls Blocked.
ALL=All Calls Blocked.
Cfwto=Call Forwards Blocked.
Mon=Room Monitor blocked
7. To Cancel DND.
8. Do not lift handset.
9. Press the **Program** softkey.
10. Press the **DND** softkey.
11. Press the **Cncl** softkey.

Multiline Terminal Using Feature Key or Access Code

Multiline Terminal have a dedicated DND button for setting this feature. Steps to set up are same as for programmed key below.

1. Do not lift the handset.
2. Press the **DND** feature key programmed in (PRG 15-07-01 or SC: **751**: 03).
- OR -
Press **DND** key.
- OR -
Press **Speaker** key and dial **747**.
3. Dial the DND option code.
0 = Cancel DND
1 = Incoming Trunk Calls Blocked
2 = Paging, incoming Intercom, Call Forwards and Transferred Trunk Calls Blocked
3 = All Calls Blocked
4 = Call Forwards Blocked
5 = Room Monitor Blocked

Single Line Terminal

1. Lift the handset.
2. Dial **747**.
3. Dial the DND option code.
 - 0** = Cancel DND
 - 1** = Incoming Trunk Calls Blocked
 - 2** = Paging, Incoming Intercom, Call Forwards and Transferred Trunk Calls Blocked
 - 3** = All Calls Blocked
 - 4** = Call Forwards Blocked

Door Box

Description

The Door Box is a self-contained Intercom unit typically used to monitor an entrance door. A visitor at the door can press the Door Box call button (like a door bell). The Door Box then sends chime tones to all extensions programmed to receive chimes. To answer the chime, the called extension user just lifts the handset. This lets the extension user talk to the visitor at the Door Box. The Door Box is convenient to have at a delivery entrance, for example. It is not necessary to have company personnel monitor the delivery entrance; they answer the Door Box chimes instead. Any number of system extensions can receive Door Box chime tones.

Each Door Box has a pair of normally open relay contacts that can connect to an electric door strike. Use these contacts to remotely control the entrance door. After answering the Door Box chimes, a Multiline Terminal user can press **Flash** key to activate the Door Box contacts. This in turn releases the electric strike on the entrance door. The device connected to the Door Box contacts cannot exceed the contact ratings shown in the following table:

Door Box Specifications	
Maximum Output	1.75 V RMS
Output Impedance	600 Ohms

The system can have up to 6 Door Boxes. Six chime tones are available.

Conditions

- Digital and IP Terminals will show the Door Box ID Name as assigned in PRG 32-04-01.
- The Door Box Feature Requires an unused analog extension port (082U-B1 : Analog Extension Port1-2 fixed) on the each board.
- To user Door Box, hardware switches on the 082U board needs to be set to DOOR1/DOOR2 side.
- Door Boxes can ring Multiline, Single Line, and wireless telephones.
- A Door Box cannot ring a virtual extension.
- External Call forward by Doorphone can forward Doorphone calls Off-Premise while a user is away. This feature only works for ISDN lines.
- Off-hook signaling is available for Door Boxes. If an extension user is on the telephone, the Large LED flashes indicating the Door Box ringing, and the display shows a call from the door box.
- The door strike cannot be activated when a door box is forwarded off-premise.
- Single line door phone acts like a single line until the hotline time expires then it will call the doorphone destination.
- When talking to a single line door phone, pressing flash will activate the doorlock release.

Default Settings

Disabled

System Availability

Terminals

All Stations

Required Component(s)

082U-B1

Related Features

ISDN Compatibility

Paging, External

Single Line Terminals

Guide to Feature Programming

The programs listed below indicate the most commonly used programs required for this feature. The programs are listed in the order that the installer should follow. Refer to the PCPro wizards for further detailed programming.

- When a * is listed next to the Program Number it indicates a program that **MUST** be set (from a default state) for this feature to be enabled.

Program No.	Program Name	Input Data	Default
10-03-05 *	ETU Setup - ETU Setup (LTA/LCA) - 1: Door Phone	0 = SLT 1 = Door Phone	0
32-02-01 *	Door Box Ring Assignment - Extension Number	Maximum eight digits	Door Box Ringing Member 1 = 101 Other : No Setting
32-03-01	Door Box Basic Setup - Chime Pattern	0 = None 1 = Door Box Ring 1 2 = Door Box Ring 2 3 = Door Box Ring 3 4 = Door Box Ring 4 5 = Door Box Ring 5 6 = Door Box Ring 6	Door Box 1 = 1 Door Box 2 = 2 Door Box 3 = 3 Door Box 4 = 4 Door Box 5 = 5 Door Box 6 = 6
32-04-01	Door Box Name Setup - Door Box Name	Up to 12 characters	Door Box Name 1 = DOOR-1 Door Box Name 2 = DOOR-2 : Door Box Name 6 = DOOR-6
10-61-01	Relay Port Setup - Relay Port 1 (Relay Type)	0 = No Setting 1 = External MOH 2 = BGM resource 3 = External Speaker 4 = Door Phone	0
10-61-02	Relay Port Setup - Destination Selection 1	[In case 10-61-01 is 1 or 2] = Not Use [In case 10-61-01 is 3] = 1-3 External Speaker message No [In case 10-61-01 is 4] = 1-6 Door Phone No	0 (Not Used)
10-61-03	Relay Port Setup - Relay Port 2 (Relay Type)	0 = No Setting 1 = External MOH 2 = BGM resource 3 = External Speaker 4 = Door Phone	0

Program No.	Program Name	Input Data	Default
10-61-04	Relay Port Setup - Destination Selection 2	[In case 10-61-01 is 1 or 2] = Not Use [In case 10-61-01 is 3] = 1-3 External Speaker message No [In case 10-61-01 is 4] = 1-6 Door Phone No	0 (Not Used)
32-01-01	Door Box Timers Setup - Door Box Answer Time	0 ~ 64800 seconds	30 seconds
32-01-02	Door Box Timers Setup - Door Lock Cancel Time	0 ~ 64800 seconds	10 seconds
32-03-02	Door Box Basic Setup - CODEC Transmit Gain Setup	1 ~ 63 (- 15.5 dB ~ + 15.5 dB)	32
32-03-03	Door Box Basic Setup - CODEC Receive Gain Setup	1 ~ 63 (- 15.5 dB ~ + 15.5 dB)	32
11-12-36	Service Code Setup (for Service Access) - Door Box Access	0~9, *, # Maximum of 8 digit	702
32-01-03	Door Box Timers Setup - Off-Premise Call Forward by Door Box Disconnect Timer	0 ~ 64800 seconds	60 seconds
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
15-03-19	Single Line Telephone Basic Data Setup - Door Phone Number	1 ~ 6	0

Operation

To call a Door Box:

Multiline Terminal

1. Press **Speaker** key.
2. Dial **702**.
3. Dial Door Box Number (**1~6**).

Single Line Terminal

1. Lift the handset.
2. Dial **702**.
3. Dial Door Box Number (**1~ 6**).

To activate the Door Box strike:

Multiline Terminal

1. While talking to the Door Box, press **Flash** key.

Single Line Terminal

1. While talking to the Door Box, hookflash.

To answer a Door Box chime:

1. Lift the handset or press **Speaker** key.

To answer a Door Box call while busy on another call:

Multiline Terminal

If you are busy on a call, the display shows the incoming Door Box call and the large LED flashes.

1. Place your active call on hold by pressing **Hold** key.
2. When you hear dial tone, dial the door box access code (**702** by default) plus the door box number (**1~6**) to answer the Door Box call.



*To retrieve the original call, hang up with the door box and press the flashing line key of the original call, or press the flashing **Hold** key, or programmed Intercom Key if original caller was an internal user.*



*To retrieve the original call, hang up with the door box and press the **DND/CONF** key or Conf softkey (2W Digital/IP Multiline Terminal).*

Single Line Terminal

If you are busy on a call, an off-hook signal is heard indicating the incoming Door Box call.

1. Press **Flash** key or hookflash to place your active call on hold.
2. Dial the door box access code (**702** by default) plus the door box number (**1~6**) to answer the Door Box call.



To retrieve the original call, hang up. The original call rings the Single Line Terminal.

To activate Call Forwarding Off-Premise for a Door Box:



This option only works for ISDN PRI or BRI Trunks.

1. At the Multiline Terminal, press **Speaker** key + dial SC **722**.
- OR -
At the Multiline Terminal only, press the **External Forward by Doorphone** key (PRG 15-07-01 or SC **751**, code **54**).
- OR -
At the Single Line Terminal, lift the handset + dial **722**.
2. Dial the Door Box number (**1~6**).
3. Dial the Speed Dialing number where the calls should be forwarded.
4. Press **Speaker** key (or hang up at the Single Line Terminal) to hang up.

To cancel Call Forwarding Off-Premise for a Door Box:

1. At the Multiline Terminal, press **Speaker** key + dial SC **722**.
- **OR** -
At the Multiline Terminal only, press the **External Forward by Doorphone** key (PRG 15-07-01 or SC **751**, code **54**).
- **OR** -
At the Single Line Terminal, lift the handset + dial **722**.
2. Dial **0** for Cancel.

Drop Key

Description

The Drop Key abandons a call while retaining the PBX/Centrex line to originate another call. The Drop key is provided by programming a Programmable Function key. This feature allows **Flash** key to be used to provide a hookflash to the PBX or Central Office. A Single Line Terminal user can use the Drop key function by an access code.

Conditions

- The Drop key provides a timed disconnect signal on CO/PBX lines.
- The Drop key cannot be used for internal, DID calls.

Default Settings

None

System Availability

Terminals

All Stations

Required Component(s)

None

Related Features

Flash

PBX Compatibility/Behind PBX

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-12-42	Service Code Setup (for Service Access) - Flash on Trunk lines	0~9, *, # Maximum of 8 digit	#3
11-12-59	Service Code Setup (for Service Access) - Trunk Drop Operation for SLT	0~9, *, # Maximum of 8 digit	660
14-02-03	Analog Trunk Data Setup - Flash Type	0 = Open Loop Flash 1 = Ground	0
14-02-04	Analog Trunk Data Setup - Hooking Type	0 = Timed Flash (Hooking) 1 = Disconnect (Cut)	0

Program No.	Program Name	Input Data	Default
15-02-05	Multiline Telephone Basic Data Setup - Transfer Key Operation Mode	0 = Transfer 1 = Serial Call (call back) 2 = Hook (Flash)	0
15-03-04	Single Line Telephone Basic Data Setup - Flashing	0 = No 1 = Yes	1
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1

Operation

To use the Drop key from a Multiline Terminal with a CO/PBX call in progress:

1. Press the **Function** key programmed as a **Drop** key.
2. Receive the new CO/PBX dial tone.
3. Dial the desired number.

To use the Drop key feature from a Single Line Terminal with a CO/PBX call in progress:

1. Hookflash.
2. Receive internal dial tone.
3. Dial the Service Code 660.
4. Receive the new CO/PBX dial tone.
5. Dial the desired number.

DT500/DT430 Terminal Connection

Description

SL2100 supports following DT500 and DT400 terminals and optional equipment listed below, other terminals or optional equipment are not supported.

- DTZ-24D-3[] (BK) / (WH) TEL
- DCZ-60-2[] (BK) / (WH) CONSOLE
- DTK-24D-1[] (BK) TEL
- DCK-60-1[](BK) CONSOLE

Conditions

- When connecting the DT500/DT430 series terminal to SL2100, following conditions or limitations are exist.

Item	Differences		Conditions or limitations to DT500/DT430
	DT500/DT430	IP7WW-12/24TX H-B1	
Number of LCD Characters	28 Characters	24 Characters	Expanded to 28 characters by adding 4 spaces in-to right end or middle.
DND Key	No	Yes	DND key is not used.
Clear/Back Key	No	Yes	Feature key works as Clear/Back key when use Directly Dialing function.
Feature Key	Yes	No	
Answer key	Yes	No	Answer key operates like SV9100..

- Other DT500/DT430 terminal options, such as bottom option, side option or handset option are not supported.
- Navigation key and Center Directory dialing feature of DT500/DT430 are not supported.
- PRG 15-02-61 to 66 are invalid for DT500/DT430 terminal.
- In case of Power failure Mode Phone may not work properly.

System Availability

Required Component(s)

DTZ-24D-3[] (BK) / (WH) TEL

DCZ-60-2[] (BK) / (WH) CONSOLE

DTK-24D-1[] (BK) TEL

DCK-60-1[](BK) CONSOLE

Related Features

None

Guide to Feature Programming

None

Operation

None

Description

Environmental issues, such as global warming or ecology are one of the most important themes in today's world. The following energy saving features are implemented in this system:

- **Ecology mode**
- **Power Saving Mode**

Conditions

Ecology mode (Power Cutting for Terminal)

- System can cut the power for Multiline Terminals connected to each interface boards. An SL2100 has a Hybrid port, therefore the Single Line Terminal or Doorphone will be controlled as power cutting terminal.

Interface boards;

Slot 1 ~ 4 for 082U, 008U

- Power cutting "on" or "off" can be set per individual slot (board) basis, however slot 1 (082U-B1) of Main Chassis cannot be set, this keeps the extension powered on in a system for emergency call, etc.
- Power cutting time will follow with Night mode time schedule. If some terminals are on call at power cutting start time, the system will wait for the power cutting "off" for the board until all extensions in the board become idle.
- Power cutting feature can be set "on" or "off" by either combination of following method.
 - Night mode time schedule
 - Service Code
 - Function key

 *If system reset happened during power cutting "off" state, all extensions will be powered up normally after the system boots up.*

 *Power cut mode will not be enabled, for the slot, until all phones on the package are idle.*

 *When the system is in power cut mode, a user cannot dial an emergency number (911) from the station. The station is unusable until it comes out of power cut mode.*

- Combination of time schedule and Manual mode change
- When using department group step calling and ecology mode, there must be at least two terminals functioning for the step call feature to work.
- When a phone has entered power cutting mode, any direct calls to the terminal will follow the stations call forwarding. If the phone is part of a chain call forwarding scenario, the chain call forwarding will not process while the phone is in power cutting mode.
- When a terminal is set to power cutting mode, the DSS/BLF status on keys or the console will not display any status including Hotel/Motel and Call Forward/DND.
- When a phone is in power cutting mode, you cannot set call back requests or camp on to the terminal until power is restored.
- Call Forward follow me settings will not be followed when the terminal loses power from the power cutting feature.
- If the terminal has Call Forward Both set and then enters power cutting mode, any calls directed to the terminal will not follow the call forward settings.
- Caller ID history is not updated for a phone which is in power cutting mode from the ecology feature. Once power is restored to the phone the caller ID history will start functioning again.

- If the system cuts the power via the ecology feature while a user is on a call, the call will not be lost. If the user places the caller on hold or park, the user's phone will then switch to power cutting mode and the call will be lost.

If power cutting set "on" manually during scheduled power cutting "off" state, power cutting "on" state continues until next power cutting "off" time.

The system does not start the cutting telephone power until next schedule.

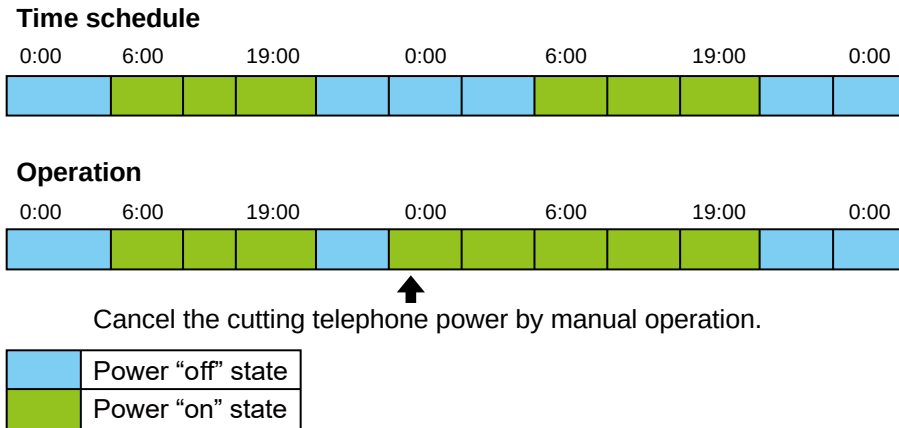


Figure 1-13 Time Schedule 1

Vice versa if power cutting is set "off" manually during scheduled power cutting "on" state, power cutting "off" state continues to next power cutting "on" time.

The system does not start the power supply until next schedule.

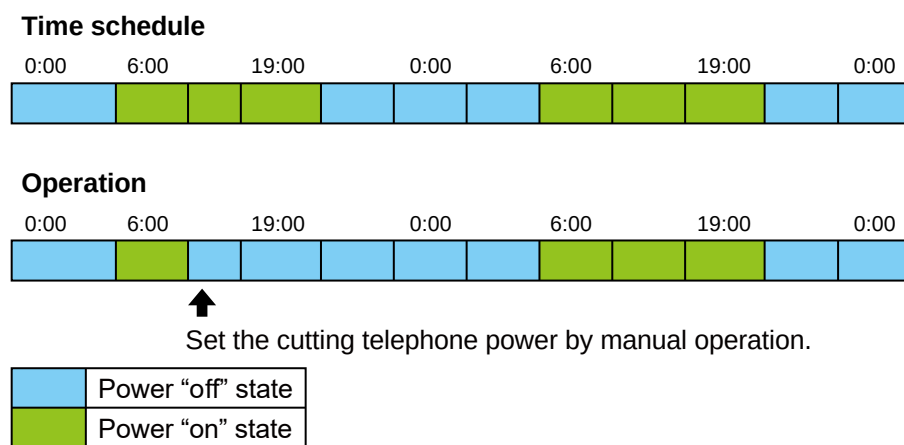


Figure 1-14 Time Schedule 2

- During power cutting "off" state,
 - Outgoing calls can not be made.
 - Incoming calls receive a busy tone.
 - Call forward features work at the forward set terminal.
 - Disables Both Ring CFW / Follow Me.

Power saving mode

- The system activates power saving mode when the Multiline Terminal is idle or no incoming calls are received during the programmed time period. This darkens the brightness of all Line Key and feature key LED's on the Multiline Terminal. This feature does not affect the display of the terminal.
- Power saving mode can be set for each terminal individually.

- Any key operation or incoming call at the terminal ends the power saving mode and all LEDs return to normal brightness.

Default Settings

None

System Availability

Terminals

All Multiline Terminals

Required Component(s)

082U-B1, 008U-()1

Related Features

Night Service

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
15-02-18	Multiline Telephone Basic Data Setup - Power-Saving Mode	0 = Normal mode 1 = Power-Saving Mode (Eco-Mode)	1
20-02-10	System Options for Multiline Telephones - Time Before Shifting to Power-Saving Mode	0 = No Shift 1 = 1 minute 2 = 2 minutes 3 = 4 minutes 4 = 8 minutes 5 = 16 minutes 6 = 32 minutes 7 = 64 minutes	0
20-42-01	Night Mode for each package - Ecology Mode group No	1 ~ 4	1
20-43-01	Power supply for each package - Ecology Mode	0 = Cut the power 1 = Power Supply	1
15-07	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
11-10-44	Service Code Setup (for System Administrator) - Cutting the telephone power	0 ~ 9, *, # Maximum of 8 digit	731

Operation

Ecology Mode (Power Cutting for terminal)

To cut the power for package 2 during night time (19:00-6:00):

< Program >

PRG 20-42-01: PKG 2 Night Mode Service Group No. 1

PRG 20-42-01: PKG 3 Night Mode Service Group No. 1

PRG 20-43-01: PKG 2 Night Mode 1, Eco Mode 1 / **Night Mode 2, Eco Mode 0**

PRG 20-43-01: PKG 3 Night Mode 1, Eco Mode 1 / Night Mode 2, Eco Mode 1

PRG 12-02: Automatic Night Service Patterns

Night Group Mode	Time pattern	Set Time No.	Start	End	Night Mode
1	1	1	0000	0600	2
1	1	2	0600	1900	1
1	1	3	1900	0000	2

19:00 - 06:00

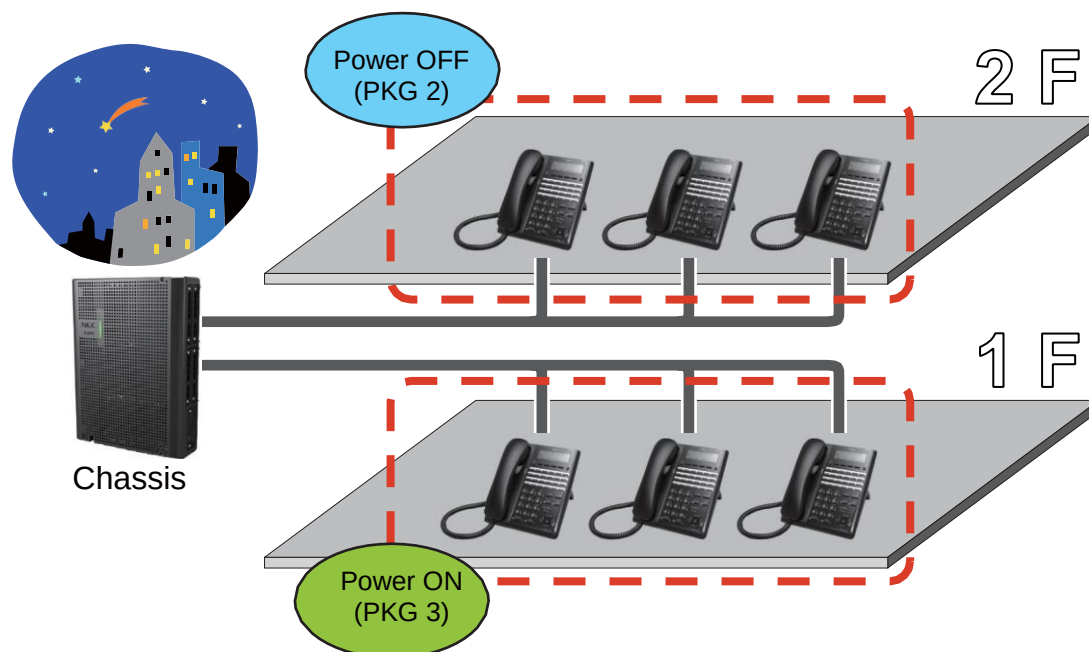


Figure 1-15 Automatic Night Service

To cut the power for package 2 and 3 only on Sunday

<Program>

PRG 20-42-01: PKG 2 Night Mode Service Group No. 1

PRG 20-42-01: PKG 3 Night Mode Service Group No. 1

PRG 20-43-01: PKG 2 Night Mode 1, Eco Mode 1 / **Night Mode 2, Eco Mode 0**

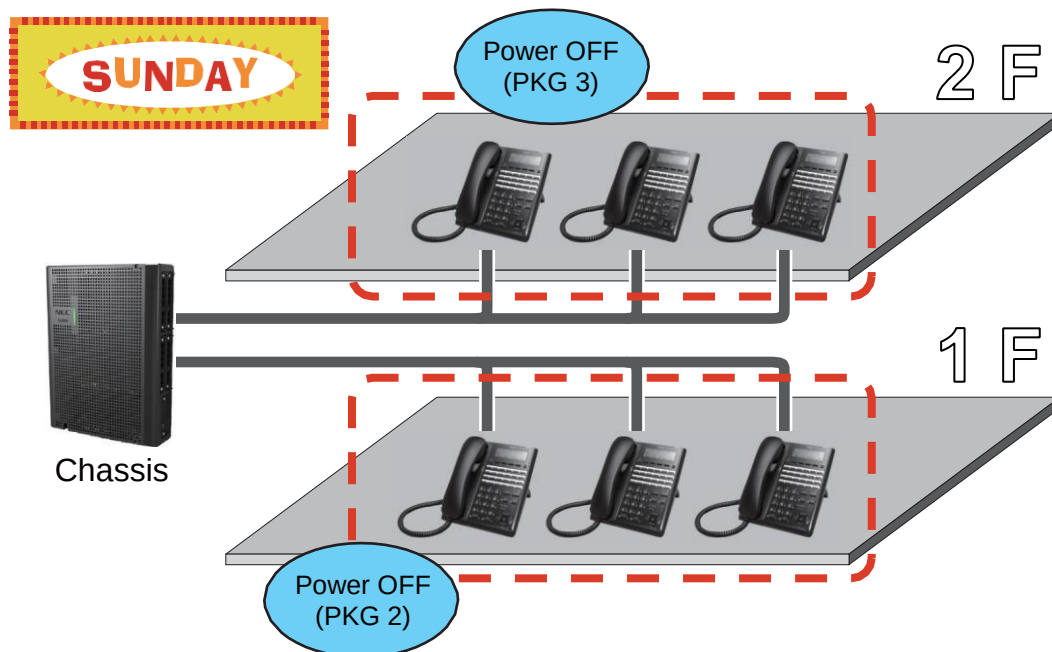
PRG 20-43-01: PKG 3 Night Mode 1, Eco Mode 1 / **Night Mode 2, Eco Mode 0**

PRG 12-02: Automatic Night Service Patterns

Night Group Mode	Time pattern	Set Time No.	Start	End	Night Mode
1	1	1	0100	0100	1
1	2	1	0100	0100	2

PRG 12-03: Weekly Night Service Switching**Night Group Mode 1;**

- Sunday Time pattern 2
- Monday Time pattern 1
- Tuesday Time pattern 1
- Wednesday Time pattern 1
- Thursday Time pattern 1
- Friday Time pattern 1
- Saturday Time pattern 1

**Figure 1-16 Weekly Night Service****Power Saving Mode**

<Program>

PRG 15-02-18: TEL 200: 1

PRG 20-02-10: 1 minute

1. Idle state at TEL200.



2. One minute later, LED area highlighted in red becomes dark at TEL200.



Flash

Description

Flash allows an extension user to access certain CO and PBX features by interrupting the trunk loop current. Flash lets an extension user take full advantage of whatever features the connected Telco or PBX offers. You must set the Flash parameters for compatibility with the connected Telco or PBX.

Conditions

The system does not provide a ground flash.

Default Settings

Enabled

System Availability

Terminals

All Stations

Required Component(s)

None

Related Features

Drop Key

PBX Compatibility/Behind PBX

InMail

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-12-42	Service Code Setup (for Service Access) - Flash on Trunk lines	0~9, *, # Maximum of 8 digit	#3
14-02-03	Analog Trunk Data Setup - Flash Type	0 = Open Loop Flash 1 = Ground	0
14-02-04	Analog Trunk Data Setup - Hooking Type	0 = Timed Flash (Hooking) 1 = Disconnect (Cut)	0
14-04-01	Behind PBX Setup - Type of Connection	0 = Stand Alone (Trunk) 1 = Behind PBX (PBX) 3 = CTX assume 9	0

Program No.	Program Name	Input Data	Default
15-03-04	Single Line Telephone Basic Data Setup - Flashing	0 = No 1 = Yes	1

Operation

To flash the trunk you are on:

From a Multiline Terminal

1. Press **Flash** key.

From a Single Line Terminal

1. Hookflash.
2. Dial **#3**.

Flexible Ring

Description

Previously ring tones for incoming trunk calls are assigned to same tone at the extension. Extensions have ability to assign individual ring tones for each trunk call. Beside system programming ring tones can be assigned by accessing service code or Soft Key if available. Also each night mode can be configurable to be confirmed by individual ring tones.

Ring tone can be assigned by accessing service code or Soft Key operation.

The data set manually is saved in Program 15-28-01.

Service Code

761 + Trunk number xxx + Night Mode 1 ~ 8

Soft Key

(This Feature is available for 2W Digital/IP Multiline Terminal)

Intercom ring tone can be set by Menu Soft Key + Dial **41**.

Line keys ring tone can be set by Menu Soft Key + Dial **42**.

Each line key and each night mode can be set by Menu Soft Key + Dial **43**.

This night mode follows night mode group (Program 12-05) of the terminal.

Soft Key Menu	Index 1	Index 2	Input Data
Ring Preferences Intercom (Menu 41)	-	-	Ring Type = 1 ~ 8
Ring Preferences Line Keys (Menu 42)	-	-	Ring Type = 1 ~ 8
Ring Preferences Each Line Keys (Menu 43)	Line Key (001 - Trunk Max)	Night Mode (1 ~ 8)	Ring Type = 1 ~ 8

Conditions

- When the ring tone is changed at the terminal, the changed data is saved to Program 15-28-01. When Program 15-28-01 is to "0", ring tone follows the setting of Program 15-02-02.
- During incoming call Soft Key can not be used to set ring tone.
- Delay ring follows the setting of DIL/IRG No Answer Destination (Program 22-08).
- This feature does not work for Recall, Transfer call, Virtual extension ring or ring no answer alarm for Incoming call.

Default Settings

All trunks are in Ring Group 1. Extensions 101, 102, 103, 104, 105, 106, 107 and 108 (First 8 ports) ring for trunk calls and all other extensions only flash.

System Availability

Terminals Multiline Terminal

Softphone

Required Component(s)

None

Related Features

Ring Group

Distinctive Ring

Night Service

Softkeys

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-11-73	Service Code Setup (for Setup/Entry Operation) - Select Incoming Ring Tones at trunk	0~9, *, # Maximum of 8 digit	761
15-28-01	Trunk Incoming Ring Tone of Extension Setup - Trunk Incoming Ring Tone	0 ~ 8 0 = Trunk incoming ring tone (4W Hybrid Multiline Terminal)/Trunk incoming ring tone (2W Digital/IP Multiline Terminal) 1 = High (2W Digital/IP Multiline Terminal) 2 = Middle (2W Digital/IP Multiline Terminal) 3 = Low (2W Digital/IP Multiline Terminal) 4 = Melody1 (2W Digital/IP Multiline Terminal) 5 = Melody2 (2W Digital/IP Multiline Terminal) 6 = Melody3 (2W Digital/IP Multiline Terminal) 7 = Melody4 (2W Digital/IP Multiline Terminal) 8 = Melody5 (2W Digital/IP Multiline Terminal)	0

Operation

To set ring tone of each line by service code:

1. Press **SPK** + service code **761**.

2. Dial Trunk number, 001 ~ 128.
3. Dial Night Mode number, 1 ~ 8.
4. Dial incoming ring tone number, 0 ~ 8 (2W Digital/IP Multiline Terminal). Then set ring tone is heard.
5. Press **SPK**.



To move to next trunk setting, dial 9, , or #.*

To set ring tone of each line by Softkey:

1. Press the **Menu** softkey.
2. Dial 43 for Each line key and each night mode setting.
3. Press the **Select** softkey.
4. Then line number 01 is indicated. Dial preferred line number if necessary.
5. Press the **Select** softkey. Current set Ring type is indicated at 2nd line of LCD.
6. Press the **Select** softkey. Then set ring tone is heard.



The << or the >> softkey can change ring tone to select.

7. Press the **Save** softkey. Incoming ring tone of the trunk was set. Then can continue to next trunk.
8. To finish setting, press the **Back** and the **Exit** softkey.

Flexible System Numbering

Description

Flexible System Numbering lets you reassign the system port-to-extension assignments. This allows an employee to retain their extension number if they move to a different office. In addition, factory technicians can make comprehensive changes to your system number plan. You can have factory technicians:

- Set the number of digits in internal (Intercom) functions. For example, extension numbers can have a maximum of 8 digits.
- Change your system Service Code numbers.
- Assign single digit access to selected Service Codes.

Talk to your sales representative to find out if this program is available to you.

You can also use Flexible System Numbering to change the system Trunk Group Routing code. Although the default code of 0 is suitable for most applications, you can alter the code if needed.

The system provides a completely flexible system numbering plan. Refer to the chart below and the SL2100 Programming Manual for more details.

Flexible System Numbering	
Program	Description
11-01-01 System Numbering	Set the system internal (Intercom) numbering plan. The numbering plan includes the digits an extension user must dial to access features and other extensions.
11-09-01 Trunk Access Code	Assign the single-digit trunk access code (normally 0). This is the code users dial to access Automatic Route Selection or Trunk Group Routing.
11-20-01 Dial Extension Analyze Table	Use tables 01 ~ 128 to assign the digits to be dialed using the Dial Extension Analyze Tables. These tables are used when PRG 11-01-01 is set to option 9 = Dial Extension Analyze. (Up to 8 digits can be assigned and the valid entries are: 0, 1 ~ 9, #, *)
11-20-02 Dial Extension Analyze Table	Assign the Type of Dial for the Dial Extension Analyze Table from PRG 11-20-01. (Svc Code, Intercom, Operator, or F-Route)
11-10 Service Code Setup (for System Administrator) 11-11 Service Code Setup (for Setup/Entry Operation) 11-12 Service Code Setup (for Service Access) 11-13 Service Code Setup (for ACD) 11-14 Service Code Setup (for Hotel) 11-15 Service Code Setup, Administrative (for Special Access)	Customize the Service Codes.
11-16 Single Digit Service Code Setup	Assign the Single Digit Service Codes. these are the post-dialing codes a user can dial after placing an Intercom call to a co-worker.

Conditions

- Programming follows a telephone extension number, not the port number in most cases. If you relocate a telephone, you may need to change additional programming. For example, if you change the extension assigned to a port in PRG 11-02, the line key programming does not follow. However, if you move the extension using the Station Relocation Feature, the line key programming does follow.

- Since making changes in PRG 11-01 does not automatically make any other changes in any other program, changing the number plan after the system is in operation may cause problems in the following programs:

PRG 11-01 Type 1 (Extension Number)				PRG 11-01 Type 2 (Service Codes)		
11-02	15-01-01	15-14	30-03	11-10	11-14	21-11
11-04	15-07	21-11		11-11	11-15	30-03
11-07	15-12	22-11		11-12	15-07	
11-17	16-01-01	25-06		11-13	15-14	

- Any feature which requires dialing a code or extension number can be affected.
- When the system searches the Dial Extension Analyze Table (PRG 11-20-01), the system uses prefix searching, giving the lower table number the higher priority. For example, the user programs 211 in table 1 and 2113 in table 2, then dials 2113, the system selects table 1.

Example for 310X	Example for 3100X
10s Group (4-digit)	100s Group (5-digit)
11-01-01 = Dial 3 31 Digit 4 = (9) Dial Extension Analyze Table	11-01-01 = Dial 3 31 Digit 5 = (9) Dial Extension Analyze Table
11-20-01 Table 1 = Dial 310	11-20-01 Table 1 = Dial 3100
11-20-02 Table 1 = Intercom	11-20-02 Table 1 = Intercom

Example for 31000X	Example for 310000X
1000s Group (6-digit)	10,000s Group (7-digit)
11-01-01 = Dial 3 31 Digit 6 = (9) Dial Extension Analyze Table	11-01-01 = Dial 3 31 Digit 7 = (9) Dial Extension Analyze Table
11-20-01 Table 1 = Dial 31000	11-20-01 Table 1 = Dial 310000
11-20-02 Table 1 = Intercom	11-20-02 Table 1 = Intercom

Default Settings

Extensions and Virtuals are numbered in the following order:

PRG 11-02-01 and PRG 11-04-01

- Physical Extensions:
 - Extn Port 1 = 101 ~ Extn Port 64 = 164
 - Extn Port 65 ~ Extn Port 128 = No Setting
- Virtual Extensions:
 - All VE Ports = No Setting

System Availability

Terminals

All Stations

Required Component(s)

None

Related Features

None

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-01-01	System Numbering - Service Code		Refer to the Programming Manual for the default values.
11-02-01	Extension Numbering - Extension Number	Dial (Up to 8 digits)	Extension Port Number : Extension Number 001 ~ 064 : 101 ~ 164 065 ~ 128 : No Setting
11-04-01	Virtual Extension Numbering - Extension Number	Dial (Up to 8 digits)	All Virtual Extension Port = No Setting
11-07-01	Department Group Pilot Numbers - Extension Group Pilot Number	Dial (Up to 8 digits)	Group Number 1 ~ 49 = No Setting Group Number 50 = 3999
11-09-01	Trunk Access Code - Trunk Access Code	Dial (Up to four digits)	0
11-09-02	Trunk Access Code - 2nd Trunk Route Access Code	Dial (Up to four digits)	No Setting
11-10-01	Service Code Setup (for System Administrator) - Night Mode Switching	0 ~ 9, *, # Maximum of 8 digit	718
11-10-03	Service Code Setup (for System Administrator) - Setting the System Time	0 ~ 9, *, # Maximum of 8 digit	728
11-10-04	Service Code Setup (for System Administrator) - Storing Common Speed Dialing Numbers	0 ~ 9, *, # Maximum of 8 digit	753
11-10-05	Service Code Setup (for System Administrator) - Storing Group Speed Dialing Numbers	0 ~ 9, *, # Maximum of 8 digit	754
11-10-06	Service Code Setup (for System Administrator) - Set Trunk to Trunk Transfer per Trunk	0 ~ 9, *, # Maximum of 8 digit	733
11-10-07	Service Code Setup (for System Administrator) - Cancel Trunk to Trunk Transfer per Trunk	0 ~ 9, *, # Maximum of 8 digit	734
11-10-08	Service Code Setup (for System Administrator) - Set Trunk to Trunk Transfer Destination per Trunk	0 ~ 9, *, # Maximum of 8 digit	735
11-10-09	Service Code Setup (for System Administrator) - Charging Cost Display by the Supervisor	0 ~ 9, *, # Maximum of 8 digit	No Setting
11-10-11	Service Code Setup (for System Administrator) - Entry Credit for Toll Restriction	0 ~ 9, *, # Maximum of 8 digit	No Setting
11-10-12	Service Code Setup (for System Administrator) - Night Mode Switching for Other Group	0 ~ 9, *, # Maximum of 8 digit	618
11-10-16	Service Code Setup (for System Administrator) - Leaving Message Waiting (Requires CPU to be licensed for Hotel/Motel)	0 ~ 9, *, # Maximum of 8 digit	626
11-10-17	Service Code Setup (for System Administrator) - Dial Block by Supervisor	0 ~ 9, *, # Maximum of 8 digit	601

Program No.	Program Name	Input Data	Default
11-10-18	Service Code Setup (for System Administrator) - Call Forward Off-Premise by Door Phone	0 ~ 9, *, # Maximum of 8 digit	722
11-10-20	Service Code Setup (for System Administrator) - VRS - Record/Erase Message	0 ~ 9, *, # Maximum of 8 digit	616
11-10-21	Service Code Setup (for System Administrator) - VRS - General Message Playback	0 ~ 9, *, # Maximum of 8 digit	611
11-10-22	Service Code Setup (for System Administrator) - VRS - Record or Erase General Message	0 ~ 9, *, # Maximum of 8 digit	612
11-10-23	Service Code Setup (for System Administrator) - SMDR - Extension Accumulated Printout Code	0 ~ 9, *, # Maximum of 8 digit	621
11-10-24	Service Code Setup (for System Administrator) - SMDR - Group Accumulated Printout Code	0 ~ 9, *, # Maximum of 8 digit	622
11-10-25	Service Code Setup (for System Administrator) - Account Code Accumulated Printout Code	0 ~ 9, *, # Maximum of 8 digit	623
11-10-26	Service Code Setup (for System Administrator) - Forced Trunk Disconnect	0 ~ 9, *, # Maximum of 8 digit	No Setting
11-10-27	Service Code Setup (for System Administrator) - Trunk Port Disable for Outgoing Calls	0 ~ 9, *, # Maximum of 8 digit	645
11-10-32	Service Code Setup (for System Administrator) - Set Private Call Refuse	0 ~ 9, *, # Maximum of 8 digit	646
11-10-33	Service Code Setup (for System Administrator) - Entry Caller ID Refuse	0 ~ 9, *, # Maximum of 8 digit	647
11-10-34	Service Code Setup (for System Administrator) - Set Caller ID Refuse	0 ~ 9, *, # Maximum of 8 digit	748
11-10-35	Service Code Setup (for System Administrator) - Dial-In Mode Switching	0 ~ 9, *, # Maximum of 8 digit	609
11-10-41	Service Code Setup (for System Administrator) - Date Setting	0 ~ 9, *, # Maximum of 8 digit	789
11-10-42	Service Code Setup (for System Administrator) - Maintenance Service	0 ~ 9, *, # Maximum of 8 digit	643
11-10-43	Service Code Setup (for System Administrator) - VRS Incoming	0 ~ 9, *, # Maximum of 8 digit	778
11-10-44	Service Code Setup (for System Administrator) - Cutting the telephone power	0 ~ 9, *, # Maximum of 8 digit	731
11-10-45	Service Code Setup (for System Administrator) - Room Monitor Permit	0 ~ 9, *, # Maximum of 8 digit	610
11-10-46	Service Code Setup (for System Administrator) - Watch Message Setting	0 ~ 9, *, # Maximum of 8 digit	614
11-10-47	Service Code Setup (for System Administrator) - Warning Message Setting	0 ~ 9, *, # Maximum of 8 digit	615
11-10-48	Service Code Setup (for System Administrator) - Auto Dial Setting for Security Sensor	0 ~ 9, *, # Maximum of 8 digit	617
11-10-49	Service Code Setup (for System Administrator) - Auto Dial Setting for Remote Inspection	0 ~ 9, *, # Maximum of 8 digit	619
11-10-50	Service Code Setup (for System Administrator) - Night-mode Skip (Own Group)	0 ~ 9, *, # Maximum of 8 digit	787
11-10-53	Service Code Setup (for System Administrator) - Clear Alarm Report	0 ~ 9, *, # Maximum of 8 digit	No Setting
11-10-54	Service Code Setup (for System Administrator) - Save Store Statistical Information of RTP	0 ~ 9, *, # Maximum of 8 digit	671
11-11-01	Service Code Setup (for Setup/Entry Operation) - Call Forward - All	0 ~ 9, *, # Maximum of 8 digit	741

Program No.	Program Name	Input Data	Default
11-11-02	Service Code Setup (for Setup/Entry Operation) - Call Forward - Busy	0 ~ 9, *, # Maximum of 8 digit	742
11-11-03	Service Code Setup (for Setup/Entry Operation) - Call Forward - No Answer	0 ~ 9, *, # Maximum of 8 digit	743
11-11-04	Service Code Setup (for Setup/Entry Operation) - Call Forward - Busy/No Answer	0 ~ 9, *, # Maximum of 8 digit	744
11-11-05	Service Code Setup (for Setup/Entry Operation) - Call Forward - Both Ring	0 ~ 9, *, # Maximum of 8 digit	745
11-11-07	Service Code Setup (for Setup/Entry Operation) - Call Forwarding - Follow-Me	0 ~ 9, *, # Maximum of 8 digit	746
11-11-08	Service Code Setup (for Setup/Entry Operation) - Do Not Disturb	0 ~ 9, *, # Maximum of 8 digit	747
11-11-09	Service Code Setup (for Setup/Entry Operation) - Answer Message Waiting	0 ~ 9, *, # Maximum of 8 digit	*0
11-11-10	Service Code Setup (for Setup/Entry Operation) - Cancel All Messages Waiting	0 ~ 9, *, # Maximum of 8 digit	773
11-11-11	Service Code Setup (for Setup/Entry Operation) - Cancel Message Waiting	0 ~ 9, *, # Maximum of 8 digit	771
11-11-12	Service Code Setup (for Setup/Entry Operation) - Alarm Clock	0 ~ 9, *, # Maximum of 8 digit	727
11-11-13	Service Code Setup (for Setup/Entry Operation) - Display Language Selection for Multiline Terminal	0 ~ 9, *, # Maximum of 8 digit	678
11-11-14	Service Code Setup (for Setup/Entry Operation) - Text Message Setting	0 ~ 9, *, # Maximum of 8 digit	No Setting
11-11-15	Service Code Setup (for Setup/Entry Operation) - Enable Handsfree Incoming Intercom Calls	0 ~ 9, *, # Maximum of 8 digit	721
11-11-16	Service Code Setup (for Setup/Entry Operation) - Force Ringing of Incoming Intercom Calls	0 ~ 9, *, # Maximum of 8 digit	723
11-11-17	Service Code Setup (for Setup/Entry Operation) - Programmable Function Key Programming (3-Digit Service Codes)	0 ~ 9, *, # Maximum of 8 digit	751
11-11-18	Service Code Setup (for Setup/Entry Operation) - BGM On/Off	0 ~ 9, *, # Maximum of 8 digit	No Setting
11-11-19	Service Code Setup (for Setup/Entry Operation) - Key Touch Tone On/Off	0 ~ 9, *, # Maximum of 8 digit	724
11-11-20	Service Code Setup (for Setup/Entry Operation) - Change Incoming CO and ICM Ring Tones	0 ~ 9, *, # Maximum of 8 digit	720
11-11-21	Service Code Setup (for Setup/Entry Operation) - Check Incoming Ring Tones	0 ~ 9, *, # Maximum of 8 digit	711
11-11-22	Service Code Setup (for Setup/Entry Operation) - Extension Name Programming	0 ~ 9, *, # Maximum of 8 digit	700
11-11-23	Service Code Setup (for Setup/Entry Operation) - Second Call for DID/DISA/DIL	0 ~ 9, *, # Maximum of 8 digit	679
11-11-24	Service Code Setup (for Setup/Entry Operation) - Change Station Class of Service	0 ~ 9, *, # Maximum of 8 digit	677
11-11-25	Service Code Setup (for Setup/Entry Operation) - Automatic Transfer Setup for Each Extension Group	0 ~ 9, *, # Maximum of 8 digit	602
11-11-26	Service Code Setup (for Setup/Entry Operation) - Automatic Transfer Cancellation for Each Extension Group	0 ~ 9, *, # Maximum of 8 digit	603
11-11-27	Service Code Setup (for Setup/Entry Operation) - Destination of Automatic Transfer Each Extension Group	0 ~ 9, *, # Maximum of 8 digit	604

Program No.	Program Name	Input Data	Default
11-11-28	Service Code Setup (for Setup/Entry Operation) - Delayed Transfer for Every Extension Group	0 ~ 9, *, # Maximum of 8 digit	605
11-11-29	Service Code Setup (for Setup/Entry Operation) - Delayed Transfer Cancellation for Each Extension Group	0 ~ 9, *, # Maximum of 8 digit	606
11-11-30	Service Code Setup (for Setup/Entry Operation) - DND Setup for Each Extension Group	0 ~ 9, *, # Maximum of 8 digit	607
11-11-31	Service Code Setup (for Setup/Entry Operation) - DND Cancellation for Each Extension Group	0 ~ 9, *, # Maximum of 8 digit	608
11-11-33	Service Code Setup (for Setup/Entry Operation) - Dial Block	0 ~ 9, *, # Maximum of 8 digit	600
11-11-34	Service Code Setup (for Setup/Entry Operation) - Temporary Toll Restriction Override	0 ~ 9, *, # Maximum of 8 digit	775
11-11-35	Service Code Setup (for Setup/Entry Operation) - Pilot Group Withdrawing	0 ~ 9, *, # Maximum of 8 digit	650
11-11-36	Service Code Setup (for Setup/Entry Operation) - Toll Restriction Override	0 ~ 9, *, # Maximum of 8 digit	663
11-11-37	Service Code Setup (for Setup/Entry Operation) - Ring Volume Set	0 ~ 9, *, # Maximum of 8 digit	729
11-11-38	Service Code Setup (for Setup/Entry Operation) - Programmable Function Key Programming (2-Digit Service Codes)	0 ~ 9, *, # Maximum of 8 digit	752
11-11-39	Service Code Setup (for Setup/Entry Operation) - One Touch Dial Entry	0 ~ 9, *, # Maximum of 8 digit	755
11-11-41	Service Code Setup (for Setup/Entry Operation) - Tandem Ringing	0 ~ 9, *, # Maximum of 8 digit	No Setting
11-11-42	Service Code Setup (for Setup/Entry Operation) - Transfer Dial Setting for Out of Range	0 ~ 9, *, # Maximum of 8 digit	689
11-11-43	Service Code Setup (for Setup/Entry Operation) - Headset Mode Switching	0 ~ 9, *, # Maximum of 8 digit	688
11-11-45	Service Code Setup (for Setup/Entry Operation) - Set/Cancel Call Forward All (Split)	0 ~ 9, *, # Maximum of 8 digit	682
11-11-46	Service Code Setup (for Setup/Entry Operation) - Set/Cancel Call Forward Busy (Split)	0 ~ 9, *, # Maximum of 8 digit	683
11-11-47	Service Code Setup (for Setup/Entry Operation) - Set/Cancel Call Forward No Answer (Split)	0 ~ 9, *, # Maximum of 8 digit	684
11-11-48	Service Code Setup (for Setup/Entry Operation) - Set/Cancel Call Forward Busy/No Answer (Split)	0 ~ 9, *, # Maximum of 8 digit	685
11-11-49	Service Code Setup (for Setup/Entry Operation) - Set/Cancel Call Forward Both Ring (Split)	0 ~ 9, *, # Maximum of 8 digit	686
11-11-50	Service Code Setup (for Setup/Entry Operation) - Set Message Waiting Indication	0 ~ 9, *, # Maximum of 8 digit	No Setting
11-11-51	Service Code Setup (for Setup/Entry Operation) - Cancel Message Waiting Indication	0 ~ 9, *, # Maximum of 8 digit	No Setting
11-11-52	Service Code Setup (for Setup/Entry Operation) - Set/Cancel Call Forward All Destination (No Split)	0 ~ 9, *, # Maximum of 8 digit	790
11-11-53	Service Code Setup (for Setup/Entry Operation) - Set/Cancel Call Forward Busy Destination (No Split)	0 ~ 9, *, # Maximum of 8 digit	791
11-11-54	Service Code Setup (for Setup/Entry Operation) - Set/Cancel Call Forward No Answer Destination (No Split)	0 ~ 9, *, # Maximum of 8 digit	792

Program No.	Program Name	Input Data	Default
11-11-55	Service Code Setup (for Setup/Entry Operation) - Call Forward Busy/No Answer Destination (No Split)	0 ~ 9, *, # Maximum of 8 digit	793
11-11-58	Service Code Setup (for Setup/Entry Operation) - Call Forward with VAU Personal Greeting	0 ~ 9, *, # Maximum of 8 digit	713
11-11-59	Service Code Setup (for Setup/Entry Operation) - Call Forward to Attendant except Busy	0 ~ 9, *, # Maximum of 8 digit	696
11-11-60	Service Code Setup (for Setup/Entry Operation) - Call Forward to Attendant/No Answer	0 ~ 9, *, # Maximum of 8 digit	697
11-11-62	Service Code Setup (for Setup/Entry Operation) - Adjust of Headset Ring Volume	0 ~ 9, *, # Maximum of 8 digit	No Setting
11-11-65	Service Code Setup (for Setup/Entry Operation) - Headset Mode Switching	0 ~ 9, *, # Maximum of 8 digit	No Setting
11-11-68	Service Code Setup (for Setup/Entry Operation) - IntraMail Language Selection for own extension	0 ~ 9, *, # Maximum of 8 digit	664
11-11-69	Service Code Setup (for Setup/Entry Operation) - IntraMail Language Selection for specific extension	0 ~ 9, *, # Maximum of 8 digit	665
11-11-70	Service Code Setup (for Setup/Entry Operation) - Backlight Brightness	0 ~ 9, *, # Maximum of 8 digit	705
11-11-71	Service Code Setup (for Setup/Entry Operation) - Auto Backlight	0 ~ 9, *, # Maximum of 8 digit	706
11-11-72	Service Code Setup (for Setup/Entry Operation) - Headset V.Announce	0 ~ 9, *, # Maximum of 8 digit	714
11-12-01	Service Code Setup (for Service Access) - Call Forward/Do Not Disturb Override	0 ~ 9, *, # Maximum of 8 digit	707
11-12-02	Service Code Setup (for Service Access) - Conference	0 ~ 9, *, # Maximum of 8 digit	#1
11-12-03	Service Code Setup (for Service Access) - Override (Off-Hook Signaling)	0 ~ 9, *, # Maximum of 8 digit	709
11-12-04	Service Code Setup (for Service Access) - Set Camp-On	0 ~ 9, *, # Maximum of 8 digit	750
11-12-05	Service Code Setup (for Service Access) - Cancel Camp-On	0 ~ 9, *, # Maximum of 8 digit	770
11-12-06	Service Code Setup (for Service Access) - Switching of Voice Call and Signal Call	0 ~ 9, *, # Maximum of 8 digit	712
11-12-07	Service Code Setup (for Service Access) - Step Call	0 ~ 9, *, # Maximum of 8 digit	708
11-12-08	Service Code Setup (for Service Access) - Barge-In	0 ~ 9, *, # Maximum of 8 digit	710
11-12-09	Service Code Setup (for Service Access) - Change to STG (Department Group) All Ring	0 ~ 9, *, # Maximum of 8 digit	No Setting
11-12-10	Service Code Setup (for Service Access) - Speed Dial Common/Station	0 ~ 9, *, # Maximum of 8 digit	#2
11-12-11	Service Code Setup (for Service Access) - Group Speed Dialing	0 ~ 9, *, # Maximum of 8 digit	#4
11-12-12	Service Code Setup (for Service Access) - Last Number Dial	0 ~ 9, *, # Maximum of 8 digit	#5
11-12-13	Service Code Setup (for Service Access) - Saved Number Dial	0 ~ 9, *, # Maximum of 8 digit	715
11-12-14	Service Code Setup (for Service Access) - Trunk Group Access	0 ~ 9, *, # Maximum of 8 digit	704
11-12-15	Service Code Setup (for Service Access) - Specified Trunk Access	0 ~ 9, *, # Maximum of 8 digit	#0

Program No.	Program Name	Input Data	Default
11-12-16	Service Code Setup (for Service Access) - Trunk Access Via Networking	0 ~ 9, *, # Maximum of 8 digit	No Setting
11-12-17	Service Code Setup (for Service Access) - Clear Last Number Dialing Data	0 ~ 9, *, # Maximum of 8 digit	776
11-12-18	Service Code Setup (for Service Access) - Clear Saved Number Dialing Data	0 ~ 9, *, # Maximum of 8 digit	785
11-12-19	Service Code Setup (for Service Access) - Internal Group Paging	0 ~ 9, *, # Maximum of 8 digit	701
11-12-20	Service Code Setup (for Service Access) - External Paging	0 ~ 9, *, # Maximum of 8 digit	703
11-12-21	Service Code Setup (for Service Access) - Meet-Me Answer to Specified Internal Paging Group	0 ~ 9, *, # Maximum of 8 digit	764
11-12-22	Service Code Setup (for Service Access) - Meet-Me Answer to External Paging	0 ~ 9, *, # Maximum of 8 digit	765
11-12-23	Service Code Setup (for Service Access) - Meet-Me Answer in Same Paging Group	0 ~ 9, *, # Maximum of 8 digit	763
11-12-24	Service Code Setup (for Service Access) - Combined Paging	0 ~ 9, *, # Maximum of 8 digit	*1
11-12-25	Service Code Setup (for Service Access) - Direct Call Pickup - Own Group	0 ~ 9, *, # Maximum of 8 digit	756
11-12-26	Service Code Setup (for Service Access) - Call Pickup for Specified Group	0 ~ 9, *, # Maximum of 8 digit	768
11-12-27	Service Code Setup (for Service Access) - Call Pickup	0 ~ 9, *, # Maximum of 8 digit	*#
11-12-28	Service Code Setup (for Service Access) - Call Pickup for Another Group	0 ~ 9, *, # Maximum of 8 digit	769
11-12-29	Service Code Setup (for Service Access) - Direct Extension Call Pickup	0 ~ 9, *, # Maximum of 8 digit	**
11-12-30	Service Code Setup (for Service Access) - Specified Trunk Answer	0 ~ 9, *, # Maximum of 8 digit	672
11-12-31	Service Code Setup (for Service Access) - Park Hold	0 ~ 9, *, # Maximum of 8 digit	#6
11-12-32	Service Code Setup (for Service Access) - Answer for Park Hold	0 ~ 9, *, # Maximum of 8 digit	*6
11-12-33	Service Code Setup (for Service Access) - Group Hold	0 ~ 9, *, # Maximum of 8 digit	732
11-12-34	Service Code Setup (for Service Access) - Answer for Group Hold	0 ~ 9, *, # Maximum of 8 digit	762
11-12-35	Service Code Setup (for Service Access) - Station Park Hold	0 ~ 9, *, # Maximum of 8 digit	757
11-12-36	Service Code Setup (for Service Access) - Door Box Access	0 ~ 9, *, # Maximum of 8 digit	702
11-12-37	Service Code Setup (for Service Access) - Common Canceling Service Code	0 ~ 9, *, # Maximum of 8 digit	620
11-12-38	Service Code Setup (for Service Access) - General Purpose Indication	0 ~ 9, *, # Maximum of 8 digit	783
11-12-40	Service Code Setup (for Service Access) - Station Speed Dialing	0 ~ 9, *, # Maximum of 8 digit	#7
11-12-41	Service Code Setup (for Service Access) - Voice Over	0 ~ 9, *, # Maximum of 8 digit	690
11-12-42	Service Code Setup (for Service Access) - Flash on Trunk lines	0 ~ 9, *, # Maximum of 8 digit	#3

Program No.	Program Name	Input Data	Default
11-12-43	Service Code Setup (for Service Access) - Answer No-Ring Line (Universal Answer)	0 ~ 9, *, # Maximum of 8 digit	#9
11-12-44	Service Code Setup (for Service Access) - Call-back Test for SLT	0 ~ 9, *, # Maximum of 8 digit	799
11-12-45	Service Code Setup (for Service Access) - Enabled On Hook When Holding (SLT)	0 ~ 9, *, # Maximum of 8 digit	749
11-12-46	Service Code Setup (for Service Access) - Answer On Hook When Holding (SLT)	0 ~ 9, *, # Maximum of 8 digit	759
11-12-47	Service Code Setup (for Service Access) - Call Waiting Answer/Split Answer	0 ~ 9, *, # Maximum of 8 digit	794
11-12-48	Service Code Setup (for Service Access) - Account Code	0 ~ 9, *, # Maximum of 8 digit	##
11-12-51	Service Code Setup (for Service Access) - VM Access	0 ~ 9, *, # Maximum of 8 digit	*8
11-12-53	Service Code Setup (for Service Access) - Live Recording at SLT	0 ~ 9, *, # Maximum of 8 digit	654
11-12-54	Service Code Setup (for Service Access) - VRS Routing for ANI/DNIS	0 ~ 9, *, # Maximum of 8 digit	782
11-12-56	Service Code Setup (for Service Access) - E911 Alarm Shut Off	0 ~ 9, *, # Maximum of 8 digit	786
11-12-57	Service Code Setup (for Service Access) - Tandem Trunking	0 ~ 9, *, # Maximum of 8 digit	#8
11-12-58	Service Code Setup (for Service Access) - Transfer Into Conference	0 ~ 9, *, # Maximum of 8 digit	624
11-12-59	Service Code Setup (for Service Access) - Trunk Drop Operation for SLT	0 ~ 9, *, # Maximum of 8 digit	660
11-12-62	Service Code Setup (for Service Access) - Security Sensor Reset	0 ~ 9, *, # Maximum of 8 digit	716
11-12-63	Service Code Setup (for Service Access) - Watch Mode Start	0 ~ 9, *, # Maximum of 8 digit	717
11-12-64	Service Code Setup (for Service Access) - Security Sensor Mode Start	0 ~ 9, *, # Maximum of 8 digit	719
11-13-01	Service Code Setup (for ACD) - ACD Log In/Log Out (for KTS)	0 ~ 9, *, # Maximum of 8 digit	*5
11-13-02	Service Code Setup (for ACD)Service Code Setup (for ACD) - ACD Log Out (for SLT)	0 ~ 9, *, # Maximum of 8 digit	655
11-13-03	Service Code Setup (for ACD)Service Code Setup (for ACD) - Set ACD Wrap-Up Time (for SLT)	0 ~ 9, *, # Maximum of 8 digit	656
11-13-04	Service Code Setup (for ACD) - Cancel ACD Wrap-Up Time (for SLT)	0 ~ 9, *, # Maximum of 8 digit	657
11-13-05	Service Code Setup (for ACD) - Set ACD Off Duty (for SLT)	0 ~ 9, *, # Maximum of 8 digit	658
11-13-06	Service Code Setup (for ACD) - Cancel ACD Off Duty (for SLT)	0 ~ 9, *, # Maximum of 8 digit	659
11-13-08	Service Code Setup (for ACD) - Agent ID Code Login	0 ~ 9, *, # Maximum of 8 digit	No Setting
11-13-09	Service Code Setup (for ACD) - Agent ID Code Logout	0 ~ 9, *, # Maximum of 8 digit	No Setting
11-13-10	Service Code Setup (for ACD) - Agent Login by Supervisor	0 ~ 9, *, # Maximum of 8 digit	667
11-13-11	Service Code Setup (for ACD) - Agent Logout by Supervisor	0 ~ 9, *, # Maximum of 8 digit	668

Program No.	Program Name	Input Data	Default
11-13-12	Service Code Setup (for ACD) - Change Agent Group by Supervisor	0 ~ 9, *, # Maximum of 8 digit	669
11-13-13	Service Code Setup (for ACD) - Agent Changing Own Group	0 ~ 9, *, # Maximum of 8 digit	670
11-14-01	Service Code Setup (for Hotel) - Set DND for Own Extension	0 ~ 9, *, # Maximum of 8 digit	627
11-14-02	Service Code Setup (for Hotel) - Cancel DND for Own Extension	0 ~ 9, *, # Maximum of 8 digit	628
11-14-03	Service Code Setup (for Hotel) - Set DND for Other Extension	0 ~ 9, *, # Maximum of 8 digit	629
11-14-04	Service Code Setup (for Hotel) - Cancel DND for Other Extension	0 ~ 9, *, # Maximum of 8 digit	630
11-14-05	Service Code Setup (for Hotel) - Set Wake Up Call for Own Extension	0 ~ 9, *, # Maximum of 8 digit	631
11-14-06	Service Code Setup (for Hotel) - Cancel Wake Up Call for Own Extension	0 ~ 9, *, # Maximum of 8 digit	632
11-14-07	Service Code Setup (for Hotel) - Set Wake Up Call for Other Extension	0 ~ 9, *, # Maximum of 8 digit	633
11-14-08	Service Code Setup (for Hotel) - Cancel Wake Up Call for Other Extension	0 ~ 9, *, # Maximum of 8 digit	634
11-14-09	Service Code Setup (for Hotel) - Set Room to Room Call Restriction	0 ~ 9, *, # Maximum of 8 digit	635
11-14-10	Service Code Setup (for Hotel) - Cancel Room to Room Call Restriction (Hotel)	0 ~ 9, *, # Maximum of 8 digit	636
11-14-11	Service Code Setup (for Hotel) - Change Toll Restriction Class for Other Extension	0 ~ 9, *, # Maximum of 8 digit	637
11-14-12	Service Code Setup (for Hotel) - Check-In	0 ~ 9, *, # Maximum of 8 digit	638
11-14-13	Service Code Setup (for Hotel) - Check-Out	0 ~ 9, *, # Maximum of 8 digit	639
11-14-14	Service Code Setup (for Hotel) - Room Status Change for Own Extension	0 ~ 9, *, # Maximum of 8 digit	640
11-14-15	Service Code Setup (for Hotel) - Room Status Change for Other Extension	0 ~ 9, *, # Maximum of 8 digit	641
11-14-16	Service Code Setup (for Hotel) - Room Status Output	0 ~ 9, *, # Maximum of 8 digit	642
11-14-17	Service Code Setup (for Hotel) - Hotel Room Monitor	0 ~ 9, *, # Maximum of 8 digit	675
11-14-19	Service Code Setup (for Hotel) - Hotel Room Data Set	0 ~ 9, *, # Maximum of 8 digit	No Setting
11-15-01	Service Code Setup, Administrative (for Special Access) - Remote Maintenance	0 ~ 9, *, # Maximum of 8 digit	730
11-15-05	Service Code Setup, Administrative (for Special Access) - System Programming Mode, Log-On	0 ~ 9, *, # Maximum of 8 digit	# * # *
11-15-09	Service Code Setup, Administrative (for Special Access) - Transfer to Incoming Ring Group	0 ~ 9, *, # Maximum of 8 digit	No Setting
11-15-12	Service Code Setup, Administrative (for Special Access) - Extension Data Swap	0 ~ 9, *, # Maximum of 8 digit	No Setting
11-15-13	Service Code Setup, Administrative (for Special Access) - Remote Access from DISA	0 ~ 9, *, # Maximum of 8 digit	No Setting
11-15-14	Service Code Setup, Administrative (for Special Access) - Modem Access	0 ~ 9, *, # Maximum of 8 digit	740
11-16-01	Single Digit Service Code Setup - Step Call	0 ~ 9, *, # Maximum of 1 digit	2
11-16-02	Single Digit Service Code Setup - Barge-In	0 ~ 9, *, # Maximum of 1 digit	No Setting

Program No.	Program Name	Input Data	Default
11-16-03	Single Digit Service Code Setup - Switching of Voice/Signal Call	0 ~ 9, *, # Maximum of 1 digit	1
11-16-04	Single Digit Service Code Setup - Intercom Off-Hook Signaling	0 ~ 9, *, # Maximum of 1 digit	*
11-16-05	Single Digit Service Code Setup - Camp-On	0 ~ 9, *, # Maximum of 1 digit	#
11-16-06	Single Digit Service Code Setup - Do Not Disturb/Call Forward override	0 ~ 9, *, # Maximum of 1 digit	No Setting
11-16-07	Single Digit Service Code Setup - Message Waiting	0 ~ 9, *, # Maximum of 1 digit	No Setting
11-16-08	Single Digit Service Code Setup - Voice Over	0 ~ 9, *, # Maximum of 1 digit	6
11-16-09	Single Digit Service Code Setup - Access to Voice Mail	0 ~ 9, *, # Maximum of 1 digit	8
11-16-10	Single Digit Service Code Setup - Department Group	0 ~ 9, *, # Maximum of 1 digit	No Setting
11-16-11	Single Digit Service Code Setup - Station Park Hold	0 ~ 9, *, # Maximum of 1 digit	No Setting
11-20-01	Dial Extension Analyze Table - Dial	Dial (Up to eight digits : 0, 1 ~ 9, #, *, @)	No Setting
11-20-02	Dial Extension Analyze Table - Type of Dials	Type of Dials : 0 = Not used 1 = Service Code Access 2 = Extension Access 5 = Operator Access 6 = F-Route Access	0

Operation

None

Flexible Timeouts

Description

The Flexible Timeouts feature provides a variety of timers in the Resident System Program to allow the system to operate without initial programming. The system timers can be changed to meet customer needs according to the system application requirements.

A Timer Class is used to allow terminals and trunks to have different timers for the same feature. There are 16 timer Classes (0~15). The following table shows the Programs that are used depending on the Timer Class used:

Timer Class 0	Timer Class 1~15	Title	Comment
20-01-08	20-31-01	Trunk Queuing Callback Time	Trunk Queuing callback rings an extension for this time. Station Timer Class is referred by the station that sets trunk queuing.
20-01-09	20-31-02	Callback / Trunk Queuing Cancel Time	The system cancels an extension Callback or Trunk Queuing request after this time. Station Timer Class is referred by the station that sets an extension Callback or Trunk Queuing.
20-04-03	20-31-03	Call Coverage Delay Interval	If VE is set for Delayed Ringing (PRG 15-11- 01), ring the covering extension after this time. Station Timer Class is referred by the station assigned to CAR/VE.
21-01-02	20-31-04	Intercom Interdigits Time	When placing Intercom calls, users must dial each digit in this time. Station Timer Class is referred by stations. Trunk Timer Class is referred by DID/ Automatic Answer Trunk trunks.
21-01-03	20-31-05	Trunk Interdigits Time	When placing CO calls, users must dial each digit in this time. Station Timer Class is referred by stations. Trunk Timer Class is referred by DID/ Automatic Answer Trunk trunks.
21-01-09	20-31-06	Hotline Time Start Time	A Ringdown extension automatically calls its programmed destination after this time. Station Timer Class is referred by the stations which sets Hotline.
22-01-03	20-31-07	Ring No Answer Alarm Time	If a trunk rings a key telephone longer than this time, the system changes the ring cadence. This indicates to the user that the call was ringing too long. Trunk Timer Class is referred by the trunk.
22-01-04	20-31-08	DIL No Answer Recall Time	A DIL that rings its programmed destination longer than this time diverts to the DIL No Answer Ring Group (PRG 22-08-01). Trunk Timer Class is referred by the trunk.
22-01-06	20-31-09	DID Ring-No-Answer Time	In systems with DID Ring No Answer Intercept, this time sets the Ring No Answer time. This time is how long a DID call rings the destination extension before rerouting to the intercept ring group. Trunk Timer Class is referred by DID trunk.
24-01-01	20-31-10	Hold Recall Time (Non Exclusive Hold)	A call on Hold recalls the extension that placed it on Hold after this time. Station Timer Class is referred by held call.
24-01-02	20-31-11	Hold Recall Callback Time (Non Exclusive Hold)	A Hold recall rings an extension for this time. Station Timer Class is referred by held call.
24-01-03	20-31-12	Exclusive Hold Recall Time	A call on Hold recalls the extension that placed it on Hold after this time. Station Timer Class is referred by held call.

Timer Class 0	Timer Class 1~15	Title	Comment
24-01-04	20-31-13	Exclusive Hold Recall Callback Time	An Exclusive Hold Recall rings an extension for this time. If not picked up, the call goes back on Non exclusive Hold. Station Timer Class is referred by held call.
24-01-06	20-31-14	Park Hold Time - Normal	A call left parked longer than this time recalls the extension that initially parked it. Trunk or Station Timer Class is referred by held call.
24-02-03	20-31-15	Delayed Call Forwarding Time	If activated at an extension, No Answer Call Forwarding occurs after this time. Station Timer Class is referred by the station sets No Answer Call Forward.
24-02-04	20-31-16	Transfer Recall Time	A transferred call recalls to the extension that initially transferred it after this time. Station Timer Class is referred by transferred call.
25-07-02	20-31-17	VRS/DISA No Answer Time	After this time expires, the call follows the programmed Ring No Answer routing (PRG 25-03 and PRG 25-04-01). Trunk Timer Class is referred.
25-07-03	20-31-18	Disconnect after VRS/DISA Re-transfer to IRG	Disconnect after re-transfer to Incoming Ring Group. Trunk Timer Class is referred.
25-07-07	20-31-19	Long Conversation Warning Tone Time	Determine the time trunk-to-trunk conversation can talk before the Long Conversation tone is heard. Trunk Timer Class is referred.
25-07-08	20-31-20	Long Conversation Disconnect Time	This timer determines how long the system waits before disconnecting a trunk-to-trunk conversation call after the Long Conversation tone is heard. Trunk Timer Class is referred.
25-07-09	20-31-21	DISA Internal Paging Time	This is the maximum length of an Internal Page placed by a DISA caller. If the Page continues longer than this time, the system terminates the DISA call. Trunk Timer Class is referred.
25-07-10	20-31-22	DISA External Paging Time	This is the maximum length of an External Page placed by a DISA caller. If the Page continues longer than this time, the system terminates the DISA call. Trunk Timer Class is referred.
31-01-02	20-31-23	Page Announcement Duration	This timer sets the maximum length of External Page announcements. Station or Trunk Timer Class is referred by the caller makes announcement.

Conditions

- Timer Classes are used for CAR/VE also.
- When Timer Class is set to 0 it uses the system-wide timers.
- Both system-wide timers (Timer Class 0) and Timer Class timers (Timer Class 1~15) can be used in the same system.

Default Settings

Timer Class set to 0 for all trunks and extensions.

System Availability

Terminals

All Multiline Terminals

Required Component(s)

None

Related Features

None

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
20-01-08	System Options - Trunk Queuing Callback Time	0 ~ 64800 seconds	15
20-01-09	System Options - Callback/Trunk Queuing Cancel Time	0 ~ 64800 seconds	64800
20-04-03	System Options for Virtual Extensions - Call Coverage Delay Interval	0 ~ 64800 seconds	10
20-29-01	Timer Class for Extension - Timer Class for Extension	0 ~ 15 0 = Not assigned	0
20-30-01	Timer Class for Trunks - Timer Class for Trunks	1 ~ 15 0 = Not assigned	0
20-31-01	Timer Class Timer Assignment - Trunk Queuing Callback Duration Time	0 ~ 64800 seconds	15
20-31-02	Timer Class Timer Assignment - Callback / Trunk Queuing Cancel Time	0 ~ 64800 seconds	64800
20-31-03	Timer Class Timer Assignment - Virtual Extension Delay Interval	0 ~ 64800 seconds	10
20-31-04	Timer Class Timer Assignment - Intercom Inter-digits Time (Intercom I/D Timer)	0 ~ 64800 seconds	10
20-31-05	Timer Class Timer Assignment - Trunk Inter-digits Time (Trunk I/D Timer)	0 ~ 64800 seconds	10
20-31-06	Timer Class Timer Assignment - Hotline Time Start Time (Hotline Start)	0 ~ 64800 seconds	0
20-31-07	Timer Class Timer Assignment - Ring No Answer Alarm Time	0 ~ 64800 seconds	60
20-31-08	Timer Class Timer Assignment - DIL/Incoming Ring Group No Answer Time	0 ~ 64800 seconds	0
20-31-09	Timer Class Timer Assignment - DID Ring-No-Answer Time	0 ~ 64800 seconds	20
20-31-10	Timer Class Timer Assignment - Hold Recall Time (Non Exclusive Hold)	0 ~ 64800 seconds	90
20-31-11	Timer Class Timer Assignment - Hold Recall CallBack Time (Non Exclusive Hold)	0 ~ 64800 seconds	0
20-31-12	Timer Class Timer Assignment - Exclusive Hold Recall Time	0 ~ 64800 seconds	90
20-31-13	Timer Class Timer Assignment - Exclusive Hold Recall Callback Time	0 ~ 64800 seconds	0
20-31-14	Timer Class Timer Assignment - Park Hold Time - Normal	0 ~ 64800 seconds	90
20-31-15	Timer Class Timer Assignment - Delayed Call Forwarding Time (Call Forward No Answer)	0 ~ 64800 seconds	10

Program No.	Program Name	Input Data	Default
20-31-16	Timer Class Timer Assignment - Transfer Recall Time	0 ~ 64800 seconds	30
20-31-17	Timer Class Timer Assignment - DID/DISA No Answer Time (Disconnect or IRG or VM)	0 ~ 64800 seconds	0
20-31-18	Timer Class Timer Assignment - Disconnect after Re-transfer to IRG	0 ~ 64800 seconds	60
20-31-19	Timer Class Timer Assignment - Long Conversation Warning Tone Time (Trunk to Trunk)	0 ~ 64800 seconds	1800
20-31-20	Timer Class Timer Assignment - Long Conversation Disconnect (Trunk to Trunk)	0 ~ 64800 seconds	30
20-31-21	Timer Class Timer Assignment - DISA Internal Paging Time	0 ~ 64800 seconds	30
20-31-22	Timer Class Timer Assignment - DISA External Paging Time	0 ~ 64800 seconds	30
20-31-23	Timer Class Timer Assignment - Page Announcement Duration	0 ~ 64800 seconds	1200
21-01-02	System Options for Outgoing Calls - Intercom Interdigit Time	0 ~ 64800 seconds	10
21-01-03	Outgoing Calls System Option - External Call, Inter digit timer	0 ~ 64800 seconds	10
21-01-09	System Options for Outgoing Calls - Ringdown Extension Timer (Hotline Start)	0 ~ 64800 seconds	0
22-01-03	System Options for Incoming Calls - Ring No Answer Alarm Time	0 ~ 64800 seconds	60
22-01-04	System Options for Incoming Calls - DIL No Answer Recall Time	0 ~ 64800 seconds 0 = No Overflow	0
22-01-06	System Options for Incoming Calls - DID Ring-No-Answer Time	0 ~ 64800 seconds	20
24-01-01	System Options for Hold - Hold Recall Time	0 ~ 64800 seconds	90
24-01-02	System Options for Hold - Hold Recall Callback Time	0 ~ 64800 seconds	0
24-01-03	System Options for Hold - Exclusive Hold Recall Time	0 ~ 64800 seconds	90
24-01-04	System Options for Hold - Exclusive Hold Recall Callback Time	0 ~ 64800 seconds	0
24-01-06	System Options for Hold - Park Hold Time - Normal	0 ~ 64800 seconds	90
24-02-03	System Options for Transfer - Delayed Call Forwarding Time	0 ~ 64800 seconds	10
24-02-04	System Options for Transfer - Transfer Recall Time	0 ~ 64800 seconds	30
25-07-02	System Timers for VRS/DISA - VRS/DISA No Answer Time	0 ~ 64800 seconds	0
25-07-03	System Timers for VRS/DISA - Disconnect after VRS/DISA retransfer to IRG	0 ~ 64800 seconds	60 seconds
25-07-07	System Timers for VRS/DISA - Long Conversation Warning Tone Time	0 ~ 64800 seconds	1800
25-07-08	System Timers for VRS/DISA - Long Conversation Disconnect Time	0 ~ 64800 seconds	30
25-07-09	System Timers for VRS/DISA - DISA Internal Paging Time	0 ~ 64800 seconds	30 seconds
25-07-10	System Timers for VRS/DISA - DISA External Paging Time	0 ~ 64800 seconds	30 seconds

Program No.	Program Name	Input Data	Default
31-01-02	System Options for Internal/External Paging - Page Announcement Duration	0 ~ 64800 seconds	1200 seconds

Operation

Please refer to the feature for the operation.

Forced Trunk Disconnect

Description

Forced Trunk Disconnect allows an extension user to disconnect (release) another extension active outside call. The user can then place a call on the released trunk. Forced Trunk Disconnect lets a user access a busy trunk in an emergency, when no other trunks are available. Maintenance technicians can also use Forced Trunk Disconnect to release a trunk on which there is no conversation. This can happen if a trunk does not properly disconnect when the outside party hangs up.



Forced Trunk Disconnect abruptly terminates the active call on the line. Only use this feature in an emergency and when no other lines are available.

Conditions

This feature only works on an analog trunk. ISDN and IP trunks do not have the Forced Trunk Disconnect available.

Default Settings

COS 01 ~ 15 = Enable

System Availability

Terminals

All Terminals

Required Component(s)

Analog Trunks

Related Features

Central Office Calls, Placing

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-10-26	Service Code Setup (for System Administrator) - Forced Trunk Disconnect	0~9, *, # Maximum of 8 digit	No Setting
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-07-11	Class of Service Options (Administrator Level) - Forced Trunk Disconnect (analog trunk only)	0 = Off 1 = On	COS 1 ~ 15 = 1

Program No.	Program Name	Input Data	Default
21-01-18	System Options for Outgoing Calls - Reset Dial After Failure of Trunk Access	0 = Disable (Off) 1 = Enable (On)	1

Operation

To disconnect a busy trunk:

Multiline Terminal

- Press a line key for trunk.
- OR -
Dial trunk access code (**#0** + trunk number).
 *You hear busy tone. Trunk numbers are 001 ~ 128.*
- Dial the Service Code (**PRG 11-10-26**).
 *You hear confirmation beeps as the system disconnects the trunk.*
 *You can now place a call on the free trunk.*
- Press the line key for the trunk disconnected in step 2.
- OR -
Dial the trunk access code (**#0** + trunk number) for the trunk disconnected in step 2.

Single Line Terminal

- Dial trunk access code (**#0** + trunk number).
 *You hear busy tone. Trunk numbers are 001 ~ 128.*
- Dial Service Code (**PRG 11-10-26**).
 *You hear confirmation beeps as the system disconnects the line.*
- Hookflash.
 *You can now place a call on the free line.*
- Dial the trunk access code (**#0** + trunk number) for the trunk disconnected in step 2.

Group Call Pickup

Description

Group Call Pickup allows an extension user to answer a call ringing another extension in a Pickup Group. This permits co-workers in the same work area to easily answer each other's calls. The user can dial a code or press a programmed Group Call Pickup key to intercept the ringing call. If several extensions within the group are ringing at the same time, Group Call Pickup intercepts the call based on the extension priority in the Pickup Group.

With Group Call Pickup, a user can intercept the following calls:

- A call ringing the user's own pickup group
- A call ringing another pickup group when the user knows the group number
- A call ringing another pickup group when the user does not know the group number

There are 50 Call Pickup Groups available.

Conditions

- A Call Pickup Group cannot have an associated name.
- Group Call Pickup can be used to answer calls recalling from Hold or Park.
- Group Call Pickup cannot be used to answer calls ringing Call Arrival Keys or Virtual Extensions.
- Virtual Extensions can use Group Call Pickup to answer calls ringing a Multiline Terminal or Single Line Terminal.
- Users can pickup calls regardless of their access map programming.
- Directed Call Pickup provides another way of answering a co-worker's call.
- Function keys simplify Group Call Pickup operation.

Default Settings

Enabled

System Availability

Terminals

Any Station

Required Component(s)

None

Related Features

Central Office Calls, Answering

Directed Call Pickup

Programmable Function Keys

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-12-25	Service Code Setup (for Service Access) - Direct Call Pickup - Own Group	0~9, *, # Maximum of 8 digit	756
11-12-26	Service Code Setup (for Service Access) - Call Pickup for Specified Group	0~9, *, # Maximum of 8 digit	768
11-12-27	Service Code Setup (for Service Access) - Call Pickup	0~9, *, # Maximum of 8 digit	* #
11-12-28	Service Code Setup (for Service Access) - Call Pickup for Another Group	0~9, *, # Maximum of 8 digit	769
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-10-01	Class of Service Options (Answer Service) - Group Call Pickup (Within Group)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-10-02	Class of Service Options (Answer Service) - Group Call Pickup (Another Group)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-10-03	Class of Service Options (Answer Service) - Group Call Pickup for Specific Group	0 = Off 1 = On	COS 01 ~ 15 = 1
20-10-04	Class of Service Options (Answer Service) - Telephone Call Pickup	0 = Off 1 = On	COS 01 ~ 15 = 1
20-10-05	Class of Service Options (Answer Service) - Directed Call Pickup for Own Group	0 = Off 1 = On	COS 01 ~ 15 = 1
20-10-09	Class of Service Options (Answer Service) - Call Pickup Callback	0 = Off 1 = On	COS 01 ~ 15 = 1
23-02-01	Call Pickup Groups - Priority	Group No. - Priority Order (1 ~ 50) ~ (1 ~ 9999)	1 - xxx (Note; default value follows the port order of PRG11-02 or PRG11-04.)

Operation

To answer a call ringing another telephone in your Pickup Group:

- Pick up the handset or press **Speaker** key.
- At Multiline Terminal only, press the **Group Call Pickup** key (PRG 15-07 or SC **751**: 24).
- OR -
Dial **756** or *#.



*Service Code *# can pick up any call in the group, plus any Ring Group calls. Service Code 756 cannot pick up Ring Group calls.*

To answer a call ringing a telephone in another Pickup Group when you do not know the group number:

- Pick up the handset or press **Speaker** key.

2. At Multiline Terminal only, press the **Group Call Pickup** key (PRG 15-07 or SC **751**: 25).
- **OR** -
Dial **769**.

To answer a call ringing a telephone in another Pickup Group when you know the group number:

1. Pick up the handset or press **Speaker** key.
2. At Multiline Terminal only, press the **Group Call Pickup** key (PRG 15-07 or SC **751**: 26 + group).
- **OR** -
Dial **768** and the group number (1 ~ 50).

Group Listen

Description

Group Listen permits a Multiline Terminal user to talk on the handset and have their caller's voice broadcast over the telephone speaker. This lets the Multiline Terminal user's co-workers listen to the conversation. Group Listen turns off the Multiline Terminal handsfree microphone so the caller does not pick the co-worker's voices during a Group Listen.

Conditions

- An extension in the headset mode cannot use Group Listen.
- Group Listen is not available to Single Line Terminals.

Default Settings

Disabled

System Availability

Terminals

Digital Multiline Terminal

Required Component(s)

None

Related Features

Handset Operation

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-13-26	Class of Service Options (Supplementary Service) - Group Listen	0 = Off 1 = On	COS 01 ~ 15 = 1

Operation

To initiate Group Listen:

1. Place or answer call using the handset.
2. Press **Speaker** key twice (but do not hang up).



***Speaker** key flashes slowly.*



*You can talk to the caller through your handset. Your co-workers hear your caller's voice over your telephone speaker after pressing **Speaker** key.*

To talk Handsfree after initiating Group Listen:

1. Hang up the handset.

To cancel Group Listen (without hanging up your call):

1. Do not hang up.
2. Press the flashing **Speaker** key.



You can talk to the caller over the handset. Your co-workers can no longer hear the caller's voice.

Handset Mute/Handset Cutoff

Description

At the same time with Microphone On/Off control, Handset Mute/Handset Cutoff is provided to Multiline Terminals connected to the SL2100 system. While talking on the Multiline Terminal handset, a station user can press **Mute** key to mute the transmit speech path. The station user can still hear the outside (or intercom) voice.

Conditions

- **Mute** key flashes when active.
- When Mute is set at the terminal and answer the incoming call or held call by Off Hooking the Handset, transmit Mute is canceled temporary, and back to original Mute state when On Hook.
- At PRG 15-02-50, MIC Lamp Status Change, **Mute** key LED can be set either way. Default is LED On when Mute On.

Default Settings

None

System Availability

Terminals

All Multiline Terminals

Required Component(s)

None

Related Features

Programmable Function Keys

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
15-02-50	Multiline Telephone Basic Data Setup - Mute Lamp Status Change	0 = normal 1 = Lamp Status Change	0
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.

Program No.	Program Name	Input Data	Default
80-01-01	Service Tone Setup - Repeat Count	0 ~ 255 (0 = Endless)	Refer to the Programming Manual for the default values.
80-01-02	Service Tone Setup - Basic Tone Number	0 ~ 33 (0 = No Tone, 33 = Default Time Slot)	Refer to the Programming Manual for the default values.

Operation

While talking on a terminal handset:

1. Press **Mute** key.

Handsfree and Monitor

Description

Handsfree allows a Multiline Terminal user to process calls using the speaker and microphone in the telephone instead of the handset. Handsfree is a convenience for workers who do not have a free hand to pick up the handset. For example, a terminal operator could continue to enter data with both hands while talking on the telephone.

There are three variations of Handsfree.

- Handsfree
The user can press **Speaker** key to place and answer calls instead of using the handset.
- Automatic Handsfree
The user can press a trunk line key or virtual extension key without lifting the handset or pressing **Speaker** key. An extension can have Automatic Handsfree for outgoing calls or for both outgoing calls and incoming calls.
- Monitor
User can place a call without lifting the handset, but must lift the handset to speak.

Conditions

- Handsfree and Monitor are not available for Single Line Terminals.
- Prime Line Selection affects how incoming and outgoing calls are handled and thus determines what happens when the user presses **Speaker** key.
- Monitoring volume may be adjusted using the volume control on the Multiline Terminal.
- When a Multiline Terminal user lifts the handset, the monitoring condition is automatically released, and **Speaker** key LED goes off.
- A Multiline Terminal is considered off-hook by the system when this feature is used.

Default Settings

Enabled

System Availability

Terminals

All Multiline Terminals

Required Component(s)

None

Related Features

Central Office Calls, Answering

Central Office Calls, Placing

Microphone Cutoff

Prime Line Selection

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
15-02-08	Multiline Telephone Basic Data Setup - Automatic Handsfree	0 = Preselect 1 = One-Touch (Automatic Handsfree)	1
15-02-16	Multiline Telephone Basic Data Setup - Hands-free Operation	0 = Disable (Off) 1 = Enable (On)	1
20-02-12	System Options for Multiline Telephones - Forced Intercom Ring (ICM Call Type)	0 = Disable (Voice) 1 = Enable (Signal)	1
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-09-05	Class of Service Options (Incoming Call Service) - Signal/Voice Call	0 = Off 1 = On	COS 01 ~ 15 = 1

Operation

To talk Handsfree:

1. Press **Speaker**, the **Trunk Line**, or the **Virtual Extension** key.
2. Place the call.
3. Speak toward the telephone when the called party answers.

To change a handset call into a Handsfree call:

1. Press **Speaker** key and hang up the handset.
2. Press **Speaker** key again to hang up.

To change a Handsfree call into a handset call:

1. Lift the handset.

To turn on/off Monitor:

1. Press **Mute** key or the **Microphone Function** key (PRG 15-07-01 or SC **751**: 02) to turn on or off the Microphone.



Monitor is off when **Mute** key LED is lit, the **Microphone Function** key is not lit (Off), or the handset is lifted.

Handsfree Answerback/Forced Intercom Ringing

Description

Handsfree Answerback permits an extension user to respond to a voice-announced Intercom call by speaking toward the telephone, without lifting the handset. Like Handsfree, this is a convenience for workers who do not have a free hand to pick up the handset.

Conditions

- Handsfree Answerback does not require the Speaker phone to be enabled (PRG 15-02-16).
- A Multiline Terminal user can process calls using the speaker and microphone in the telephone (instead of the handset).
- With Microphone Cutoff enabled, Handsfree Answerback callers to an extension hear a single beep (instead of two).
- Incoming Intercom calls always ring Single Line Terminals.
- The extension you are calling must be set to Voice for this feature to work.

Default Settings

Enabled

System Availability

Terminals

All Multiline Terminals

Required Component(s)

None

Related Features

Handsfree and Monitor

Microphone Cutoff

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-11-15	Service Code Setup (for Setup/Entry Operation) - Enable Handsfree Incoming Intercom Calls	0~9, *, # Maximum of 8 digit	721

Program No.	Program Name	Input Data	Default
11-11-16	Service Code Setup (for Setup/Entry Operation) - Force Ringing of Incoming Intercom Calls	0~9, *, # Maximum of 8 digit	723
11-12-06	Service Code Setup (for Service Access) - Switching of Voice Call and Signal Call	0~9, *, # Maximum of 8 digit	712
15-02-16	Multiline Telephone Basic Data Setup - Hands-free Operation	0 = Disable (Off) 1 = Enable (On)	1
20-02-12	System Options for Multiline Telephones - Forced Intercom Ring (ICM Call Type)	0 = Disable (Voice) 1 = Enable (Signal)	1
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-08-10	Class of Service Options (Outgoing Call Service) - Signal/Voice Call	0 = Off 1 = On	COS 01 ~ 15 = 1
20-09-05	Class of Service Options (Incoming Call Service) - Signal/Voice Call	0 = Off 1 = On	COS 01 ~ 15 = 1

Operation

To enable Handsfree Answerback for your incoming Intercom calls:

1. Press idle **Speaker** key.
2. Dial **721**.
3. Press **Speaker** key to hang up.

 This disables Forced Intercom Ringing.

To enable Forced Intercom Ringing for your incoming Intercom calls:

1. Press idle **Speaker** key.
2. Dial **723**.
3. Press **Speaker** key to hang up.

 This disables Handsfree Answerback.

To change the way your Intercom call signals the extension you are calling:

1. Dial **1**.

 If ringing, your call voice-announces. If voice-announced, your call starts to ring the destination. This option is also available at Single Line Terminals.

Headset Operation

Description

A Multiline Terminal user can use a customer-provided headset in place of the handset. Like using Handsfree, using the headset frees up the user's hands for other work. However, Headset Operation provides privacy not available from Handsfree.

As the headset plugs into a separate jack on the bottom of the telephone, the handset can still be connected to the telephone. This gives you the option to use the handset, headset or the speakerphone for calls. (2W Digital/IP Multiline Terminal)

Conditions

- While using the headset, the Headset function key becomes a release (disconnect) key and no dial tone is heard from the speaker.
- While in the headset mode, the hook switch is not functional.
- An extension with a headset can still receive voice-announced Intercom calls and respond handsfree when idle.
- A Headset Function key is required to answer or place a call in headset mode.
- Electronic Hook Switch (EHS) functionality requires a Plantronics APD-80 cable, a EHS capable headset and a head set key programmed on an available line key.

Default Settings

Disabled

System Availability

Terminals

None

Required Component(s)

Headset

Related Features

Handsfree Answerback/Forced Intercom Ringing

Programmable Function Keys

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-02-05	System Options for Multiline Telephones - Headset Busy Mode	0 = No (Disable) 1 = Yes (Enable)	0
20-02-12	System Options for Multiline Telephones - Forced Intercom Ring (ICM Call Type)	0 = Disable (Voice) 1 = Enable (Signal)	1
20-09-07	Class of Service Options (Incoming Call Service) - Call Queuing	0 = Off (Calls are not queued.) 1 = On (Calls are queued.)	COS 01 ~ 15 = 0
20-13-06	Class of Service Options (Supplementary Service) - Automatic Off-Hook Signaling (Automatic Override)	0 = Off (manually) 1 = On (automatically)	COS 01 ~ 15 = 1

Operation

To enable the headset:

1. Plug in the headset into the headset jack on the bottom of the telephone.
2. Program a **Headset** key (PRG 15-07 or SC **751**: 05).



You hear a confirmation beep.

To use the headset:



The Headset key lights when on a call. To disconnect, press the Headset key again.



You can still use the handset for calls or respond to voice-announced Intercom calls with the headset plugged in. The headset only activates when the Headset key is pressed.

1. Answer a ringing call by pressing the **Headset** key.
- OR -
2. Press the **Headset** key and then a line key or press **Speaker** key then **0** to make a outgoing call.
- OR -
3. Press the **Headset** key to get intercom dial tone.
- OR -
4. If on a call, press the **Headset** key to hang up.

Hold

Description

Hold lets an extension user put a call in a temporary waiting state. The caller on Hold hears silence or Music on Hold, not conversation in the extension user's work area. While the call waits on Hold, the extension user may process calls or use a system feature. Calls left on Hold too long recall the extension that placed them on Hold. There are four types of Hold:

- **System Hold**
An outside call a user places on Hold flashes the line key (if programmed) at all other Multiline Terminals. Any Multiline Terminal user with the flashing line key can pick up the call.
- **Exclusive Hold**
When a user places a call on Exclusive Hold, only that user can pick up the call from Hold. The trunk appears busy to all other Multiline Terminals that have a key for the trunk. Exclusive hold is important if a user does not want a co-worker picking up their call on Hold.
- **Group Hold**
If a user places a call on Group Hold, another user in the Department Group can dial a code to pick up the call. This lets members of a department easily pick up each other's calls.
- **Intercom Hold**
A user can place an Intercom call on Hold. The Intercom call on Hold does not indicate at any other extension.

Hold Recall to Operator

Hold Recall to Operator enhances how the system handles calls that are left on hold too long. With Hold Recall to Operator:

- A trunk call recalls the extension that placed it on Hold after the Hold/Exclusive Hold Recall Time.
- The recalling trunk rings the extension that placed it on Hold for the Hold/Exclusive Hold Recall Callback Time.
- After the Hold/Exclusive Hold Recall Callback Time, the trunk call rings the operator.

Hold Recall to Operator applies to trunk calls placed on System Hold, Exclusive Hold and Group Hold. It does not apply to Intercom calls.

Conditions

- The called extension must lift the handset or press **Speaker** key before the call can be placed on hold.
- Callers on Hold hear Music on Hold, if programmed.
- An extension can have function keys for System Hold and Exclusive Hold.
- Analog Single Line Terminals can only use Exclusive Hold and Group Hold.
- If station A calls station B, and station A puts station B on hold and then calls station C, station C cannot transfer the call.
- The Exclusive Hold Recall Timer is used when an internal call from a Single Line telephone or 3rd party SIP telephone is placed on Hold.

Default Settings

Enabled

System Availability

Terminals

All Terminals

Required Component(s)

None

Related Features

Music on Hold

Programmable Function Keys

Single Line Terminals

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-12-30	Service Code Setup (for Service Access) - Specified Trunk Answer	0~9, *, # Maximum of 8 digit	672
11-12-33	Service Code Setup (for Service Access) - Group Hold	0~9, *, # Maximum of 8 digit	732
11-12-34	Service Code Setup (for Service Access) - Answer for Group Hold	0~9, *, # Maximum of 8 digit	762
14-01-16	Basic Trunk Data Setup - Forced Release of Held Call	0 = Disable (No) 1 = Enable (Yes)	0
14-07-01	Trunk Access Map Setup - Access Map	0 = No access 1 = Outgoing access only 2 = Incoming access only 3 = Access only when trunk on Hold 4 = Outgoing access and access when trunk on Hold 5 = Incoming and access when trunk on Hold 6 = Incoming and outgoing access 7 = Full access	Access Map 1 ~ 128 = Trunk Ports 1 ~ 128 assigned with option 7 access (incoming and outgoing access and access when trunk is on Hold).
15-02-06	Multiline Telephone Basic Data Setup - Hold Key Operating Mode	0 = Normal (Common) 1 = Exclusive Hold 2 = Park Hold	0
15-02-07	Multiline Telephone Basic Data Setup - Automatic Hold for CO Lines	0 = Hold 1 = Disconnect (Cut)	1
15-02-11	Multiline Telephone Basic Data Setup - Callback Automatic Answer	0 = Off 1 = On	1
15-06-01	Trunk Access Map for Extensions - Trunk Access Map Number	001 ~ 128	1

Program No.	Program Name	Input Data	Default
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
16-02-01	Department Group Assignment for Extensions	Department Groups 1 - 50 Priority 1 - 200	Refer to Programming Manual.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-11-09	Class of Service Options (Hold/Transfer Service) - Group Hold Initiate	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-10	Class of Service Options (Hold/Transfer Service) - Group Hold Answer	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-13	Class of Service Options (Hold/Transfer Service) - Operator Transfer After Hold Callback	0 = Off 1 = On	COS 01 ~ 15 = 1
20-17-01	Operator Extension - Operator's Extension Number	Up to eight digits	101
24-01-01	System Options for Hold - Hold Recall Time	0 ~ 64800 seconds	90
24-01-02	System Options for Hold - Hold Recall Callback Time	0 ~ 64800 seconds	0
24-01-03	System Options for Hold - Exclusive Hold Recall Time	0 ~ 64800 seconds	90
24-01-04	System Options for Hold - Exclusive Hold Recall Callback Time	0 ~ 64800 seconds	0
24-01-05	System Options for Hold - Forced Release of Held Call	0 ~ 64800 seconds	1800

Operation

System Hold

To place an outside call on System Hold:

Press **Hold** key.

To pick up an outside call on System Hold:

1. If you know the specific line number, dial **672** + Line number (**001 ~ 128**).

Exclusive Hold

To place an outside call on Exclusive Hold:

Press the **Exclusive Hold** key (PRG 15-07-01 or SC **751**: 45).

Single Line Terminal

1. Hookflash.
2. Dial **749**.

To pick up an outside call on Exclusive Hold:

1. Press the flashing **line** key.

Single Line Terminal

1. Dial **759**.

Group Hold**To place a call on Hold so anyone in your Department Group can pick it up:**

1. Press **Hold** key.
2. Dial **732**.
3. Press **Speaker** key to hang up.

Single Line Terminal

1. Hookflash.
2. Dial **732**.
3. Hang up.

To pick up a call on Group Hold:

1. Press **Speaker** key.
2. Dial **762**.

Single Line Terminal

1. Lift the handset.
2. Dial **762**.

Intercom Hold**To place an Intercom call on Intercom Hold:**

1. Press **Hold** key.
2. Press **Speaker** key to hang up.

To pick up an Intercom call on Intercom Hold:

1. Press the flashing **Hold** key.

Hotel/Motel

Description

Your system provides Hotel/Motel services in addition to the many features available to business users. These Hotel/Motel services help you run your facility more efficiently, save you time and money and provide your guests with more responsive service.

Hotel/Motel features include:

Wake Up Call/Snooze Callback

Wake Up Call is like having an alarm clock in each room - with some unique advantages:

- Guests can set or cancel Wake Up Calls for themselves, or you can set and cancel Wake Ups for them.
- Unanswered Wake Up Calls can automatically call the operator and print on the Room Status Printout report.
- You can view the status of all your system Wake Up Calls from your DSS Console.
- Use Wake Up Call as a meeting reminder (e.g., for convention attendees).
- Guests can set Snooze Callback.

Single Digit Dialing

Single Digit Dialing gives your guests one-touch access to your important Hotel/Motel services. They can lift the handset and press a single key for:

- Extensions such as the front desk, reservation services, housekeeping or the maitre d' of your restaurant.
- Feature Access Codes for one-button access to selected features and outside lines.
- Voice Mail, so your guests can leave requests even when your service providers are unavailable.
- A Department Calling Group allowing, for example, your guests to reach the first available agent in your reservation desk group.

A Department Calling Group

A Department Calling Group, allowing, for example, your guests to reach the first available agent in your reservation desk group.

Message Waiting

If you call a guest while they are away from their room, leave them a Message Waiting. When the guest returns, they see the lamp on their phone flashing and can automatically call you back. You can use Message Waiting when you have parcels for a guest dropped off at your front desk. Do not keep redialing the guest if they are not in - just send them a Message Waiting. (Your DSS Console can show all the rooms that have messages waiting.)

PMS Integration using Lua PMS Application

Using a Lua Property Management System Application (Lua PMS) loaded on the CPU-C1, the SL2100 system can support IP integration to third-party PMS applications.

Room to Room Calling Restriction

Prevent guests in one room from calling guests in another - a handy feature for guests that want to maintain their privacy. If you need to, you can always allow inter-room calling (e.g., for families or groups that have separate rooms).

Toll Restriction (When Checked In)

Control a guest's long distance dialing automatically when they check in. Use this feature to set up two different Toll Restriction modes. The first mode is for you and your staff when the room is checked out. The second mode is for your guests when they check in. You may want to restrict the outside numbers guests can dial, but allow your staff to call vendors and suppliers. In addition, you can set a room's Toll Restriction mode directly to any valid setting : 1 ~ 15.

Room Status

Your phone and DSS Console can set and monitor the status of all your guest rooms: Checked In, Checked Out, Maid Required and Maid in Room. Maximize room usage by coordinating your cleaning staff and reservation desk. For example, you can dial simple codes to set a room status. And, press STATUS on your console to see the status of all rooms at a single glance.

Room Status Printouts

The Room Status Printouts give you a concise overview of the status of all your guest rooms at a glance. The printouts provide up to the minute reports showing Room Status, Room Call Restriction, Do Not Disturb, Message Waiting and Wake Up Calls. If your cleaning staff needs to know which rooms to clean, for example, just print out the report showing Room Status. This printout requires a connection to the system using IP post on the CPU.

DSS Console Monitoring

Your DSS Console provides unique one-touch room monitoring abilities. Press a button on your DSS Console to check a room status. Or, see at a glance which rooms have Wake Up Calls set or messages waiting. You can also use your console for business mode features.

Do Not Disturb

A guest can activate DND anytime they need privacy (for example, if they need to work uninterrupted). Do Not Disturb (DND) blocks the room telephone incoming calls and Paging announcements. This can be set from the room phone or attendant phone.

Flexible Numbering Plan

To simplify dialing guests and services in your facility, customize your system to have room numbers match phone extension numbers. For example, if the rooms on the first floor are numbered 100 ~ 120, the corresponding room extensions should also be 100 ~ 120.

InMail Integration

- By setting PRG 45-02-05 to "1" (On), at the event of check-in the special command is transmitted from the system to the InMail in order to activate following features.
 1. Mailbox for the room cleared of messages
 2. The mailbox language returns to default
- Each Guest Room user can have individual mailbox languages at PRG 40-07-01.
- Guest Room users has ability to choose the language indication by Soft Key. (2W Digital/IP Multiline Terminal)

Hotel/Motel Feature Quick Reference Chart

Hotel/Motel Feature Quick Reference Chart	
Do Not Disturb	
Enable DND at a room telephone:	Lift handset + 627 + Hang up.
Cancel DND at a room telephone:	Lift handset + 628 + Hang up.
Enable DND for another room telephone:	Lift handset + 629 + Extension for which you want to enable DND + Hang up.

Hotel/Motel Feature Quick Reference Chart	
Cancel DND enabled at another room telephone:	Lift handset + 630 + Extension for which you want to disable DND + Hang up.
DSS Console Monitoring	
Check which room telephones have Messages Waiting:	Without lifting the handset, press MESSAGE (PAGE).
Check which room telephones have Wake Up Calls set:	Without lifting the handset, press WAKE UP (GROUP).
View the Check Out Status of a room:	Without lifting the handset, press STATUS (DOOR).
Message Waiting	
Leave a Message Waiting:	Call the room telephone + 0 + Hang up.
Cancel a Message Waiting:	Lift handset + 773 . - or - You know the extension at which you left the message: Lift handset + 771 + Extension .
Leave a Message Waiting without first calling the extension:	Lift handset + 626 + Extension .
Answer a Message Waiting left at your telephone:	Lift handset + * 0 .
Room Status	
Check-in Options	
Set a room as checked in:	Lift handset + 638 + Extension of the room you want to check in + Hang up.
Set a room as checked out:	If you have previously dialed 638 to check it in, lift handset + 639 + Extension of the room you want to check out + Hang up.
House Cleaning Options	
Set a room house cleaning status from the room telephone:	Lift handset + 640 + Room status code (1 ~ 4) + Hang up. 1 = Room Clean (Occupied) 2 = Maid Required 3 = Maid in Room 4 = Inspection Required
Set a room status from another telephone:	Lift handset + 641 + Extension of the room you want to set + Room status code (1 ~ 4) + Hang up. 1 = Room Clean (Occupied) 2 = Maid Required 3 = Maid in Room 4 = Inspection Required
Room Status Printouts	
Have your printer output the Room Status Printout:	Lift handset + 642 + Room Status Printout option (0 ~ 5) + Hang up. 0 = All Printouts 1 = Room Status List (Check-in and House Cleaning Status) 2 = Call Restriction List 3 = Do Not Disturb and Room Clean List 4 = Message Waiting List 5 = Wake Up Call List
Room-to-Room Call Restriction	
Enable Room-to-Room Call Restriction for a guest's telephone:	Lift handset + 635 + Extension .  The guest cannot dial any other Hotel Mode extension.
Disable Room-to-Room Call Restriction for a guest's telephone:	Lift handset + 636 + Extension .
Single Digit Dialing	
When a guest wants to use Single Digit Dialing:	Lift handset + single dial pad key (1 ~ 9).
Toll Restriction (When Checked In)	

Hotel/Motel Feature Quick Reference Chart	
Change a room telephone Toll Restriction (When Checked In) level:	Lift handset + 637 + Extension to change the Toll Restriction (When Checked In) level + Enter the new Toll Restriction (When Checked In) level (01 ~ 15).  <i>If a room Toll Restriction level is changed using access code 637, that room keeps the new setting until it is either changed using access code 637 or in system programming.</i>
Wake Up Call	
Set a Wake Up Call for your own room:	Lift handset + 631 + Time for wake up (use a 24-hour clock, ex: 1:00 PM = 13:00) + Hang up.
Cancel a Wake Up that you have set:	Lift handset + 632 .
Set a Wake Up Call for another room:	Lift handset + 633 + Extension to receive the wake up + Time for your wake up (use a 24-hour clock, ex: 1:00 PM = 13:00) + Hang up.
Cancel a Wake Up you have set for another room:	Lift handset + 634 + Extension whose wake up you want to cancel.

Conditions

- Lua PMS requires system software Ver. 1.50 or higher.
- This feature requires the SL2100 be licensed for Hotel/Motel (0007).
- Wake up call greetings require VRS programming and licensing.
- Wake up call greetings are only provided to single line phones. Multiline phones will hear dial tone when answered.
- SL2100 supports a maximum of 64 room telephones.
- When multiple DSS Consoles are used for Hotel/Motel, function keys must be assigned to each DSS console for Wake Up Call Indication and Room Status Indication.
- The Message Waiting status of a room cannot be seen when the console is in Wake Up Call or Room Status mode.
- The BLF indication for each room is always available no matter what mode the console is in.
- Hotel/Motel Feature on SL2100 allows to use a Standard SIP device, but there are following conditions.
 - Standard SIP Device does not support Mini bar (Hotel Room Data setting) feature.
 - For Standard SIP Device to function correctly, Program 15-05-50(Peer to Peer Mode) must be set to Disable.
 - SL2100 supports basic Standard SIP Device feature therefore some of unique features on Standard SIP Device which are not supported by SL2100 might not work properly.
 - It is recommended to make sure features availability between SL2100 and Standard SIP Device by interoperability test in advance.
 - For the details of SL2100 hotel features, refer to the relevant documents (manuals and training document).
 - Do not set DND function that Standard SIP Device itself has, because SL2100 can not control it.
 - The indication of Message Waiting depends on the specifications of Standard SIP Device.
- The Hotel/Motel feature is licensed. The following dial access codes can be used only if the CPU is licensed for the Hotel/Motel Feature:

Dial Access Codes that Require SL2100 HOTEL LIC		
Program	Dial Access Code	Description
11-10-16	626	Leaving Message Waiting (Requires CPU to be licensed for Hotel/Motel)
11-14-01	627	Set DND for Own Extension
11-14-02	628	Cancel DND for Own Extension
11-14-03	629	Set DND for Other Extension
11-14-04	630	Cancel DND for Other Extension
11-14-05	631	Set Wake Up Call for Own Extension
11-14-06	632	Cancel Wake Up Call for Own Extension
11-14-07	633	Set Wake Up Call for Other Extension
11-14-08	634	Cancel Wake Up Call for Other Extension
11-14-09	635	Set Room to Room Call Restriction
11-14-10	636	Cancel Room to Room Call Restriction (Hotel)
11-14-11	637	Change Toll Restriction Class for Other Extension
11-14-12	638	Check In
11-14-13	639	Check Out
11-14-14	640	Room Status Change for Own Extension
11-14-15	641	Room Status Change for Other Extension
11-14-16	642	Room Status Output
11-14-17	675	Hotel Room Monitor

Default Settings

Disable

System Availability

Terminals

All Terminals

Required Component(s)

DSS Console

License (SL2100 HOTEL LIC)

Related Features

Code Restriction/Toll Restriction

Department Calling

Do Not Disturb (DND)

Flexible System Numbering

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-20-01	LAN Setup for External Equipment - TCP Port	Available values are: 0 ~ 65535	External Device 1 (CTI Server) = 0 External Device 2 (ACD-MIS) = 0 External Device 4 (Networking System) = 30000 External Device 5 (SMDR Output) = 0 External Device 6 (DIM Output) = 0 External Device 8 (UC Web Application) = 0 External Device 9 (1st Party CTI) = 0 External Device 11 (O&M Server) = 8010 External Device 12 (Traffic Report Output) = 0 External Device 13 (Room Data Output for Hotel Service) = 0 External Device 14 (IP-DECT Directory Access) = 0 External Device 15 (Presence) = 0
11-10-16	Service Code Setup (for System Administrator) - Leaving Message Waiting (Requires CPU to be licensed for Hotel/Motel)	0~9, *, # Maximum of 8 digit	626
11-14-01	Service Code Setup (for Hotel) - Set DND for Own Extension	0~9, *, # Maximum of 8 digit	627
11-14-02	Service Code Setup (for Hotel) - Cancel DND for Own Extension	0~9, *, # Maximum of 8 digit	628
11-14-03	Service Code Setup (for Hotel) - Set DND for Other Extension	0~9, *, # Maximum of 8 digit	629
11-14-04	Service Code Setup (for Hotel) - Cancel DND for Other Extension	0~9, *, # Maximum of 8 digit	630
11-14-05	Service Code Setup (for Hotel) - Set Wake Up Call for Own Extension	0~9, *, # Maximum of 8 digit	631
11-14-06	Service Code Setup (for Hotel) - Cancel Wake Up Call for Own Extension	0~9, *, # Maximum of 8 digit	632
11-14-07	Service Code Setup (for Hotel) - Set Wake Up Call for Other Extension	0~9, *, # Maximum of 8 digit	633
11-14-08	Service Code Setup (for Hotel) - Cancel Wake Up Call for Other Extension	0~9, *, # Maximum of 8 digit	634
11-14-09	Service Code Setup (for Hotel) - Set Room to Room Call Restriction	0~9, *, # Maximum of 8 digit	635
11-14-10	Service Code Setup (for Hotel) - Cancel Room to Room Call Restriction (Hotel)	0~9, *, # Maximum of 8 digit	636
11-14-11	Service Code Setup (for Hotel) - Change Toll Restriction Class for Other Extension	0~9, *, # Maximum of 8 digit	637
11-14-12	Service Code Setup (for Hotel) - Check-In	0~9, *, # Maximum of 8 digit	638
11-14-13	Service Code Setup (for Hotel) - Check-Out	0~9, *, # Maximum of 8 digit	639
11-14-14	Service Code Setup (for Hotel) - Room Status Change for Own Extension	0~9, *, # Maximum of 8 digit	640

Program No.	Program Name	Input Data	Default
11-14-15	Service Code Setup (for Hotel) - Room Status Change for Other Extension	0~9, *, # Maximum of 8 digit	641
11-14-16	Service Code Setup (for Hotel) - Room Status Output	0~9, *, # Maximum of 8 digit	642
11-14-17	Service Code Setup (for Hotel) - Hotel Room Monitor	0~9, *, # Maximum of 8 digit	675
15-03-01	Single Line Telephone Basic Data Setup - SLT Signaling Type	0 = DP 1 = DTMF	1
15-03-04	Single Line Telephone Basic Data Setup - Flashing	0 = No 1 = Yes	1
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-13-11	Class of Service Options (Supplementary Service) - Room Monitor, Initiating Extension	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-13	Class of Service Options (Supplementary Service) - Continued Dialing (DTMF) Signal on ICM Call	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-16	Class of Service Options (Supplementary Service) - Barge-In, Receive	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-17	Class of Service Options (Supplementary Service) - Barge-in Tone/Display (Intrusion Tone)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-40	Class of Service Options (Supplementary Service) - Do Not Disturb	0 = Off 1 = On	COS 01 ~ 15 = 1
20-15-10	Ring Cycle Setup - Incoming Signal Type : Alarm for SLT	Ring Cycle Number : 1 ~ 13	5
20-17-01	Operator Extension - Operator's Extension Number	Up to eight digits	101
20-35-01	Extension's Operator Setting - Extension's Operator Setting	0 ~ 15 (0 = Not Set)	0
30-01-01	DSS Console Operating Mode - DSS Operation Mode	0 = Business Mode 1 = Hotel Mode	0
30-02-01	DSS Console Extension Assignment - Extension Port connected to DSS	Up to eight digits	No Setting
30-03-01	DSS Console Key Assignment		The DSS keys 001~060 of all DSS consoles = DSS/One-Touch key 101~160 The DSS keys 061~114 of all DSS consoles = No Setting

Program No.	Program Name	Input Data	Default
40-07-01	Voice Prompt Language Assignment for System Based - Voice Prompt Language	01 = US English 02 = UK English 03 = Australian English 04 = French Canadian 05 = Dutch 06 = Mexican Spanish 07 = Latin America Spanish 08 = Italian 09 = German 10 = Madrid Spanish 11 = Norwegian 12 = Parisian French 13 = Brazilian Portuguese 14 = Japanese 15 = Mandarin Chinese 16 = Korean 17 = Iberian Portuguese 18 = Greek 19 = Danish 20 = Swedish 21 = Thai 22 = Mandarin Chinese (Taiwan) 23 = Flemish 24 = Turkish 25 = Arabic 26 = Russian	3
42-01-01	System Options for Hotel/Motel - Answering Message Mode for Wake Up Call (Hotel Mode)	0 = MOH (Hold Time) 1 = VAU Message 2 = VAU Message + Time	0
42-01-02	System Options for Hotel/Motel - Wake Up Call Message Assignment	0 ~ 100 (0 = No setting)	0
42-01-03	System Options for Hotel/Motel - Wake Up Call No Answer	0 = No Transfer 1 = Transfer to the Operator	0
42-01-04	System Options for Hotel/Motel - Setup Message Mode for Wake Up Call (Hotel Mode)	0 = Confirmation Tone 1 = VAU Message 2 = Time Stamp + VAU Message	0
42-01-05	System Options for Hotel/Motel - Wake Up Call Message Assignment	0 ~ 100 (0 = No setting)	0
42-01-06	System Options for Hotel/Motel - Flexible Room Status	0 = Disabled 1 = Enabled	0
42-01-07	System Options for Hotel/Motel - Snooze Call-back Timer	0 = Disabled 1 = Enabled	0
42-01-08	System Options for Hotel/Motel - Snooze Call-back Setting Dial	0~9, *, # (Up to one digit)	1
42-02-01	Hotel/Motel Telephone Setup - Hotel Mode	0 = Normal 1 = Hotel	0
42-02-02	Hotel/Motel Telephone Setup - Toll Restriction Class When Check In	1 ~ 15	1
42-03-01	Class of Service Options (Hotel/Motel) - Check-In Operation	0 = Off 1 = On	Class 01 ~ 15 = 1
42-03-02	Class of Service Options (Hotel/Motel) - Check-Out Operation	0 = Off 1 = On	Class 01 ~ 15 = 1
42-03-03	Class of Service Options (Hotel/Motel) - Room Status Output	0 = Off 1 = On	Class 01 ~ 15 = 1
42-03-04	Class of Service Options (Hotel/Motel) - DND Setting for Other Extension	0 = Off 1 = On	Class 01 ~ 15 = 1
42-03-05	Class of Service Options (Hotel/Motel) - Wake up Call Setting for Other Extension	0 = Off 1 = On	Class 01 ~ 15 = 1
42-03-06	Class of Service Options (Hotel/Motel) - Room Status Change for Other Extension	0 = Off 1 = On	Class 01 ~ 15 = 1

Program No.	Program Name	Input Data	Default
42-03-07	Class of Service Options (Hotel/Motel) - Restriction Class Changing for Other Extension	0 = Off 1 = On	Class 01 ~ 15 = 1
42-03-08	Class of Service Options (Hotel/Motel) - Room to Room Call Restriction	0 = Off 1 = On	Class 01 ~ 15 = 1
42-03-09	Class of Service Options (Hotel/Motel) - DND Setting for Own Extension	0 = Off 1 = On	Class 01 ~ 15 = 1
42-03-10	Class of Service Options (Hotel/Motel) - Wake Up Call Setting for Own Extension	0 = Off 1 = On	Class 01 ~ 15 = 1
42-03-11	Class of Service Options (Hotel/Motel) - Change Room Status for Own Extension	0 = Off 1 = On	Class 01 ~ 15 = 1
42-03-12	Class of Service Options (Hotel/Motel) - SLT Room Monitor	0 = Off 1 = On	Class 01 ~ 15 = 1
42-04-01	Hotel Mode One-Digit Service Codes - Hotel Mode One-Digit Service Codes	Destination Number Up to eight digits	No Setting
42-05-01	Hotel Room Status Printer - Output Port Type	0 = No Setting 3 = LAN	0
42-05-03	Hotel Room Status Printer - Wake Up Call No Answer Data	0 = Not Output 1 = Output	0
42-05-04	Hotel Room Status Printer - Check-Out Sheet	0 = Not Output 1 = Output	0
45-02-05	NSL Option Setup - Send 4PM message	0 = Off 1 = On	0

Operation

None

Hotel/Motel - Do Not Disturb

Description

Use **Do Not Disturb** to block your incoming calls so that you can have privacy.

Do Not Disturb (DND) blocks incoming telephone calls and Paging announcements. A guest can activate DND anytime they need privacy (for example, if they need to work uninterrupted). Once a guest activates Do Not Disturb, they can still place calls and dial other hotel/motel services from their room telephone. Callers to the DND extension hear error tone or the voice prompt, *"Please do not disturb"* (if installed).

Supervisor's stations can remotely activate and cancel Do Not Disturb for room telephones. If you allow room telephones to activate DND, you should also allow supervisor stations to remotely activate and cancel. Checking out a guest also deactivates their phone Do Not Disturb.

Conditions

None

Default Settings

Disabled

System Availability

Terminals

Refer to Hotel/Motel.

Required Component(s)

Refer to Hotel/Motel.

Related Features

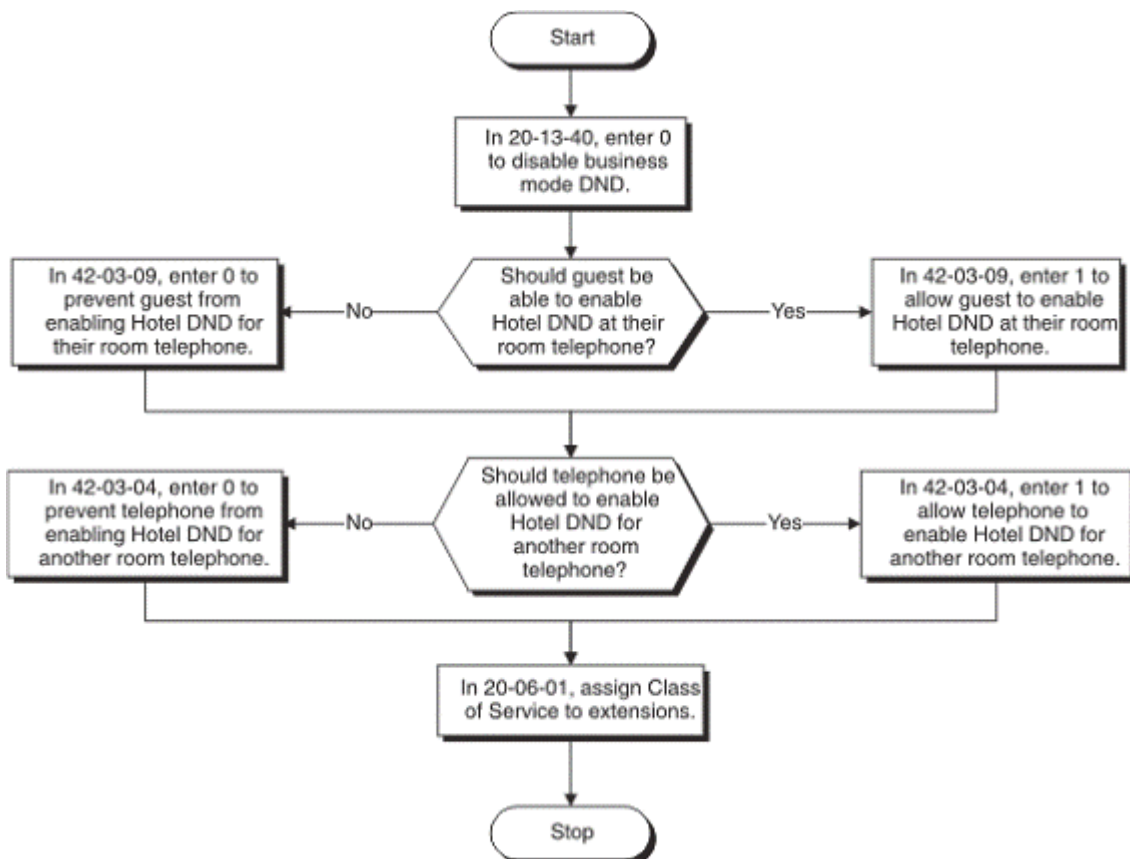
Hotel/Motel

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-13-40	Class of Service Options (Supplementary Service) - Do Not Disturb	0 = Off 1 = On	COS 01 ~ 15 = 1

Program No.	Program Name	Input Data	Default
42-03-04	Class of Service Options (Hotel/Motel) - DND Setting for Other Extension	0 = Off 1 = On	Class 01 ~ 15 = 1
42-03-09	Class of Service Options (Hotel/Motel) - DND Setting for Own Extension	0 = Off 1 = On	Class 01 ~ 15 = 1

Setting Up



Operation

To Enable DND at a room telephone:

1. Lift the handset.
2. Dial **627**.

 You hear confirmation tone after you dial the code.

3. Hang up.

 The supervisor's station user can still call the extension by using the business mode feature Do Not Disturb Override.

To Cancel DND at a room telephone:

1. Lift the handset.

 *You hear stutter dial tone when you lift the handset.*

2. Dial **628**.

 *You hear confirmation tone.*

3. Hang up.

To Enable DND at a room telephone:

Normally, only the supervisor's station has this ability.

1. Lift the handset.

2. Dial **629**.

3. Dial the number of the extension for which you want to enable DND.

 *You hear confirmation tone.*

4. Hang up.

To Cancel DND enabled at another room telephone:

Normally, only the supervisor's station has this ability.

1. Lift the handset.

2. Dial **630**.

3. Dial the number of the extension for which you want to disable DND.

 *You hear confirmation tone.*

4. Hang up.

Hotel/Motel - DSS Console Monitoring

Description

Use **DSS Console Monitoring** to see who has messages and Wake-Up Calls and even their room's status. The DSS Console provides the supervisor's station with unique one-touch room monitoring abilities. Instead of relying on an elaborate off-line tracking system, the supervisor can press a button on their DSS Console to see:

- Room telephones with voice mail messages waiting
- Room telephones that have Wake Up Calls set or missed
- The status of each room (Checked In, Checked Out, Maid Required, Maid in Room, or Ready to Inspect) The DSS Console also gives the supervisor's station the full complement of business mode DSS Console features, including:
- One-button calling to extensions, Door Boxes and outside lines
- Busy Lamp Field (BLF) for extensions and Door Boxes
- Night Service Mode switching
- One-button access to Service Codes and Programmable Feature Key codes

Conditions

None

Default Settings

DSS Consoles are not assigned. Refer to [Setting Up DSS Console Monitoring](#) after plugging in the console. The console example shown next illustrates some common button assignments.

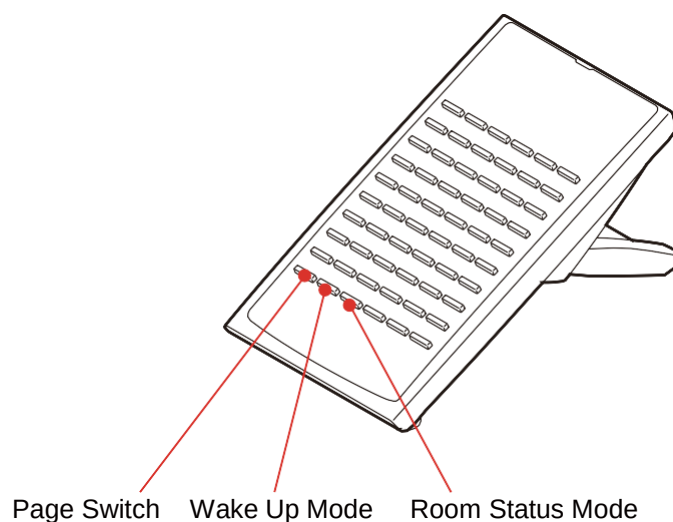


Figure 1-17 Digital (2W) DSS Console



These buttons are not programmed at default and must be set in PRG 30-03-01.

Page Switch	ON = Buttons 1 ~ 54 are Rooms 1 ~ 54 SLOW FLASH = Buttons 61 ~ 114 are Rooms 61 ~ 114	Digital (2W) DSS Console

Wake Up Mode	ON = Wake Up Mode Set OFF = Wake Up Mode Not Set FAST FLASH = Wake Up Call Missed	
Room Status Mode	ON = Checked In and Clean OFF = Checked Out (clean and available) SLOW FLASH = Maid Required (Digital (2W) DSS Console) MEDIUM FLASH = Maid in Room FAST FLASH = Inspect Room (Digital (2W) DSS Console)	

System Availability

Terminals

Refer to Hotel/Motel.

Required Component(s)

Refer to Hotel/Motel.

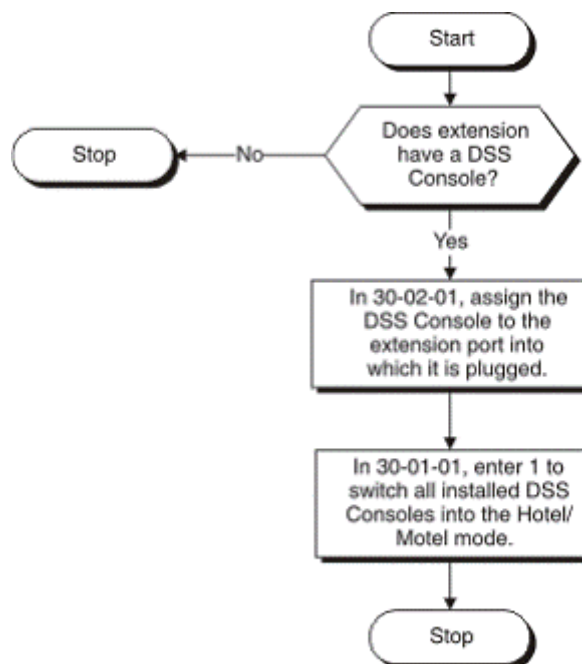
Related Features

Hotel/Motel

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
20-13-41	Class of Service Options (Supplementary Service) - Voice Mail Message Indication on DSS	0 = Off 1 = On	COS 01 ~ 15 = 0
30-01-01	DSS Console Operating Mode - DSS Operation Mode	0 = Business Mode 1 = Hotel Mode	0
30-02-01	DSS Console Extension Assignment - Extension Port connected to DSS	Up to eight digits	No Setting
30-03-01	DSS Console Key Assignment		The DSS keys 001~060 of all DSS consoles = DSS/One-Touch key 101~160 The DSS keys 061~114 of all DSS consoles = No Setting

Setting Up



Operation

To check which room telephones have Messages Waiting:

- Without lifting the handset, make sure the keys programmed for Room Status Mode and Wake Up Call mode are off.

If the DSS key is:	The guest has:
ON (Red)	A Message Waiting
OFF	No messages

To check which room telephones have Wake Up Calls set:

- Without lifting the handset, press the **WAKE UP** key (Function Code 92).

If the DSS key is:	The guest has:
ON (Red)	Wake Up Call set
OFF	No Wake Up Call set
FAST FLASH (Red)	Wake Up Call missed

To view the Status of a room:

- Without lifting the handset, press the **STATUS** key (Function Code 93).

If the DSS key is:	The guest has:
ON (Red)	Checked In and Clean
OFF	Checked Out (Clean and Available)
SLOW FLASH (Red)	Maid Required (Digital (2W) DSS Console)
MEDIUM FLASH (Red)	Maid in Room
FAST FLASH (Red)	Inspect (Digital (2W) DSS Console)

To view the Status of rooms 1~54 or 61~114: (Digital (2W) DSS Console)

- Without lifting the handset, press the **PAGE SWITCHING** key (Function Code 95).

If the DSS key is:	The DSS Console Indicates:
ON (Red)	Buttons 1~54 are Rooms 1~54
SLOW FLASH (Red)	Buttons 61~114 are Rooms 61~114

Hotel/Motel - Message Waiting

Description

Use **Message Waiting** so that while a guest is out they can leave a message waiting so they can automatically call you when they return.

If you call a guest and they are away from their room, leave them a Message Waiting for a return call. When the guest returns, they see the lamp on their phone flashing. To return the message, the guest goes to the phone and dials the Message Waiting code. The system then automatically places a call to the extension that initially left the message.

Use Message Waiting when you have mail, parcels or other packages for a guest dropped off at your front desk. Instead of constantly redialing the room hoping to find the guest in, just send them a Message Waiting. In that way, you'll be sure to get a return call as soon as the guest arrives.



An option is available for analog Single Line Terminals with MW Lamp to allow for a Message Waiting indications.

Conditions

None

Default Settings

Enabled

System Availability

Terminals

Refer to Hotel/Motel.

Required Component(s)

Refer to Hotel/Motel.

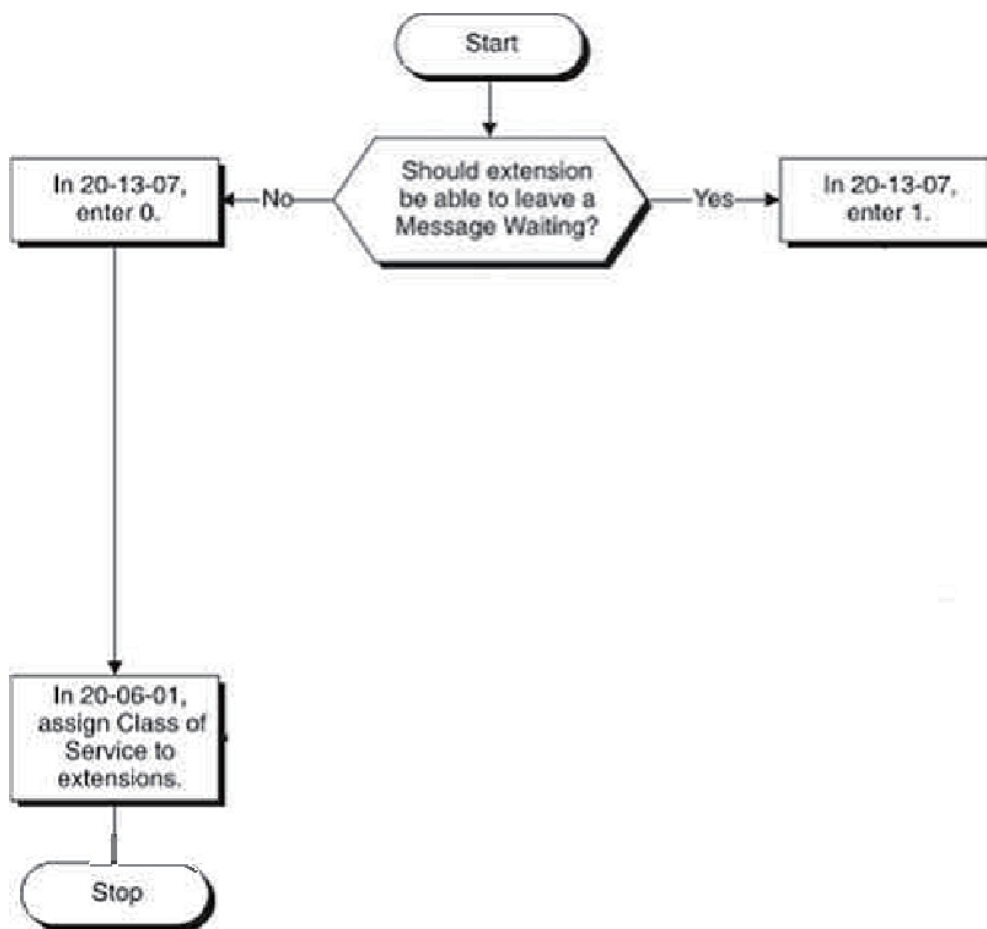
Related Features

Hotel/Motel

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
15-03-09	Single Line Telephone Basic Data Setup - Caller ID Function	0 = Disable (Caller ID not displayed.) 1 = Enable (Caller ID is displayed.)	0
15-03-10	Single Line Telephone Basic Data Setup - Caller Name	0 = Disable 1 = Enable	1
15-03-11	Single Line Telephone Basic Data Setup - Caller ID Type	0 = FSK 1 = DTMF	0
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-13-07	Class of Service Options (Supplementary Service) - Message Waiting	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-41	Class of Service Options (Supplementary Service) - Voice Mail Message Indication on DSS	0 = Off 1 = On	COS 01 ~ 15 = 0

Setting Up



Operation

To leave a Message Waiting:

Normally, only the supervisor's station has this ability.

1. Call the room telephone.
2. Dial **0**.



You hear confirmation tones. The Message Waiting lamp on the telephone you called flashes.

3. Hang up.



*If you want to cancel the message you just left, lift the handset and dial **773**. If you know the number of the extension at which you left the message, dial **771** and that extension number instead.*

To leave a Message Waiting without first calling the extension:

The supervisor's station is typically the only phone with this ability.

1. Lift the handset.
2. Dial **626**.
3. Dial the number of the room telephone where you want to leave the message waiting.



You hear confirmation tones.

To answer a Message Waiting left at your telephone:

Your Message Waiting lamp flashes when you have a message.

1. Lift the handset and listen for dial tone.
2. Dial ***0**.



You automatically call the extension that left you a message.

Hotel/Motel - PMS Integration

Description

Hotel/Motel

As an enhancement to the Hotel Motel feature the SL2100 can support third party Property Management System (PMS) applications.

The Lua PMS application provide IP PMS to SL2100 integration. The Lua PMS application loaded onto the CPU-C1 using the Lua Application Manager and the device serve as a gateway between the PMS application and the SL2100, or via direct integration to the SL2100's own PMS stream.

Using the Lua PMS Application, the supported PMS protocols are NEAX 90-K, NEAX 60-K, KTSi and KTSi with ENQ. The Lua PMS Application does not support FIAS 2.11 Fidelio protocol.

Conditions

- Lua PMS requires system software Ver. 1.50 or higher.
- The Lua PMS connection is controlled by license SL2100 PMS LIC and SL2100 LUA PMS LIC.

Default Settings

Disabled

Required Component(s)

- Hotel/Motel Hospitality License (SL2100 HOTEL LIC)
- PMS Integration License (SL2100 PMS LIC)
- PMS API Converter License (SL2100 LUA PMS LIC)

Related Features

Hotel/Motel

SMDR

Message Waiting

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-12-01	CPU Network Setup - IP Address	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	192.168.0.10

Program No.	Program Name	Input Data	Default
10-12-02	CPU Network Setup - Subnet Mask	128.0.0.0 192.0.0.0 224.0.0.0 240.0.0.0 248.0.0.0 252.0.0.0 254.0.0.0 255.0.0.0 255.128.0.0 255.192.0.0 255.224.0.0 255.240.0.0 255.248.0.0 255.252.0.0 255.254.0.0 255.255.0.0 255.255.128.0 255.255.192.0 255.255.224.0 255.255.240.0 255.255.248.0 255.255.252.0 255.255.254.0 255.255.255.0 255.255.255.128 255.255.255.192 255.255.255.224 255.255.255.240 255.255.255.248 255.255.255.252 255.255.255.254 255.255.255.255	255.255.255.0
10-12-03	CPU Network Setup - Default Gateway	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0
10-12-09	CPU Network Setup - IP Address (VoIPDB)	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	172.16.0.10
10-12-10	CPU Network Setup - Subnet Mask (VoIPDB)	128.0.0.0 192.0.0.0 224.0.0.0 240.0.0.0 248.0.0.0 252.0.0.0 254.0.0.0 255.0.0.0 255.128.0.0 255.192.0.0 255.224.0.0 255.240.0.0 255.248.0.0 255.252.0.0 255.254.0.0 255.255.0.0 255.255.128.0 255.255.192.0 255.255.224.0 255.255.240.0 255.255.248.0 255.255.252.0 255.255.254.0 255.255.255.0 255.255.255.128 255.255.255.192 255.255.255.224 255.255.255.240 255.255.255.248 255.255.255.252 255.255.255.254 255.255.255.255	Refer to the programming manual for all the possible valid subnet mask entries. (default = 255.255.0.0)
11-14-01	Service Code Setup (for Hotel) - Set DND for Own Extension	0~9, *, # Maximum of 8 digit	627
11-14-02	Service Code Setup (for Hotel) - Cancel DND for Own Extension	0~9, *, # Maximum of 8 digit	628
11-14-03	Service Code Setup (for Hotel) - Set DND for Other Extension	0~9, *, # Maximum of 8 digit	629
11-14-04	Service Code Setup (for Hotel) - Cancel DND for Other Extension	0~9, *, # Maximum of 8 digit	630
11-14-05	Service Code Setup (for Hotel) - Set Wake Up Call for Own Extension	0~9, *, # Maximum of 8 digit	631
11-14-06	Service Code Setup (for Hotel) - Cancel Wake Up Call for Own Extension	0~9, *, # Maximum of 8 digit	632
11-14-07	Service Code Setup (for Hotel) - Set Wake Up Call for Other Extension	0~9, *, # Maximum of 8 digit	633
11-14-08	Service Code Setup (for Hotel) - Cancel Wake Up Call for Other Extension	0~9, *, # Maximum of 8 digit	634
11-14-09	Service Code Setup (for Hotel) - Set Room to Room Call Restriction	0~9, *, # Maximum of 8 digit	635

Program No.	Program Name	Input Data	Default
11-14-10	Service Code Setup (for Hotel) - Cancel Room to Room Call Restriction (Hotel)	0~9, *, # Maximum of 8 digit	636
11-14-11	Service Code Setup (for Hotel) - Change Toll Restriction Class for Other Extension	0~9, *, # Maximum of 8 digit	637
11-14-12	Service Code Setup (for Hotel) - Check-In	0~9, *, # Maximum of 8 digit	638
11-14-13	Service Code Setup (for Hotel) - Check-Out	0~9, *, # Maximum of 8 digit	639
11-14-14	Service Code Setup (for Hotel) - Room Status Change for Own Extension	0~9, *, # Maximum of 8 digit	640
11-14-15	Service Code Setup (for Hotel) - Room Status Change for Other Extension	0~9, *, # Maximum of 8 digit	641
11-14-16	Service Code Setup (for Hotel) - Room Status Output	0~9, *, # Maximum of 8 digit	642
11-14-17	Service Code Setup (for Hotel) - Hotel Room Monitor	0~9, *, # Maximum of 8 digit	675
11-14-18	Service Code Setup (for Hotel) - Hotel PMS Toll Restriction Set	0~9, *, # Maximum of 8 digit	666
20-17-01	Operator Extension - Operator's Extension Number	Up to eight digits	101
42-02-01	Hotel/Motel Telephone Setup - Hotel Mode	0 = Normal 1 = Hotel	0
42-02-02	Hotel/Motel Telephone Setup - Toll Restriction Class When Check In	1 ~ 15	1
42-03-13	Class of Service Options (Hotel/Motel) - PMS Restriction Level	0 = Off 1 = On	Class 01 ~ 15 = 1
42-05-05	Hotel Room Status Printer - PMS Protocol type	0 = Normal 1 = Fidelio	0
42-06-01	PMS Service Setting - PMS Port Number	0 ~ 65535	5129
42-06-02	PMS Service Setting - 3:00 AM Auto Room Scan Determine if the system scans the status of Hotel rooms at 3:00 AM.	0 = Off 1 = On	0
42-06-03	PMS Service Setting - CheckIn Message Type	0 = Off 1 = On	0
42-06-04	PMS Service Setting - CheckOut Auto Status Change	0 = Off 1 = On	0
42-06-05	PMS Service Setting - AREYUTHERE/LINETEST Send Timing	1 ~ 128 seconds	10
42-06-06	PMS Service Setting - AREYUTHERE/LINETEST Send Count	0 ~ 20 (times)	3
42-06-07	PMS Service Setting - Check-Out Auto Flexible Status Change	0 = Off 1 = On	0
42-06-08	PMS Service Setting - Status for Check-Out Auto Flexible Status Change	1 = Room Clean(Occupied) 2 = Maid Required 3 = Maid in Room 4 = Inspection Required 5 = Maintenance Request 6 = Out of Order 7 = Reserve 1 8 = Reserve 2 9 = Reserve 3 0 = Room Clean(Vacant) * = Reserve 5 # = Reserve 6	4

Program No.	Program Name	Input Data	Default
42-07-01	PMS Restriction Level Conversion Table - PMS Restriction Level Conversion	1 ~ 15	Level 0=10 Level 1=11 Level 2=12 Level 3=13

Operation

None

Hotel/Motel - Room Status

Description

Use **Room Status** to set and monitor the status of your guest. Use your phone and DSS Console to set and monitor the status of guest rooms. Room Status helps you maximize room usage by coordinating the cleaning staff and reservation desk. Use simple codes to set room status. And, press the key programmed for Room Status Mode (Function 93) on your console to see the status of all guest rooms at a single glance.

Four Room Status options are available:

- **Check-in Options**

Check-in options override house cleaning options. Also, changing a room check-in status affects Toll Restriction (When Checked In).

- **Checked In**

The guest has checked into the room. This option is Room Clean on the Room Status Printout. Normally, only the front desk can use this option.

- **Checked Out**

The room is clean, checked out and available for a new guest. All house cleaning is complete. This option is Inspection Required on the Room Status Printout. Normally, only the front desk can use this option.

- **House Cleaning Options**

- **Maid Required**

The room is vacant, was inspected and needs to be cleaned. The room is not checked out and available for a new guest.

This option is Maid Required on the Room Status Printout.

- **Maid in Room**

House cleaning is currently working in the room. The room is not checked out and is not available for a new guest.

This option is Maid in Room on the Room Status Printout.

Conditions

- View current room status in PRG 42-02-03 via WebPro and PhonePro.
- Use PRG 42-01-06 to enable (1) or disable (0) the ability to change from any room status code to any other room status code.
- When PRG 42-01-06 is disabled valid room status changes are limited.
- The current room status in PRG 42-02-03 cannot be checked via PCPro.

Default Settings

Disabled

System Availability

Terminals

Refer to Hotel/Motel.

Required Component(s)

Refer to Hotel/Motel.

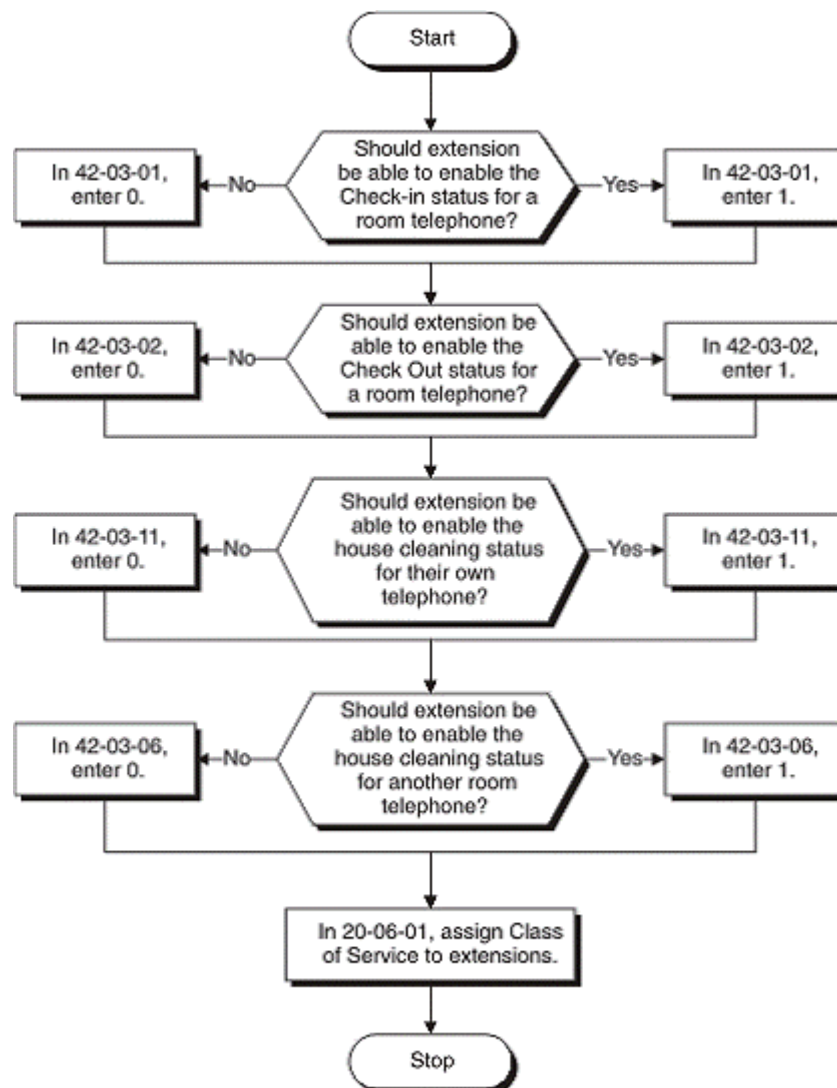
Related Features

Hotel/Motel

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
42-01-06	System Options for Hotel/Motel - Flexible Room Status	0 = Off 1 = On	0
42-02-03	Hotel/Motel Telephone Setup - Room Status (Reference Only)	Read Only: 1 = Room Clean (Occupied) 2 = Maid Required 3 = Maid in Room 4 = Inspection Required 5 = Maintenance Request 6 = Out of Order 7 = Reserve 1 8 = Reserve 2 9 = Reserve 3 0 = Room Clean(Vacant) * = Reserve 5 # = Reserve 6	-
42-03-01	Class of Service Options (Hotel/Motel) - Check-In Operation	0 = Off 1 = On	Class 01 ~ 15 = 1
42-03-02	Class of Service Options (Hotel/Motel) - Check-Out Operation	0 = Off 1 = On	Class 01 ~ 15 = 1
42-03-06	Class of Service Options (Hotel/Motel) - Room Status Change for Other Extension	0 = Off 1 = On	Class 01 ~ 15 = 1
42-03-11	Class of Service Options (Hotel/Motel) - Change Room Status for Own Extension	0 = Off 1 = On	Class 01 ~ 15 = 1
42-09-01	Flexible Setup for Room Status - Flexible Setup for Room Status	1 = Room Clean (Occupied) 2 = Maid Required 3 = Maid in Room 4 = Inspection Required 5 = Maintenance Request 6 = Out of order 7 = Reserve 1 8 = Reserve 2 9 = Reserve 3 0 = Room Clean (Vacant) * = Reserve 5 # = Reserve 6	1 - # = None

Setting Up



Operation

Check-in Options

To set a room as checked in:

Set a room as checked in as the guest registers at the front desk.

1. Lift the handset.
2. Dial **638**.
3. Dial the extension number of the room you want to check in.

 *You hear confirmation tone.*

4. Hang up.

 *In the STATUS mode, the DSS Console key for the room is on.*

To set a room as checked out:

*Set a room as checked out after your guest checks out and the room is clean. You can set a room as checked out only if you have previously dialed **638** to check it in.*

1. Lift the handset.
2. Dial **639**.
3. Dial the extension number of the room you want to check out.



You hear confirmation tone.

4. Hang up.



In the STATUS mode, the DSS Console key for the room is off.

House Cleaning Options**To set a room house cleaning status from the room telephone:**

Your cleaning staff can set the room status.

1. Lift the handset.
2. Dial **640**.
3. Dial the room status code:
 - 1 = Room Clean (Occupied)
 - 2 = Maid Required
 - 3 = Maid in Room
 - 4 = Inspection Required
 - 5 = Maintenance Request
 - 6 = Out of Order
 - 7 = Reserve 1
 - 8 = Reserve 2
 - 9 = Reserve 3
 - 0 = Room Clean (Vacant)
 - * = Reserve 5
 - # = Reserve 6



You hear confirmation tone.

4. Hang up.



In the STATUS mode, the DSS Console shows the room status: Slow Flash for Maid Required; Fast Flash for Inspect Room. (Digital (2W) DSS Console)

To set room status from another telephone:

The supervisor's station should be the only telephone with this ability.

1. Lift the handset.
2. Dial **641**.
3. Dial the extension number of the room you want to set.

4. Dial the room status code:
 - 1 = Room Clean (Occupied)
 - 2 = Maid Required
 - 3 = Maid in Room
 - 4 = Inspection Required 5 = Maintenance Request 6 = Out of Order
 - 7 = Reserve 1
 - 8 = Reserve 2
 - 9 = Reserve 3
 - 0 = Room Clean (Vacant)
 - * = Reserve 5
 - # = Reserve 6
5. You hear confirmation tone.
6. Hang up.



In the STATUS mode, the DSS Console shows the room status: Slow Flash for Maid Required; Fast Flash for Inspect Room. (Digital (2W) DSS Console)

Hotel/Motel - Room Status Printout

Description

Use the **Room Status Printout** to get detailed, up-to-the-minute printouts that show the status of all your rooms. Use the Room Status Printout to get a concise overview of the status of guest rooms at a glance. The printout gives you up to the minute reports showing Check In Status, Room Call Restriction, Do Not Disturb, Message Waiting and Wake Up Calls. This feature requires a connection to the system using an IP port on the CPU. Five separate reports are available

Room Status List (Option 1)

The Room Status List shows the status of each room. This gives you an overview of all rooms in a single report. In the report below:

- *Room Clean*
Lists all the Checked In rooms (305, 311 and 315).
- *Maid Required*
Lists all the vacant rooms that need cleaning (309).
- *Maid in Room*
Lists the rooms in which house cleaning is currently working (317).
- *Inspection Required*
Lists the rooms that are Checked Out waiting to be cleaned up (313).

```
Room Status List ----- 03/03/06 12:15
Room Clean (Occupied) --- Check In
 305      311      315
Maid Required
 309
Maid in Room
 317
Inspection Required
 313
```

Call Restriction List (Option 2)

The Call Restriction List shows the status of Room-to-Room Call Restriction and Toll Restriction at each phone. In the following report:

- *Room-to-Room Barring*
Shows which extensions have Room-to-Room Call Restriction enabled (311).
- *Outside Call Class*
Lists the Toll Restriction Level for each extension. If an extension is checked in, this report shows the Toll Restriction When Checked In level. If the extension is checked out, this report shows the business mode Toll Restriction level.

```
Calling Class List ----- 03/03/06
12:15
Room to Room Barring
 311
Outside Call Class
 305 -05      309 -01      311 -03
```

Do Not Disturb and Room Clean List (Option 3)

This report shows two things: Rooms in Do Not Disturb and rooms with a house cleaning option enabled. This is an important report for the cleaning staff. The first section of the report shows the rooms that should not be disturbed for any reason. The second section of the report shows rooms that need to be cleaned or that housecleaning is currently cleaning.

- *Do-Not Disturb*
Lists all rooms that have enabled Do Not Disturb (309).

- *Clean Up Check*

Provides a summary report of rooms that are unavailable because they are either checked in or checked out (313). You may want to check these rooms to see if they need cleaning. Rooms not in this report are unoccupied and available.

DND and Clean Up Check	-----	03/03/06
12:15		
DO-NOT-DISTURB		
309		
CLEAN UP CHECK		
313		

Message Waiting List (Option 4)

This report lists all the rooms that have Messages Waiting (307 and 311). Be sure to clear the Messages Waiting for all rooms that are checked out or available (clean).

Message Service List	-----	03/03/06
12:15		
307	311	

Wake Up Call List (Option 5)

This report lists all the rooms that have Wake Up calls (307, 311 and 339) and shows the time set for each call. An asterisk (*) in front of the extension number indicates that the Wake Up Call was unanswered. Consider checking on the guests that have unanswered Wake Up Calls.

Wake Up Call List	-----	03/03/06
07:15		
307	-07:55	*311 -6:55 339 -
07:15		



Room Status Reports require a LAN connection

Conditions

None

Default Settings

Disabled

System Availability

Terminals

Refer to Hotel/Motel.

Required Component(s)

Refer to Hotel/Motel.

Related Features

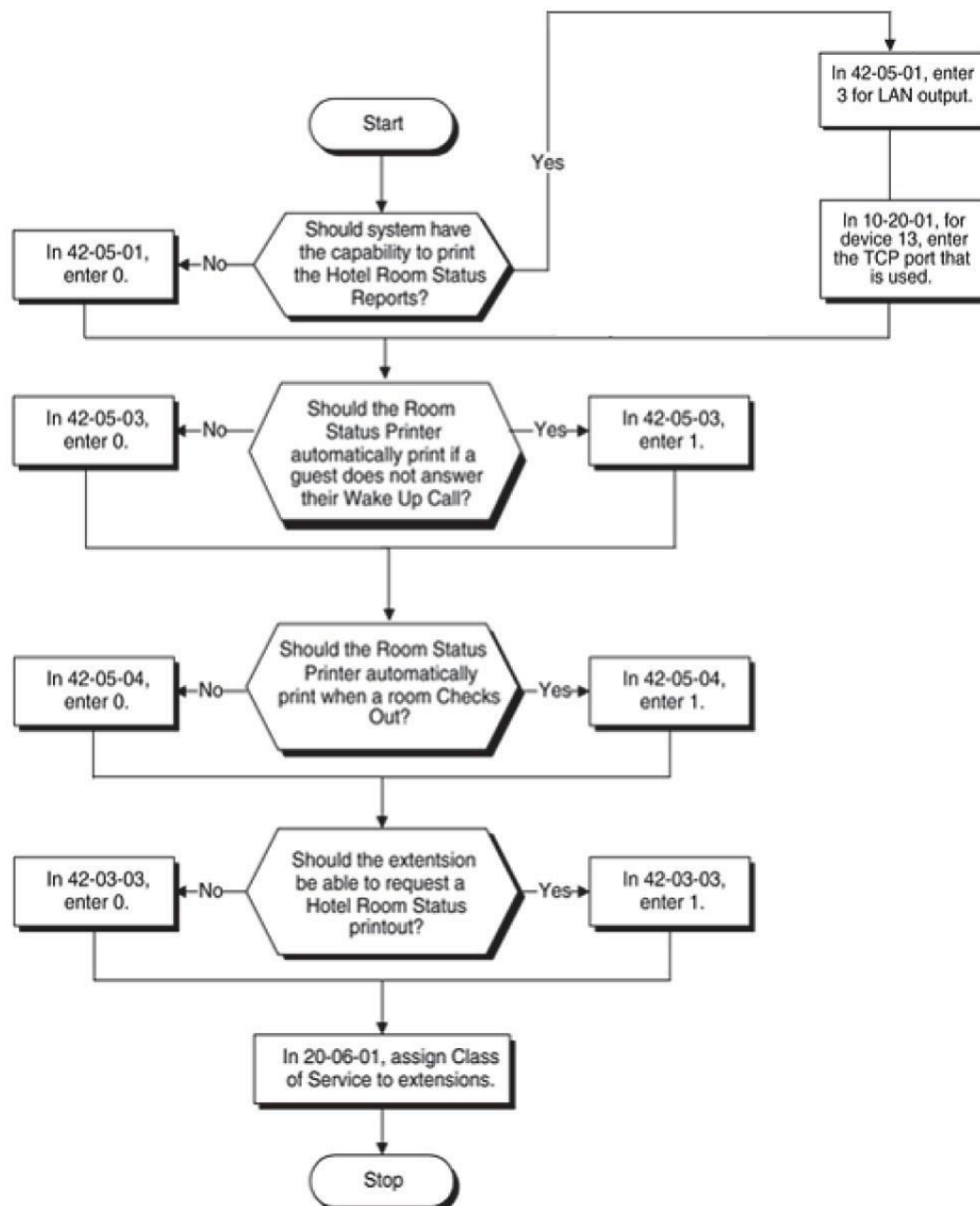
Hotel/Motel

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-20-01	LAN Setup for External Equipment - TCP Port	Available values are: 0 ~ 65535	External Device 1 (CTI Server) = 0 External Device 2 (ACD-MIS) = 0 External Device 4 (Networking System) = 30000 External Device 5 (SMDR Output) = 0 External Device 6 (DIM Output) = 0 External Device 8 (UC Web Application) = 0 External Device 9 (1st Party CTI) = 0 External Device 11 (O&M Server) = 8010 External Device 12 (Traffic Report Output) = 0 External Device 13 (Room Data Output for Hotel Service) = 0 External Device 14 (IP-DECT Directory Access) = 0 External Device 15 (Presence) = 0
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
42-05-01	Hotel Room Status Printer - Output Port Type	0 = No Setting 3 = LAN	0
42-05-03	Hotel Room Status Printer - Wake Up Call No Answer Data	0 = Not Output 1 = Output	0
42-05-04	Hotel Room Status Printer - Check-Out Sheet	0 = Not Output 1 = Output	0

Setting Up

Setting Up Room Status Printouts



Operation

To have your printer output the Room Status Printout:

Your printer should be located conveniently next your telephone.

1. Lift the handset.
2. Dial **642**.

3. Dial the Room Status Printout option:
 - 0 = All Printouts
 - 1 = Room Status List (Check-in and House Cleaning Status)
 - 2 = Call Restriction List
 - 3 = Do Not Disturb and Room Clean List
 - 4 = Message Waiting List
 - 5 = Wake Up Call List
4. Hang up.

Hotel/Motel - Room-to-Room Call Restriction

Description

Use **Room-to-Room Call Restriction** to help your guests keep their privacy by avoiding nuisance callers. Room-to-Room Call Restriction prevents guests in one room from calling guests in another. You'll find this restriction handy for guests that want to maintain their privacy. On the other hand, you may want to allow inter-room calling for families or groups that have separate rooms.

Conditions

An extension cannot enable Room-to-Room Call Restriction for a room telephone.



WARNING: If you enable Room-to-Room Call Restriction for a guest's phone, neither you nor any other Hotel Mode extension can call them while they are checked in. To call the guest's phone, first dial 639 to cancel the restriction. This may have implications in emergency situations.



Checking out a room (by dialing Service Code **639** automatically cancels Room-to-Room Call Restriction.

Default Settings

Disabled

System Availability

Terminals

Refer to Hotel/Motel.

Required Component(s)

Refer to Hotel/Motel.

Related Features

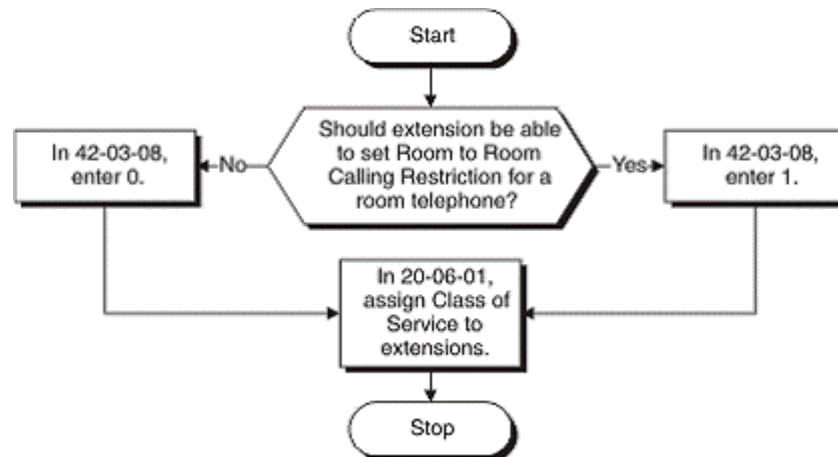
Hotel/Motel

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1

Program No.	Program Name	Input Data	Default
42-03-08	Class of Service Options (Hotel/Motel) - Room to Room Call Restriction	0 = Off 1 = On	Class 01 ~ 15 = 1

Setting Up



Operation

To enable Room-to-Room Call Restriction for a guest's telephone:

1. Lift the handset.
2. Dial **635**.
3. Dial the guest's telephone number.
You hear confirmation tone.



The guest cannot dial any other Hotel Mode extension. Consider having a single emergency phone that is not set for Hotel Mode (e.g., the operator). The guest can always call that phone, even with restriction enabled.

To disable Room-to-Room Call Restriction for a guest's telephone:

1. Lift the handset.
2. Dial **636**.
3. Dial the guest's telephone number.
You hear confirmation tone.

Hotel/Motel - Single Digit Dialing

Description

Use **Single Digit Dialing** to provide guests with one-touch access to services and departments. Single Digit Dialing gives guests one-touch access to important Hotel/Motel services. Rather than having your guests dial longer codes for services and departments, they can lift the handset and press a single key. The Single Digit Dialing codes can be:

- **Extension Numbers**

You can give guests one-touch access to the front desk, reservation services, housekeeping or the maitre d' of your restaurant. There is no need to publish an in-room directory of extension numbers for these services. The press of a single key automatically dials the assigned extension number.

- **Feature Access Codes**

Storing feature access codes gives you great flexibility in how you want guest phones to work. For example, you could have your guests dial 6 for local calls. The digit 6 could output 631, which is the access code for setting a wake-up call. Or, you could program the code 5 to automatically leave a Message Waiting at the maintenance office. In this example, dialing 5 could output 1050 which would leave a Message Waiting at extension 105 .

- **Voice Mail**

If you have mailboxes for your services (such as housekeeping), your guests can leave requests even when the service providers are unavailable. You cannot miss the requests and your guests can appreciate the convenience.

- **A Department Calling Group**

If you have several agents with extensions at your reservation desk, you could program them into a unique Department Calling Group. Then, assign a single digit to access the pilot number of the group. When a guest dials the digit, they go through to the first available agent. Refer to Department Calling in your Software Manual for additional details on Department Calling Groups.

Conditions

- When programming Single Digit Dialing, PRG 11-01-01 has priority over PRG 42-04-01.
- For options other than 9, PRG 11-01-01 must be set to two digits or more for Single Digit Dialing to work.

Default Settings

Disabled

System Availability

Terminals

Refer to Hotel/Motel.

Required Component(s)

Refer to Hotel/Motel.

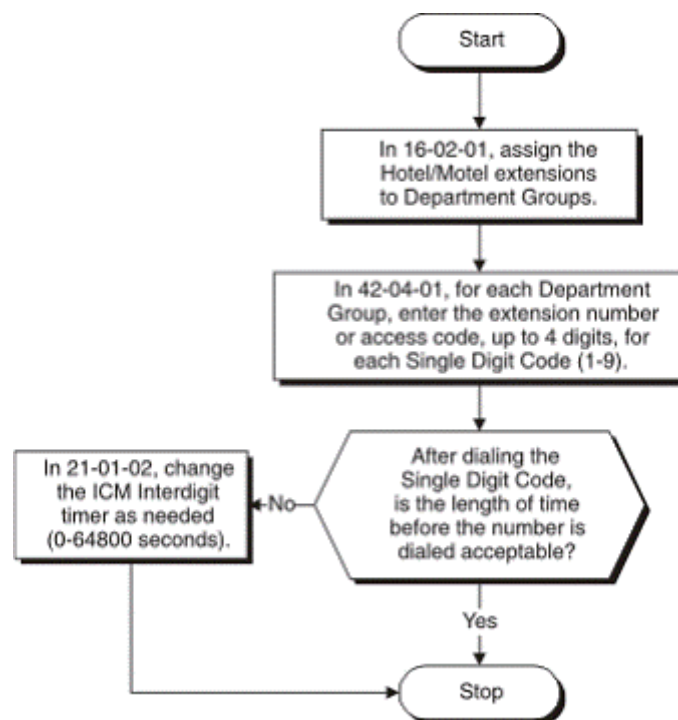
Related Features

Hotel/Motel

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
16-02-01	Department Group Assignment for Extensions	-	Refer to Programming Manual.
21-01-02	System Options for Outgoing Calls - Intercom Interdigit Time	0 ~ 64800 seconds	10
42-04-01	Hotel Mode One-Digit Service Codes - Hotel Mode One-Digit Service Codes	Destination Number Up to eight digits	No Setting

Setting Up



Operation

When a guest wants to use Single Digit Dialing:

They lift the handset and press a single dial pad key (1~9).

Hotel/Motel - Toll Restriction (When Checked In)

Description

With Toll Restriction (When Checked In), you can control guest's long distance dialing automatically when they check in. This option allows you to set up two completely different Toll Restriction modes. The first mode determines the type of call your staff can place from a room telephone when the room is checked out (Service Code **639**). This is the business mode Toll Restriction. The second mode sets the Toll Restriction limits for your guests as soon as you check them in (Service Code **638**). This is the hotel mode Toll Restriction.

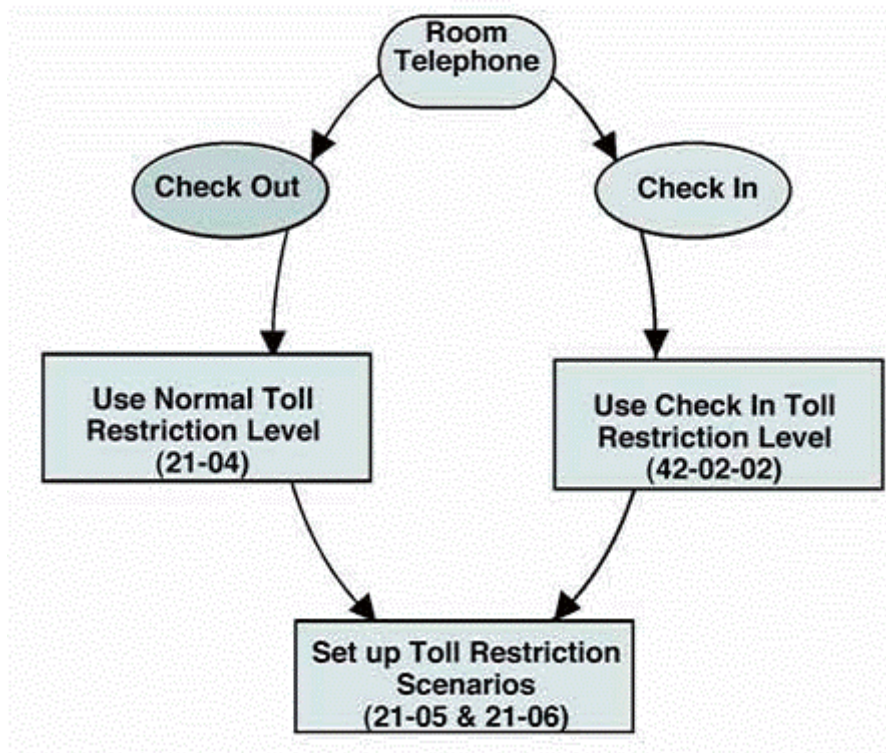
In the checked out mode, for example, you may want to allow your staff to call locally and within your area code. This would allow them to contact suppliers and other service providers without going to the front desk each time. In the checked in mode, however, you may want to completely restrict outgoing calls and force your guests to use your metered services. (This can also tie into [Single Digit Dialing](#).)

In many cases, such simplified Toll Restriction scenarios may be adequate. However, since each mode uses the full abilities of the system Toll Restriction programming, you can make the calling restriction as elaborate as it needs to be.

Toll Restriction (When Checked In) also allows you to change the Toll Restriction of a room telephone while the room is checked in. This allows you to provide more permissive Toll Restriction to high priority guests. It also allows you to enforce less permissive dialing privileges to guests if you suspect the potential for abuse.

 *If a room Toll Restriction is changed using access code **637**, that room keeps the new setting until it is either changed using access code **637** or in system programming.*

The following diagram shows the basic operation of Toll Restriction (When Checked In). When checked in, the room telephone follows the Check In Toll Restriction Level (set in PRG 42-02-02). When checked out, the room telephone follows the normal Toll Restriction Level (set in PRG 21-04-01). Both levels interact with the dialing restrictions set up in PRG 21-05 and 21-06. For more details, refer to [Setting Up](#).

**Conditions**

None

Default Settings

Disabled

System Availability**Terminals**

Refer to Hotel/Motel.

Required Component(s)

Refer to Hotel/Motel.

Related Features

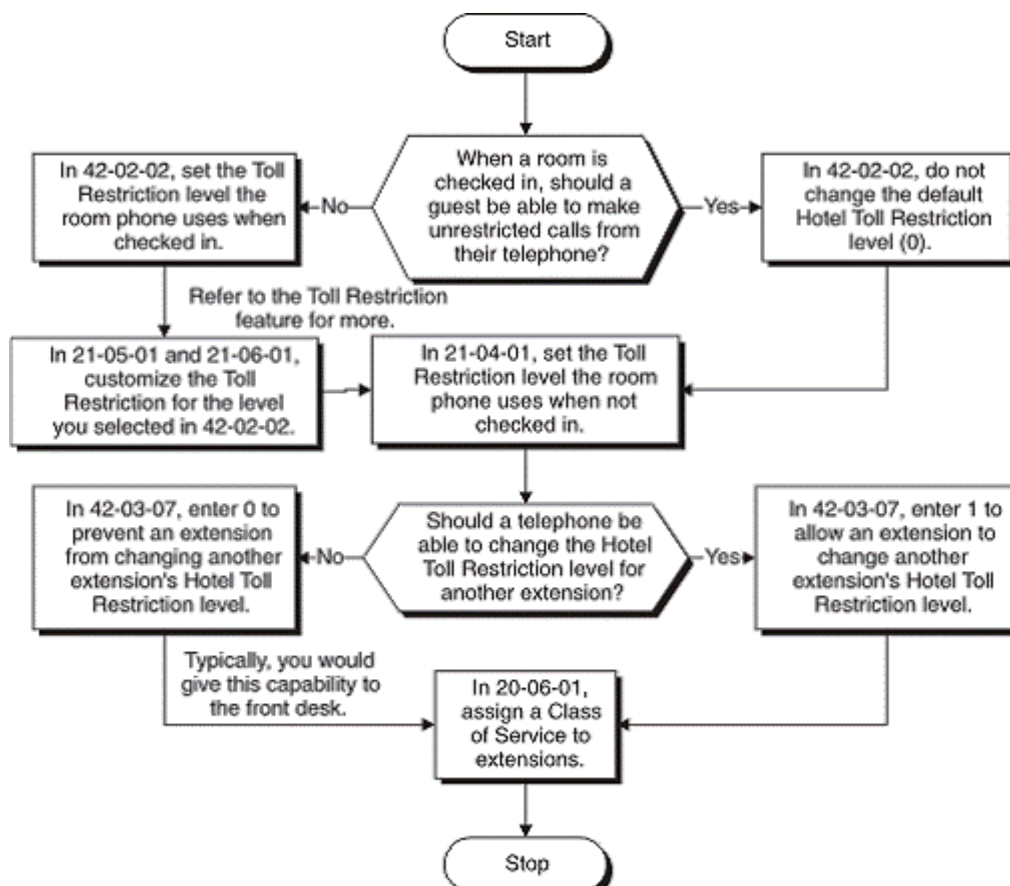
Hotel/Motel

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
21-04-01	Toll Restriction Class for Extensions - Restriction Class	1 ~ 15 = Toll Class 1 ~ 15	2
21-05-01	Toll Restriction Class - International Call Restriction Table	0 = Unassign (No international restrict table applied.) 1 = Assign (Table in PRG 21-06-01 is applied.)	Class No1, 6 ~ 15 : 0 Class No2 ~ 5 : 1
21-05-02	Toll Restriction Class - International Call Permit Code Table	0 = Unassign (No international permit table applied.) 1 = Assign (Table in PRG 21-06-02 is applied.)	Class No1, 3 ~ 15 : 0 Class No2 : 1
21-05-04	Toll Restriction Class - Maximum Number of Digits Table Assignment	0 = No Table Applied 1 ~ 4 = Tables 1 ~ 4 (Defined in PRG 21-06-03)	Class No1 ~ 2, 6 ~ 15 : 0 Class No3 : 1 Class No4 : 2 Class No5 : 3
21-05-05	Toll Restriction Class - Common Permit Code Table	0 = Unassign (No common permit table applied.) 1 = Assign (Table in PRG 21-06-04 is applied.)	Class No1, 8 ~ 15 : 0 Class No2 ~ 7 : 1
21-05-06	Toll Restriction Class - Common Restriction Table	0 = Unassign (No common restrict table applied.) 1 = Assign (Table in PRG 21-06-05 is applied.)	Class No1, 6 ~ 15 : 0 Class No2 ~ 5 : 1
21-05-07	Toll Restriction Class - Permit Code Table	0 = No Permit Table Assigned 1 ~ 4 = Permit Tables 1 ~ 4 (assigned in PRG 21-06-06)	Class No1 ~ 2, 6 ~ 15 : 0 Class No3 : 1 Class No4 : 2 Class No5 : 3
21-05-08	Toll Restriction Class - Restriction Table	0 = No Permit Table Assigned 1 ~ 4 = Restrict Tables 1 ~ 4 (assigned in PRG 21-06-07)	0
21-05-09	Toll Restriction Class - Restriction for Common Speed Dials	0 = Does Not Restrict 1 = Following Restriction Check	0
21-05-10	Toll Restriction Class - Restriction for Group Speed Dials	0 = Does Not Restrict 1 = Following Restriction Check	0
21-05-11	Toll Restriction Class - Intercom Call Restriction	0 = Disable (ICM call not restricted.) 1 = Enable (ICM call restricted.)	0
21-05-12	Toll Restriction Class - PBX Call Restriction	0 = Disable (PBX/CTX call not restricted.) 1 = Enable (PBX/CTX call restricted.)	Class 1 ~ 6 = 0 Class 7 = 1 Class 8 ~ 15 = 0
21-05-13	Toll Restriction Class - Restriction of Tie Line Calls	0 = Disable (No) 1 = Enable (Yes)	0
21-05-14	Toll Restriction Class - Trunk Transfer Restriction on Incomplete Dial	0 = Not allow 1 = Allow	0
21-05-15	Toll Restriction Class - Common Hold Restriction on Incomplete Dial	0 = Not allow 1 = Allow	0
21-06-01	Toll Restriction Table Data Setup - International Call Restriction Table		Tables 1~10 = No Setting
21-06-02	Toll Restriction Table Data Setup - International Call Permit Code Table		Tables 1~20 = No Setting

Program No.	Program Name	Input Data	Default
21-06-03	Toll Restriction Table Data Setup - Maximum Number of Digits Table Assignment		Tables 1~ 4 = 30
21-06-04	Toll Restriction Table Data Setup - Common Permit Code Table		Table 1 = 000 Table 2 ~ 10 = No Setting
21-06-05	Toll Restriction Table Data Setup - Common Restriction Table		
21-06-06	Toll Restriction Table Data Setup - Permit Code Table		Table 1~4 = No Setting
21-06-07	Toll Restriction Table Data Setup - Deny Restriction Table		Table 1~4 = No Setting
21-06-08	Toll Restriction Table Data Setup - PBX Access Code		Table 1~4 = No Setting
21-06-09	Toll Restriction Table Data Setup - Specific Dial Outgoing Code		Tables 1~20 = No Setting
21-06-10	Toll Restriction Table Data Setup - Outgoing Call Code Setup		Tables 1~20 = No setting
42-02-02	Hotel/Motel Telephone Setup - Toll Restriction Class When Check In	1 ~ 15	1
42-03-07	Class of Service Options (Hotel/Motel) - Restriction Class Changing for Other Extension	0 = Off 1 = On	Class 01 ~ 15 = 1

Setting Up



Operation

To change a room telephone Toll Restriction (When Checked In) level:

 *If a room Toll Restriction is changed using access code **637**, that room keeps the new setting until it is either changed using access code **637** or in system programming.*

1. Lift the handset.
2. Dial **637**.
3. Dial the number of the extension for which you want to change the Toll Restriction (When Checked In) level.

 *You hear a single beep.*

4. Enter the new Toll Restriction (When Checked In) level (01-15).

 *You hear confirmation tone.*

Hotel/Motel - Wake Up Call

Description

Use **Wake Up Call** to have your guests set their Wake Up Calls- or you can set Wake Ups for them. A Wake Up Call is like an alarm clock: Set it and it alerts the guest at prescribed time. But unlike a simple alarm clock, Wake Up Call has some unique advantages.

Guests can set or cancel Wake Up Calls for themselves, or you can set and cancel Wake Ups for them. In addition guests can set Snooze Callback for wake up calls.

When a guest answers their Wake Up Call, you can have the system play them a recorded message, or a recorded message followed by the time. If you choose the message or message/time option, your system repeats the message three times and then cancels the Wake Up Call. (This option is available only from analog Single Line Terminals.)

You can view the status of all wake up calls from your DSS Console. Press the key programmed for WAKE UP Call Indication Mode (function 92) to see which rooms have reminders set. Refer to [DSS Console Monitoring](#).

Optionally have **unanswered** Wake Up Calls call the operator and print on the Room Status Printout report. This helps you find out who needs another reminder or might need assistance. See [Room Status Printout](#) for more on the printed report.

Use Wake Up Call as a meeting reminder for convention attendees. If the meeting time gets changed, you can reset the reminder for all attendees.

When a guest answers their Wake Up Call, you can choose to play either Music on Hold or a VRS message as set in PRG 42-01-01 and PRG 42-01-02. If the system is set for the VRS message and the VRS is not available (connect connected, busy or PRG 42-01-02 is set to 0), Music on Hold is played instead.

Conditions

- For the Snooze Callback feature to work PRG 42-01-01 must be set to play a recorded VAU greeting or a recorded VAU greeting + Time.
- Up to a maximum of 16 telephones can be set for the same time. If more then 16 telephones are set for the same time, the time for the Wake Up Call for those additional phones is moved to the next minute.

Default Settings

Disabled

System Availability

Terminals

Refer to Hotel/Motel.

Required Component(s)

Refer to Hotel/Motel.

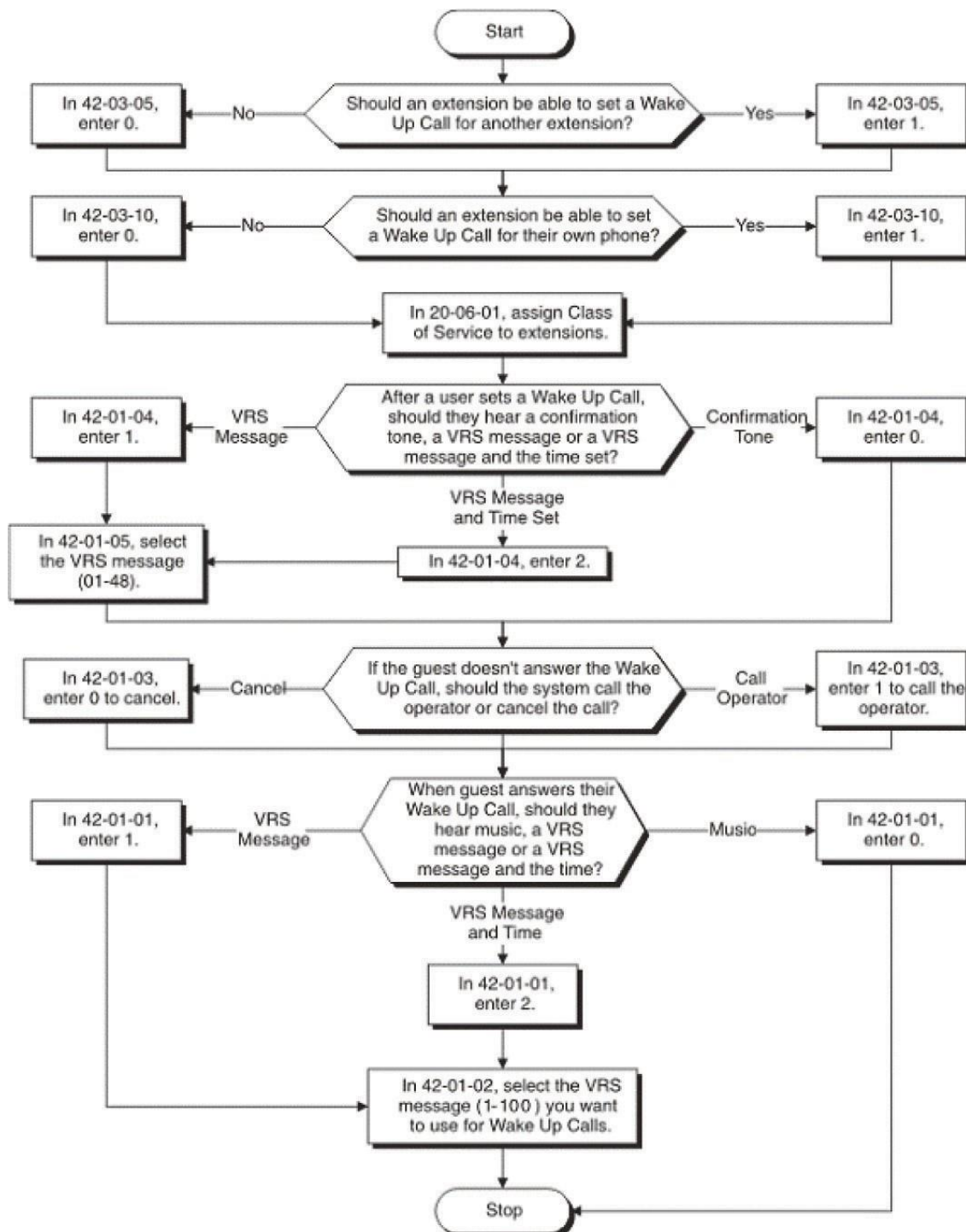
Related Features

Hotel/Motel

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-15-10	Ring Cycle Setup - Incoming Signal Type : Alarm for SLT	Ring Cycle Number : 1 ~ 13	5
42-01-01	System Options for Hotel/Motel - Answering Message Mode for Wake Up Call (Hotel Mode)	0 = MOH (Hold Time) 1 = VAU Message 2 = VAU Message + Time	0
42-01-02	System Options for Hotel/Motel - Wake Up Call Message Assignment	0 ~ 100 (0 = No setting)	0
42-01-03	System Options for Hotel/Motel - Wake Up Call No Answer	0 = No Transfer 1 = Transfer to the Operator	0
42-01-04	System Options for Hotel/Motel - Setup Message Mode for Wake Up Call (Hotel Mode)	0 = Confirmation Tone 1 = VAU Message 2 = Time Stamp + VAU Message 3 = Play Fixed VRS Message + Time	0
42-01-05	System Options for Hotel/Motel - Wake Up Call Message Assignment	0 ~ 100 (0 = No setting)	0
42-03-05	Class of Service Options (Hotel/Motel) - Wake up Call Setting for Other Extension	0 = Off 1 = On	Class 01 ~ 15 = 1
42-03-10	Class of Service Options (Hotel/Motel) - Wake Up Call Setting for Own Extension	0 = Off 1 = On	Class 01 ~ 15 = 1

Setting Up



Operation

To set a Wake Up Call for your own room:

1. Lift the handset.
2. Dial **631**.

3. Dial the time for your wake up.



Use a 24-hour clock. For example, 1:00 PM = 1300. You hear confirmation tone.

4. Hang up.

To cancel a Wake Up that you have set:

1. Lift the handset.
2. Dial **632**.



You hear confirmation tone.

To set a Wake Up Call for another room:

Normally, only the supervisor's station has this ability.

1. Lift the handset.
2. Dial **633**.
3. Dial the number of the room phone that should receive the wake up.
4. Dial the time for your wake up.



Use a 24-hour clock. For example, 1:00 PM = 1300. You hear confirmation tone.

5. Hang up.

To cancel a Wake Up you have set for another room:

1. Lift the handset.
2. Dial **634**.
3. Dial the number of the room phone whose wake up you wants to cancel.



You hear confirmation tone.

Hot Key-Pad

Description

The Hot Key-Pad feature allows the user to place a call without lifting the handset or pressing **Speaker** key. When the user dials another extension number on an idle telephone with Hot Key-Pad enabled, **Speaker** key lights and the internal call is made. When the user dials the trunk access code from a telephone with Hot Key-Pad enabled, **Speaker** key lights, a trunk is seized and the outgoing call is made.

Conditions

- When a user dials any digits on a station with Hot Key-Pad enabled, **Speaker** key lights.
- After a user dials the trunk access code on a station with Hot Key-Pad enabled, a trunk is seized when dialing the first digit of the called party number.
- When both Hot Key-Pad and Dialing Number Preview are turned on, Hot Key-Pad has priority and Dialing Number Preview does not work.
- When both Hot Key-Pad and Hotline are turned on, Hot Key-Pad has priority and Hotline does not work.
- When placing an outgoing call with the Hot Key-Pad feature, the user must dial the trunk access code before dialing the called party number.
- The ARS feature can be used when placing outside calls with the Hot Key-Pad feature.
- When both Hot Key-Pad and VRS Fixed Messaging are turned on, VRS fixed messaging does not work.
- The Hot Key-Pad Feature also works when dialing service codes.

Default Settings

Disabled

System Availability

Terminals

All Multiline Terminals

Required Software:

None

Related Features

Central Office Calls, Placing

Class of Service

Dialing Number Preview

Hotline

Intercom**Voice Response System (VRS)**

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-08-20	Class of Service Options (Outgoing Call Service) - Hot Key Pad	0 = Off 1 = On	COS 01 ~ 15 = 0

Operation**To place an intercom call using Hot Key-Pad:**

The Multiline Terminal is idle. No need to press **Speaker** key.

1. Dial the extension.
2. Dialed extension rings.

To place a trunk call using Hot Key-Pad:

The Multiline Terminal is idle. No need to press **Speaker** key.

1. Dial the trunk access code, **0** by default, and the external destination number you wish to call.

Hotline

Description

Hotline gives a Multiline Terminal user one-button calling and Transfer to another extension (the Hotline partner). Hotline helps co-workers that work closely together. The Hotline partners can call or Transfer calls to each other just by pressing a single key.

The Hotline feature has two applications.

- Hotline (Hotline partner)
- Ringdown Extension, Internal/External ([Refer to Ringdown Extension \(Hotline\), Internal/External.](#))

In addition, the Hotline key shows the status of the partner's extension.

When the key is . . .	The extension is . . .	Note
Off	Idle	
On	Busy or ringing	
Fast Flash	DND - All calls (option 3) or Intercom calls (option 2)	
Double Wink On	ACD Agent logged onto the group	
Wink Off	ACD Agent logged off	

There are 128 hotlines available.

Conditions

- An extension user cannot use Hotline to pick up a call ringing their partner's extension.
- If a station is an ACD agent, the Hotline key blinks to indicate the ACD agent's status.
- Hotline keys can be assigned to the DSS consoles.
- Hotline does not override Do Not Disturb.
- Hotline always follows the Handsfree Answerback/Forced Intercom Ringing mode set at the called extension. The Hotline caller can override the setting, if desired.
- External Hotline automatically dials a telephone number or Speed Dial - System/Group/Station number when the handset is lifted.
- If the partner's extension is busy, Hotline does not automatically activate Off-Hook Signaling.
- A Hotline is a uniquely programmed function key.

Default Settings

Disabled

Related Features

Automatic Call Distribution (ACD)

Distinctive Ringing, Tones and Flash Patterns

Direct Station Selection (DSS) Console

Do Not Disturb (DND)

Handsfree Answerback/Forced Intercom Ringing

Off-Hook Signaling

Programmable Function Keys

Ringdown Extension, Internal/External

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
15-02-22	Multiline Telephone Basic Data Setup - Multiple Incoming From Intercom and Trunk	0 = Disable 1 = Enable	1
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-08-09	Class of Service Options (Outgoing Call Service) - Hotline/Extension Ringdown	0 = Off 1 = On	COS 01 ~ 15 = 1
20-08-19	Class of Service Options (Outgoing Call Service) - Hotline for SPK	0 = Off 1 = On	COS 01 ~ 15 = 0
20-11-06	Class of Service Options (Hold/Transfer Service) - Unscreened Transfer (Ring Inward Transfer)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-11	Class of Service Options (Hold/Transfer Service) - Automatic On-Hook Transfer	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-06	Class of Service Options (Supplementary Service) - Automatic Off-Hook Signaling (Automatic Override)	0 = Off (manually) 1 = On (automatically)	COS 01 ~ 15 = 1
21-01-09	System Options for Outgoing Calls - Ringdown Extension Timer (Hotline Start)	0 ~ 64800 seconds	0
21-11-01	Dial Block Restriction Class Per Extension - Hotline Destination Number	1 ~ 0, *, #, Pause, Hook Flash, @ (Code to wait for answer supervision) (maximum 36 digits)	No Setting
22-01-01	System Options for Incoming Calls - Incoming Call Priority	0 = Intercom Call Priority 1 = Trunk Call Priority	1
30-05-02	DSS Console Lamp Table - Busy Extension	0 ~ 7 (Lamp Pattern Data)	7
30-05-03	DSS Console Lamp Table - DND Extension	0 ~ 7 (Lamp Pattern Data)	3
30-05-04	DSS Console Lamp Table - ACD Agent Busy	0 ~ 7 (Lamp Pattern Data)	7
30-05-05	DSS Console Lamp Table - Out of Schedule (ACD DSS)	0 ~ 7 (Lamp Pattern Data)	0
30-05-06	DSS Console Lamp Table - ACD Agent log Out (ACD DSS)	0 ~ 7 (Lamp Pattern Data)	5
30-05-07	DSS Console Lamp Table - ACD Agent Log In (ACD DSS)	1 ~ 7 (Lamp Pattern Data)	4
30-05-09	DSS Console Lamp Table - Hotel Status Code 1 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	7
30-05-10	DSS Console Lamp Table - Hotel Status Code 2 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	1

Program No.	Program Name	Input Data	Default
30-05-11	DSS Console Lamp Table - Hotel Status Code 3 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	2
30-05-12	DSS Console Lamp Table - Hotel Status Code 4 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	3
30-05-13	DSS Console Lamp Table - Hotel Status Code 5 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	5
30-05-14	DSS Console Lamp Table - Hotel Status Code 6 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	3
30-05-15	DSS Console Lamp Table - Hotel Status Code 7 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	6
30-05-16	DSS Console Lamp Table - Hotel Status Code 8 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	4
30-05-17	DSS Console Lamp Table - Hotel Status Code 9 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	3
30-05-18	DSS Console Lamp Table - Hotel Status Code 0 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	0
30-05-19	DSS Console Lamp Table - Hotel Status Code * (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	4
30-05-20	DSS Console Lamp Table - Hotel Status Code # (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	5
30-05-21	DSS Console Lamp Table - VM Message Indication	0 ~ 7 (Lamp Pattern Data)	3

Table 1-19 Extension Busy Setup

	PRG 20-13-06	PRG 20-02-03	BLF Status	Busy Status
1	1	0	Off	No
2	1	1	On	Yes
3	0	0	On	Yes
4	0	1	On	Yes

Operation

To place a call to your Hotline partner:

1. Press the **Hotline** key (PRG 15-07-01 or SC **751**: 01 + partner's extension number).



You can optionally lift the handset after this step for privacy.

To transfer your outside call to your Hotline partner:

1. Press the **Hotline** key.
2. Announce the call and hang up.
- OR -
Hang up to have the call wait at your Hotline partner unannounced.



If unanswered, the call recalls like a regular transferred call.

To answer a call from your Hotline partner:

1. If you hear two beeps, speak toward the telephone.
- **OR** -
If your telephone rings, lift the handset.

Howler Tone Service

Description

Howler Tone Service provides a Howler Tone when a station remains off-hook after a call is completed or when a station is off-hook and digits are not dialed in a programmed time.

Conditions

Howler tone is generated 30 seconds after a call is disconnected and the telephone is left off-hook or the telephone is left off-hook without dialing.

Default Settings

Enabled

System Availability

Terminals

All Terminals

Required Component(s)

None

Related Features

None

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
20-18-02	Service Tone Timers - Busy Tone Timer	0 ~ 64800 seconds	15
80-01-01	Service Tone Setup - Repeat Count	0 ~ 255 (0 = Endless)	Refer to the Programming Manual for the default values.
80-01-02	Service Tone Setup - Basic Tone Number	0 ~ 33 (0 = No Tone) (33 = Default Time Slot)	Refer to the Programming Manual for the default values.

Operation

None

InGuard (Toll Fraud Guard)

Description

The SL2100 InGuard (Toll Fraud Guard), is an active call monitoring application used to help prevent toll fraud. It works by monitoring SMDR output provided by the PBX and applies user-configured rules to look for call trends that may be fraudulent. When potential fraudulent activity takes place, the guard sends an email notification to users to inform them of the suspicion. As the application runs on the PBX, it has the ability to prevent further fraudulent activity from taking place by modifying its configuration.

There are two stages to the blocking actions for outbound calls; the alerts are first set to warn the user about the possible fraudulent activity. Secondly, an automatic blocking action is implemented to either place the extension in a restrictive toll restriction class or prevent the number from dialing out.

Rules

Once the guard is configured, different rules can be applied to trigger notifications. By default, rules are system-wide for all telephone numbers, all trunks, and all extensions. They are also created against a time range, allowing different thresholds to trigger rules based on the time of day and day of the week.

- **Blocking Actions** – When configured, these rules have the ability to either restrict an extension from dialing out or block a number from being dialed.
 - **Target Number Rate** – Target Number Rate rules look for repeated outbound calls from any extension to the same number, this is a common symptom of Toll Fraud. The guard looks only at the first eight digits that are dialed, not the complete number. This allows the Guard to capture dialing patterns for similar numbers.
When the Block action is triggered, the number is automatically blocked by adding it to the Restrict Table in the PBX and an Email is sent to the user. The user may reply to the Email to unblock the number.
 - **Extension Call Rate** – A higher than expected call rate is another common symptom of Toll Fraud. If an extension on a PBX had been compromised, a hacker could make many calls over a period of time. The extension call rate rules allow you to enter the expected call rate for an extension and if that rate is exceeded an alert can be triggered.
When the Block action is triggered, the extension is automatically moved to the configured Toll Restriction Class. The user may reply to the Email to undo the action, they will be moved back to their original Toll Restriction Class.
- **Other Actions** – This allows certain calls to be ignored by the Guard.
 - **Stop Checking** – Stop Checking is a rule that can be defined to prevent the Guard from looking at certain call types.



Refer to the SL2100 InGuard User Guide for rule creation.

Email Configuration

The Guard uses Emails to inform users when Toll Fraud rules have been broken. The Guard sends Emails using SMTP. Typically, the administrator of the mail server assigns an Email address that the Guard uses. The Guard should work with any SMTP mail server and has been specifically tested with MailServer and Gmail.

If the mail server is entered as a hostname, DNS must be entered in Program command 10-12-13.

Conditions

- The InGuard application only works with outbound calls. This is not applicable on incoming and intercom calls.
- Email configuration should be done correctly for InGuard to work effectively.
- If the **Target Number rate** rule is triggered, application will only display **Dialed Number/ Target Number** in the warning/block mail.
 - Emergency call destination must be set considering this feature's purpose.
 - If the rule is triggered for a given prefix number, only the prefix number will be updated in the Restrict Code Table, not the complete dialed number.
 - If the rule is triggered for **No prefix**, the complete dialed number (maximum of eight digits) will be updated in the Restrict Code Table.
- If the **Extension Call rate** rule is triggered, application will only display the **Extension Number** that made the excessive call in the warning/block mail.
 - Application does not display the dialed number when using the Extension call Rate.
- If blocking action is attempted and the restrict table is full, the new entry will be updated at the last position in the Restrict Code Table (FIFO process).
 - After new entry is updated on 60th position, old entries will be shifted from their **last position - 1**. First position entry will be deleted.
- Rules can be triggered for numbers allowed in the permit code table, but restrictions will not be applied to these numbers.
- In the InGuard application, do not delete the phone/lines tag, if the phone/lines tag is being used by any rule.

Default Settings

None

System Availability

Terminals

All Terminals

Required Component(s)

- SL2100 INGUARD LIC (3512)
- The Guard Application supports the following browsers:

Web Browser	Minimum Version
Internet Explorer	11
Google Chrome	43
Firefox	42

Related Features

Code Restriction

Station Message Detail Recording

Guide to Feature Programming



Refer to the SL2100 InGuard Installation Manual for PBX and application programming.

Operation

None

Description

InMail is a low cost voice mail solution that mounts on the CPU-C1 board. Its programming is fully integrated with Chassis programming. This system offers the most voice mail system features customers expect.

InMail supports a maximum of 16 channels when EXIFB is installed.

Up to 4 channels of Built-In VRS/VM (InMail) are available from default on CPU-C1.

Automated Attendant automatically answers the system incoming calls. After listening to a customized message, an outside caller can dial a system extension or use Voice Mail.

Up to 16 InMail voice mail ports are available using EXIFB, however as soon as an InMail is installed 16 ports will be reduced from the total station ports available in the system. Integrated Voice Mail enhances the telephone system with the following features:

Every SL2100 has InMail built in on the system. When a system is defaulted, InMail will be automatically programmed and work in the system. The following settings are made automatically on a defaulted system. If needed, they can be changed but it is recommended that the default values be kept:

- Subscriber Mailboxes are enabled for extensions 101 ~ 164 .
The mailbox numbers are the same as the extension numbers.
- The Automated Attendant does not answer outside calls.
- The Department group pilot for InMail extensions in Program 11-07-01 is 3999.
- All InMail extensions are assigned to Department group 50 in Program 16-02-01.
- The extension numbers for the InMail ports are 213 ~ 228.
- The voice mail Department group is set to 50 in Program 45-01-01.
- InMail extensions 213 ~ 228 are set to DP in Program 15-03-01.
- InMail extensions 213 ~ 228 are set to Special in Program 15-03-03.

- **Call Forwarding to Voice Mail**

An extension user can forward their calls to Voice Mail. Once forwarded, calls to the extension connect to that extension mailbox. The caller can leave a message in the mailbox instead of calling back later. Forwarding can occur for all calls immediately, for unanswered calls or only when the extension is busy. When a user transfers a call to an extension forwarded to Voice Mail, the call waits for the Delayed Call Forwarding time before routing to the called extension mailbox. This gives the transferring party the option of retrieving the call instead of having it go directly to the mailbox.

- **Leaving a Message**

Voice Mail lets a Multiline Terminal extension user easily leave a message at an extension that is unanswered, busy or in Do Not Disturb. The caller presses their Voice Mail key to leave a message in the called extension mailbox. There is no need to call back later.

- **Transferring to Voice Mail**

By using Transfer to Voice Mail, a Multiline Terminal extension user can Transfer a call to the user's or a co-worker's mailbox. After the Transfer goes through, the caller can leave a message in the mailbox.

A station user transferring a call can transfer the call to the called party voice mail box after an internal station number is dialed while performing a screened transfer, or during intercom calls. The user calls the extension then dials the quick transfer dial access code (default = 8) and hangs up. The call is placed in the mailbox and the caller hears the personal greeting.

- **Live Record**

The Multiline Terminal user just presses the InMail Record key; the SLT user dials a code. Once recorded, the Voice Messaging System stores the conversation as a new message in the user's mailbox. After calling their mailbox, a user can save, edit or delete the recorded conversation. This feature is supported only on CO or DID calls. It is not supported on internal calls.

- **Voice Mail Overflow**

If Voice Mail automatically answers trunks, Voice Mail Overflow can reroute those trunks to other extensions when all Voice Mail ports do not answer or, with certain software, are busy. During periods of high traffic, this prevents the outside calls from ringing Voice Mail for an inordinate amount of time. There are two types of Voice Mail Overflow: Immediate and Delayed. With immediate overflow, calls immediately reroute to other extensions when all Voice Mail ports do not answer or, with certain software, are busy. With delayed overflow, calls reroute after a preset interval. Without overflow, the outside calls ring Voice Mail until a port becomes available or the outside caller hangs up.

- **Message Center Mailbox**

A Message Center Mailbox is shared by more than one extension. Any Multiline Terminal that has a Message Center Key for the shared mailbox can:

- Listen to the messages stored in the shared mailbox
- Transfer calls to the shared mailbox

- Use many other Voice Mail features previously available only at an extension individual mailbox A Message Center Mailbox helps co-workers that work together closely – such as members of the same Department Hunt Group or ACD Group. For example, an Hunt Group Supervisor can send important messages to the shared Message Center Mailbox, to which any ACD Group member can respond when time allows. Each ACD Agent's Message Center Key flashes when messages are waiting. (The Message Center Mailbox can be a mailbox for an installed, uninstalled or virtual extension.)

- **Voice Mail Caller ID**

InMail can use ANI/Caller ID information to identify the outside caller that left a message in a user's mailbox. When the message recipient presses TI after hearing a message, they hear the time the message was sent and the outside telephone number of the message sender. Refer to [Caller ID](#) for more information on setting up this feature.

- **Security Code Enhancement**

After a subscriber sets their Security Code, they can choose to make it required for all logons or just remote logons. When enabled for all logons, the subscriber must always enter their Security Code to access voice mail, even from their own extension. If enabled just for remote logons, the subscriber can go right into voice mail from their own telephone. However, the Security Code is still required from another extension or from outside the system. The Security Code logon option is a convenience for those who normally leave their office locked or otherwise secure. Those who work in open areas should normally set their mailbox to always require a Security Code.

Voice Mail Queuing

When accessing voice mail, the system provides a voice mail queue. If all the voice mail ports are busy, any call trying to get to the voice mail is placed in queue. As the voice mail port becomes available, the calls are connected to the voice mail in the order in which they were received.

As the Voice Mail Queue follows Department Hunting programming, the queue can hold a maximum of 10 calls. If the queue is full or if the voice mail ports are not assigned to a Department Group, the calls are handled as though no voice mail queuing feature was enabled.

The calls either access voice mail if a port is available or they receive a busy signal. The Voice Mail Queuing feature does not work with the Conversation Record feature.



The Voice Mail Queuing feature does not work with the Conversation Record feature.

Voice Mail Key

When an extension receives a voice mail, the Voice Mail key (PRG 15-07-01, code 77) can be used to call the voice mail to listen to the messages. Voice Mail Key and the telephone Message Waiting LED flashes to indicate new messages.

InMail Available

InMail is Built-In on the CPU-C1 board. Up to 4 channels are initially available and can be expanded to 16 channels by adding optional hardware (IP7WW-EXIFB-C1).

For the VRS/VM message storage, approximately two hours are initially available on CPU-C1 board.

If the message storage size requires more than two hours, there are optional hardware to expand the storage size. (IP7WW-SDVMS-C1: Approx.15 hours/IP7WW-SDVML-C1: Approx.120 hours)

For the Voice Prompt, One language is initially available on CPU-C1 board and enable to use multi-language Voice Prompts in case optional hardware (IP7WW-SDVMS-C1/IP7WW-SDVML-C1) is installed. There are 26 languages are provided.

The InMail Automated Attendant answers incoming calls and routes them quickly and efficiently.

Integrated Voice Mail features include Conversation Record, Answering Machine Emulation, and Caller ID with Return Call.

Interactive Softkeys guide the display telephone user through the extensive InMail feature set. (Digital/IP Multiline Terminal)

Table 1-20 Related Part Number and Capacity

Stock Number	Equipment Name	Note
BE116497	IP7AU-CPU-C1	InMail Channel: 4 channels Message Stor- age: 2 hours Voice Prompt: One language (AU English)
BE116501	IP7WW-EXIFB-C1	Expand InMail Channel to 16 channels
BE116502	IP7WW-SDVMS-C1	Expand mes- sage storage size to approx. 15 hours with Multi-language Voice prompt.
BE116503	IP7WW-SDVML-C1	Expand mes- sage storage size to approx. 120 hours with Multi-language Voice prompt.
Mailboxes	Station Mailboxes 128 Routing Mailboxes 32 Group Mailbox 32 Total Mailboxes 192	

InMail: External Transfer Available

The software allows the InMail to perform an external transfer. This allows the InMail to route an incoming Automated Attendant call out of the SL2100 system on a new trunk based on a Speed Dial number stored in a Dial Action Table.

InMail: Softkey With Security Code Programming (Digital/IP Multiline Terminal)

InMail provides softkeys when programming the security code. These softkeys allow a user to select OK, CLEAR or EXIT following an entry of a new code.

InMail: Internal Message Notification Timer

When Message Notification places a call out, the system waits up to 30 seconds for ringback, reorder, or busy tone from the trunk. If detected, notification call out processing begins normally. If not detected, the system abandons the call and decrements the Ring No Answer (RNA) count.

InMail: Directory Dialing

Directory Dialing allows an Automated Attendant caller to reach an extension by dialing the first few letters in the extension user's name. With Directory Dialing, the caller does not have to remember the extension number of the person they wish to reach – just the name.

The following steps describe Directory Dialing:

1. When the Automated Attendant answers, it sends the call to the Main Greeting box. The caller must dial a digit to access Directory Dialing.
2. The Directory Dialing Mailbox plays the Directory Dialing Message which asks the caller to dial letters for the name of the person they wish to reach.
3. The caller dials the letters for the person's name plus #. They can dial by first name or last name, depending on how the Directory Dialing Message was recorded and the Directory Dialing Mailbox was set up.
4. InMail searches the list of programmed extension names for a match of the caller-entered letters.
5. Voice prompts announce the first three matches, and allow the caller to dial a digit (1~3) to reach one of the announced matches. Additionally, the caller can dial 4 to hear additional matches (if any).
6. The caller dials the digit for the extension they wish to reach, and InMail sends the call to that extension. The call is sent as a Screened or Unscreened transfer, depending on programming.

For callers to use Directory Dialing, the system must have a name programmed for each extension (up to 15 characters, A~Z, using upper and lower case letters). Each extension user should also have a name recorded in their Subscriber Mailbox. In addition, each extension used by Directory Dialing must be installed and have an active Subscriber Mailbox (Personal or Group).

An outside caller can route to a Master Mailbox or a Routing Mailbox programmed as a Directory Dialing Mailbox from:

- The Answer Tables Answer Schedule Override mailbox, Default mailbox, or Routing mailbox.
- A GOTO action in the Dial Action Table of a Call Routing Mailbox.

InMail: Multiple Greetings

The mailbox subscriber can record up to three greetings and make any of the three active. When a caller leaves a message in the subscriber's mailbox, they hear the active greeting. This allows the subscriber, for example, to record a greeting for work hours, after work, and during vacation. Instead of changing their greeting when they leave the office, they can activate the after work greeting instead.

If the active greeting has not been recorded, a caller leaving a message in the subscriber mailbox hears, "At the tone, you can leave your message for (extension number or name)."

Refer to the InMail Feature Manual for complete details on setting these features.

Conditions

- When an InMail is installed in a system 16 station ports will be reduced from the total station ports available in the system.
- When more than four ports are to be enabled, the EXIFB-C1 is required.

- Email forwarding requires one (1) InMail Email Notification License (1014) for the system. .
- Constant Message Count is displayed on a telephone display until another activity needs the display (i.e., if a call is made or received on the telephone). To have the message count display again, the telephone needs to receive a new voice mail message or a new call into the voice mailbox.
- The Quick Transfer to Voice Mail feature is allowed when:
 - Listening to the Ring Back Tone (RBT).
 - Listening to the Call Waiting Tone (CWT).
 - In Handsfree Answerback Mode.
 - In Voice Over Mode.
- When Quick Transfer to Voice Mail is accessed, the Voice Over feature is canceled.
- While on an intercom (ICM) call, dial the Quick Transfer Access Code (default: 8) to automatically transfer to that station Voice Mail box.
- The Quick Transfer to Voice Mail is not allowed when caller is:
 - Listening to the busy tone (BT).
 - Talking on an internal line.
 - Talking on an outside line.
 - Making a conference call.
- Extension numbers cannot start with 0, 9, * or #.
- Distribution List members can only have 2 or 3 digit extension IDs.
- Live Record does not work for monitored calls.
- Live Record does not work for conference calls.
- Fixed Call Forwarding can be used to transfer a user's unanswered calls to their voice mail. Call Forwarding does not have to be programmed manually by each user.
- Caller ID information is passed from the Voice Mail to an extension for pre-answer display on an unscreened transfer from Voice Mail.
- Off-premise notification and external extensions require access to outside lines.
- When the voice mail places a call on hold, it uses Group Hold. Any line appearances for the trunk shows the hold flash rate, however, a user cannot pick up this call (a busy signal is heard).
- Updating the system time also updates the InMail time.
- The displayed message count for New and Saved messages does not update until the mailbox user hangs up and calls back into the InMail.
- InMail and Analog Voice Mail cannot be used at the same time in the same system.
- The number of speech path channels on the CPU for the In Mail and the VRS feature are shared and depends if the EXIFB-C1 board is installed.
 - Without an EXIFB-C1 board installed the systems supports a maximum of four channels for VRS and/or InMail.
 - With an EXIFB-C1 board installed, the system supports a maximum of 16 channels for VRS and/or InMail. The maximum number of channels supported for InMail is eight.
- When installing a SDVMS/SDVML card onto the CPU-C1 the system MUST be powered off. Never install or uninstall the SDVMS/SDVML card while the system is under power.

Default Settings

Disabled

System Availability

Terminals

All Terminals

Required Component(s)

- IP7()-CPU-C1
- IP7WW-EXIFB-C1
- IP7WW-SDVMS-C1
- IP7WW-SDVML-C1
- SL2100 VM E-MAIL NOTIFY LIC

Related Features

Automatic Call Distribution (ACD)

Barge-In

Caller ID

Call Forwarding

Central Office Calls, Placing

Clock/Calendar Display/Time and Date

Direct Inward Line (DIL)

Hold

Message Waiting

One-Touch Calling

Programmable Function Keys

Transfer

Guide to Feature Programming

The programs listed below indicate the most commonly used programs required for this feature. The programs are listed in the order that the installer should follow. Refer to the PCPro wizards for further detailed programming.

- When a * is listed next to the Program Number it indicates a program that **MUST** be set (from a default state) for this feature to be enabled.

Program No.	Program Name	Input Data	Default
11-02-01	Extension Numbering - Extension Number	Dial (Up to 8 digits)	Extension Port Number : Extension Number 001 ~ 064 : 101 ~ 164 065 ~ 128 : No Setting
15-03-01 *	Single Line Telephone Basic Data Setup - SLT Signaling Type	0 = DP 1 = DTMF	1
15-03-03 *	Single Line Telephone Basic Data Setup - Terminal Type	0 = Normal 1 = Special	0
11-07-01 *	Department Group Pilot Numbers - Extension Group Pilot Number	Dial (Up to 8 digits)	Group Number 1 ~ 49 = No Setting Group Number 50 = 3999

Program No.	Program Name	Input Data	Default
16-01-01	Department Group Basic Data Setup - Department Name	Maximum 12 characters	No Setting
16-01-02	Department Group Basic Data Setup - Department Calling Cycle	0 = Normal Routing (Priority) 1 = Easy - UCD Routing (Circular)	0
16-01-04	Department Group Basic Data Setup - Hunting Mode	0 = Stop at last member (non-loop) 1 = Circular	0
16-01-10	Department Group Basic Data Setup - Enhanced Hunt Type	0 = No hunting 1 = Hunting When Busy 2 = Hunting When Not Answered 3 = Hunting When Busy or No Answer	0
16-02-01 *	Department Group Assignment for Extensions	Department Group = 1 ~ 50 Priority Order = 1 ~ 200	(Refer to the programming manual for the default values of all extensions.)
16-02-02	Department Group Priority Assignment	1 ~ 200	(Refer to the programming manual for the default values of all extensions.)
45-01-01 *	Voice Mail Integration Options - Voice Mail Department Group Number	0 = No Voice Mail Assigned 1 ~ 50 = Department Group 1 ~ 50	50
14-01-22	Basic Trunk Data Setup - Caller ID to Voice Mail	0 = Disable (Caller ID not sent to VM.) 1 = Enable (Caller ID is sent to VM.)	1
15-02-37	Multiline Telephone Basic Data Setup - Voice Mail Message Wait Lamp Color	0 = Green 1 = Red	1
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-02-09	System Options for Multiline Telephones - Disconnect Supervision	0 = Disable (Off) 1 = Enable (On)	1
20-09-02	Class of Service Options (Incoming Call Service) - Caller ID Display	0 = Off 1 = On	COS 01 ~ 15 = 1
22-02-01	Incoming Call Trunk Setup - Trunk Service Type	0 = Normal 1 = VRS (second dial tone if no VRS installed) 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delayed VRS 7 = ANI/DNIS 8 = DID (DDI) Mode Switching	0
47-11-01	InMail Answer Table Options - Answer Schedule Override	0 = No (Disabled) 1 = Yes (Enabled)	0
47-11-02	InMail Answer Table Options - Override Mailbox Number	-	Refer to Programming Manual.
47-11-03	InMail Answer Table Options - Default Mailbox Number	-	Refer to Programming Manual.
47-11-04	InMail Answer Table Options - Next Answer Table	Answer Table (1 ~ 16) 0 = Undefined	0

Program No.	Program Name	Input Data	Default
47-12-01	InMail Answer Schedules - Schedule Type	0 = Undefined 1 = Day of the Week 2 = Range of Days 3 = Date	Answer Table 1/ Schedule 1 = 2 All other schedules = 0
47-12-02	InMail Answer Schedules - Routing Mailbox Number	-	Refer to Programming Manual.
47-12-03	InMail Answer Schedules - Day of the Week	1 = Sunday 2 = Monday 3 = Tuesday 4 = Wednesday 5 = Thursday 6 = Friday 7 = Saturday	Answer Table 1 ~ 16 = 1
47-12-04	InMail Answer Schedules - InMail Answer Schedules – Start Day	1 = Sunday 2 = Monday 3 = Tuesday 4 = Wednesday 5 = Thursday 6 = Friday 7 = Saturday	Answer Table 1/ Schedule 1 = 2 All Other Schedules = 1
47-12-05	InMail Answer Schedules - InMail Answer Schedules – End Day	1 = Sunday 2 = Monday 3 = Tuesday 4 = Wednesday 5 = Thursday 6 = Friday 7 = Saturday	Answer Table 1/ Schedule 1 = 6 All Other Answer Schedules = 1
47-12-06	InMail Answer Schedules - InMail Answer Schedules – Date	MMDD For example : - 0101 = January 1 - 1231 = December 31 (0000 = Undefined)	Answer Table 1 ~ 16 = 0000
47-12-07	InMail Answer Schedules - InMail Answer Schedules – Schedule Start Time	HHMM (24-hour clock) For example : - 0130 = 1 : 30 AM - 1700 = 5 : 00 PM (0000 = Undefined)	Answer Table 1/ Schedule 1 = 0830 (8 : 30AM) All other schedules are 0000.
47-12-08	InMail Answer Schedules - InMail Answer Schedules – Schedule End Time	HHMM (24-hour clock) For example : - 0130 = 1 : 30 AM - 1700 = 5 : 00 PM (0000 = Undefined)	Answer Table 1/ Schedule 1 = 1700 (5 : 00 PM) All Other Schedules = 0000
47-13-01	InMail Dial Action Tables - Data	-	Refer to Programming Manual.

ACD Delay Announcement:

Only use if Master Mailboxes are used for ACD Delay Announcements.

Program No.	Program Name	Input Data	Default
41-19-01	ACD Voice Mail Delay Announcement - Delay Message Start Timer	0 ~ 64800 (seconds)	0
41-19-02	ACD Voice Mail Delay Announcement - Mailbox Number for 1st Announcement Message	Dial (up to eight digits)	No Setting
41-19-03	ACD Voice Mail Delay Announcement - 1st Delay Message Sending Count	1 ~ 255 0 = No message is played.	0
41-19-04	ACD Voice Mail Delay Announcement - Mailbox Number for 2nd Announcement Message	Dial (up to eight digits)	No Setting

Program No.	Program Name	Input Data	Default
41-19-05	ACD Voice Mail Delay Announcement - 2nd Delay Message Sending Count	1 ~ 255 0 = No message is played.	0
41-19-06	ACD Voice Mail Delay Announcement - Wait Tone Type at Message Interval	0 = Ring Back Tone 1 = Music On Hold Tone 2 = Background Music Source	0
41-19-07	ACD Voice Mail Delay Announcement - ACD Forced Disconnect Time after 2nd Announcement	0 ~ 64800 (seconds)	0
41-19-08	ACD Voice Mail Delay Announcement - Delay Message Interval Time	0 ~ 64800 (seconds)	20
47-03-02	InMail Group Mailbox Options - Mailbox Number	Up to eight digits No Setting (entered by pressing Hold)	No Setting
47-03-03	InMail Group Mailbox Options - Mailbox Type	0 = None 1 = Subscriber 2 = Routing	1
47-03-03	InMail Group Mailbox Options - Routing Mailbox Number	01 ~ 32	0
10-09-01	DTMF, Dial Tone Detection Setup - DTMF, Dial Tone Detection	0 = Common use for both analog extensions and trunks 1 = Use for analog extensions (DTMF Receivers) 2 = Use for analog trunks (DTMF receivers/Dial tone detection/ Caller ID detection)	Resource 1 ~ 140 = 0
11-12-08	Service Code Setup (for Service Access) - Barge-In	0~9, *, # Maximum of 8 digit	710
14-02-10	Analog Trunk Data Setup - Caller ID	0 = Off (Caller ID not displayed.) 1 = On (Caller ID is displayed.)	1
15-02-28	Multiline Telephone Basic Data Setup - Message Waiting Lamp Color	0 = Green 1 = Red	0
15-03-09	Single Line Telephone Basic Data Setup - Caller ID Function	0 = Disable (Caller ID not displayed.) 1 = Enable (Caller ID is displayed.)	0
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-09-01	Class of Service Options (Incoming Call Service) - Second Call for DID/DISA/DIL/E&M Override	0 = Off (2nd call will not be allowed.) 1 = On (2nd call is allowed.)	COS 01 ~ 15 = 1
20-11-01	Class of Service Options (Hold/Transfer Service) - Call Forward All	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-02	Class of Service Options (Hold/Transfer Service) - Call Forward When Busy	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-03	Class of Service Options (Hold/Transfer Service) - Call Forwarding When Unanswered	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-04	Class of Service Options (Hold/Transfer Service) - Call Forwarding (Both Ringing)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-05	Class of Service Options (Hold/Transfer Service) - Call Forwarding with Follow Me	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-12	Class of Service Options (Hold/Transfer Service) - Call Forwarding Off Premise (External Call Forwarding)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-01	Class of Service Options (Supplementary Service) - Long Conversation Alarm	0 = Off 1 = On	COS 01 ~ 15 = 0

Program No.	Program Name	Input Data	Default
20-13-05	Class of Service Options (Supplementary Service) - Intercom Off-Hook Signaling	0 = Off (ICM off hook signaling disabled.) 1 = On (ICM off hook signaling enabled.)	COS 01 ~ 15 = 1
20-13-06	Class of Service Options (Supplementary Service) - Automatic Off-Hook Signaling (Automatic Override)	0 = Off (manually) 1 = On (automatically)	COS 01 ~ 15 = 1
20-13-07	Class of Service Options (Supplementary Service) - Message Waiting	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-13	Class of Service Options (Supplementary Service) - Continued Dialing (DTMF) Signal on ICM Call	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-15	Class of Service Options (Supplementary Service) - Barge-In, Initiate	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-16	Class of Service Options (Supplementary Service) - Barge-In, Receive	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-28	Class of Service Options (Supplementary Service) - Allow Class of Service to be Changed	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-35	Class of Service Options (Supplementary Service) - Block Camp On	0 = Off (Camp On blocked.) 1 = On (Camp On allowed.)	COS 01 ~ 15 = 0
22-01-04	System Options for Incoming Calls - DIL No Answer Recall Time	0 ~ 64800 seconds 0 = No Overflow	0
22-04-01	Incoming Extension Ring Group Assignment - Extension Number	Maximum eight Digits	Group01 has 101, 102, 103, 104, 105, 106, 107, and 108 (First 8 ports ringing)
22-07-01	DIL Assignment - Number of Transferring Destination	Maximum of 8 digits (0 ~ 9, *, #)	No Setting
22-08-01	DIL/IRG No Answer Destination - Incoming Ring Group Number	0 = No Setting 01 ~ 50 = Incoming Ring group 102 = VM 103 = Centralized VM	Group01 has 101, 102, 103, 104, 105, 106, 107, and 108 (First 8 ports ringing)
24-02-02	System Options for Transfer - MOH or Ringback on Transferred Calls	0 = Hold Tone 1 = Ring Back Tone	0
24-02-03	System Options for Transfer - Delayed Call Forwarding Time	0 ~ 64800 seconds	10
45-01-02	Voice Mail Integration Options - Voice Mail Master Name	Up to 12 Characters	VOICE MAIL
45-01-04	Voice Mail Integration Options - Park and Page	0 = Off 1 = On	1
45-01-05	Voice Mail Integration Options - Message Wait	0 = Off 1 = On	1
45-01-06	Voice Mail Integration Options - Record Alert Tone Interval Time	0 ~ 64800 seconds	0
45-01-15	Voice Mail Integration Options - Analog Voice Mail Protocol Selection	0 = Fixed 1 = Program	0
45-01-16	Voice Mail Integration Options - Voice Mail Fax Digit Add Assignment	Up to four digits	No Setting
45-01-17	Voice Mail Integration Options - Reply Mailbox Number	0 = No 1 = Yes	1
45-01-18	Voice Mail Integration Options - Trunk Number Mapping	2 ~ 3	2

Program No.	Program Name	Input Data	Default
47-01-02	InMail System Options - InMail Master Name	Up to 12 characters	InMail ## (The system substitutes the port number for the # when calling the port.)
47-01-03	InMail System Options - Incoming Message Length	1 ~ 4095 seconds	120 seconds
47-01-04	InMail System Options - Non-Subscriber Message Length	1 ~ 4095 seconds	120 seconds
47-01-05	InMail System Options - Message Backup/Go Ahead Time	1 ~ 6015 seconds	5 seconds
47-01-07	InMail System Options - Digital Pager Callback Number	Digits (12 maximum, using 0 ~ 9, # and *) M (Number of messages - entered by pressing LK1) X (Extension number - entered by pressing LK2) InMail automatically replaces the X command with the number of the extension that initially received the message.	X*M#
47-01-08	InMail System Options - Delay in Dialing Digital Pager Callback Number	0 ~ 99 seconds	30 seconds
47-01-09	InMail System Options - Wait Between Digital Pager Callout Attempts	1 ~ 255 minutes	15 minutes
47-01-10	InMail System Options - Wait Between Non-Pager Callout Attempts	1 ~ 255 minutes	20 minutes
47-01-11	InMail System Options - Wait Between Busy Non-Pager Callout Attempts	1 ~ 255 minutes	15 minutes
47-01-12	InMail System Options - Wait Between RNA Non-Pager Callout Attempts	1 ~ 255 minutes	30 minutes
47-01-13	InMail System Options - Number of RNA rings	1 ~ 99 rings	5 rings
47-01-14	InMail System Options - Number of Cascading Attempts	1 ~ 99 rings	1 ring
47-01-15	InMail System Options - Send Pager Callout Until Acknowledged	0 = No (Disabled) 1 = Yes (Enabled)	0
47-01-16	InMail System Options - Name Format	0 = First-Last 1 = Last-First	0
47-02-01	InMail Station Mailbox Options - Mailbox Type	0 = None 1 = Personal 2 = Group	Mailbox 1 ~ 64 : 1 Mailbox 65 ~ 128 : 0
47-02-02	InMail Station Mailbox Options - Mailbox Number	Up to eight digits	Mailbox 1 = 101 Mailbox 2 ~ 64 = 102 ~ 164 Mailbox 65 ~ 128 = No Setting
47-02-03	InMail Station Mailbox Options - Number of Messages	0 ~ 99 messages To conserve storage space, enter 0 for all unused mailboxes.	Mailbox 1 = 99 Mailbox 2 ~ = 20
47-02-04	InMail Station Mailbox Options - Message Playback Order	0 (FIFO = first-in/ first-out, or oldest messages first). 1 (LIFO = last-in/ first-out, or newest messages first)	0

Program No.	Program Name	Input Data	Default
47-02-05	InMail Station Mailbox Options - Auto Erase/ Save of Messages	0 = Erase After the subscriber listens to the entire new message and hangs up, InMail erases the message. 1 = Save After the subscriber listens to the entire new message and hangs up, InMail saves the message.	1
47-02-06	InMail Station Mailbox Options - Message Retention	0 ~ 99 Days (0 = Indefinite)	0
47-02-07	InMail Station Mailbox Options - Recording Conversation Beep	0 = No (Disabled) 1 = Yes (Enabled)	1
47-02-08	InMail Station Mailbox Options - Message Waiting Lamp	0 = No (Disabled) 1 = Yes (Enabled)	1
47-02-09	InMail Station Mailbox Options - Auto Attendant Direct to Voice Mail	0 = No (Disabled) 1 = Yes (Enabled)	0
47-02-10	InMail Station Mailbox Options - Forced Unscreened Transfer	0 = No (Disabled) 1 = Yes (Enabled)	0
47-02-11	InMail Station Mailbox Options - Auto Time Stamp	0 = No (Disabled) 1 = Yes (Enabled)	0
47-02-12	InMail Station Mailbox Options - System Administrator	0 = No (Disabled) 1 = Yes (Enabled)	Mailbox 1 (101) = 1 Mailbox 2 ~ = 0
47-02-13	InMail Station Mailbox Options - Dialing Option	0 = No (Disabled) 1 = Yes (Enabled)	0
47-02-14	InMail Station Mailbox Options - Next Call Routing Mailbox	Call Routing Mailbox Number (1 ~ 3 digits, 00 ~ 32) (00 = Undefined) No entry (Entered by pressing CLEAR)	1
47-02-15	InMail Station Mailbox Options - Directory List Number	0 = None 1 ~ 8 = List Number * = All	0
47-02-25	InMail Station Mailbox Options - Security Code Option	0 = Always 1 = Remote Logon only	0
47-06-01	Group Mailbox Subscriber Options - Number of Messages	00 ~ 99 messages To conserve storage space, enter 0 for all unused mailboxes.	20
47-06-02	Group Mailbox Subscriber Options - Message Playback Order	0 (FIFO = first-in/ first-out, or oldest messages first). 1 (LIFO = last-in/ first-out, or newest messages first).	0
47-06-03	Group Mailbox Subscriber Options - Auto Erase/ Save of Messages	0 = Erase After the subscriber listens to the entire new message and hangs up, InMail erases the message. 1 = Save After the subscriber listens to the entire new message and hangs up, InMail saves the message.	1
47-06-04	Group Mailbox Subscriber Options - Message Retention	0 ~ 90 days (0 = Indefinite)	0
47-06-05	Group Mailbox Subscriber Options - Recording Conversation Beep	0 = No (Disabled) 1 = Yes (Enabled)	1
47-06-06	Group Mailbox Subscriber Options - Message Waiting Lamp	0 = No (Disabled) 1 = Yes (Enabled)	1
47-06-07	Group Mailbox Subscriber Options - Auto Attendant Direct to Voice Mail	0 = No (Disabled) 1 = Yes (Enabled)	0

Program No.	Program Name	Input Data	Default
47-06-08	Group Mailbox Subscriber Options - Forced Unscreened Transfer	0 = No (Disabled) 1 = Yes (Enabled)	0
47-06-09	Group Mailbox Subscriber Options - Auto Time Stamp	0 = No (Disabled) 1 = Yes (Enabled)	0
47-06-10	Group Mailbox Subscriber Options - System Administrator	0 = No (Disabled) 1 = Yes (Enabled)	0
47-06-11	Group Mailbox Subscriber Options - Dialing Option	0 = No (Disabled) 1 = Yes (Enabled)	0
47-06-12	Group Mailbox Subscriber Options - Next Call Routing Mailbox	0 ~ 32 (0 = Undefined)	1 (Call Routing Mailbox 01) By default, Call Routing Mailbox numbers are 01 = 16.
47-06-13	Group Mailbox Subscriber Options - Directory List Number	0 = None 1 ~ 8 = List Number * = All	0
47-06-23	Group Mailbox Subscriber Options - Security Code Option	0 = Always 1 = Remote Logon only	0
47-07-02	InMail Routing Mailbox Options - Routing Mailbox Type	0 = None 1 = Call Routing 2 = Announcement 3 = Directory 4 = Distribution	Mailboxes 01 ~ 08 = 1 (Call Routing) Mailboxes 09 ~ 32 = 2 (Announcement)
47-08-01	Call Routing Mailbox Options - Dial Action Table	1 ~ 32 (Dial Action Table 1 ~ 32)	1 (Dial Action Table 1)
47-08-02	Call Routing Mailbox Options - Screened Transfer Timeout	0 ~ 255 seconds Entering 0 causes immediate recall.	15 seconds
47-08-03	Call Routing Mailbox Options - Time Limit for Dialing Commands	0 ~ 99 seconds Entering 0 causes the Automated Attendant to immediately route callers to the Timeout destination programmed in the active Dial Action Table.	5 seconds
47-08-04	Call Routing Mailbox Options - Fax Detection	0 = No (Disabled) 1 = Yes (Enabled)	0
47-09-01	Announcement Mailbox Options - Next Call Routing Mailbox	Call Routing Mailbox Number (01 ~ 32) Next Call Routing Mailbox 00 ~ 32 00 = Undefined	0
47-09-02	Announcement Mailbox Options - Repeat Count	0 ~ 10 (Announcement repeats 1 ~ 10 times) (0 = No Repeats)	0
47-09-03	Announcement Mailbox Options - Hang Up After	0 = None 1 = Goodbye 2 = Silent	0
47-10-01	InMail Trunk Options - Answer Table Assignment	Answer Table (1 ~ 16)	1

Program No.	Program Name	Input Data	Default
47-11-02	InMail Answer Table Options - Override Mailbox Category (Override MB Ctg) Use this option to specify the category of the mailbox where Automated Attendant calls should route when you enable Answer Schedule Override. • If the Override Mailbox is a Subscriber Mailbox, the outside caller hears the mailbox greeting (if recorded) and can leave a message. • If the Override Mailbox is a Master Mailbox, the outside caller hears the recorded announcement. Depending on how the Announcement Mailbox is programmed, InMail then hangs up, reroutes the call, or provides additional dialing options. • If the Override Mailbox is a Routing Mailbox, the outside caller hears the instruction menu and can dial any option allowed by the associated Dial Action Table.  <i>If any of the Input Data values are entered, the terminal displays the Override Mailbox Number selection (below).</i>	0 = Undefined 1 = Subscriber Mailbox - STA 2 = Master Mailbox 3 = Routing Mailbox	0
47-11-02	InMail Answer Table Options - Override Mailbox Number (Override MB Num) Use this option to specify the mailbox where Automated Attendant calls should route when you enable Answer Schedule Override. The mailbox number you select in this option should match the mailbox category specified in 47-11-02 : Override Mailbox Category above.	Up to 3 digits (using 0 ~ 9)	No Setting
47-11-03	InMail Answer Table Options - Default Mailbox Category (Default MB Ctg) Use this option to specify the category of mailbox used as the Default Mailbox. • If the Default Mailbox is a Subscriber Mailbox, the outside caller hears the mailbox greeting (if recorded) and can leave a message. • If the Default Mailbox is a Master Mailbox, the outside caller hears the recorded announcement. Depending on how the Announcement Mailbox is programmed, InMail then hangs up, reroutes the call, or provides additional dialing options. • If the Default Mailbox is a Routing Mailbox, the outside caller hears the instruction menu and can dial any option allowed by the associated Dial Action Table.  <i>If any of the Input Data values are entered, the terminal displays the Override Mailbox Number selection (below). If any of the Input Data values are entered, the terminal displays the Override Mailbox Number selection (below).</i>	0 = Undefined 1 = Subscriber Mailbox - STA 2 = Master Mailbox 3 = Routing Mailbox	Answer Table 1 = 3 Answer Table 2 ~ 16 = 0
47-11-03	InMail Answer Table Options - Default Mailbox Number (Default MB Num) Use this option to set the Answer Table Default Mailbox number. InMail uses the Default Mailbox when an Answer Schedule is not in effect. By default, this occurs at all times other than Monday through Friday from 8:30 AM to 5:00 PM.	Up to 3 digits (using 0 ~ 9)	Answer Table 1 = 1 Answer Table 2 ~ 16 = No setting
47-11-04	InMail Answer Table Options - Next Answer Table When 10 Answer Schedules in an Answer Table are not sufficient, use this option to link two Answer Tables together. InMail treats the two linked tables as a single 20 entry Answer Table.	Answer Table (0 ~ 16) 0 = Undefined	0
47-12-01	InMail Answer Schedules - Schedule Type	0 = Undefined 1 = Day of the Week 2 = Range of Days 3 = Date	Answer Table 1/ Schedule 1 = 2 All other schedules = 0

Program No.	Program Name	Input Data	Default
47-12-02	InMail Answer Schedules - Answering Mailbox Category (Entryxx MB Ctg) Use this option to specify the category of mailbox to which Automated Attendant calls should route when the schedule is in effect. If the Answering Mailbox is a Subscriber Mailbox , the outside caller hears the mailbox greeting (if recorded) and can leave a message. If the Answering Mailbox is a Master Mailbox , the outside caller hears the recorded announcement. Depending on how the Announcement Mailbox is programmed, InMail then hangs up, reroutes the call, or provides additional dialing options. If the Answering Mailbox is a Routing Mailbox , the outside caller hears the instruction menu and can dial any option allowed by the associated Dial Action Table.	0 = Undefined 1 = Subscriber Mailbox - STA 2 = Master Mailbox 3 = Routing Mailbox	Answer Table 1/ Schedule 1 = 3 All Other Schedules = 0
47-12-02	InMail Answer Schedules - Answering Mailbox Number (Entryxx MB Num) Use this option to set the number of the Answering Mailbox the Automated Attendant uses when the selected schedule is in effect. This mailbox is defined in 47-12-02 : Answering Mailbox Category.	Up to 3 digits (using 0 ~ 9)	Answer Table 1/ Schedule 1 = 1 All Other Answer Schedules = No setting
47-12-03	InMail Answer Schedules - Day of the Week (Entryxx Day) For Day of the Week (Type 1) Answer Schedules, use this option to select the day of the week the Answer Schedule should be active.	1 = Sunday 2 = Monday 3 = Tuesday 4 = Wednesday 5 = Thursday 6 = Friday 7 = Saturday	All Schedules = 1
47-12-04	InMail Answer Schedules - Start Day (Entryxx Start Day) For Range of Days (Type 2) Answer Schedules, use this option to select the day of the week the Answer Schedule should start.	1 = Sunday 2 = Monday 3 = Tuesday 4 = Wednesday 5 = Thursday 6 = Friday 7 = Saturday	Answer Table 1/ Schedule 1 = 2 All Other Schedules = 1
47-12-05	InMail Answer Schedules - End Day (Entryxx End Day) For Range of Days (Type 2) Answer Schedules, use this option to select the day of the week the Answer Schedule should end.	1 = Sunday 2 = Monday 3 = Tuesday 4 = Wednesday 5 = Thursday 6 = Friday 7 = Saturday	Answer Table 1/ Schedule 1 = 6 All Other Answer Schedules = 1
47-12-06	InMail Answer Schedules - Date (Entryxx Date) For Date (Type 3) Answer Schedules, use this option to select the date the Answer Schedule should be active.	MMDD For example : - 0101 = January 1 - 1231 = December 31 (0000 = Undefined)	All Schedule = 0000
47-12-07	InMail Answer Schedules - Schedule Start Time (Entryxx Start Time) Use this option to specify the time the Answer Schedule should start. It applies to Day of the Week (Type 1), Range of Days (Type 2), and Date (Type 3) schedules. (To make a schedule run continuously, make the same entry for 47-12-07 : Schedule Start Time and 47-12-08 : Schedule End Time.)	HHMM (24-hour clock) For example : - 0130 = 1 : 30 AM - 1700 = 5 : 00 PM (0000 = Undefined)	Answer Table 1/ Schedule 1 = 0830 All other schedules are 0000.
47-12-08	InMail Answer Schedules - Schedule End Time (Entryxx End Time) Use this option to specify the time the Answer Schedule should end. It applies to Day of the Week (Type 1), Range of Days (Type 2), and Date (Type 3) schedules. (To make a schedule run continuously, make the same entry for 47-12-07 : Schedule Start Time and 47-12-08 : Schedule End Time.)	HHMM (24-hour clock) For example : - 0130 = 1 : 30 AM - 1700 = 5 : 00 PM (0000 = Undefined)	Answer Table 1/ Schedule 1 = 1700 All Other Schedules = 0000

Program No.	Program Name	Input Data	Default
47-13-01	InMail Dial Action Tables - Action	0 = UND (Undefined) 1 = TRF (Transfer) 2 = UTRF (Unscreened Transfer) 3 = REC1 4 = REC2 5 = LOGON 6 = Hang Up 7 = GOTO	Refer to the programming manual for the default values and for all other available options in this command.
47-13-01	InMail Dial Action Tables - Data	Up to 8 digits (0 ~ 9, *, #) X = Caller Dialed Digits I = Ignore Digits N = No Routing P = Pause	Refer to the programming manual for the default values and for all other available options in this command.
80-03-01	DTMF Tone Receiver Setup - Detect Level	0 = 0 dBm ~ - 25 dBm 1 = - 5 dBm ~ - 30 dBm 2 = - 10 dBm ~ - 35 dBm 3 = - 15 dBm ~ - 40 dBm 4 = - 20 dBm ~ - 45 dBm 5 = - 25 dBm ~ - 50 dBm 6 = - 30 dBm ~ - 55 dBm	Refer to the Programming Manual for the default values.
80-04-01	Call Progress Tone Detector Setup - Detection Level	0 = 0 dBm ~ - 25 dBm 1 = - 5 dBm ~ - 30 dBm 2 = - 10 dBm ~ - 35 dBm 3 = - 15 dBm ~ - 40 dBm 4 = - 20 dBm ~ - 45 dBm 5 = - 25 dBm ~ - 50 dBm 6 = - 30 dBm ~ - 55 dBm	Refer to the Programming Manual for the default values.

Operation

Calling Your Mailbox

To call your mailbox:

With a Multiline Terminal, your Voice Mail key flashes green and your Message Center keys flash red when they have messages waiting. If you do not have a Voice Mail key, your Message Waiting LED flashes instead.

Multiline Terminal

1. Press your **Voice Mail** key (PRG 15-07 or SC **751** : 01 + *8).

- OR -

Press the **Vmsg** softkey.



Your mailbox number is normally the same as your extension number. You may optionally dial a co-worker's mailbox - or use this procedure to call your mailbox from a co-worker's telephone.

- OR -

Press **Speaker** key and dial *8.

2. If requested by Voice Mail, enter your security code.



Ask your Voice Mail system administrator for your security code.



Normally, your Message Waiting (MW) LED goes out (if applicable). If it continues to flash, you have unanswered Message Waiting requests or a new General Message. See "To check your messages" below.

Single Line Terminal

1. Lift the handset and dial *8.



If you are at a co-worker's telephone, you can dial the Voice Mail master number and your mailbox number instead. You can also use this procedure from your own telephone to call a co-worker's mailbox.

2. If requested by Voice Mail, enter your security code.

Checking Messages

1. Press the **Voice Mail** key once.



The voice mail is called.



When there are new messages, the Message Waiting LED on the telephone flashes red.



*With this option set, the MSG key can be used as a Voice Mail key for any function [calling voice mail or transfer call to voice mail (**Hold** + MSG + Extension Number), etc.].*

Leaving A Message (Multiline Terminal Only)

To leave a message in the mailbox of an unanswered extension (the extension you call can be busy, in DND or unanswered):

1. Press the **Voice Mail** key (PRG 15-07 or SC **751**: code 77 + InMail pilot).
- OR -
Dial *8.



The Voice Mail System prompts you to leave a message.

Forwarding Calls to Your Mailbox

To activate or cancel Call Forwarding:

1. Press **Speaker** key (or lift the handset at the Single Line Terminal) and choose from the following dial access codes:
741 = Call Forward – Immediate (PRG 15-07 or SC 751: code 10)
742 = Call Forward – Busy (PRG 15-07 or SC 751: code 11)
743 = Call Forward – No Answer (PRG 15-07 or SC 751: code 12)
744 = Call Forward – Busy/No Answer (PRG 15-07 or SC 751: code 13)
2. Dial the Voice Mail master number.
3. Press **Speaker** key to hang up (or hang up handset at the Single Line Terminal).

Transferring Calls to a Mailbox

To transfer your active call to a mailbox:

Multiline Terminal

1. Press **Hold** key.
2. Press the **Voice Mail** key (PRG 15-07 or SC **751**: code 77 + InMail pilot).

3. Dial the number of mailbox to receive the transfer.



This number can be a mailbox number or a co-worker's mailbox number.

- OR -

Press the **DSS Console** or **One-Touch** key for extension user's mailbox, which receives the transfer.



If the Transfer destination is an extension forwarded to Voice Mail, the call waits before routing the called user's mailbox. This gives you the option of retrieving the call instead of having it picked up by Voice Mail.

4. Hang up.



Voice Mail prompts your caller to leave a message in the mailbox you selected.

- OR -

1. Dial extension number or press a **DSS Console** key for the extension mailbox which receives the transfer.
2. Press the **Voice Mail** key (PRG 15-07 or SC **751**: code 77 + InMail pilot)
3. Hang up.



Voice Mail prompts your caller to leave a message in the mailbox you selected.

Single Line Terminal

1. Hookflash.
Dial Voice Mail master number followed by destination mailbox.



If the Transfer destination is an extension forwarded to Voice Mail, the call waits before routing the called user's mailbox. This gives you the option of retrieving the call instead of having it picked up by Voice Mail.

2. Hang up.

Recording Your Call

To record your active call in your mailbox:

Multiline Terminal

1. Press the **Voice Mail Record** key (PRG 15-07 or SC **751** : code 78)



You hear a beep and your Record key flashes. The system beeps periodically to remind you that you are recording.



To stop recording, press the Voice Mail Record key again. You can restart and stop recording as required.

- OR -

1. Press **Hold** key.

2. Dial **654**.



The system automatically reconnects you to your call.



To stop recording, place the call on hold then pick the call back up. You can restart and stop recording as required.

Single Line Terminal

1. Hookflash.
2. Dial **654**.



The system automatically reconnects you to your call.



To stop recording, hookflash twice. You can restart and stop recording as required.

Personal Answering Machine Emulation (Multiline Terminal Only)

To enable or cancel Personal Answering Machine Emulation:

1. Press **Speaker** key (or lift the handset at the Single Line Terminal) and choose from the following dial access codes:
 - 741 = Call Forward – Immediate
 - 742 = Call Forward – Busy
 - 743 = Call Forward – No Answer
 - 744 = Call Forward – Busy/No Answer
 - 745 = Call Forward – Both Ring
 - 746 = Call Forwarding – Follow Me
2. Dial the Voice Mail master number.
3. Press **Speaker** key to hang up (or hang up handset at the Single Line Terminal).

When Personal Answering Machine Emulation broadcasts your caller's message, you can:

Your telephone must be idle (not on a call).

1. Do nothing.



The message is automatically being recorded in your mailbox. The broadcast stops when your caller hangs up.

- OR -

1. Lift the handset to intercept the call.



You connect to the caller. The system records the first part of the message in your mailbox. The line key changes from red to green.

- OR -

Press **Speaker** key to cut off the message broadcast and send the call to your mailbox.



Voice Mail records the entire message in your mailbox.

Directory Dialing

Recording a Directory Dialing message:

1. Log onto the System Administrator's mailbox: **SA** (72) or dial **0** to play a Help message.
2. Select Instruction Menus: **I** (4).
3. Enter the Directory Dialing Mailbox number or dial **#** to go back to the System Administrator Options.
4. Select one of the following options:
 - L** (5) = Listen to the current Directory Dialing Message (if any)
 - #** = Exit listen mode
 - R** (7) = Record a new Directory Dialing Message
 - ***** = *Pause or restart recording*
 - **E (3)** = *Erase recording*
 - **#** = *Exit recording mode*
 - E (3)** = Erase the Directory Dialing Message
 - #** = Go back to the System Administrator options

Using Directory Dialing:

1. After the Automated Attendant answers, wait for the Directory Dialing Message. The Automated Attendant may ask you to dial a digit for Directory Dialing.
2. Dial the letters that correspond to the name of the person you wish to reach + **#**.
 - The Directory Dialing Message tells you how many letters you need to dial, and whether you should enter the person's first name or last name.
 - To exit Directory Dialing without selecting a name, dial **#**.
3. The Automated Attendant announces the name matches, and tells you which digit to dial (**1~3**) to reach each of the announced names.
 - To hear additional name matches (if any), dial **6** instead.
4. After you make your selection, the Automated Attendant routes your call to the name you select.

Schedule the Answer Schedule

Type 1 (Day of the Week) Answer Schedule Options

Type 1 (Day of Week) Example

In this example, Answer Table 1 routes calls as follows:

- Schedule 1 uses Routing Mailbox 2 and runs Sunday from 8:30 AM to 5:00 PM.
- Schedule 2 uses Subscriber Mailbox 3 and runs Wednesday from 10:30 AM to 5:00 PM.
- Schedule 3 uses Routing Mailbox 4 and runs Tuesday from 9:00 AM to 10:00 AM.
- At all other times, routing is handled by the Default Mailbox specified in PRG 47-11-03 : Default Mailbox Category and PRG 47-11-03 : Default Mailbox Number.

When setting up Answer Tables with multiple types, build the Answer Schedules in the following order:

- Range of Days
- Day of Week
- Date

Type 1 (Day of Week) Example		
Answer Table 1	Answer Schedule 1 Answer Schedule 1 is a Day of Week schedule that runs Sunday from 8:30 AM to 5:00 PM.	47-12-01 : Entry01 Schedule Type = 1
		47-12-02 : Entry01 MB Ctg = 3
		47-12-02 : Entry01 MB Num = 2
		47-12-03 : Entry01 Day = 1
		47-12-04 : Entry01 Start Day = 1 (Entry does not matter)
		47-12-05 : Entry01 End Day = 1 (Entry does not matter)
		47-12-06 : Entry01 Date (MMDD) = 0000 (Entry does not matter)
		47-12-07 : Entry01 Start Time = 0830 (8:30 AM)
		47-12-08 : Entry01 End Time = 1700 (5:00 PM)
	Answer Schedule 2 Answer Schedule 2 is a Day of Week schedule that runs Wednesday from 10:30 AM to 5:00 PM.	47-12-01 : Entry01 Schedule Type = 1
		47-12-02 : Entry01 MB Ctg = 1
		47-12-02 : Entry01 MB Num = 3
		47-12-03 : Entry01 Day = 4
		47-12-04 : Entry01 Start Day = 1 (Entry does not matter)
		47-12-05 : Entry01 End Day = 1 (Entry does not matter)
		47-12-06 : Entry01 Date (MMDD) = 0000 (Entry does not matter)
		47-12-07 : Entry01 Start Time = 1030 (10:30 AM)
		47-12-08 : Entry01 End Time = 1700 (5:00 PM)
	Answer Schedule 3 Answer Schedule 3 is a Day of Week schedule that runs Tuesday from 9:00 AM to 10:00 AM.	47-12-01 : Entry01 Schedule Type = 1
		47-12-02 : Entry01 MB Ctg = 3
		47-12-02 : Entry01 MB num = 4
		47-12-03 : Entry01 Day = 3
		47-12-04 : Entry01 Start Day = 1 (Entry does not matter)
		47-12-05 : Entry01 End Day = 1 (Entry does not matter)
		47-12-06 : Entry01 Date (MMDD) = 0000 (Entry does not matter)
		47-12-07 : Entry01 Start Time = 0900 (9:00 AM)
		47-12-08 : Entry01 End Time = 1000 (10:00 AM)

Type 2 (Range of Days) Answer Schedule Options

Type 2 (Range of Days) Example

In this example, Answer Table 1 routes calls as follows:

- Schedule 1 uses Routing Mailbox 1 and runs Sunday through Wednesday from 8:30 AM to 5:00 PM.
- Schedule 2 uses Routing Mailbox 2 and runs Thursday and Friday from 11:00 AM to 1:00 PM.
- At all other times, routing is handled by the Default Mailbox specified in PRG 47-11-03 : Default Mailbox Category and PRG 47-11-03 : Default Mailbox Number.

When setting up Answer Tables with multiple types, build the Answer Schedules in the following order:

- Range of Days
- Day of Week
- Date

Type 2 (Range of Days) Example		
Answer Table 1	Answer Schedule 1 Answer Schedule 1 is a Range of Days schedule that starts schedule that runs Sunday through Wednesday from 8:30 AM to 5:00 PM.	47-12-01 : Entry01 Schedule Type = 2
		47-12-02 : Entry01 MB Ctg = 3
		47-12-02 : Entry01 MB Num = 1
		47-12-03 : Entry01 Day = 1 (Entry does not matter)
		47-12-04 : Entry01 Start Day = 1 (Sunday)
		47-12-05 : Entry01 End Day = 4 (Wednesday)
		47-12-06 : Entry01 Date (MMDD) = 0000 (Entry does not matter)
		47-12-07 : Entry01 Start Time = 0830 (8:30 AM)
		47-12-08 : Entry01 End Time = 1700 (5:00 PM)
	Answer Schedule 2 Answer Schedule 2 is a Range of Days schedule that runs Thursday and Friday from 11:00 AM to 1:00 PM.	47-12-01 : Entry01 Schedule Type = 2
		47-12-02 : Entry01 MB Ctg = 3
		47-12-02 : Entry01 MB Num = 2
		47-12-03 : Entry01 Day = 1 (Entry does not matter)
		47-12-04 : Entry01 Start Day = 4 (Wednesday)
		47-12-05 : Entry01 End Day = 5 (Thursday)
		47-12-06 : Entry01 Date (MMDD) = 0000 (Entry does not matter)
		47-12-07 : Entry01 Start Time = 1100 (11:00 AM)
		47-12-08 : Entry01 End Time = 1300 (1:00 PM)

Type 3 (Date) Answer Schedule Options

Type 3 (Date) Example

In this example, Answer Table 1 routes calls as follows:

- Schedule 1 uses Routing Mailbox 1 and runs every day from 8:30 AM to 5:00 PM.
- Schedule 2 uses Routing Mailbox 9 and runs only on Christmas day from 8:30 AM to 5:00 PM.
- At all other times, routing is handled by the Default Mailbox specified in PRG 47-11-03 : Default Mailbox Category and PRG 47-11-03 : Default Mailbox Number.

When setting up Answer Tables with multiple types, build the Answer Schedules in the following order:

- Range of Days
- Day of Week
- Date

Type 3 (Date) Example		
Answer Table 1	Answer Schedule 1 Answer Schedule 1 is a Range of Days schedule that starts schedule that runs every day from 8:30 AM to 5:00 PM.	47-12-01 : Entry01 Schedule Type = 2
		47-12-02 : Entry01 MB Ctg = 3
		47-12-02 : Entry01 MB Num = 1
		47-12-03 : Entry01 Day = 1 (Entry does not matter)
		47-12-04 : Entry01 Start Day = 1 (Sunday)
		47-12-05 : Entry01 End Day = 1 (Sunday)
		47-12-06 : Entry01 Date (MMDD) = 0000 (Entry does not matter)
		47-12-07 : Entry01 Start Time = 0830 (8:30 AM)
		47-12-08 : Entry01 End Time = 1700 (5:00 PM)
	Answer Schedule 2 Answer Schedule 2 is a Date schedule that runs only on Christmas day from 8:30 AM to 5:00 PM.	47-12-01 : Entry01 Schedule Type = 3
		47-12-02 : Entry01 MB Ctg = 3
		47-12-02 : Entry01 MB Num = 9
		47-12-03 : Entry01 Day = 1 (Entry does not matter)
		47-12-04 : Entry01 Start Day = 1 (Entry does not matter)
		47-12-05 : Entry01 End Day = 1 (Entry does not matter)
		47-12-06 : Entry01 Date (MMDD) = 1225 (December 25, Christmas day)
		47-12-07 : Entry01 Start Time = 0830 (8:30 AM)
		47-12-08 : Entry01 End Time = 1700 (5:00 PM)

InMail-Auto Setting

Description

Auto Setting Cold Start

This feature will automatically program and work in the SL2100 system at default (Cold start).

Following programs are made automatically.

- 11-07-01, for Department Group 50 = 3999
- 15-03-01, for extensions 213-228 = Dial Pulse (0)
- 15-03-03, for extensions 213-228 = Special (1)
- 16-02-01, for extensions 213-228 = 50
- 45-01-01 = 50

Conditions

- InMail supports a maximum of 16 channels when EXIFB is installed.
- Up to 4 channels of Built-In VRS/VM (InMail) are available from default on CPU-C1.
- If after auto setting PRG 45-01-01 and PRG 16-02-01 are changed, the system must be reset for the changes to take affect.
- InMail Auto Setting does not change extension number assignments in PRG11-02-01. If the extension numbers for ports 113-128 were deleted then the InMail ports will not have extension numbers and the voice mail feature will not work properly.

Default Settings

See Guide to Feature Programming below.

System Availability

Terminals

N/A

Required Components

IP7xx-CPU-C1

IP7WW-EXIFB-C1 (Optional Depending on number ports required)

Related Features

InMail

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-07-01	Department Group Pilot Numbers - Extension Group Pilot Number	Dial (Up to 8 digits)	Group Number 1-49 : Pilot Number 3101-3149 Group Number 50 : Pilot Number 3999 Group Number 1-49 : Pilot Number is No Setting
45-01-01	Voice Mail Integration Options - Voice Mail Department Group Number	0 = No Voice Mail Assigned 1 ~ 50 = Department Group 1 ~ 50	Department Group 50
15-03-01	Single Line Telephone Basic Data Setup - SLT Signaling Type	0 = DP 1 = DTMF	Extensions 213 ~ 228 = Dial Pulse (0) Other Extensions = DTMF (1)
15-03-03	Single Line Telephone Basic Data Setup - Terminal Type	0 = Normal 1 = Special	Extensions 213 ~ 228 = Special (1) Other Extensions = Normal (0)
16-02-01	Department Group Assignment	1 ~ 50  If department group 50 already used, InMail auto setting does not function.	Extensions 213 ~ 228 = 50 Other Extensions = Group 1

Operation

Cold Start

1. Turn SL2100 power off.
2. Once the system has powered down, push in and hold the **Load** button.
3. Turn SL2100 power on.
4. Continue holding the **Load** button for approximately three seconds or until ALM LED (red) lights.
5. Release the **Load** button.
6. Programming changes are made automatically.

InMail-Automatic Access to VM by Caller ID

Description

An InMail mailbox can be associated with a specific caller ID (CID) number. When that CID number is presented to the InMail, it automatically logs the user into their mailbox. This greatly improves VM accessibility for outside callers.

Two types of voice mail access modes exist for this feature.

1. Specifying the VM Pilot number as a DID/DIL/DISA/VRS destination.
- OR -
Dialing the VM pilot number after calling in from a Mobile Extension.
2. Program to forward a call to VM (102) by any of following Programs.
 - PRG 22-05-01 (Incoming Ring Group)
 - PRG 22-11-05 (Transfer Target number -1)
 - PRG 22-11-06 (Transfer Target number -2)
 - PRG 25-03-01 (Incoming Ring Group No.)
 - PRG 25-04-01 (VRS/DISA Transfer Ring Group at No answer/Busy)

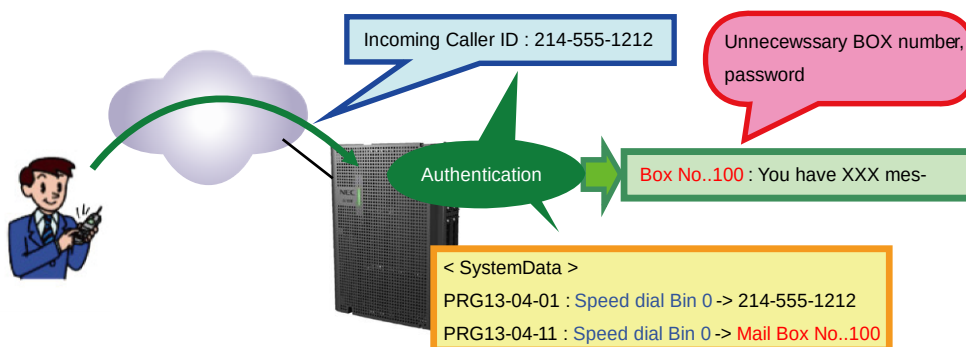


Figure 1-18 Example - User Access to Voice Mail

Conditions

- When using this feature, InMail does not prompt for a password on a call from the set CID number.
- To use this feature, the voice mailbox number must be set in PRG13-04-11. If not set, the system requires the normal log in procedure or entering a valid mailbox and security code to login.
- Two different mailboxes can not be tied to the same inbound CID number. If two mailboxes are set for the same inbound CID number the system uses the first match it finds.
- This feature is only supported for external calls to the InMail.
- Mobile Extension users can use this feature by setting the VM box number in PRG 13-04-11 which corresponds to the Speed Dial number registered in PRG 15-22-01.
- Common Speed Dial area is used for this feature. Group or Station Speed Dial areas are not supported with this feature.
- When a number in the Common Speed Dial includes a trunk access code or end code (#), the Redial name indication will work if the number matches completely.
- If the same number is registered in the Common Speed Dial bin, the latest Speed Dial number is used.
- The Flexible ringing feature has priority over the InMail - Automatic Access to VM by Caller ID feature.
- To enable this feature, PRG 14-01-22 (Caller ID to Voice Mail) must be set to 1.

Default Settings

Disabled

System Availability

Terminals

All Multiline Terminals

Trunks

The following Trunks support sending Caller ID:

- Analog Line
- ISDN Line (BRI)
- ISDN Line (PRI)
- SIP Line

Required Component(s)

- CPU-C1 board

Related Features

Abbreviated Dialing/Speed Dial

Caller ID - Flexible Ringing

Mobile Extension

InMail

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
13-04-01	Speed Dialing Number and Name - Number	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
13-04-02	Speed Dialing Number and Name - Name	Maximum 12 Characters (Use dial pad to enter name)	No Setting
13-04-11	Speed Dialing Number and Name - Mailbox Number	0 ~ 128, 900 ~ 931	0
15-22-01	Mobile Extension Setup - Mobile Extension Target Setup	0 = No Setting 1 ~ 999 = Speed Dial Bin 1 ~ 999 (PRG 13-04)	0

Program No.	Program Name	Input Data	Default
22-02-01	Incoming Call Trunk Setup - Trunk Service Type	0 = Normal 1 = VRS (second dial tone if no VRS installed) 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delayed VRS 7 = ANI/DNIS 8 = DID (DDI) Mode Switching	0
22-05-01	Incoming Trunk Ring Group Assignment - Incoming Group Number	0 = No Setting 01 ~ 50 = Incoming Group 102 = VMI 103 = Centralized VM	1
22-11-05	DID Translation Table - Transfer Destination Number 1	0 = No setting 01 ~ 50 = Incoming Ring Group 102 = VM 103 = Centralized VM 201 ~ 250 = Department Group 400 = VRS 401 = DISA 501 ~ 599 = DISA 1000 ~ 1999 = Common ABB Dial (000 ~ 999)	0
22-11-06	DID Translation Table - Transfer Destination Number 2	0 = No setting 01 ~ 50 = Incoming Ring Group 102 = VM 103 = Centralized VM 201 ~ 232 = Department Group 400 = VRS 401 = DISA 501 ~ 599 = DISA 1000 ~ 1999 = Common ABB Dial (000 ~ 999)	0
25-03-01	VRS/DISA Transfer Ring Group With Incorrect Dialing - Incoming Group Number	0 = Disconnect 01 ~ 25 = Incoming Ring Group 102 = VMI 103 = Centralized VM 104 = Assign the Speed Dial Number	1
25-04-01	VRS/DISA Transfer Ring Group With No Answer/Busy - Incoming Group Number	0 = Disconnect 01 ~ 50 = Incoming Ring Group 102 = VMI 103 = Centralized VM 104 = Assign the Speed Dial Number	0

Operation

Retrieve VM Messages

To retrieve VM messages from outside of office:

Trunk 1: 214-555-2000 (DIL)

Outside party number: 9725551212

PRG 22-02-01: Trunk 1 DIL

PRG 22-07-01: VM Pilot number, 300

PRG 13-04-01: Speed Dial area No.0 -> 9725551212

PRG 13-04-11: Speed Dial area No.0 -> 100 (VM BOX)

1. Call DIL number.
2. After the VM is answered, user can enter VM Box 100 directly.
3. Announce the zone.

- OR -

Trunk 1: 214-555-2000 (DID)

Outside party number: 9725551212

PRG 22-02-01: Trunk 1 DID

PRG 22-11-05: Set transfer destination, 102 InMail

PRG 13-04-01: Speed Dial area No.0 -> 9725551212

PRG 13-04-11: Speed Dial area No.0 -> 100 (VM BOX)

1. Call the DID number to set the transfer to InMail from outside party.
2. After the VM is answered, user can enter VM Box 100 directly.

To retrieve VM messages from Mobile extension:

Trunk 1: 214-555-2000 (DIL)

Mobile extension number: 4321

PRG 22-02-01: Trunk 1 DIL

PRG 22-07-01: VM Pilot number, 300

PRG 15-22-01: Mobile Extension Target Setup No.0 -> 4321

PRG 13-04-11: Speed Dial area No.0 -> 100 (VM BOX)

1. Call DIL number.
2. After the VM is answered, user can enter VM Box 100 directly.

InMail-Cascade Message Notification

Description

If an extension user receives a new message in their mailbox, Cascading Message Notification will call them at up to five preset destinations to let them know a new voice mail message has arrived. A destination can be an outside number (such as a cell phone, pager, or home office) or a co-worker's extension.

The Cascading Message Notification destinations are set up in the Notification Schedule. Each of the five schedule entries can be individually enabled or disabled and provides options for:

- Type: Voice call or pager.
- Start Hour: The time the destinations become active.
- End Hour: The time the destinations become inactive.
- Day of Week: Enables or disables day of week.
- Number: The destination telephone, pager, or extension number.
- Busy Attempts: The number of times the system will try the destination when it is busy. The system cancels notification callouts for this entry when the Busy Attempts number is met.
- RNA Attempts: The number of times the system will try the destination when it is unanswered. The system cancels notification callouts for this entry when the RNA Attempts number is met.
- Security: Enables or disables the Security Code requirement for the notification destinations. For example, you may want to disable the Security Code when the destinations is your cell phone and it may be inconvenient to dial digits after answering the notification callout.

When the extension user enables Cascading Message Notification, the system will try each enabled destination that is active for the current day and time (i.e., in-schedule). The system will not try any destinations that are disabled or are not in-schedule. When the retries for a particular destination have been met the system will immediately move to the next destination.

Conditions

- Retry Interval timers are set on a system wide basis only.
- The pager dial string is set on a system wide basis only.
- Notification settings can be changed using the Telephone Mailbox Option Interface or system programming only.
- When the retries for a particular destination have been met the system will immediately move to the next destination even if there is only one destination active.
- Once the notification process begins, a new message does not restart the process if it is already in progress. Once the process ends (e.g., if the message is acknowledged or the maximum number of callout attempts is reached), the next new message will restart the process.
- The system determines which numbers are internal extensions or external numbers by the system dial plan settings.
- Depending on the system ARS routing maybe needed to properly route external calls.
- If no trunks are available when an outside destination is attempted it is counted as a Busy No Answer attempt.
- Program 47-02-28 is used to enable or disable message notification queuing. If enabled, message notification is stored in queue when there is no active notification destination. Once the destination becomes active the queued notification is processed.

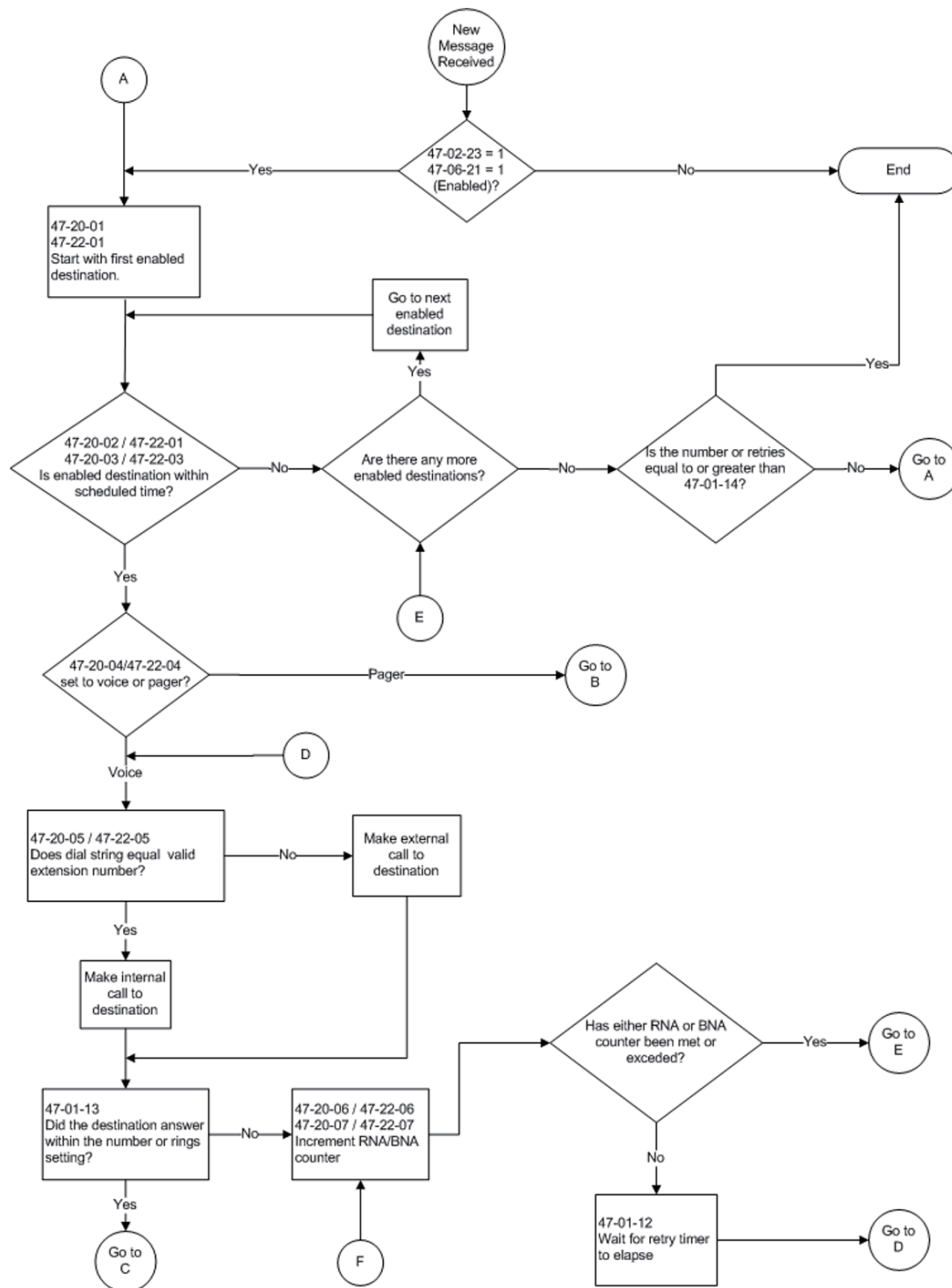


Figure 1-19 Cascade Message Notification Flow Chart-1

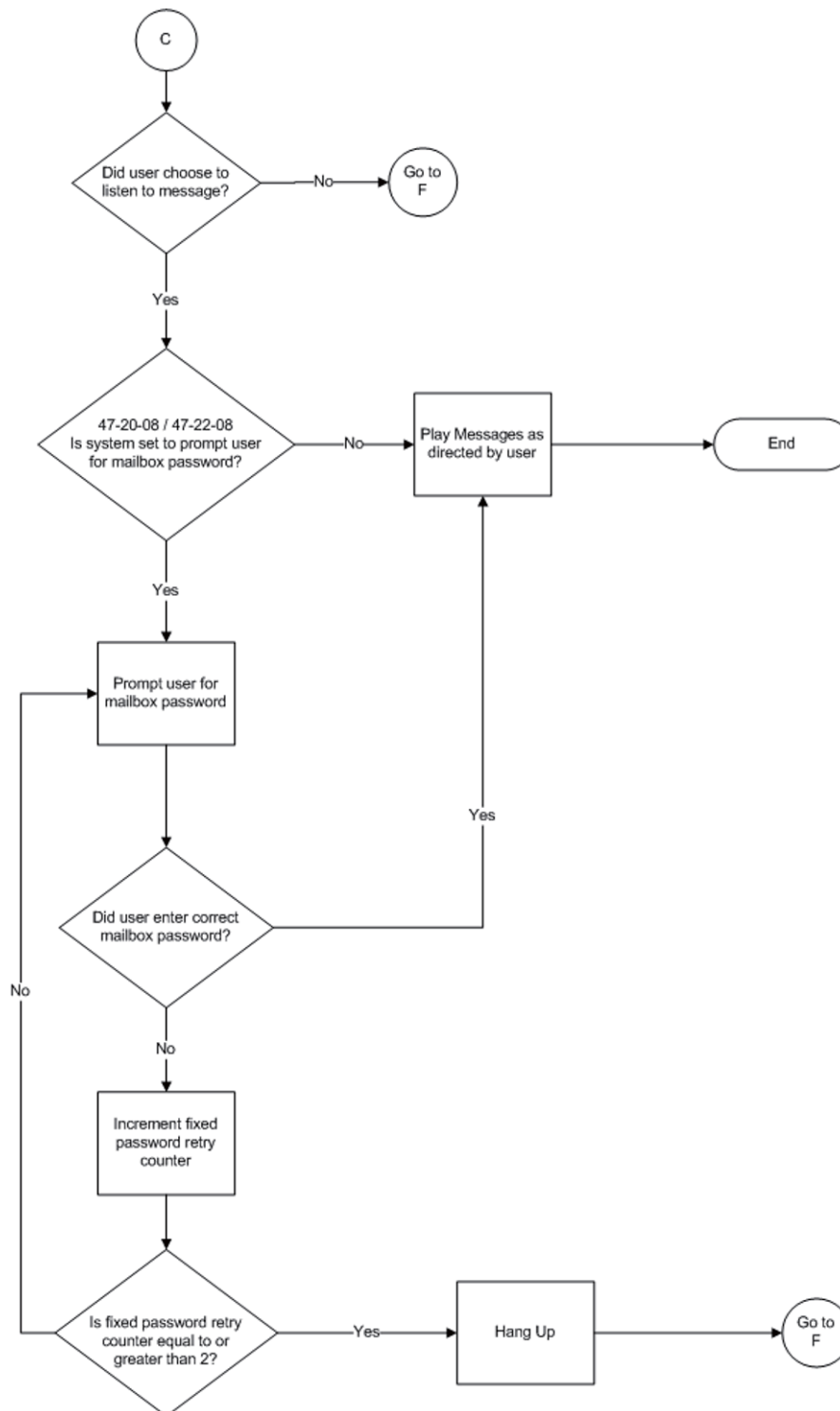


Figure 1-20 Cascade Message Notification Flow Chart-2

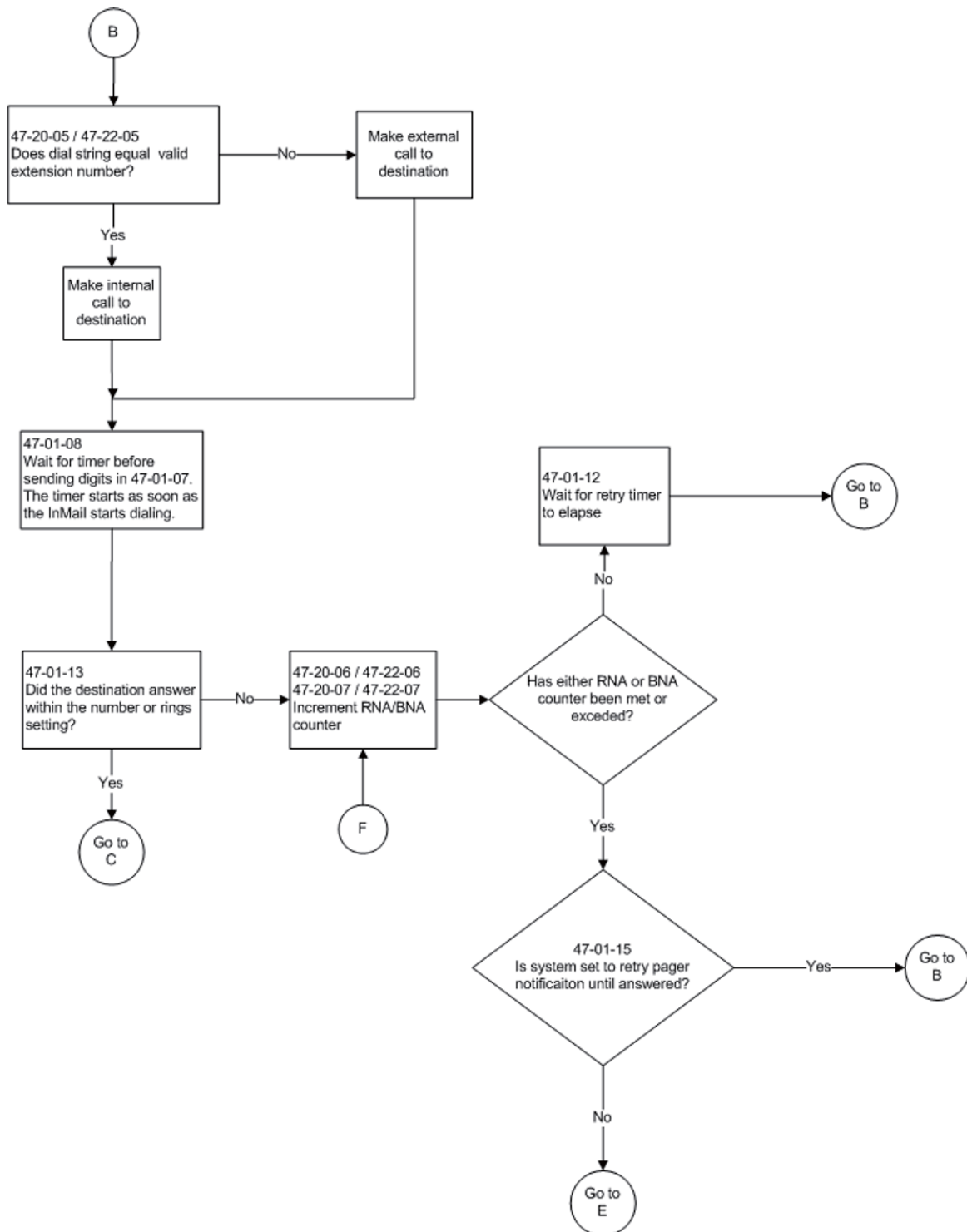


Figure 1-21 Cascade Message Notification Flow Chart-3

Message Notification to Normal Telephone Numbers

Below is a basic overview of how Message Notification works with phone numbers assuming the retry attempts are at default. The system determines which numbers are internal extensions or external numbers by the system dial plan settings. Depending on the system, ARS routing maybe needed to properly route external calls.

1. The subscriber activates Message Notification for their mailbox.

2. When the subscriber receives a new message, the InMail dials the first active destination in the cascade that should receive the Message Notification.
 - InMail waits up to 30 seconds (approximately five rings) for ringback, reorder, busy or voice activity from the called number. If nothing is detected, the callout is considered unanswered (RNA).
3. If the recipient answers, InMail plays the notification message ("Hello, I have a message for") and asks the recipient to dial 1 to log onto their mailbox. The recipient hears the notification message if:
 - They say "Hello" after answering the callout, or
 - The system receives answer supervision from the Telco after the recipient answers the call. (Note that the recipient can skip the announcement by dialing 1 to log onto their mailbox after answering the callout – without saying "Hello".), or
 - The notification is to a system extension.
4. Once the recipient logs onto the mailbox, the notification is considered acknowledged and will not reoccur until the subscriber receives new messages.
5. If the recipient doesn't answer, the system follows the Cascading Message Notification retry attempt settings and notification will eventually stop if the call is not answered.
6. Once the notification process begins, a new message does not restart the process if it is already in progress. Once the process ends (e.g., if the message is acknowledged or the maximum number of callout attempts is reached), the next new message will restart the process.

Message Notification to Pager Numbers

Below a basic overview of how Message Notification works with pager numbers assuming the retry attempts are at default. The system determines which numbers are internal extensions or external numbers by the system dial plan settings. Depending on the system, ARS routing maybe needed to properly route external calls.

1. The subscriber activates Message Notification for their mailbox.
2. When the subscriber receives a new message, InMail immediately dials the pager service.
 - InMail waits up to 30 seconds (approximately 5 rings) for ringback, reorder, busy or voice activity from the called number. If nothing is detected, the callout is considered unanswered.
3. After the pager service answers, InMail waits for the timer PRG 47-01-08 then sends the dial string in PRG 47-01-07 which causes the pager display to show the subscriber's mailbox number as well as the number of new messages in the mailbox.
 - The notification is considered acknowledged if the subscriber logs onto their mailbox.
 - If the notification is not acknowledged (within a programmable time frame, PRG 47-01-12) the pager notification is repeated (up to the RNA attempts count, PRG 47-20-07).
 - If the pager service doesn't answer, the system follows the Cascading Message Notification rules and notification will eventually stop if the call is not answered.

Default Settings

None

System Availability

Terminals

All Multiline Terminals

Required Component(s)

IP7[]-CPU-C1 board

SL2100 VM E-MAIL NOTIFY LIC

Related Features

None

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
47-01-07	InMail System Options - Digital Pager Callback Number	Digits (12 maximum, using 0 ~ 9, # and *) M (Number of messages - entered by pressing LK1) X (Extension number - entered by pressing LK2) InMail automatically replaces the X command with the number of the extension that initially received the message.	X * M#
47-01-08	InMail System Options - Delay in Dialing Digital Pager Callback Number	0 ~ 99 seconds	30 seconds
47-01-09	InMail System Options - Wait Between Digital Pager Callout Attempts	1 ~ 255 minutes	15 minutes
47-01-11	InMail System Options - Wait Between Busy Non-Pager Callout Attempts	1 ~ 255 minutes	15 minutes
47-01-12	InMail System Options - Wait Between RNA Non-Pager Callout Attempts	1 ~ 255 minutes	30 minutes
47-01-13	InMail System Options - Number of RNA rings	1 ~ 99 rings	5 rings
47-01-14	InMail System Options - Number of Cascading Attempts	1 ~ 99 rings	1 ring
47-02-23	InMail Station Mailbox Options - All Message Notification Enabled	0 = No 1 = Yes	1
47-02-28	InMail Station Mailbox Options - Message Notification Queuing Option	0 = Disabled 1 = Enable	0
47-06-21	Group Mailbox Subscriber Options - All Message Notification Enabled	0 = No 1 = Yes	1
47-06-26	Group Mailbox Subscriber Options - Message Notification Queuing Option	0 = Disabled 1 = Enabled	0
47-20-01	Station Mailbox Message Notification Options - Notification	0 = Off 1 = On	0
47-20-02	Station Mailbox Message Notification Options - Notification Begin Hour	00 ~ 23 (00 (12 : 00 AM) ~ 23 (11 : 00 PM))	00
47-20-03	Station Mailbox Message Notification Options - Notification End Hour	00 ~ 23 (00 (12 : 00 AM) ~ 23 (11 : 00 PM))	00

Program No.	Program Name	Input Data	Default
47-20-04	Station Mailbox Message Notification Options - Notification Type	0 = Undefined 1 = Voice 2 = Pager	1
47-20-05	Station Mailbox Message Notification Options - Notification Number	Up to 16 digits	No Setting
47-20-06	Station Mailbox Message Notification Options - Notification Busy Attempts	1 ~ 99 (attempts)	5
47-20-07	Station Mailbox Message Notification Options - Notification RNA Attempts	1 ~ 99 (attempts)	5
47-20-08	Station Mailbox Message Notification Options - Notification Security	0 = Off 1 = On	1
47-20-09	Station Mailbox Message Notification Options - Notification Day of week - Sunday	0 = Disabled 1 = Enabled	1
47-20-10	Station Mailbox Message Notification Options - Notification Day of week - Monday	0 = Disabled 1 = Enabled	1
47-20-11	Station Mailbox Message Notification Options - Notification Day of week - Tuesday	0 = Disabled 1 = Enabled	1
47-20-12	Station Mailbox Message Notification Options - Notification Day of week - Wednesday	0 = Disabled 1 = Enabled	1
47-20-13	Station Mailbox Message Notification Options - Notification Day of week - Thursday	0 = Disabled 1 = Enabled	1
47-20-14	Station Mailbox Message Notification Options - Notification Day of week - Friday	0 = Disabled 1 = Enabled	1
47-20-15	Station Mailbox Message Notification Options - Notification Day of week - Saturday	0 = Disabled 1 = Enabled	1
47-22-01	Group Mailbox Message Notification Options - Notification	0 = Off 1 = On	0
47-22-02	Group Mailbox Message Notification Options - Notification Begin Hour	00 ~ 23 (00 (12 : 00 AM) ~ 23 (11 : 00 PM))	00
47-22-03	Group Mailbox Message Notification Options - Notification End Hour	00 ~ 23 (00 (12 : 00 AM) ~ 23 (11 : 00 PM))	00
47-22-04	Group Mailbox Message Notification Options - Notification Type	0 = Undefined 1 = Voice 2 = Pager	1
47-22-05	Group Mailbox Message Notification Options - Notification Number	Up to 16 digits	No Setting
47-22-06	Group Mailbox Message Notification Options - Notification Busy Attempts	1 ~ 99 (attempts)	5
47-22-07	Group Mailbox Message Notification Options - Notification RNA Attempts	1 ~ 99 (attempts)	5
47-22-08	Group Mailbox Message Notification Options - Notification Security	0 = Off 1 = On	1
47-22-09	Group Mailbox Message Notification Options - Notification Day of week - Sunday	0 = Disabled 1 = Enabled	1
47-22-10	Group Mailbox Message Notification Options - Notification Day of week - Monday	0 = Disabled 1 = Enabled	1
47-22-11	Group Mailbox Message Notification Options - Notification Day of week - Tuesday	0 = Disabled 1 = Enabled	1
47-22-12	Group Mailbox Message Notification Options - Notification Day of week - Wednesday	0 = Disabled 1 = Enabled	1
47-22-13	Group Mailbox Message Notification Options - Notification Day of week - Thursday	0 = Disabled 1 = Enabled	1

Program No.	Program Name	Input Data	Default
47-22-14	Group Mailbox Message Notification Options - Notification Day of week - Friday	0 = Disabled 1 = Enabled	1
47-22-15	Group Mailbox Message Notification Options - Notification Day of week - Saturday	0 = Disabled 1 = Enabled	1

Operation

To set up Cascade Notification:



The Display Information and Soft keys are available for IP Multiline Terminal & 2W Digital Multiline Terminal.

1. Access the All Message Notification Setting menu.

Log onto Subscriber Mailbox.

V	m	a	i	l		-		M	a	i	l	b	o	x	:	1	0	1					
M	s	g	s		N	e	w	:		0				A	r	c	h	:		0			
	L	s	t	n		G	r	e	e	t			L	v	M	s	g		M	o	r	e	>

↓Dial OP (67) / Press "More >" → "Setup".

Mailbox Options menu

C	o	n	f	i	g	u	r	e		M	b	o	x		1	0	1						
	C	o	d	e		N	o	t	f	y		C	a	l	l	H			M	o	r	e	>

↓Dial N (6) / Press "Notify".

Notification Type Selection menu

M	e	s	s	a	g	e		N	o	t	i	f	i	c	a	t	i	o	n				
P	h	o	n	e		E	m	a	i	l									B	a	c	k	

↓Dial P (7) / Press "Phone".

All Message Notifications Setting menu

P	h	o	n	e		N	o	t	i	f	i	c	a	t	i	o	n	:		O	f	f	
		O	n				O	f	f				D	e	s	t			B	a	c	k	

2. All message Notifications Setting menu

P	h	o	n	e		N	o	t	i	f	i	c	a	t	i	o	n	:		O	f	f	
		O	n				O	f	f				D	e	s	t			B	a	c	k	

↓ Dial O (6) / Press "On". ↑ Dial O (6) / Press "Off".

P	h	o	n	e		N	o	t	i	f	i	c	a	t	i	o	n	:		O	n		
		O	n				O	f	f				D	e	s	t			B	a	c	k	

- Soft key Operation (IP Multiline Telephone & 2W Digital Multiline Telephone Only)

On/On: Turn All Notifications on.

Off/Off: Turn All Notifications off.

Dest/Destinations: Proceed to notification Destination Selection Menu.

Back/Back: Go back to Notification Type Selections Menu.

- Key Operation

Key 3: Proceed to Notification Destination Selection Menu.

Key 6: Toggle All Notifications on/off.

Key 9: Exit from Mailbox.

Key #: Go back to Notification Type Selection menu.

3. Notification Destination Selection menu

P	h	o	n	e		N	o	t	i	f	i	c	a	t	i	o	n	:		O	n		
D	e	s	t	1		D	e	s	t	2		D	e	s	t	3			M	o	r	e	>

↓Press "More>". ↑ Press "More>".

P	h	o	n	e		N	o	t	i	f	i	c	a	t	i	o	n	:		O	n		
D	e	s	t	4		D	e	s	t	5			B	a	c	k			M	o	r	e	>

- Soft key Operation (IP Multiline Telephone & 2W Digital Multiline Telephone Only)

Dest1/Destination 1: Proceed to Notification Destination Selection 1 Menu.

Dest2/Destination 2: Proceed to Notification Destination Selection 2 Menu.

Dest3/Destination 3: Proceed to Notification Destination Selection 3 Menu.

Dest4/Destination 4: Proceed to Notification Destination Selection 4 Menu.

Dest5/Destination 5: Proceed to Notification Destination Selection 5 Menu.

Back: Go back to All Message Notifications Setting menu.

- Key Operation

Key 1: Proceed to Phone Notification Destination 1 menu.

Key 2: Proceed to Phone Notification Destination 2 menu.

Key 3: Proceed to Phone Notification Destination 3 menu.

Key 4: Proceed to Phone Notification Destination 4 menu.

Key 5: Proceed to Phone Notification Destination 5 menu.

Key 9: Exit from mailbox.

Key #: Go back to All Message Notifications Setting menu.

4. Message Notification main menu

InMail plays a summary of your Message Notification settings.

D	e	s	t		1		D	i	s	a	b	l	d		1	2	A	M	-	1	2	A	M	
P	h	o	n	e	:																			
	E	n	b	l			D	i	s	b	l			C	h	n	g	e			B	a	c	k

If phone number already exists,

D	e	s	t		1		D	i	s	a	b	l	d		0	8	A	M	-	0	6	P	M	
P	h	o	n	e	:	2	0	3	9	2	6	5	4	0	0									
	E	n	b	l			D	i	s	b	l			C	h	n	g	e			B	a	c	k

↓Dial E (3) / Press "Enbl". ↑Dial D (3) / Press "Disbl".

D	e	s	t		1		E	n	a	b	l	e	d		0	8	A	M	-	0	6	P	M
P	h	o	n	e	:	2	0	3	9	2	6	5	4	0	0								
	E	n	b	l		D	i	s	b	l		C	h	n	g	e			B	a	c	k	

- Soft key Operation (IP Multiline Telephone & 2W Digital Multiline Telephone Only) Enbl/Enable: Turn destination [x] notifications on.
Disbl/Disable: Turn destination [x] notifications off.
Change/Change: Go to destination [x] notification setting menus.
Back/Back: Go back to Notification Destination Selection menu.
- Key Operation
Key 2: Go to destination [x] notification setting menus.
Key 3: Toggle destination [x] notifications on/off.
Key #: Go back to Notification Destination Selection menu.

5. Message Notification Programming (Begin Hour)

N	o	t	i	f	i	c	a	t	i	o	n		B	e	g	i	n	:		1	2	A	M
													N	e	x	t			E	x	i	t	

6. Message Notification Programming (End Hour)

N	o	t	i	f	i	c	a	t	i	o	n		E	n	d	:		1	2	A	M		
													N	e	x	t			E	x	i	t	

7. Message Notification Programming (Sunday)

D	a	y		o	f		W	e	e	k	:	S	u	n	-	E	n	a	b	l	e	d		
	E	n	b	l			D	i	s	b	l			N	e	x	t			E	x	i	t	

D	a	y		o	f		W	e	e	k	:	S	u	n	-	D	i	s	a	b	l	d		
	E	n	b	l			D	i	s	b	l			N	e	x	t			E	x	i	t	

8. Message Notification Programming (Monday)

D	a	y		o	f		W	e	e	k	:	M	o	n	-	E	n	a	b	l	e	d		
	E	n	b	l			D	i	s	b	l			N	e	x	t			E	x	i	t	

D	a	y		o	f		W	e	e	k	:	M	o	n	-	D	i	s	a	b	l	d		
	E	n	b	l			D	i	s	b	l			N	e	x	t			E	x	i	t	

9. Message Notification Programming (Tuesday)

D	a	y			o	f		W	e	e	k	:	T	u	e	-	E	n	a	b	l	e	d		
	E	n	b	l				D	i	s	b	l				N	e	x	t			E	x	i	t

D	a	y			o	f		W	e	e	k	:	T	u	e	-	D	i	s	a	b	l	d		
	E	n	b	l				D	i	s	b	l				N	e	x	t			E	x	i	t

10. Message Notification Programming (Wednesday)

D	a	y			o	f		W	e	e	k	:	W	e	d	-	E	n	a	b	l	e	d	
	E	n	b	l			D	i	s	b	l			N	e	x	t			E	x	i	t	

D	a	y			o	f		W	e	e	k	:	W	e	d	-	D	i	s	a	b	l	d		
	E	n	b	l				D	i	s	b	l				N	e	x	t			E	x	i	t

11. Message Notification Programming (Thursday)

D	a	y			o	f		W	e	e	k	:	T	h	u	-	E	n	a	b	l	e	d	
	E	n	b	l			D	i	s	b	l			N	e	x	t			E	x	i	t	

D	a	y			o	f		W	e	e	k	:	T	h	u	-	D	i	s	a	b	l	d	
	E	n	b	l			D	i	s	b	l			N	e	x	t			E	x	i	t	

12. Message Notification Programming (Friday)

D	a	y			o	f		W	e	e	k	:	F	r	i	-	E	n	a	b	l	e	d		
	E	n	b	l				D	i	s	b	l			N	e	x	t			E	x	i	t	

D	a	y			o	f		W	e	e	k	:	F	r	i	-	D	i	s	a	b	l	d		
	E	n	b	l				D	i	s	b	l			N	e	x	t			E	x	i	t	

13. Message Notification Programming (Saturday)

D	a	y			o	f		W	e	e	k	:	S	a	t	-	E	n	a	b	l	e	d		
	E	n	b	l				D	i	s	b	l			N	e	x	t			E	x	i	t	

D	a	y			o	f		W	e	e	k	:	S	a	t	-	D	i	s	a	b	l	d		
	E	n	b	l				D	i	s	b	l			N	e	x	t			E	x	i	t	

14. Message Notification Programming (Notification Type)

N	o	t	i	f	y		V	i	a	:	N	u	m	b	e	r									
	N	u	m				P	a	g	e	r			N	e	x	t			E	x	i	t		

15. Message Notification Programming (Number)

N	u	m	b	e	r	:																		
		O	K			C	l	e	a	r			N	e	x	t			E	x	i	t		

16. Message Notification Programming (Security Code Required)

S	e	c	u	r	i	t	y		C	o	d	e		O	p	t	i	o	n					
	R	e	q			N	o	R	e	q			N	e	x	t			E	x	i	t		

- Soft key Operation (IP Multiline Telephone & 2W Digital Multiline Telephone Only) Req/Required: Turn "Security Code Required" flag On.
NoReq/Not Required: Turn "Security Code Required" flag Off.
Next/Next: Keep current setting and proceed to Busy Attempt count menu.
Exit/Exit: Keep current setting and return to main Notification menu.
- Key Operation
Key 7: Turn "Security Code Required" flag On.
Key 6: Turn "Security Code Required" flag Off.
Key *: Keep current setting and proceed to Busy Attempt count menu.
Key #: Keep current setting and return to main Notification menu.

17. Message Notification Programming (Busy Attempt count)

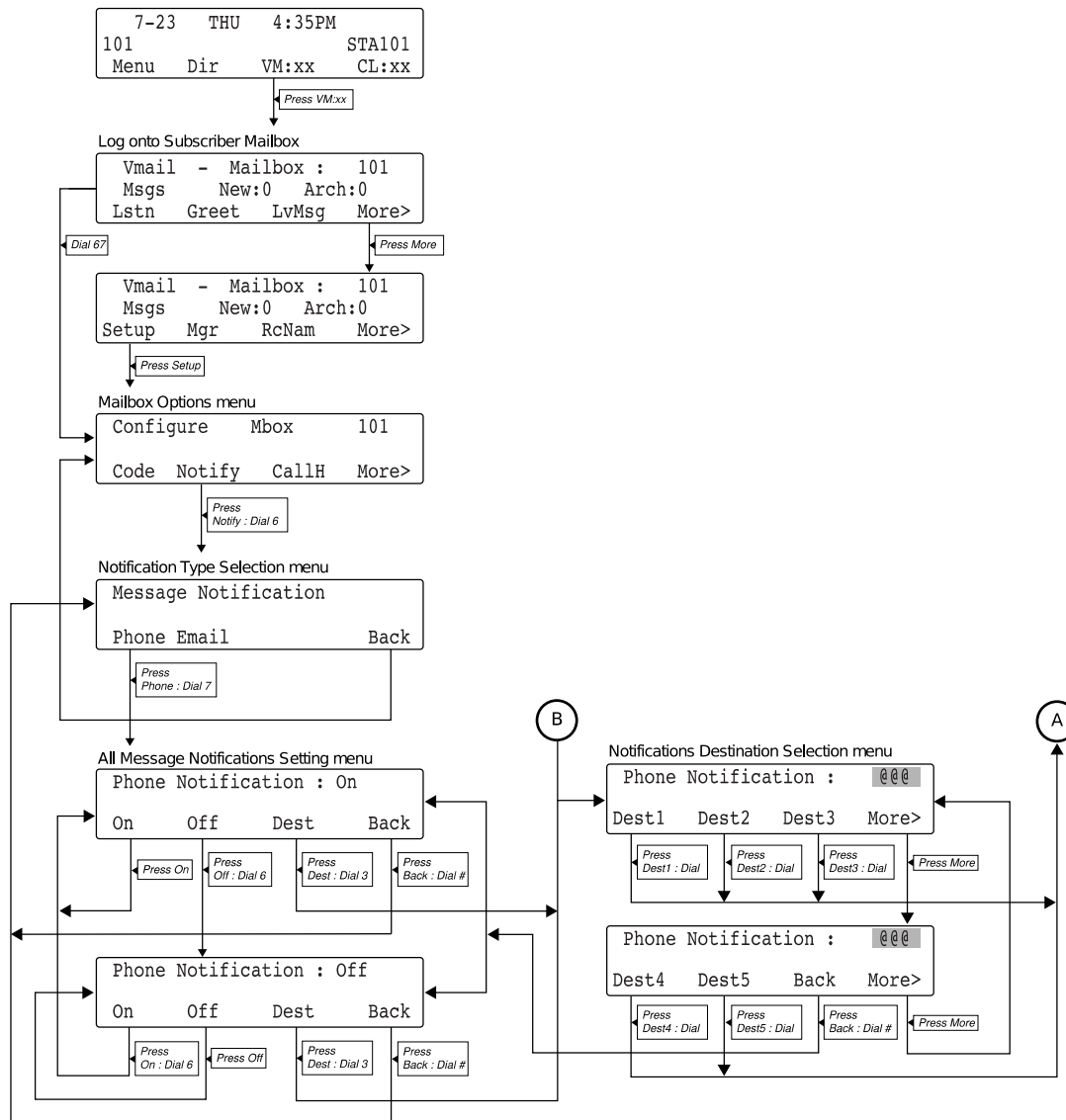
B	u	s	y		A	t	t	e	m	p	t	s	:		0	5								
													N	e	x	t			E	x	i	t		

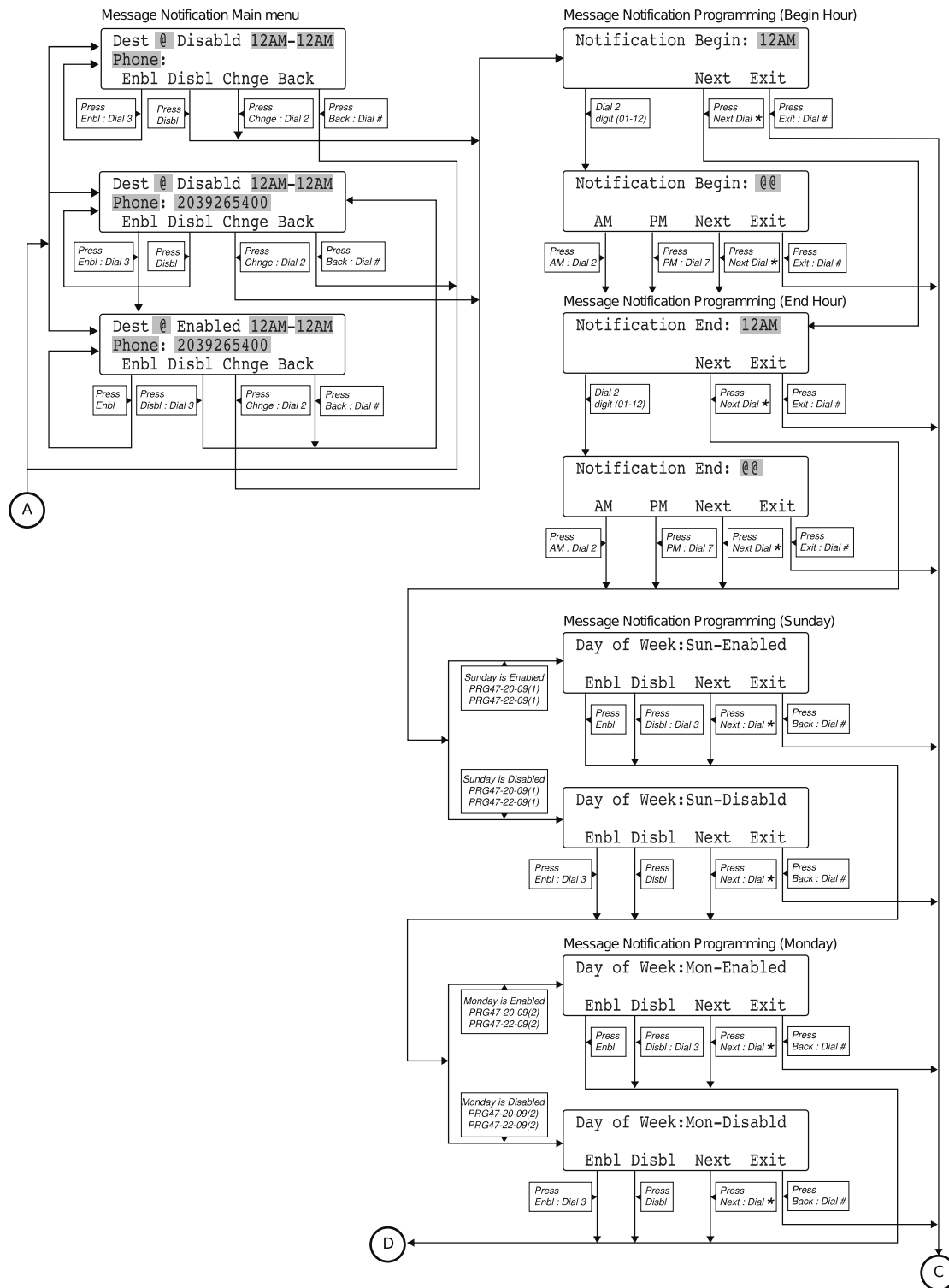
- Soft key Operation (IP Multiline Telephone & 2W Digital Multiline Telephone Only)
Next/Next: Keep current setting and proceed to RNA Attempt menu.
Exit/Exit: Keep current setting and return to main Notification menu.
- Key Operation
Key 0-9: Set Busy Attempt count.
Key *: Keep current setting and proceed to RNA Attempt count menu.
Key #: Keep current setting and return to main Notification menu.

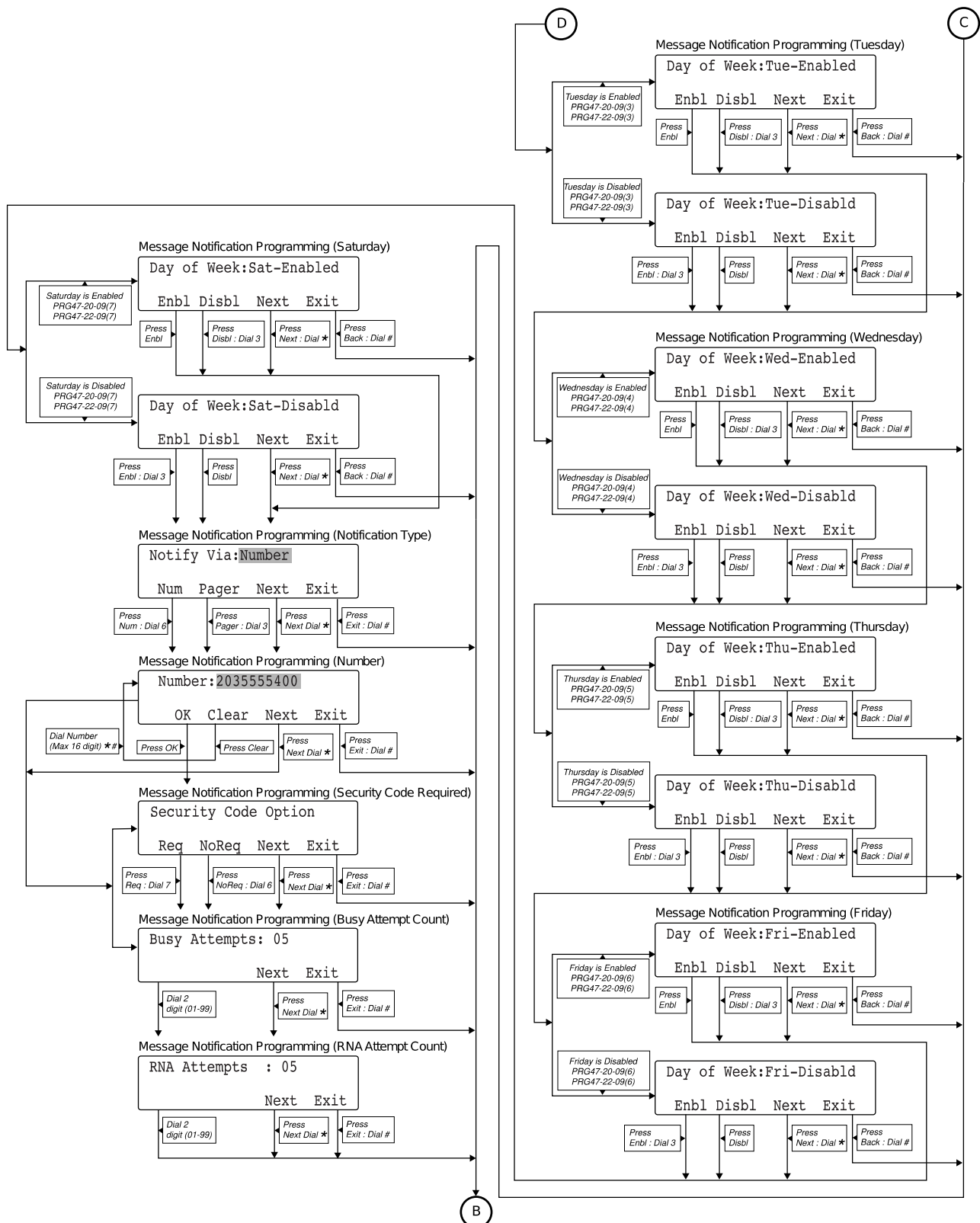
18. Message Notification Programming (RNA Attempt count)

- Soft key Operation (IP Multiline Telephone & 2W Digital Multiline Telephone Only)
Next/Next: Keep current setting and proceed to main Notification menu.
Exit/Exit: Keep current setting and return to main Notification menu.
- Key Operation
Key 0-9: Set RNA Attempt count.
Key *: Keep current setting and proceed to main Notification menu.
Key #: Keep current setting and return to main Notification menu.

The graphics below provide a User Menu for Cascade Message Notification.







InMail-Email Notification

Description

Email Notification automatically sends an email notification when a Subscriber Mailbox receives a new message. The email can optionally include the recorded message as a .wav file attachment. To hear the message, the email recipient double-clicks the .wav attachment to have the message play in their wav player (such as Windows Media Player).

Email Notification uses SMTP (Simple Mail Transfer Protocol) to deliver messages to the recipient's email account. If the message recipient has a mobile telephone service provider with an SMS (Short Message Service) portal, they can optionally choose to have text messages delivered right to their cell phone. In either case, Email Notification does not provide synchronization – the email account and the voice mailbox operate independently. For example, deleting the voice mail message does not automatically delete the email and visa-versa.

If Email Notification tries to deliver an email and it doesn't go through because of a connection problem (i.e., no connection or a dropped connection), it will retry every 15 minutes for 24 hours. If the email still can't go through, Email Notification cancels the delivery. Email deliveries that fail because authentication fails or the encryption mode is incorrect are immediately cancelled.

Collecting the Email Notification Data

In order for the installation site's InMail to send email notifications, it must have a valid SMTP email account assigned. To save time during programming, use the following table to help collect the system's email account information. The email account provider can supply this information. See Programming in this feature for more.

Table 1-21 InMail Email Account Information

Item	Description	System's Email Account Data
SMTP Email Account	The email account that will handle notifications sent from the InMail (e.g., <i>your-name@emailserver.com</i>).	
SMTP Server Name	The SMTP server (email provider) that will handle email for the SMTP email account. The SMTP server name is typically similar to <i>smtp.emailserver.com</i> .	
SMTP Port Number	The port the SMTP server uses for SMTP delivery.	
SMTP Encryption	Determines whether or not the SMTP server accepts plain text (unencrypted) or encrypted email (Yes or No).	
SMTP Authentication	Enter Yes if the <i>SMTP server requires the SMTP Email Account's</i> user name and password each time the system logs on. Otherwise, enter No.	
SMTP User Name	In the <i>SMTP Email Account</i> , this is normally the <i>your-name portion of your-name@emailserver.com</i> .	
SMTP Password	This is the password for the account specified in <i>SMTP Email Account</i> above.	
Email Reply To	If a notification recipient replies to a notification email, this is the address to which the reply is sent.	

Explanation of the Message Sender (From) Field

Like any other email client, Email Notification uses the From field to identify the person that left the message being delivered. In the email message, the data in the From field is formatted as *Name [Reply To]*, where:

- *Name* identifies the person that left the message.
- *Reply To* * is the email address used when the email recipient replies to the message.



This information is not provided in the recipient's inbox – just the actual email message.

For messages left by **Intercom** callers:

- *Name* is:
 - The extension name (if programmed).
 - OR -
 - The extension number (if there is no name programmed).
- *Reply To* **1 is:
 - The email address of the person that left the message (if programmed).
 - OR -
 - The *Reply To Email Address* data from PRG 47-18-09.
 - OR -
 - The *Send From Email Address* data from PRG 47-18-09.

For messages left by **Outside** callers:

- *Name* is always the text "Outside Caller".
- *Reply To* **1 is:
 - The *Reply To Email Address* data from PRG 47-18-09.
 - OR -
 - The *Send From Email Address* data from PRG 47-18-09.

SMS Text Message Delivery to a Cell Phone

The table below shows the basic format of an InMail email notification delivered to a cell phone as an SMS Text Message. The information is much the same as that delivered to an email account. There may be more than one text message for each notification, depending on the number of characters the provider allows in each text message (typically 120-160 characters). SMS will not send the wav file attachment, even if enabled in programming.



An extension set up for notification via SMS Text Messaging should have the Email Message as Attachment option disabled in system programming. Attempting to deliver a wav file attachment to an SMS messaging service may have undesirable results.

**1. The recipient's inbox only shows the Name portion of the From field. The Reply To portion is not included.

- SMS Text Message Notification

The following shows a typical SMS Text Message when the InMail is set up to provide email notification only (no wav file of the actual message). In this case, the provider divided the message into two parts: one for the message header and one for the message body. This is only an example – your provider may handle similar content differently.

Table 1-22 Typical SMS Notification (No Wav File)

Description	Text
Text Message for Message Header	
Text Message Inbox:	InMail [2 OF 2]
Text Message Body:  Your cell phone display will automatically break the text lines to best fit the screen.	MESSAGE FROM: InMail [2 OF 2] SENT: 3:51PM 9/17

Table 1-23 Typical SMS Notification (No Wav File) (Continued)

Description	Text
Text Message for Message Body	
Text Message Inbox:	SBJ:VOICE MESSAGE
Text Message Body:  Your cell phone display will automatically break the text lines to best fit the screen.	MESSAGE FROM: XXXX SUBJ: VOICE MESSAGE FROM XXXX- (0M6S) VOICE MESSAGE ARRIVED ON MONDAY, SEPT 17@3:51 PMDURATION: 0M 6S -----NEC [1 OF 2] SENT: 3:51PM 09/17

POP3 Login

InMail Email Notification supports POP3 Login. The logic of this method is that it allows a user to send e-mail from any location, as long as they can demonstrably also fetch their mail from the same place. Check with your email provider to see if this type of login is required.

Some Common SMTP Settings

Table 1-24 Common Email Notification SMTP Server Settings

Provider	Server Name and Account (PRG 47-18-02)	SMTP Port (PRG 47-18-03)	Encryption (PRG 47-18-04)	Authentication (PRG 47-18-05)	Updated	Comments
Yahoo	smtp.mail.yahoo.com	465	Yes	Yes	6/28/07	Requires POP Yahoo! Mail Plus
GMail	smtp.gmail.com	465	Yes	Yes	6/28/09	
Optimum On-line	mail.optonline.net	587	Yes	Yes	6/28/07	
AOL	smtp.aol.com	587	Yes	Yes	6/28/07	

Some Common SMS Portals

Table 1-25 Some Common Mobile Telephone Service Provider SMS Portals

Provider	Email Address for SMS Text Message
Some Popular Provider-Specific SMS Portals	
Alltel	yourcellphonenumber@message.alltel.com

Provider	Email Address for SMS Text Message
AT&T Wireless	yourcellphonenumber@mobile.att.net OR yourcellphonenumber@mmode.net
Boost Mobile	yourcellphonenumber@myboostmobile.com
Cingular	yourcellphonenumber@mobile.mycingular.com OR yourcellphonenumber@cingularme.com
Nextel	yourcellphonenumber@messaging.nextel.com OR yourcellphonenumber@page.nextel.com
Sprint PCS	yourcellphonenumber@messaging.sprintpcs.com
T-Mobile	yourcellphonenumber@tmail.com OR yourcellphonenumber@tmomail.net
Verizon	yourcellphonenumber@vtext.com
Virgin Mobile	yourcellphonenumber@vmobl.com
A Universal SMS Portal	
Teleflip	yourcellphonenumber@teleflip.com
A More Complete SMS Portal Listing	
For a more complete SMS portal list, see http://www.livejournal.com/tools/textmessage.bml?mode=details .	

Conditions

- The E-MAIL notification feature is licensed on a per system basis.
- Refer to the InMail Feature Manual for more information about this feature.

Default Settings

Disabled

System Availability

Terminals

All Multiline Terminals

Required Component(s)

- IP7()-CPU-C1
- IP7WW-EXIFB-C1
- IP7WW-SDVMS-C1
- IP7WW-SDVML-C1
- SL2100 VM E-MAIL NOTIFY LIC

Related Features

None

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-12-13	Alarm Report SMTP Setting - DNS Primary Address	0.0.0.0 ~ 255.255.255.255	0.0.0.0
10-12-14	Alarm Report SMTP Setting - DNS Secondary Address	0.0.0.0 ~ 255.255.255.255	0.0.0.0
47-02-20	InMail Station Mailbox Options - Enable E-mail Notification	0 = No 1 = Yes	0
47-02-21	InMail Station Mailbox Options - E-mail Address	Up to 48 characters	No Setting
47-02-22	InMail Station Mailbox Options - Include Message as Attachment	0 = No 1 = Yes	1
47-02-23	InMail Station Mailbox Options - All Message Notification Enabled	0 = No 1 = Yes	1
47-02-27	InMail Station Mailbox Options - Email message Save/Delete Option	0 = No Change 1 = Save 2 = Delete	0
47-02-28	InMail Station Mailbox Options - Message Notification Queuing Option	0 = Disabled 1 = Enable	0
47-06-18	Group Mailbox Subscriber Options - Enable Email Notification	0 = No 1 = Yes	0
47-06-19	Group Mailbox Subscriber Options - Email Address	Up to 48 characters	No Setting
47-06-20	Group Mailbox Subscriber Options - Include Msg as Attachment	0 = No 1 = Yes	1
47-06-21	Group Mailbox Subscriber Options - All Message Notification Enabled	0 = No 1 = Yes	1
47-06-25	Group Mailbox Subscriber Options - Email message Save / Delete Option	0 = No Change 1 = Save 2 = Delete	0
47-06-26	Group Mailbox Subscriber Options - Message Notification Queuing Option	0 = Disabled 1 = Enabled	0
47-18-01	SMTP Setup - SMTP Enabled	0 = No 1 = Yes	0
47-18-02	SMTP Setup - Server Name	Up to 48 characters	No Setting
47-18-03	SMTP Setup - SMTP Port	0 ~ 65535	25
47-18-04	SMTP Setup - Encryption	0 = No 1 = Yes	0
47-18-05	SMTP Setup - Authentication	0 = No 1 = Yes 2 = POP3	0
47-18-06	SMTP Setup - User Name	Up to 48 characters	No Setting
47-18-07	SMTP Setup - Password	Up to 48 characters	No Setting
47-18-08	SMTP Setup - E-mail Address	Up to 48 characters	No Setting
47-18-09	SMTP Setup - Reply to Address	Up to 48 characters	No Setting
47-19-01	POP3 Setup - Server Name	Up to 48 characters	No Setting
47-19-02	POP3 Setup - POP3 Port	0 ~ 65535	110
47-19-03	POP3 Setup - Encryption	0 = No 1 = Yes	0
47-19-04	POP3 Setup - User Name	Up to 48 characters	No Setting
47-19-05	POP3 Setup - Password	Up to 48 characters	No Setting

Program No.	Program Name	Input Data	Default
47-20-01	Station Mailbox Message Notification Options - Notification	0 = Off 1 = On	0
47-20-02	Station Mailbox Message Notification Options - Notification Begin Hour	00 ~ 23 (00 (12 : 00 AM) ~ 23 (11 : 00 PM))	00
47-20-03	Station Mailbox Message Notification Options - Notification End Hour	00 ~ 23 (00 (12 : 00 AM) ~ 23 (11 : 00 PM))	00
47-20-04	Station Mailbox Message Notification Options - Notification Type	0 = Undefined 1 = Voice 2 = Pager	1
47-20-05	Station Mailbox Message Notification Options - Notification Number	Up to 16 digits	No Setting
47-20-06	Station Mailbox Message Notification Options - Notification Busy Attempts	1 ~ 99 (attempts)	5
47-20-07	Station Mailbox Message Notification Options - Notification RNA Attempts	1 ~ 99 (attempts)	5
47-20-08	Station Mailbox Message Notification Options - Notification Security	0 = Off 1 = On	1
47-20-09	Station Mailbox Message Notification Options - Notification Day of week - Sunday	0 = Disabled 1 = Enabled	1
47-20-10	Station Mailbox Message Notification Options - Notification Day of week - Monday	0 = Disabled 1 = Enabled	1
47-20-11	Station Mailbox Message Notification Options - Notification Day of week - Tuesday	0 = Disabled 1 = Enabled	1
47-20-12	Station Mailbox Message Notification Options - Notification Day of week - Wednesday	0 = Disabled 1 = Enabled	1
47-20-13	Station Mailbox Message Notification Options - Notification Day of week - Thursday	0 = Disabled 1 = Enabled	1
47-20-14	Station Mailbox Message Notification Options - Notification Day of week - Friday	0 = Disabled 1 = Enabled	1
47-20-15	Station Mailbox Message Notification Options - Notification Day of week - Saturday	0 = Disabled 1 = Enabled	1
47-22-01	Group Mailbox Message Notification Options - Notification	0 = Off 1 = On	0
47-22-02	Group Mailbox Message Notification Options - Notification Begin Hour	00 ~ 23 (00 (12 : 00 AM) ~ 23 (11 : 00 PM))	00
47-22-03	Group Mailbox Message Notification Options - Notification End Hour	00 ~ 23 (00 (12 : 00 AM) ~ 23 (11 : 00 PM))	00
47-22-04	Group Mailbox Message Notification Options - Notification Type	0 = Undefined 1 = Voice 2 = Pager	1
47-22-06	Group Mailbox Message Notification Options - Notification Busy Attempts	1 ~ 99 (attempts)	5
47-22-07	Group Mailbox Message Notification Options - Notification RNA Attempts	1 ~ 99 (attempts)	5
47-22-08	Group Mailbox Message Notification Options - Notification Security	0 = Off 1 = On	1
47-22-09	Group Mailbox Message Notification Options - Notification Day of week - Sunday	0 = Disabled 1 = Enabled	1
47-22-10	Group Mailbox Message Notification Options - Notification Day of week - Monday	0 = Disabled 1 = Enabled	1

Program No.	Program Name	Input Data	Default
47-22-11	Group Mailbox Message Notification Options - Notification Day of week - Tuesday	0 = Disabled 1 = Enabled	1
47-22-12	Group Mailbox Message Notification Options - Notification Day of week - Wednesday	0 = Disabled 1 = Enabled	1
47-22-13	Group Mailbox Message Notification Options - Notification Day of week - Thursday	0 = Disabled 1 = Enabled	1
47-22-14	Group Mailbox Message Notification Options - Notification Day of week - Friday	0 = Disabled 1 = Enabled	1
47-22-15	Group Mailbox Message Notification Options - Notification Day of week - Saturday	0 = Disabled 1 = Enabled	1

Operation

Table 1-26 Turn Email Notification On or Off (2W Digital/IP Multiline Terminal)

To Turn Email Notification On or Off			
1.	Log onto Subscriber Mailbox		
2.	[Optns]		Select Mailbox Options. • Alternately dial OP (67)
3.	[Notfy]		Select Notification. • Alternately dial N (6)
4.	[Email]		Select Email. • Alternately dial E (3)
5.	Do one of the following:		
	a.	[On]	Select to turn email notification on. • Alternately dial O (6)
	b.	[Off]	Select to turn email notification off. • Alternately dial O (6)
	c.	[Back]	Select to exit without making any changes. • Alternately dial #

InMail-Find-Me Follow-Me

Description

Find-Me Follow-Me helps an outside caller locate an extension user who is not at their desk. If their call is unanswered and is picked up by voice mail, the caller has the option of dialing a digit to try up to three alternate Find-Me Follow-Me destinations. A destination can be an outside number (such as a cell phone or home office) or a co-worker's extension.

The Find-Me Follow-Me destinations are set up in the Find-Me Follow-Me schedule. Each of the three schedule entries can be individually enabled or disabled and provides options for Start Hour, End Hour, Day of Week, and destination number. If the caller chooses the Find-Me Follow-Me option, the system will try each enabled entry that is active for the current day and time (i.e., in-schedule). The system will not try any entries that are disabled or are not in-schedule.

When trying the destinations, Find-Me Follow-Me skips an active, in-schedule number that is busy, in DND, or is unanswered. When all active in-schedule destinations have been tried the caller can then choose to try Find-Me Follow-Me again or select another option.

You can set up Find-Me Follow-Me for an extension in system programming. In addition, an extension user can set up Find-Me Follow-Me from their Mailbox Options.

Conditions

- Find-Me Follow-Me settings can be changed using the Telephone Mailbox Option Interface and system programming only.
- Find-Me Follow-Me can be used for standard subscriber mailboxes and Group Mailboxes set to subscriber in PRG 47-03-03.
- Find-Me Follow-Me does not work for internal callers.
- Find-Me Follow-Me requires that Tandem Trunking be enabled on the line that rings into the Automated Attendant. If Tandem Trunking is disabled, the Find-Me Follow-Me options are not available.

Default Settings

Enabled

System Availability

Terminals

All Multiline Terminals

Required Component(s)

IP7[]-CPU-C1 board

SL2100 VM E-MAIL NOTIFY LIC

Related Features

None

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
14-01-13	Basic Trunk Data Setup - Trunk-to-Trunk Transfer	0 = Disable (No) 1 = Enable (Yes)	1
20-11-14	Class of Service Options (Hold/Transfer Service) - Trunk-to-Trunk Transfer Restriction	0 = Off 1 = On	COS 01 ~ 15 = 0
47-02-24	InMail Station Mailbox Options - All Find-Me Follow-Me Enabled	0 = No 1 = Yes	0
47-06-22	Group Mailbox Subscriber Options - All Find-Me Follow-Me Enabled	0 = No 1 = Yes	0
47-21-01	Station Mailbox Find-Me Follow-Me Options - Find-Me Follow-Me	0 = Off 1 = On	0
47-21-02	Station Mailbox Find-Me Follow-Me Options - Find-Me Follow-Me Begin Hour	00 ~ 23 (00 (12 : 00 AM) ~ 23 (11 : 00 PM))	00
47-21-03	Station Mailbox Find-Me Follow-Me Options - Find-Me Follow-Me End Hour	00 ~ 23 (00 (12 : 00 AM) ~ 23 (11 : 00 PM))	00
47-21-04	Station Mailbox Find-Me Follow-Me Options - Find-Me Follow-Me Number	Up to 16 digits	No Setting
47-21-05	Station Mailbox Find-Me Follow-Me Options - Find-Me Follow-Me Day of week - Sunday	0 = Disabled 1 = Enabled	1
47-21-06	Station Mailbox Find-Me Follow-Me Options - Find-Me Follow-Me Day of week - Monday	0 = Disabled 1 = Enabled	1
47-21-07	Station Mailbox Find-Me Follow-Me Options - Find-Me Follow-Me Day of week - Tuesday	0 = Disabled 1 = Enabled	1
47-21-08	Station Mailbox Find-Me Follow-Me Options - Find-Me Follow-Me Day of week - Wednesday	0 = Disabled 1 = Enabled	1
47-21-09	Station Mailbox Find-Me Follow-Me Options - Find-Me Follow-Me Day of week - Thursday	0 = Disabled 1 = Enabled	1
47-21-10	Station Mailbox Find-Me Follow-Me Options - Find-Me Follow-Me Day of week - Friday	0 = Disabled 1 = Enabled	1
47-21-11	Station Mailbox Find-Me Follow-Me Options - Find-Me Follow-Me Day of week - Saturday	0 = Disabled 1 = Enabled	1
47-23-01	Group Mailbox Find-Me Follow-Me Options - Find-Me Follow-Me	0 = Off 1 = On	0
47-23-02	Group Mailbox Find-Me Follow-Me Options - Find-Me Follow-Me Begin Hour	00 ~ 23 (00 (12 : 00 AM) ~ 23 (11 : 00 PM))	00
47-23-03	Group Mailbox Find-Me Follow-Me Options - Find-Me Follow-Me End Hour	00 ~ 23 (00 (12 : 00 AM) ~ 23 (11 : 00 PM))	00
47-23-04	Group Mailbox Find-Me Follow-Me Options - Find-Me Follow-Me Number	Up to 16 digits	No Setting
47-23-05	Group Mailbox Find-Me Follow-Me Options - Find-Me Follow-Me Day of week - Sunday	0 = Disabled 1 = Enabled	1
47-23-06	Group Mailbox Find-Me Follow-Me Options - Find-Me Follow-Me Day of week - Monday	0 = Disabled 1 = Enabled	1

Program No.	Program Name	Input Data	Default
47-23-07	Group Mailbox Find-Me Follow-Me Options - Find-Me Follow-Me Day of week - Tuesday	0 = Disabled 1 = Enabled	1
47-23-08	Group Mailbox Find-Me Follow-Me Options - Find-Me Follow-Me Day of week - Wednesday	0 = Disabled 1 = Enabled	1
47-23-09	Group Mailbox Find-Me Follow-Me Options - Find-Me Follow-Me Day of week - Thursday	0 = Disabled 1 = Enabled	1
47-23-10	Group Mailbox Find-Me Follow-Me Options - Find-Me Follow-Me Day of week - Friday	0 = Disabled 1 = Enabled	1
47-23-11	Group Mailbox Find-Me Follow-Me Options - Find-Me Follow-Me Day of week - Saturday	0 = Disabled 1 = Enabled	1

Operation

To set up Find-Me Follow-Me:



The Display Information and Soft keys are available for IP Multiline Terminal & 2W Digital Multiline Terminal.

Setting Up Message Notification				
Log On to Subscriber Mailbox.				
OP (67)	Access the Mailbox Options menu. [Setup]			
	CH (26)	Access the Call Handling Options Menu. [CallH]		
		(1)	Access the Find-Me Follow-Me Options Menu. [FMFM]	
		InMail states your Find-Me Follow-Me status: On or Off		
		O (6)	Turn Find-Me Follow-Me on or off. [On] [Off]	
		D (3)	Change your Find-Me Follow-Me destinations. [Dest]	
		#	Back up to the previous level without changing your entry. [Back]	
			(1) (2) (3)	Enter the destination number to change. [Dest1] [Dest2] [Dest3]
			#	Back up to the previous level without changing your entry. [Back]
		The system will provide the status of the destination selected.		
			E (3)	Enable selected destination. [Enbl]
			D (3)	Disable selected destination. [Disbl]
			C (2)	Change selected destination. [Chnge]
			#	Back up to the previous level without changing your entry. [Back]

Setting Up Message Notification				
				Enter the hour you want Find-Me Follow-Me to begin for the selected destination. • Enter 2 digits for the hour. • Press * or [Next] to skip to the next setting.
			A (2)	Select AM. [AM]
			P (7)	Select PM. [PM]
			#	Back up to the previous level without changing your entry. [Exit]
				Enter the Find-Me Follow-Me Day of Week (Sunday-Saturday): Enable or Disable
			E (3)	Enable selected day. [Enbl]
			D (3)	Disable selected day. [Disbl]
			#	Back up to the previous level without changing your entry. [Exit]
				Enter the destination phone or extension number, up to 16 digits.
			OK	Accept entered number.
			Clear	Clear entered number.
			Next	Skip to next setting.
			#	Back up to the previous level without changing your entry. [Back]
		#		Go back to the Mailbox Options menu. [Back]
	#			Go back to the Main Menu. [Back]
0	Plays Help message.			

InMail - Language Setting

Description

The Language setting feature allows the telephone display language and the InMail mailbox language to be changed from the telephone. This can be used to change either the user's phone or another specified telephones display and InMail language if allowed in system programming.

Either a dial access code or Softkey operation is available. (2W Digital/IP Multiline Terminal)

Conditions

- The telephone display language can be changed using dial access codes or softkeys only.
- The InMail language can be changed using dial access codes, softkeys only or End User Web Pro.
- The ability to change other extensions language options is allowed on a class of server basis in PRG 20-13-53.
- One default Voice Prompt language is initially available in the CPU-C1 board.
 - IP7AU-CPU-C1: AU English
- All the supported Languages are initially available in the IP7WW-SDVMS-C1/IP7WW-SDVML-C1.

Supported Languages

InMail Languages	Telephone Display Languages
• 01 (US English) • 02 (UK English) • 03 (Australian English) • 04 (French Canadian) • 05 (Dutch) • 06 (Mexican Spanish) • 07 (Latin America Spanish) • 08 (Italian) • 09 (German) • 10 (Madrid Spanish) • 11 (Norwegian) • 12 (Parisian French) • 13 (Brazilian Portuguese) • 14 (Japanese) • 15 (Mandarin Chinese) • 16 (Korean) • 17 (Iberian Portuguese) • 18 (Greek) • 19 (Danish) • 20 (Swedish) • 21 (Thai) • 22 (Taiwan) • 23 (Flemish) • 24 (Turkish) • 25 (Arabic) • 26 (Russian)	• 1 (English) • 2 (German) • 3 (French) • 4 (Italian) • 5 (Spanish) • 6 (Dutch) • 7 (Portuguese) • 8 (Norwegian) • 9 (Danish) • 10 (Swedish) • 11 (Turkish) • 12 (Latin American Spanish) • 13 (Romanian) • 14 (Polish) • 16 (Russian) • 17 (Simplified Chinese) • 18 (Traditional Chinese)

Default Settings

Enabled

System Availability

Terminals

All Multiline Terminals

Required Component(s)

IP7()-CPU-C1 board

IP7WW-SDVMS-C1/ IP7WW-SDVML-C1

Related Features

None

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-11-13	Service Code Setup (for Setup/Entry Operation) - Display Language Selection for Multiline Terminal	0~9, *, # Maximum of 8 digit	678
11-11-68	Service Code Setup (for Setup/Entry Operation) - IntraMail Language Selection for own extension	0~9, *, # Maximum of 8 digit	664
11-11-69	Service Code Setup (for Setup/Entry Operation) - IntraMail Language Selection for specific extension	0~9, *, # Maximum of 8 digit	665
20-13-53	Class of Service Options (Supplementary Service) - Language Selection for specific extension	0 = Disable 1 = Enable	COS 01 ~ 15 = 0

Operation

To Language Setting Operation:



The Display Information and Soft keys are available for IP Multiline Terminal & 2W Digital Multiline Terminal.

From an Idle Display Phone (When PRG15-02-60 = 0)							
Prog	Press Program Softkey						
	↓	Press down arrow					
		↓	Press down arrow				
			Lang	Press Language Softkey			
			Disp	To change telephone display language press Display Softkey.			
				Own	To change your own extension display language press Own Softkey.		
					Choose Lang	Select desired language, press down arrow to advance to next page. Press softkey for desired language.	
						Press Speaker Exit	

From an Idle Display Phone (When PRG15-02-60 = 0)							
					Other	To change another extension display language press Other softkey.	
						Ext #	Enter the extension number to be changed.
						Choose Lang	Select desired language, press down arrow to advance to next page. Press softkey for desired language.
						Press Speaker Exit	
				VMail	To change spoken InMail mailbox language press VMail Softkey.		
					Own	To change your own extension display language press Own Softkey.	
						Choose Lang	Select desired language, press down arrow to advance to next page. Press softkey for desired language.
						Press Speaker Exit	
					Other	To change another spoken mailbox language press Other softkey.	
						Ext #	Enter the extension number to be changed.
						Choose Lang	Select desired language, press down arrow to advance to next page. Press softkey for desired language.
						Press Speaker Exit	

InMail Park and Page

Description

InMail Park and Page can automatically Park a call at an extension and Page the user with a recorded Paging Message announcing the parked call. The called extension user can then go to any telephone and implement Personal Park to pick up the call. With InMail Park and Page, InMail tries to locate the person instead of just sending the call to their mailbox. Additionally, there is no need for an operator or receptionist to manually answer the call, park it, and then try to track down the employee.

The Paging Message is usually recorded in the user's own voice and typically says something like, "Mike Smart, you have a call." If the Paging Message is not recorded for the extension, a built-in message announces the called party's name or extension number (if the name is not recorded).

InMail Park and Page is available for all trunk calls that are redirected to voice mail via forwarding or overflow, including transferred calls, Direct Inward Lines, and Direct Inward Dialing. Park and Page is also available for Automated Attendant Screened (STRF) and Unscreened (UTRF) Transfers. Optionally, an extension can have calls from the Automated Attendant immediately Park and Page without trying their extension first.

When InMail Park and Page intercepts the call, it normally offers the caller three options:

1. Dial **1** to leave a message in the called extension's mailbox.
(The caller hears the mailbox Greeting, if recorded.)
2. Dial **2** to Park and Page.
(The caller returns to these options if the Park is not picked up.)
3. Dial **3** for Find Me Follow Me if enabled.
(The caller returns to these options if the none of the destinations choose to take the call.)
4. Dial **4** for other options.
(Normally, this routes to the extension's Next Call Routing Mailbox.)

InMail Park and Page is available at Personal and Group Subscriber Mailboxes, and can be enabled through system programming or via the subscriber's Mailbox Options Menu. InMail Park and Page is not applicable to Intercom calls.

Automated Attendant Direct to Voice Mail (DVM)

When an extension has Automated Attendant Direct to Voice Mail (DVM) enabled, all calls from the Automated Attendant go directly to the subscriber's mailbox. The extension does not ring for Automated Attendant calls. The caller hears the mailbox greeting and can leave a message or access other routing options such as Park and Page if enabled. A subscriber typically turns on DVM when they need to work at their desk undisturbed by outside calls from the Automated Attendant.

DVM can be enabled by the installer from system programming or by the extension user from their Mailbox Options Menu.

Keep in mind that DVM does not block Intercom calls from co-workers or any other outside call not routed through the Automated Attendant. For example, with DVM enabled, Direct Inward Lines and transferred outside calls to an extension work normally.

Conditions

- The Park and Page feature uses the extensions personal park location only.
- The Park and Page feature uses the All Zone paging only; this cannot be changed or configured.
- Virtual extensions are not supported for Park and Page.

Default Settings

Park and Page and Automated Attendant Direct to Voice Mail are disabled.

For transferred outside calls, direct inward lines and direct inward dialing refer to [Table 1-27 Park and Page Call Handling](#).

Table 1-27 Park and Page Call Handling

Park and Page (Call Handling) For Transferred Outside Calls, Direct Inward Line and Direct Inward Dialing			
47-02-14: Next Call Routing Mailbox	47-02-13: Dialing Option	47-02-17: Enable Park and Page	Result
Undefined	0 (No)	0 (No)	If unanswered, caller hears greeting and can leave a message.
Undefined	0 (No)	1 (Yes)	If unanswered, caller can dial 1 to leave a message or 2 to Park and Page.
Undefined	1 (Yes)	0 (No)	If unanswered, caller hears greeting and can leave a message.
Undefined	1 (Yes)	1 (Yes)	If unanswered, caller can dial 1 to leave a message or 2 to Park and Page.
Defined	0 (No)	0 (No)	If unanswered, caller hears greeting and can leave a message.
Defined	0 (No)	1 (Yes)	If unanswered, caller can dial 1 to leave a message, 2 to Park and Page, and 4 for other options (from the Next Call Routing Mailbox).
Defined	1 (Yes)	0 (No)	If unanswered, caller hears greeting, can leave a message, and dial options (from the Next Call Routing Mailbox).
Defined	1 (Yes)	1 (Yes)	If unanswered, caller can dial 1 to leave a message, 2 to Park and Page, and 4 for other options (from the Next Call Routing Mailbox).

For automated attendant unscreened (UTRF) and screened (STRF) transfers refer to [Table 1-28 Park and Page Call Handling](#).

Table 1-28 Park and Page Call Handling

Park and Page (Call Handling) For Automated Attendant Unscreened (UTRF) and Screened (STRF) Transfers			
47-02-17: Enable Park and Page	47-02-18: Paging Option	47-02-09: Auto Att Direct to VM	Result
0 (No)	0 (RNA)	0 (No)	If unanswered, caller hears greeting and can leave a message. ^{**1}
0 (No)	0 (RNA)	1 (Yes)	Caller immediately hears greeting and can leave a message.
0 (No)	1 (IMM)	0 (No)	If unanswered, caller hears greeting and can leave a message.
0 (No)	1 (IMM)	1 (Yes)	Caller immediately hears greeting and can leave a message.
1 (Yes)	0 (RNA)	0 (No)	If unanswered, the caller can dial 1 to leave a message, 2 to Park and Page or 4 for other options if a Next Call Routing box is assigned. ^{**2}
1 (Yes)	0 (RNA)	1 (Yes)	If unanswered, the caller can dial 1 to leave a message, 2 to Park and Page or 4 for other options if a Next Call Routing box is assigned.
1 (Yes)	1 (IMM)	0 (No)	Park and Page occurs immediately.

Park and Page (Call Handling) For Automated Attendant Unscreened (UTRF) and Screened (STRF) Transfers			
47-02-17: Enable Park and Page	47-02-18: Paging Option	47-02-09: Auto Att Direct to VM	Result
1 (Yes)	1 (IMM)	1 (Yes)	If unanswered, the caller can dial 1 to leave a message, 2 to Park and Page or 4 for other options if a Next Call Routing box is assigned.

****1.** For a Screened Transfer (STRF) with a Next Call Routing Mailbox assigned, caller can dial 1 to leave a message or 2 for other options.

****2.** For an Unscreened Transfer (UTRF) with a Next Call Routing Mailbox assigned, caller can dial 1 to leave a message, 2 to Park and Page, and 4 for other options.

System Availability

Terminals

All Terminals

Required Component(s)

IP7()-CPU-C1 board

Related Features

Park

Paging, Internal

Paging, External

Guide to Feature Programming

Setting Up Park and Page for Extension:

Program No.	Program Name	Input Data	Default
47-02-04	InMail Station Mailbox Options - Message Playback Order	0 (FIFO = first-in/ first-out, or oldest messages first). 1 (LIFO = last-in/ first-out, or newest messages first)	0
47-02-09	InMail Station Mailbox Options - Auto Attendant Direct to Voice Mail	0 = No (Disabled) 1 = Yes (Enabled)	0
47-02-14	InMail Station Mailbox Options - Next Call Routing Mailbox	Call Routing Mailbox Number (1 ~ 3 digits, 00 ~ 32) (00 = Undefined) No entry (Entered by pressing CLEAR)	1
47-02-17	InMail Station Mailbox Options - Enable Paging	0 = No (Disabled) 1 = Yes (Enabled)	0

Program No.	Program Name	Input Data	Default
47-02-18	InMail Station Mailbox Options - Paging Option	0 = RNA 1 = Immediately	0

Setting Up Park and Page for a Group Mailbox:

Program No.	Program Name	Input Data	Default
47-06-07	Group Mailbox Subscriber Options - Auto Attendant Direct to Voice Mail	0 = No (Disabled) 1 = Yes (Enabled)	0
47-06-12	Group Mailbox Subscriber Options - Next Call Routing Mailbox	0 ~ 32 (0 = Undefined)	1 (Call Routing Mailbox 01) By default, Call Routing Mailbox numbers are 01 ~ 32.
47-06-15	Group Mailbox Subscriber Options - Enable Paging	0 = No 1 = Yes	0
47-06-16	Group Mailbox Subscriber Options - Paging Option	0 = RNA 1 = Immediate	0

Operation

To record your paging message refer to [Table 1-29 Recording Your Paging Message](#).

Table 1-29 Recording Your Paging Message

Recording Your Paging Message		In these Instructions: [Telephone Softkey]	
To record your Paging Message:			
1.	Log onto your Subscriber Mailbox.		
2.	[More> + More> + Page]	Select Paging Message. • Alternately dial PG (74).	
3.	Do one of the following:		
	a.	[Lstn]	Select to listen to the current Paging Message (if any). • Alternately dial L (5).
			# Exit the listen mode.
	b.	[Rec]	Select to record the Paging Message. • Alternately dial R (7).
			[Pause] Select to pause recording. • Alternately dial * .
			[Resume] Select to resume recording (if paused). • Alternately dial * .
			[Cncl] Select to erase the recording. • Alternately dial E (3).
			[Done] Select to confirm the recording and exit the recording mode. • Alternately dial #.
	c.	[Del]	Select to erase the Paging Message. • Alternately dial E (3).
	d.	[Back]	Select to go back to the Mailbox Main Menu. • Alternately dial #.

To set your call handling options refer to [Table 1-30 Setting the Call Handling Options](#).

Table 1-30 Setting the Call Handling Options

Recording Your Paging Message		In these Instructions: [Telephone Softkey]	
To set your Call Handling options: This includes Automated Attendant Direct to Voice Mail as well as Park and Page.			
1.	Log onto your Subscriber Mailbox.		
2.	[More> + Setup]	Select Mailbox Options. (You are at the Mailbox Options Menu). Alternately dial OP (67).	
	[CallH]	Select Call Options. (You are at the Call Handling Options Menu). Alternately dial CO (26).	
3.	Do one of the following:		
	a.	[DVM]	Select to turn Automated Attendant Direct to Voice Mail on or off. Alternately dial O (6).
		[Paging]	Select to turn Park and Page on or off. Alternately dial E (3).
		[Back]	Select to go back to the Mailbox Options Menu.

To retrieve a call parked in a personal parked orbit refer to [Table 1-31 Picking Up a Parked Call](#).

Table 1-31 Picking Up a Parked Call

Picking Up a Parked Call		In these Instructions: [Telephone Softkey]	
To retrieve a call parked in a Personal Orbit:			
1.	Dial * * .		
2.	Dial the number of the extension at which the call is parked.		

InMail Upload Download Audio

Description

The InMail Upload Download Audio feature allows the upload of mailbox greetings up to 2 MB in size, recorded on a PC or professionally, to any valid subscriber mailbox in the system. It also allows users to listen to, download and/or delete voice mail messages from callers. Access to the System Memory drive is via the HTML User Pro (WebPro).

The User Admin (UA Mode) can change Routing Mailbox greetings for the following Routing mailbox types: Instruction (Call Routing), Announcement and Group.

Audio Prompt Format

In order for uploaded greetings to properly play on the InMail they must be in the proper format. Audio files not recorded in the proper format may not playback on the InMail. The proper format is:

- Bit Rate: 64 kbps
- Sampling Size: 8 bits
- Channel: 1 (Mono)
- Sampling Rate: 8 kHz
- Audio Format: CCITT A-law/ μ -law

User Pro Access Options

There are two different User Pro login types available to make changes. To login, open an Internet browser and enter the IP of the SL2100 LAN port in the address line. At default, the IP address is 192.168.0.10.

User Admin Mode (UA Mode): This mode allows the user admin to access any telephone and mailbox in the system. This mode must be used to change VRS and Routing Mailbox greetings. At default the login ID is USER1 and the password is **1111**.

User Mode (UB Mode): This mode allows a user to access only their own telephone and mailbox when logged in. They will not be able to change any other telephone, mailbox, VRS or Routing Mailbox. At default the login ID is the "Extension Number" and the password is **1111**.

Below is the page layout diagram of the two different User Pro login IDs:

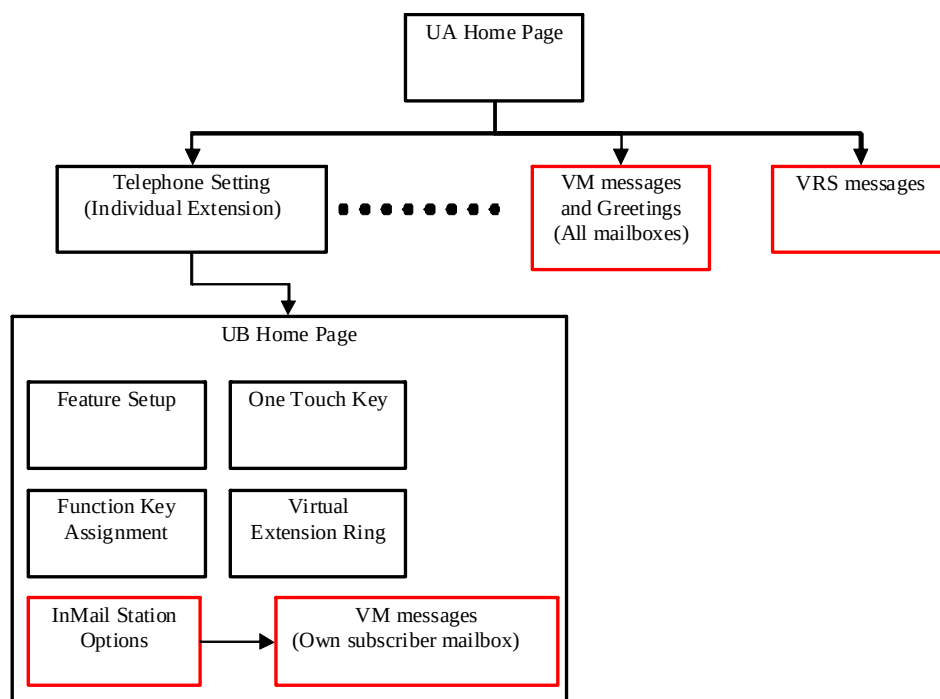


Figure 1-22 InMail User Pro Login Diagram

Message Name Format

Downloaded messages are automatically assigned a name by the system. This name includes the mailbox number the message was left in, type of message, the message number and the date and time to the second the message was left. The table below shows how to interpret the message name to determine this information.

Table 1-32 Default Incoming Ringing Tone

File Name Format	BTNNN_YYYYMMDD_HHMMSS.wav (maximum 32 characters)
B	Mailbox number (maximum eight digits) or VRS for the VRS message
T	Message Type + : Greeting or VRS message - : Recorded message
NNN	Message number (three digits)
YYYY	Year
MM	Month (1~12)
DD	Date (1~31)
HH	Hour (00~23)
MM	Minute (00~59)
SS	Second (0 ~59)

Conditions

- Uploading audio files to any type of Call Routing box and Group mailboxes is supported. This means auto attendant and group mailbox greetings can be uploaded or deleted using End User Web Pro interface with the UA login.
- It is not possible to upload/download/delete multiple files simultaneously.

- The mailbox will be inaccessible from the telephone under these conditions:
 - Mailbox XXX will not be accessible when opening the telephone setup screen of extension XXX by UA or UB mode in User Pro.
 - Mailbox XXX will not be accessible when selecting the extension XXX on the file upload/ download screen of UA mode User Pro.
 - Mailbox XXX will be inaccessible when logging in the UB mode User Pro for extension XXX.
 - While uploading an audio file via User Pro the greeting is not accessible by telephone.
 - When downloading/deleting an audio file via User Pro, the file is not accessible by another User Pro session or from the telephone.
 - This feature is only supported using a LAN connection.
 - When uploading an audio file the extension will be checked whether it is "WAV" or not. However, the format of the uploaded file will not be checked. If the uploaded file is not in the proper format it may not playback properly.
 - The largest allowed upload file size is approximately 2MB. Files larger than this cannot be uploaded.
 - There is no size limitation when downloading audio files.
 - User Pro does not check the uploaded file for correct naming format (i.e., BTNNN_YYYYMMDD_HHMMSS.wav). The file name will be automatically changed when the file is written in the SD Card.
 - The actual file name of the messages is not displayed in User Pro. The message number, modified date and file size are displayed instead. If there is no message file, "-" will be displayed and the download/delete icon will not be displayed.
 - The User Pro message page does not refresh automatically, to see new messages the page must be refreshed. For instance, if a new message is received via regular operation on the system while a user is viewing the upload/download screen, the new message is not shown until the page is reloaded by clicking the  icon.
 - At default, Microsoft Windows will automatically open and play the downloaded WAV. To make "Open" or "Save" selectable, the following settings are required:
 - Windows Vista/Windows 7: It is not possible to change the save to folder option. The downloaded file is automatically opened for playback.
-  *With Windows Vista and Windows 7 the automatic playback feature may stop working in the middle of the message. If this problem is present, the following steps are required:*
1. *Save the current .Wav file to your hard drive using the Windows Media Application that was playing the file.*
 2. *Close down the Windows Media Application.*
 3. *Re-launch the Windows Media Application.*
 4. *From the Windows Media Application open the .Wav file that was saved in step 1 and listen to the message.*

Default Settings

None

System Availability

Terminals

All Terminals

Required Component(s)

IP7()-CPU-C1 board

Related Features

InMail

Voice Response System (VRS) Upload Download Audio

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
90-02-01	Programming Password Setup - User Name	Maximum 10 characters	Refer to the Programming Manual for the default values.
90-02-02	Programming Password Setup - Password	Up to eight digits	Refer to the Programming Manual for the default values.
90-02-03	Programming Password Setup - User Level	0 = Prohibited User 2 = IN (Installer Level) 3 = SA (System Administrator Level 1) 4 = SB (System Administrator Level 2) 5 = UA (User Programming Administrator Mode Level 1)	Refer to the Programming Manual for the default values.

Troubleshooting

The table below shows possible Error messages and their causes.

Error Message	Cause
Mailbox "XXX" does not exist. (XXX = mailbox number)	The mailbox does not exist.
The mailbox is being used by another session.	When the mailbox is being used by another session, either PC or phone.
There is no available space in the SD.	When there is no available space in the SD.
The file is being used by another session. Please try again later.	When the file to be downloaded is being used by another session, either PC or phone.
The selected file has already been deleted.	When the file selected for download has already been deleted.
The file is being used by another session. Please try again later.	When the file selected for deletion is being used by another session.
The selected file has already been deleted.	When the file selected for deletion has already been deleted.
Cannot upload the file since the original file is being used by another session. Please try again later.	When the file to be replaced is being used when trying to upload the replacement.

Operation

Listening to Voice Mail Messages using User Admin Mode (UA)

All messages stored on the InMail can be accessed via the Mailbox User Mode for playback or deletion.

1. To login, open an Internet browser and enter the IP of the CPU LAN port in the address line. At default, the IP address is 192.168.0.10.
2. At the login screen enter username = USER1 and password = 1111.
3. You will then see the main menu, click on the InMail Audio Up/Download icon.
4. Choose the extension number to be changed and make sure Audio Data is set to Incoming Messages.



The message numbers correspond to the same message number when accessed via the telephone. Message 1 is the first message, message 2 is the second message, etc.

5. To delete a message, click on the red X to the right of the appropriate message.
6. To listen to a message:
 - Click on the download icon to the right of the message you want to hear.
 - Depending on browser settings, a security prompt may appear.
 - Click on the menu and choose to allow the file to download.
 - Depending on Windows configuration, you may be prompted again to either Open or Save the message. To listen, click Open and the default WAV file player will play the message. To save the message, click on the Save icon and browse to the location where the message will be saved on a local PC.

Listening to Voice Mail Messages using Mailbox User Mode (UB)

1. To login, open an Internet browser and enter the IP of the CPU LAN port in the address line. At default, the IP address is 192.168.0.10.
2. At the login screen enter username = Extension Number and password = 1111.
3. You will then see the main menu, click on the InMail Audio Up/Download icon.



The message numbers correspond to the same message number when accessed via the telephone. Message 1 is the first message, message 2 is the second message, etc.

4. To delete a message, click on the red X to the right of the appropriate message.
5. To listen to a message:
 - Click on the download icon to the right of the message you want to hear.
 - Depending on browser settings, a security prompt may appear.
 - Click on the menu and choose to allow the file to download.
 - Depending on Windows configuration, you may be prompted again to either Open or Save the message. To listen, click Open and the default WAV file player will play the message. To save the message, click on the Save icon and browse to the location where the message will be saved on a local PC.

Changing Mailbox Greetings using User Admin Mode (UA)

Audio files up to 1 MB may be uploaded to the InMail for any mailbox greeting. In order for uploaded greetings to play on the InMail they must be in the proper format. Audio files not recorded in the proper format may not playback on the Inmail. The proper format is:

Bit Rate	64 kbps
Sampling Size	8 bits
Channel	1 (Mono)
Sampling Rate	8 KHz
Audio Format	CCITT A-law

1. To login, open an Internet browser and enter the IP of the CPU LAN port in the address line. At default, the IP address is 192.168.0.10.
2. At the login screen enter username = USER1 and password = 1111.

3. You will then see the main menu, click on the InMail Audio Up/Download icon.
4. Choose the extension number to be changed and make sure Audio Data is set to Incoming Messages.



The greeting numbers correspond to the same greeting number when accessed via the telephone. Greeting 1 is GR1, greeting 2 is GR2 and greeting 3 is GR3. Greeting 7 is the paging greeting used with the park and page feature.

5. To delete a greeting, click on the red X to the right of the appropriate greeting.
6. To upload a greeting:
 - Under Message No, enter the greeting number to be replaced on the voice mail.
 - Browse to find the location where the greeting file is stored.
 - Click on the upload icon to the right of the selected file name.
 - Depending on file size and LAN speed, it may take several minutes to upload the greeting.
 - The uploaded greeting will appear in the assigned location.

Changing Mailbox Greetings using Mailbox User Mode (UB)

Audio files up to 2MB may be uploaded to the InMail for any mailbox greeting. In order for uploaded greetings to play on the InMail they must be in the proper format. Audio files not recorded in the proper format may not playback on the Inmail. The proper format is:

Bit Rate	64 kbps
Sampling Size	8 bits
Channel	1 (Mono)
Sampling Rate	8 KHz
Audio Format	CCITT A-law

1. To login, open an Internet browser and enter the IP of the CPU LAN port in the address line. At default, the IP address is 192.168.0.10.
2. At the login screen enter username = Extension Number and password = 1111.
3. You will then see the main menu, click on the InMail Audio Up/Download icon.



The greeting numbers correspond to the same greeting number when accessed via the telephone. Greeting 1 is GR1, greeting 2 is GR2 and greeting 3 is GR3. Greeting 7 is the paging greeting used with the park and page feature.

4. To delete a greeting, click on the red X to the right of the appropriate greeting.
 - Under Message No, enter the greeting number to be replaced on the voice mail.
 - Browse to find the location where the greeting file is stored.
 - Click on the upload icon to the right of the selected file name.
 - Depending on file size and LAN speed, it may take several minutes to upload the greeting.
 - The uploaded greeting will appear in the assigned location.

Intercom

Description

Intercom gives extension users access to other extensions. This provides the system with complete internal calling ability.

Handsfree Answerback/Forced Intercom Ringing

Handsfree Answerback permits an extension user to respond to a voice-announced Intercom call by speaking toward the telephone, without lifting the handset. Like Handsfree, this is a convenience for workers who do not have a free hand to pick up the handset. Refer to [Handsfree Answerback/Forced Intercom Ringing](#) feature for more information.

Busy Status Display

When a display Multiline Terminal user places an Intercom call to a busy extension, the details of the busy status (who is talking to the extension or which line is in use by the extension) can be displayed. The details of the trunk busy status (the extension using the line) can be displayed after trying to access the trunk. This feature provides a user information which can determine whether they should use the Barge-In feature for the extension or trunk. This information automatically displays for a Multiline Terminal once programmed.

Conditions

- Intercom calls can ring or be voice-announced at the called extension.
- Intercom Abandoned Call Display remembers Intercom calls to an extension.
- Ringing Line Preference can automatically answer ringing Intercom or trunk calls when the user lifts the handset.
- An extension can have a name assigned that identifies the extension to callers.
- Dialing **0** or any other trunk access code after dialing a busy extension results in termination of the Intercom call and a trunk is seized.
- In order for a station to retrieve a held ICM call, the station must have an ICM key assigned in PRG 15-07 (*00).
- Special ring tone when pre-assigned extension places an intercom call feature should be set PRG 15-01-13 to 1 ~ 8 (Tone Pattern 1 ~ 8).

Default Settings

Enabled

System Availability

Terminals

All Terminals

Required Component(s)

None

Related Features

Handsfree Answerback/Forced Intercom Ringing

Intercom

Line Preference

Name Storing

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-11-13	Service Code Setup (for Setup/Entry Operation) - Display Language Selection for Multiline Terminal	0~9, *, # Maximum of 8 digit	678
15-01-13	Basic Extension Data Setup - Special ringtone choice	0 = Incoming extension ring tone 1 = Tone pattern 1 2 = Tone pattern 2 3 = Tone pattern 3 4 = Tone pattern 4 5 = Melody1 (2W Digital/IP Multiline Terminal) 6 = Melody2 (2W Digital/IP Multiline Terminal) 7 = Melody3 (2W Digital/IP Multiline Terminal) 8 = Melody4 (2W Digital/IP Multiline Terminal)	0
15-02-01	Multiline Telephone Basic Data Setup - Display Language Selection	1 = English 2 = German 3 = French 4 = Italian 5 = Spanish 6 = Dutch 7 = Portuguese 8 = Norwegian 9 = Danish 10 = Swedish 11 = Turkish 12 = Latin American Spanish 13 = Romanian 14 = Polish 16 = Russian	1
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-08-01	Class of Service Options (Outgoing Call Service) - Intercom Calls	0 = Off 1 = On	COS 01 ~ 15 = 1
20-08-11	Class of Service Options (Outgoing Call Service) - Protect for the Call Mode Switching from Caller	0 = Off 1 = On	COS 01 ~ 15 = 0
20-11-07	Class of Service Options (Hold/Transfer Service) - Transfer Without Holding	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-22	Class of Service Options (Supplementary Service) - Busy Status Display (Called Party Status)	0 = Off 1 = On	COS 01 ~ 15 = 0
20-17-01	Operator Extension - Operator's Extension Number	Up to eight digits	101
20-18-01	Service Tone Timers - Extension Dial Tone Time	0 ~ 64800 seconds	30

Program No.	Program Name	Input Data	Default
21-01-02	System Options for Outgoing Calls - Intercom Interdigit Time	0 ~ 64800 seconds	10
82-01-01 (01)	Incoming Ring Tone - Frequency 1	1 = 520 Hz 2 = 540 Hz 3 = 660 Hz 4 = 760 Hz 5 = 1100 Hz 6 = 1400 Hz 7 = 2000 Hz	Refer to Programming Manual.
82-01-02	Incoming Ring Tone - Frequency 2	1 = 520 Hz 2 = 540 Hz 3 = 660 Hz 4 = 760 Hz 5 = 1100 Hz 6 = 1400 Hz 7 = 2000 Hz	Refer to Table 1-33 Incoming Ringing Tone .
82-01-03	Incoming Ring Tone - Modulation	0 = No Modulation 1 = 8 Hz Modulation 2 = 16 Hz Modulation 3 = Envelope	Refer to Table 1-33 Incoming Ringing Tone .

Handsfree Answerback/Forced Intercom Ringing:

Program No.	Program Name	Input Data	Default
20-02-12	System Options for Multiline Telephones - Forced Intercom Ring (ICM Call Type)	0 = Disable (Voice) 1 = Enable (Signal)	1
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-08-10	Class of Service Options (Outgoing Call Service) - Signal/Voice Call	0 = Off 1 = On	COS 01 ~ 15 = 1
20-09-05	Class of Service Options (Incoming Call Service) - Signal/Voice Call	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-06	Class of Service Options (Supplementary Service) - Automatic Off-Hook Signaling (Automatic Override)	0 = Off (manually) 1 = On (automatically)	COS 01 ~ 15 = 1
80-01-01 (28)	Service Tone Setup - Tone 28, Speaker Monitor Tone	0 ~ 255 (0 = Endless)	Refer to Service tones (Service Tone #28).
80-01-02	Service Tone Setup - Basic Tone Number	0 ~ 33 (0 = No Tone) (33 = Default Time Slot)	Refer to the Programming Manual for the default values.
82-01-01	Incoming Ring Tone - Frequency 1	1 = 520 Hz 2 = 540 Hz 3 = 660 Hz 4 = 760 Hz 5 = 1100 Hz 6 = 1400 Hz 7 = 2000 Hz	Refer to Table 1-33 Incoming Ringing Tone .

Table 1-33 Incoming Ringing Tone

Incoming Ring Tone Number	Tone Type	Frequency 1	Frequency 2	Modulation
Pattern 1 (Trunk Incoming)	High Mid Low	1100 660 520	1400 760 660	16Hz Modulation 16Hz Modulation 16Hz Modulation

Incoming Ring Tone Number	Tone Type	Frequency 1	Frequency 2	Modulation
Pattern 2 (Trunk Incoming)	High Mid Low	1100 660 520	1400 760 660	8Hz Modulation 8Hz Modulation 8Hz Modulation
Pattern 3 (Trunk Incoming)	High Mid Low	2000 1400 1100	760 660 540	16Hz Modulation 16Hz Modulation 16Hz Modulation
Pattern 4 (Trunk Incoming)	High Mid Low	2000 1400 1100	760 660 540	8Hz Modulation 8Hz Modulation 8Hz Modulation
Pattern 5 (Intercom Incoming Pattern)	High Mid Low	1100 660 520	1400 760 660	8Hz Modulation 8Hz Modulation 8Hz Modulation
Pattern 6 (Alarm Sensor Pattern)	High Mid Low	760 760 760	760 760 760	No Modulation No Modulation No Modulation
Pattern 7 (Trunk Incoming)	High Mid Low	1400 760 660	540 540 540	16Hz Modulation 16Hz Modulation 16Hz Modulation
Pattern 8 (Trunk Incoming)	High Mid Low	1400 760 660	540 540 540	8Hz Modulation 8Hz Modulation 8Hz Modulation
Pattern 9 (Trunk Incoming)	High Mid Low	2000 2000 1100	1100 540 760	16Hz Modulation 16Hz Modulation 16Hz Modulation
Pattern 10 (Trunk Incoming)	High Mid Low	2000 2000 1100	1100 540 760	8Hz Modulation 8Hz Modulation 8Hz Modulation

Operation

To place an Intercom call:

- At Multiline Terminal, press **Speaker** key.
- OR -
At Single Line Terminal, lift the handset.
- Dial extension number (or **9** for your operator).



Your call may voice-announce or ring the called extension. Dial 1 to change the way your call alerts the called extension.



If the extension you call is busy or does not answer, you can dial another extension without hanging up.

To answer an Intercom call:

- If you hear two beeps, speak toward telephone.



Your telephone picks up your voice.

- OR -

If your telephone rings, lift the handset.

To check the extension data (Multiline Terminal only):

- Press **Help** key.

2. Dial the extension number.



You display shows your telephone extension number, port number and extension/Department Group.



*You can also check any other extension numbers information by pressing **Help** key + the extension number.*

3. Press **Exit** key to return the normal time/date display.

To change how Intercom calls ring the extension:

1. Press **Speaker** key or lift the handset.
2. Dial **723** to have calls ring your extension.
- OR -
3. Dial **721** to have calls voice announce to your extension.

InUC Web Client

Description

The InUC Web Client is a browser based client hosted on the SL2100 CPU that provides a Buddy List, BLF status, Call Control, Call History, Function Key Status and Access, Presence Status, group or individual Email Messaging, group and individual Instant Messaging, Service Access for Call Forward and Do Not Disturb, Speed Dial List, Status Messages, and Video Conferencing. Each of these features is described in more detail below.

Buddy List

Each user can define a list of buddies that will show up on their Home page. Each buddy entry shows the following information:

- Online or Offline
- BLF Status – Shows Busy, Call Forward, and DND icons



BLF indication does not show the extension number in PRG20-57-43 for browser phones, so it's also necessary to set the extension number of the browser phone in PRG20-57-41.

- IM Icon – Initiate an IM to a buddy
- Presence Status – Shows if buddy's presence status is set for In the Office, On Vacation, Business Travel, In a Meeting, Out to Lunch, Sick, Gone for the Day, Out of the Office, or Unavailable. Up to 5 custom presence states can be defined. PRG 20-70 is used to assign an icon, color, and name to the custom presence state.
- Status Message – Shows the buddy's Status Message if one is set.

Buddy lists are initially sorted by name. Buddy Lists can also be sorted by a Division/Department defined in system programming or sorted by Presence Status.

Call Control

The InUC Web Client can control a user's physical terminal giving them the ability to make and receive internal and outside calls. The Call Control can be supported for the Desktop Phone Mode and Browser Phone Mode.

1. Desktop Phone Mode
Desktop Phone can be controlled using 1st Party CTI.



For Desktop phone mode, call control requires license 0082 (InUC Web 1st CTI) in addition to license 0081 (InUC Web Client).

Desktop Phone mode can perform the following Call Control functions:

- Call
 - Answer
 - Hold
 - Resume or UnHold
 - Transfer
 - Conference
 - DTMF
 - End Call
2. Mobile Device Mode
Mobile Device mode can be controlled a mobile device using ST500 (Android)/ST465 application installed and it can call via application. The call function depends on the application.



For Mobile Device mode, call control requires license 0081 (InUC Web Client).

3. Browser Phone Mode (V1.50 or higher)

Browser Phone can be controlled based on the standard SIP terminal specification.



For Browser phone mode, call control requires license 0084 (InUC Web Client - Browser phone) in addition to license 0081 (InUC Web Client).

Browser Phone mode can perform the following Call Control functions:

- Call
- Answer (Voice/Video Call)
- Hold
- Swap
- Resume or UnHold
- Transfer
- DTMF
- Video Call
- End Call

Call History

When the InUC Web Client is run in desktop phone mode or browser phone mode, the client will show the call history of the controlled desktop phone or browser phone. In browser phone mode, the call history is generated on a client. It does not receive from system like desktop phone mode. Users can make a call to a number in the Call History list.

Function Key Status

When the InUC Web Client is run in desktop phone mode, the client can show the status of function keys that are programmed on the controlled desktop phone. Some function can be accessed from the programmed function keys.

Email Messaging

Users can initiate an Email to one or more InUC Web Client users. If the InUC Web Client user has an Email address defined in Program 20-57, other InUC Web Client users can select them from a list within InUC Web Client. This will open the new Email form in their default mail client with the selected users Email address already populated in the To: field.

Instant Messaging

Users can send an instant message to one or more InUC Web Client users. Instant messages can be sent from the buddy list or in a multicast message. Instant Messages show date and time stamp. When a user logs out of the InUC Web Client, the messages are not automatically saved, but a user can manually save them to a text file.

Service Access

Under the Service Access feature, the InUC Web Client can Set and Cancel Call Forwarding (immediate, both, busy, busy/no answer, and no answer) and Do not Disturb. Service Access also provides a link to open Web Programming. When the In UC Web Client is run in browser phone mode, the media device (camera, microphone) can be selected. Also Multi Device Group can be used for mobile device mode and browser phone mode.

Speed Dial

The InUC Web Client lists the Speed Dial names and numbers defined in Program 13-04 in system programming. Users can make calls to the numbers in the Speed Dial list when logged in with Call Control mode. The Speed Dial list can be sorted alphabetically or by the Speed Dial index.

Video Conferencing

The InUC Client Web Conference feature gives an InUC user the ability to have a video conference with a maximum of seven other users. The SL2100 supports a total of four Web Conferences with a maximum of eight parties each.

Conditions

- The information shown in user details when clicking a buddy list entry is pulled from Program 20-57.
- When sending an instant message, pressing the Enter key will carriage return to the next line at default. To send a message with the Enter key, PRG 20-64-05 should be set to 1: SendIM.
- If the SL2100 system is reset, InUC Web Client presence information and status messages are not retained. Users must reset all presence and status messages.
- SL2100 supports a maximum of 128 InUC Web Client users.
- Instant Message is a one to one or one to many but is not many to many. For example, if a users sends an instant message to three users, when they reply, only the user that sent the original message receives it, not all three.
- Instant Message can be sent a one to a maximum 30 clients at one time.
- The following is a maximum number of Instant Messages that can be stored in the activity history.
Versions prior to 3.00: 500 per user in the client application
Version 3.00 or higher: 100 per user in the client application
When this limit is reached, the oldest message is removed to make room for the new message.
- About Resend Instant Message
 - With version 3.00 or higher, the message can be sent to the off-line recipient. When a message is sent to Off-Line client, the message is queued by the SL2100 system. When message recipient becomes On-Line, the message is re-sent from the system automatically. Even if sender's browser is closed, the message will be sent to the recipient.
 - For Off-line client, 30 messages can be queued at the recipient. When the recipient queue is full, sending message is fail. The error is displayed at the sender's screen.
 - When the sender is Off-Line, the message will be queued by sender's client. When the recipient becomes On-Line, the message is sent. In this case, the message is not queued by the system. If the browser is closed while in queue, the message is lost.
 - If Programming 20-57-01 User ID is changed while there are queued messages in the system, these messages are lost.
 - Resend Instant Message requires 7.5 Mbyte disk space on SD-Card.
- If less than 7.5 Mbyte, Instant Message History is deleted, and Resend Instant Message from the system does not work.
- When a client logs out, Instant Messages are lost unless previously saved to a file.
- The device must meet the specs recommended below or delays can occur in video:
 - Windows – Core i5 2.7 GHz or better CPU with 4 GB of RAM
 - Android – Quad-Core 2.5 GHz or better CPU with 3 GB of RAM
- If InUC Web Client B logs in with the user ID of InUC Web Client A who is already logged in, Client A will be logged out with the option to reconnect.
- When the window size is less than 520px, the list mode is displayed on the home page. If the window size is larger than 520px, the card mode is displayed in the home page.
- BLF status is displayed even when an InUC user is not logged into InUC Web Client.
- If the user is Offline, the Presence Icon is grayed out. If the user is online, the Presence icon is colored in.
- One Call Forward and DND icon is shown for all Call Forward and DND types.
- If a URL that starts with HTTP:// or HTTPS:// is sent in an Instant Message, it is displayed as a hyperlink in the message. If the user clicks the hyperlink, it will open in a new browser window.
- If the IM port is set to 0 in Program 20-64-03, no web clients sessions will be accepted.
- If a user has multiple Email addresses in Program 20-57, when initiating an Email from InUC Web Client, the 1st Email address is used.
- When a user invites someone to a Video Conference, the invitation is sent as a hyperlink in an Instant Message.

- When a client creates a Video Conference, the conference page opens in a new browser window.
- If a device goes into hibernate mode, logged in InUC Web Clients will be disconnected with an option to reconnect.
- When an IM is received, Chrome on a mobile device will show a notification in the web client window.
- An action when a client received an IM in PC is changed as below. The action is different by a browser.
With Version 1.0:
 - When an IM is received, Chrome on a PC will show a notification in the web client window and desktop system tray and the focus is moved to the Web Client window.
 - When an IM is received, Internet Explorer will show a notification in the web client window and the focus is moved to the Web Client window.With Version 1.5 or higher:
 - In Chrome: A popup notification is shown at right-bottom of screen. If user clicks the popup notification, the IM window is opened. When the IM window has already opened, the IM window moves to the front.
 - In Internet Explorer 11: If a parent window is minimized in task bar, a parent window moves to the front. If a parent window has shown, a name of parent window in task bar blinks.
- When using by Android OS, a notice action isn't performed at the time of receiving IM.
- Desktop Phone Mode requires license 0082 (InUC Web 1st CTI)
- If an InUC Web Client user loses connection for more than 5 minutes, other clients will show the disconnected user as offline.
- The extension number the InUC Web Client controls is set in PRG 20-57-41.
- If the controlled desktop phone for is a SLT, only Call is supported.
- If the user logs into InUC client while the controlled phone is not idle, the status is not updated and will update when the phone goes idle.
- If a user enables headset mode (PRG 11-11-65) a Headset key (05) must be programmed on the phone for the InUC web client to be able to control the phone.
- Call History is only shown when logged in with desktop phone mode and browser phone mode.
- Call History only supports multiline terminals with desktop phone mode.
- Call History shows up to 50 called numbers and up to 10 incoming numbers. If the number of calls exceeds these limits, the oldest calls are eliminated from the list. (Desktop phone mode only)
- For the desktop phone mode, at default Call History will only show the latest call from a number. To see each call from the same number, PRG 15-02-73 should be set to 1:unpack. Even with PRG 15-02-73 set to 1:unpack, multiple calls within the same minute only show the latest call.
- The Function Key page shows the name and additional data of the programmed key and the color and blink pattern of the key.
- The Function Key page does not support DSS consoles.
- The Function Key page only shows keys the phone physically has or is licensed for. If a phone has 12 keys but is programmed in the system with 48 function keys, only the 12 actual keys will show on the Function Key page.
- Up to 32 Function Keys are supported on the InUC Web Client Function Key page.
- If Function Keys are changed a re-login is required to apply the changes to the web client.
- If program setting of Custom Presence states are changed, the InUC client will not reflect the change until a re-login happens.
- The ST500 requires activation code to enable UC support for the SL2100. UC Settings in the ST500 profile will not show up without this activation key.
- GT890 terminals do not support the Web Conference feature within the UC tab.

- **Browser Phone Mode (Ver.1.50 or higher)**

- Main Software Ver.1.50 or higher is required for this feature.
- Browser Phone Mode is not supported using the built-in VoIP channels on the CPU. A VoIPDB card is required.
- A Web Phone License (0084) is required for Browser Phone Mode. This is a floating license-the number of installed licenses is the maximum number of clients that can be connected to the SL2100 at the same time. If there is no available license when a client attempts to login, an error message is displayed and the user may only login in no-phone mode.
If the license is lack at logging in, the error message is displayed, and user can log in as a no- phone mode.
- When terminating media packets in VoIPDB, VoIPDB channel license is consumed. This call consumes one channel about one call as same as the conventional encrypted call.
- Peer-to-Peer (P2P) communication can be used in voice or video calls between Browser Phones when the P2P settings of the two browser phones are enabled. P2P communication does not consume a VoIP resource channel. P2P communication must be enabled to make a video call.
- The video call between Browser Phone via AspireNet and SIP/H.323 system interconnection is not supported. It will be a Voice Call.
- When the user accesses with unsupported OS and browser, the "**Browser Phone**" is not displayed in select box of Telephony on Login screen.
- If a VoIPDB is not instaleed during log in, an error message is displayed and the user cannot log in no-phone mode.
- A Ringtone, Ringback tone and Holding tone are implemented in the browser phone. These sounds are fixed and they can't be changed.
- A USB Handset/Headset and Bluetooth Handset/Headset are supported as a microphone and speaker device. However, their key operations including a hook key of a device are not supported.
- Android OS and iOS is not supported.
- Only Chrome is supported.
- Video calls with Simple MCU and SIP video terminal are not supported.
- The call history data does not save to the SL2100 system, and when a client logs out, the call history data is deleted.
- Every time a call ends, the call history is generated automatically.
- The upper limit of the call history data on a client is 1000. When the call history data exceeds this limit, the oldest history data is deleted and the new history data is registered.
- Browser phone is not supported as an ACD Agent.
- Browser phone does not support ISDN sub addresses.
- When a browser phone answers a callback, recall, or initiates a call pickup, a VoIP resource is used regardless of peer to peer settings. Video cannot be used when this happens.
- If a user clicks Hold before a called trunk party answers, the call will end.
- Completing a transfer before a trunk party answers is not supported. The trunk party must answer before the transfer can happen. If transfer is attempted before the trunk party answers, the transfer fails and the call will recall.
- If two browsers phones are engaged in a call and switch the camera or microphone on/off, turn screen share on/off, click hold, or change video quality at the same time, the call will end.
- Browser phone only supports SIP info for DTMF. RFC 2833 is not supported.
- Barge-in to a video call cannot be used.
- In case of P2P communication disable, a Video call and video enable operation by a browser phone are restricted and the call will end.
- Browser Phones that have been registered and are logged out will show as BUSY in the BLF Area/Buddy List.
- If the InUC Web Client calls a station that is forwarded, the InUC Web Client shows you are ringing/talking to the forwarded station even after it has forwarded and been answered by the forward destination station.
- Use in following port is regulated in Chrome. Please confirm the latest edition by a Google Chrome site. Reference URL: https://src.chromium.org/viewvc/chrome/trunk/src/net/base/net_util.cc?view=markup

Regulated Port	Usage	Regulated Port	Usage	Regulated Port	Usage	Regulated Port	Usage
1	Tcpmux	77	priv-rjs	139	netbios	601	??
7	Echo	79	finger	143	imap2	636	ldap+ssl
9	Discard	87	ttylink	179	BGP	993	ldap+ssl
11	Systat	95	supdup	389	ldap	995	pop3+ssl
13	Daytime	101	hostrame	465	smtp+ssl	2049	nfs
15	Netstat	102	iso-tsap	512	print/exec	3659	apple-sasl/PasswordServer
17	qotd	103	Gppitnp	513	login	4045	lockd
19	chargen	104	acr-nema	514	shell	6000	X11
20	ftp data	109	Pop2	515	printer	6665	Alternate IRC [Apple addition]
21	ftp access	110	Pop3	526	tempo	6666	Alternate IRC [Apple addition]
22	ssh	111	sunrpc	530	courier	6667	Standard IRC [Apple addition]
23	telnet	113	auth	531	chat	6668	Alternate IRC [Apple addition]
25	smtp	115	sftp	532	netnews	6669	Alternate IRC [Apple addition]
37	time	117	uucp-path	540	uucp	65535 (0xFFFF)	Used to block all invalid port numbers third_party/ WebKit/Source/ platform/weborigin/KURL.cpp, KURL::port
42	name	119	nntp	556	remotefs		
43	nickname	123	NTP	563	nntp+ssl		
53	domain	135	loc-srv/epmap	587	smtp?		

Default Settings

InUC User Information Settings are not defined at default.

System Availability

Terminals

All Multiline Terminals

Single Line Terminals and Mobile Device mode are supported for Make Call only.

GT890 with ST500

Required Component(s)

- Following license is required for each mode.

Mode	Required License
No phone	- SL2100 IN-UC WEB CLIENT-01 LIC
Desktop Phone	- SL2100 IN-UC WEB CLIENT-01 LIC - SL2100 IN-UC 1ST CTI-01 LIC
Mobile Device	- SL2100 IN-UC WEB CLIENT-01 LIC - SL2100 IP EXT-01 LIC (required for ST500 (Android)/ST465)
Browser Phone	- SL2100 IN-UC WEB CLIENT-01 LIC - SL2100 IN-UC WEB PHONE-01 LIC

- Browser Phone is required a VoIPDB.
- The Client PC or Mobile device is running as following operation system and browsers.

Mode	Windows 8.1/10 with		macOS v10.14 or higher with Google Chrome v83 or higher	Android v8.1 or higher with Google Chrome v83 or higher
	Microsoft Edge v83 or higher	Google Chrome v83 or higher		
No phone	X	X	X	X
Desktop Phone	X	X	X	X
Mobile Device	N/A	N/A	N/A	X
Browser Phone	N/A	X	X	N/A

For ST500 Mode, refer to InUC Web Client – ST500 Integration Section.

For Android, the Desktop Site Mode of the Web browser is not supported.

iOS is not supported.



This is the SL2100 v3.00 software information on platforms. When using the previous SL2100 software version, refer to the previous SL2100 Feature and Specification manual to check the OS and Web browser.

- Client PC is required as following recommended specifications:
 - CPU Core5 2.7GHz or more
 - RAM 4GB or more
- Android device is required as following recommended specifications:
 - CPU Quad-core 2.5GHz or more
 - 3GB or more

Related Features

Video Conference with Web RTC

Guide to Feature Programming

Program No.	Program Name/Description	Input Data	Default	Mode *1			
				No Phone	Desktop Phone	Mobile Device	Browser Phone
10-12-09	CPU Network Setup - IP Address (VoIPDB) Assign the IP Address for the VoIPDB.	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	172.16.0.10	X	X	X	X

Program No.	Program Name/ Description	Input Data	Default	Mode *1			
				No Phone	Desktop Phone	Mobile Device	Browser Phone
10-12-10	CPU Network Setup - Subnet Mask (VoIPDB) Assign the subnet mask for the VoIPDB.	128.0.0.0 192.0.0.0 224.0.0.0 240.0.0.0 248.0.0.0 252.0.0.0 254.0.0.0 255.0.0.0 255.128.0.0 255.192.0.0 255.224.0.0 255.240.0.0 255.248.0.0 255.252.0.0 255.254.0.0 255.255.0.0 255.255.128.0 255.255.192.0 255.255.224.0 255.255.240.0 255.255.248.0 255.255.252.0 255.255.254.0 255.255.255.0 255.255.255.128 255.255.255.192 255.255.255.224 255.255.255.240 255.255.255.248 255.255.255.252 255.255.255.254 255.255.255.255	Refer to the programming manual for all the possible valid subnet - mask entries. (default = 255.255.0.0)	X	X	X	X
10-20-01	LAN Setup for External Equipment - TCP Port Set External Device 8 (UC Web Application) to something other than 0. example: 8787	Available value are: 0 ~ 65535	External Device 1 (CTI Server) = 0 External Device 2 (ACD-MIS) = 0 External Device 4 (Networking System) = 0 External Device 5 (SMDR Output) = 0 External Device 6 (DIM Output) = 0 External Device 8 (UC Web Application) = 0 External Device 9 (1st Party CTI) = 0 External Device 11 (O&M Server) = 8010 External Device 12 (Traffic Report Output) = 0 External Device 13 (Room Data Output for Hotel Service) = 0 External Device 14 (IPDECT Directory Access) = 0 External Device 15 (Presence) = 0	X	X	X	X

Program No.	Program Name/Description	Input Data	Default	Mode *1			
				No Phone	Desktop Phone	Mobile Device	Browser Phone
11-02-01	Extension Numbering - Extension Number Set up extension numbers for multiline telephones, single line telephones, In-Mail and IP telephones.  <i>Extension number assignments cannot be duplicated in Programs 11-02, and 11-07.</i>	Dial (Up to 8 digits)	Extension Port Number : Extension Number 001 ~ 064 : 101 ~ 164 065 ~ 128 : No Setting		XX	XX	XX
11-09-01	Trunk Access Code - Trunk Access Code Use this program to assign the trunk access code defined in PRG 11-01-01. This is the access code that users will dial to make outbound calls.	Dial (Up to four digits)	0		X	X	X
11-11-01	Service Code Setup (for Setup/Entry Operation) - Call Forward - All Terminal: MLT, SLT	0 ~ 9, *, # Maximum of 8 digit	741		X	X	X
11-11-02	Service Code Setup (for Setup/Entry Operation) - Call Forward - Busy Terminal: MLT, SLT	0 ~ 9, *, # Maximum of 8 digit	742		X	X	X
11-11-03	Service Code Setup (for Setup/Entry Operation) - Call Forward - No Answer Terminal: MLT, SLT	0 ~ 9, *, # Maximum of 8 digit	743		X	X	X
11-11-04	Service Code Setup (for Setup/Entry Operation) - Call Forward - Busy/No Answer Terminal: MLT, SLT	0 ~ 9, *, # Maximum of 8 digit	744		X	X	X
11-11-05	Service Code Setup (for Setup/Entry Operation) - Call Forward - Both Ring Terminal: MLT, SLT	0 ~ 9, *, # Maximum of 8 digit	745		X	X	X
11-11-08	Service Code Setup (for Setup/Entry Operation) - Do Not Disturb Terminal: MLT, SLT	0 ~ 9, *, # Maximum of 8 digit	747		X	X	X

Program No.	Program Name/Description	Input Data	Default	Mode *1			
				No Phone	Desktop Phone	Mobile Device	Browser Phone
11-11-75	Service Code Setup (for Setup/Entry Operation) - Multi-Device Support (On) Used to enable the Multi-Device group key.	SLT, MLT	No Setting			X	X
11-11-76	Service Code Setup (for Setup/Entry Operation) - Multi-Device Support (Off) Used to disable the Multi-Device group key.	SLT, MLT	No Setting			X	X
15-02-34	Multiline Telephone Basic Data Setup - Call Register Mode Define if the Caller ID Scroll and InUC Call history stores Trunk calls only (0), or both Internal and Trunk calls (1).	0 = Trunk Mode 1 = Extension/Trunk Mode	0		X		
15-02-73	Multiline Telephone Basic Data Setup - Calling Party History View Mode Define if the call history display only the latest call to the same number (0-Pack) or each call (1-Unpack).	0 = pack 1 = unpack	0		X		
15-05-16	IP Telephone Terminal Basic Data Setup - Authentication Password Assign the authentication password for SIP single line telephones. Web pro indicates password as * mark. This program is valid when PRG 15-05-01 Terminal Type is set to 2. (2=SIP)	Up to 24 characters Version 3.00 or higher: Enter 8 or more characters. Password must contain at least one uppercase letter, one lowercase letter and a number.	No Setting				XX
15-05-43	IP Telephone Terminal Basic Data Setup - Video Mode Enable or Disable Video Mode for standard SIP terminals. This must be enabled for Browser Phone mode to be able to make video calls.	0 = Disable 1 = Enable	0				X

Program No.	Program Name/Description	Input Data	Default	Mode ^{*1}			
				No Phone	Desktop Phone	Mobile Device	Browser Phone
15-05-49	IP Telephone Terminal Basic Data Set-up - Receiving SIP INFO Select whether or not system can receive DTMF from standard SIP phone via SIP INFO message. Must be set to 1 for DTMF to work in browser phone mode.	0 = Disable 1 = Allowed any time 2 = Allowed while RTP is not available	1				X
15-05-50	IP Telephone Terminal Basic Data Set-up - Peer to Peer Mode On a per station basis, enable or disable Peer to Peer mode. Must be enabled for Browser Phone Mode to be able to make video calls.	Off = Disable On = Enable	1				X
20-57-01	UC User Information Settings - User ID For each User Information Table number (1 ~ 128), define the User ID for authentication while creating a conference.	Maximum of 16 characters	No Setting	XX	XX	XX	XX
20-57-02	UC User Information Settings - Password For each User Information Table number (1 ~ 128), define the password for authentication while creating a conference.	Maximum of 16 characters Version 3.00 or higher: Enter 8 or more characters. Password must contain at least one uppercase letter, one lowercase letter and a number.	No Setting	X	X	X	X
20-57-03	UC User Information Settings - Last Name Define last name.	Maximum of 20 characters	No Setting	X	X	X	X
20-57-04	UC User Information Settings - First Name Define first name.	Maximum of 20 characters	No Setting	X	X	X	X
20-57-07	UC User Information Settings - TEL1 Define telephone number 1.	Maximum of 24 characters	No Setting	X	X	X	X
20-57-08	UC User Information Settings - Last Name2 Define secondary last name.	Maximum of 20 characters	No Setting	X	X	X	X

Program No.	Program Name/ Description	Input Data	Default	Mode ^{*1}			
				No Phone	Desktop Phone	Mobile Device	Browser Phone
20-57-09	UC User Information Settings - First Name2 Define secondary first name.	Maximum of 20 characters	No Setting	X	X	X	X
20-57-10	UC User Information Settings - TEL2 Define telephone number 2.	Maximum of 24 characters	No Setting	X	X	X	X
20-57-11	UC User Information Settings - Last Name3 Define last name 3.	Maximum of 20 characters	No Setting	X	X	X	X
20-57-12	UC User Information Settings - First Name3 Define first name 3.	Maximum of 20 characters	No Setting	X	X	X	X
20-57-13	UC User Information Settings - TEL3 Define telephone number 3.	Maximum of 24 characters	No Setting	X	X	X	X
20-57-14	UC User Information Settings - Mobile1 Define mobile number 1.	Maximum of 24 characters	No Setting	X	X	X	X
20-57-15	UC User Information Settings - Mobile2 Define mobile number 2.	Maximum of 24 characters	No Setting	X	X	X	X
20-57-16	UC User Information Settings - E-Mail1 Define E-Mail 1.	Maximum of 128 characters	No Setting	X	X	X	X
20-57-17	UC User Information Settings - E-Mail-2 Define E-mail 2.	Maximum of 128 characters	No Setting	X	X	X	X
20-57-18	UC User Information Settings - Company Define the company.	Maximum of 128 characters	No Setting	X	X	X	X
20-57-19	UC User Information Settings - Department/Division Define the department/division.  <i>This setting is how the InUC Client can sort the buddy list by division.</i>	Maximum of 128 characters	No Setting	X	X	X	X
20-57-20	UC User Information Settings - City Define the city.	Maximum of 64 characters	No Setting	X	X	X	X

Program No.	Program Name/ Description	Input Data	Default	Mode ^{*1}			
				No Phone	Desktop Phone	Mobile Device	Browser Phone
20-57-21	UC User Information Settings - State/Prov Define the State/Province.	Maximum of 32 characters	No Setting	X	X	X	X
20-57-22	UC User Information Settings - Zip/Postal Define the Zip/Postal code.	Maximum of 32 characters	No Setting	X	X	X	X
20-57-23	UC User Information Settings - Country Define the country.	Maximum of 32 characters	No Setting	X	X	X	X
20-57-24	UC User Information Settings - Profile Name Define the profile name.	Maximum of 256 characters	No Setting	X	X	X	X
20-57-41	UC User Information Settings - Extension Number Define the extension number. This extension number follows for the BLF indication.	Maximum of 8 digits	No Setting	X	XX	X	X
20-57-42	UC User Information Settings - Language Define the language for InUC Web Client.	0 = Japanese 1 = English 2 = German 3 = French 4 = Italian 5 = Spanish 6 = Dutch 7 = Portuguese 8 = Norwegian 9 = Danish 10 = Swedish 11 = Turkish 12 = Romanian 13 = Polish 14 = Russian 15 = Simplified Chinese 16 = Traditional Chinese 17 = Thai 18 = Vietnamese 19 = Bahasa Indonesia 20 = Bahasa Malaysia 21 = Latin America Spanish 22 = Brazilian Portuguese 23 = Language23 24 = Language24 25 = Language25 26 = Language26 27 = Language27 28 = Language28 29 = Language29 30 = Language30	1	X	X	X	X

Program No.	Program Name/ Description	Input Data	Default	Mode ^{*1}			
				No Phone	Desktop Phone	Mobile Device	Browser Phone
20-57-43	UC User Information Settings - Extension Number of Browser Phone This is the extension number of browser phone related to the UC account. While a UC client is on-line, change isn't applied.	Dial (Up to 8 digits)	No Setting				XX
20-64-03	UC Web Application Setting - IM Port Number Assign the IM port number.	0 ~ 65535	0	XX	XX	XX	XX
20-64-04	UC Web Application Setting - Allow Blank Password Allow blank password.	0 = Not Allow 1 = Allow	0	XX	X	X	X
20-64-05	UC Web Application Setting - Enter Key Operation at editing IM Define the Enter Key Operation at editing IM.	0 = Newline 1 = Send IM	0	X	X	X	X
20-64-06	UC Web Application Setting - Register Port of Browser Phone This is register port of browser phone. When it is 0, InUC web client cannot use browser phone mode.	0 ~ 65535	0				XX
20-64-07	UC Web Application Setting - Internal Port of Browser Phone This is top of internal port for browser phone. When it is not 0, 512 port which continues from a set port is reserved. For example, when this port number is 50000, 50000 ~ 50511 ports are reserved. When it is 0, InUC web client cannot use browser phone mode.  When an input check detected a duplicate with other port, an input error occurs.	0 ~ 65024	0				XX

Program No.	Program Name/Description	Input Data	Default	Mode *1			
				No Phone	Desktop Phone	Mobile Device	Browser Phone
20-64-08	UC Web Application Setting - Internal Forwarded Port of Browser Phone This is top of internal forwarded port for browser phone. When it is not 0, 460 port which continues from a set port is reserved. For example, when this port number is 10020, 10020 ~ 10479 ports are reserved. When it is 0, InUC web client cannot use browser phone mode.  When an input check detected a duplicate with other port, an input error occurs.	0 ~ 65076	0				XX
20-70-01	Custom Presence Status Setting - Icon Assign the Presence Icon.	0 = arrow 1 = asterisk 2 = at 3 = bed 4 = coffee 5 = book 6 = building 7 = lock 8 = mobile 9 = subway	0	X	X	X	X
20-70-02	Custom Presence Status Setting - Icon Color Assign the Color of Presence Icon.	0 = Green 1 = Orange 2 = Red	0	X	X	X	X
20-70-03	Custom Presence Status Setting - Status Name Assign the name of Presence status.	Up to 16 characters	No Setting	X	X	X	X
80-05-01	Date Format for SMDR and System - Date Format The Date Format is indicated in the InUC application.	0 = American Format (Month / Day / Year) 1 = Japanese Format (Year / Month / Day) 2 = European Format (Day / Month / Year)	2	X	X	X	X
84-26-01	VoIP Basic Setup (DSP) - IP Address Assign the IP address for each DSP on the VOIPDB.	xxx.xxx.xxx.xxx	172.16.0.20 ~				XX
84-26-02	VoIP Basic Setup (DSP) - RTP Port Number	0 ~ 65534	10020				XX
84-26-03	VoIP Basic Setup (DSP) - RTCP Port Number	RTP Port Number + 1	10021				XX

Program No.	Program Name/Description	Input Data	Default	Mode *1			
				No Phone	Desktop Phone	Mobile Device	Browser Phone
84-26-15	VoIP Basic Setup (DSP) - IP Address for Browser Phone communication Assign the IP address for each DSP on the VOIPDB. Must be different than 10-12-09 or 84-26-01 addresses but must be on the same network.	0.0.0.0~126.255.255.254 128.0.0.1~191.255.255.254 192.0.0.1~223.255.255.254	0.0.0.0				XX
84-27-03	VoIP Basic Setup - SRTP Mode Must be enabled for Browser Phone Mode.	0 = Disable 1 = Enable	0				XX
90-54-01	PC/Web Programming Setting - WebPro TCP Port Number Assign TCP WebPro port number.	0 ~ 65535	Version 3.00 or higher: 0 Version 2.xx or lower: 80	X	X	X	
90-54-03	PC/Web Programming Setting - Web Programming TCP Port (HTTPS) Assign Web programming TCP port (HTTPS) number.	0 ~ 65535 0 = HTTP access is not available	443	X	X	X	X

*1. "X" indicates a related programming and "XX" indicates a programming that **MUST BE SET** for each feature.

NAT Traversal:

Program No.	Program Name/Description	Input Data	Default
10-12-07	CPU Network Setup - NAPT Router IP Address Set the IP address on the WAN side of router.	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0
10-33-05	SIP Registrar/Proxy Information Basic Setup - NAT Mode Enable this Mode if the System controls the SIP Phone by the NAT router.	0 = Disable 1 = Enable	0
10-37-01	UPnP Setup - UPnP Mode If the system controls the SIP phone through the NAT Router this program should be 1: Enable.  Router must support UPnP.	0 = Disable 1 = Enable	0
10-58-01	Network Address - IP Address Sets local network address. If the system uses both the Intranet and NAT router please input the IP Network address of the terminal connected to the Internet.	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0

Program No.	Program Name/Description	Input Data	Default
10-58-02	Network Address - Subnet Mask Sets local subnet mask.	248.0.0.0 252.0.0.0 254.0.0.0 255.0.0.0 255.128.0.0 255.192.0.0 255.224.0.0 255.240.0.0 255.248.0.0 255.252.0.0 255.254.0.0 255.255.0.0 255.255.128.0 255.255.192.0 255.255.224.0 255.255.240.0 255.255.248.0 255.255.252.0 255.255.254.0 255.255.255.0 255.255.255.128 255.255.255.192 255.255.255.224 255.255.255.240 255.255.255.248 255.255.255.252 255.255.255.254	0.0.0.0
15-05-45	IP Telephone Terminal Basic Data Setup - NAT plug & play Effect this program only when PRG 10-46-14 (for IP Multiline Terminals) or PRG 10-33-05 (for Standard SIP Terminal) are set to NAT mode. Effect this program only when PRG 10-46-14 (for IP Multiline Terminals) is set to NAT mode. If you are setting the SIP Terminal using remote router by turning this setting ON you don't need to set the Port Forward on remote router side. Select sending RTP port number to remote Router, use from negotiation result (0) or received RTP packet (1).	0 = OFF 1 = ON	1
15-05-47	IP Telephone Terminal Basic Data Setup - Registration Expire Timer for NAT On a per station basis, this setting defines the SIP registration expiry timer. This setting applies to IP Multiline Terminals or Standard SIP Terminal connected via NAPT. If this value is set to 0, for a NAPT terminal, the value in PRG 84-23-01 (for IP Multiline Terminals) or PRG 10-33-01 (for Standard SIP Terminal) are applied.	0 = Disable 60 ~ 65535 (sec)	180
15-05-48	IP Telephone Terminal Basic Data Setup - Subscriber Expire Timer for NAT On a per station basis, this setting defines the SIP subscribe expiry timer. This setting only applies to IP Multiline Terminals or Standard SIP Terminal connected via NAPT. If this value is set to 0, for a NAPT terminal, the value in PRG 84-23-02 (for IP Multiline Terminals) or PRG 10-33-01 (for Standard SIP Terminal) are applied.	0 = Disable 60 ~ 65535 (sec)	180

The following NAPT settings need to programmed in the customer router:

Port	TCP/UDP	Destination
Port from PRG 10-20-01 index 8	TCP	IP Address from PRG 10-12-09
10020 ~ 10083	UDP	IP Address from PRG 84-26-01

Operation

Refer to the SL2100 InUC Web Client User Guide for more information.

InUC Web Client – ST500 Integration

Description

With Version 3.00 or higher, the system provides InUC Web I/F to the UNIVERGE ST500 Android application. The ST500 can sign in InUC Web Client and allow to use InUC features within the ST500 UC tab. The ST500 also can see the caller's name information while receiving call or viewing call history. The name information comes from the SL2100 through InUC Web I/F.



For ST500 Integration, call control requires license 0081 (InUC Web Client). IP Phone License is separately required for ST500 application.

Conditions

InUC Web Client ST500 integration has the common conditions with InUC. Web Client. Please refer Conditions of InUC Web Client section. The following conditions apply to only InUC Web Client within ST500 UC tab.

- Call Control is only ST500.
- Call History is shown within ST500 application.
- If InUC Web Client B logs in with the user ID of InUC Web Client A who is already logged in, Client A will be logged out with the option to reconnect. If the Client A is InUC Web Client with ST500 Integration, the ST500 must sign in again.
- A user can not manually save instant messages to a text file.
- If a browser supporting the Video Conference with WebRTC is not installed, the browser doesn't open when starting web conference or clicking URL to join the conference on ST500.
- When InUC for ST500 disconnected to the system, it try to reconnect automatically.
- In case of InUC within ST500 on iOS and its Push notification is enabled, if the user is Offline, the Presence Icon is not grayed out. In this status, it can notice Instant Message by Push notification. SIP Registration is needed to enable Push notification.
- SL2100 does not support Push notifications for InUC for ST500 Android. If Push is enabled, there could be speech path issues when Web conferences and ST500 voice calls are performed at the same time.
- The presence of UNIVERGE ST500 with InUC Web Client ST500-Mode user can be seen as below.

Mobile Status	Android
Foreground	On Line
Calling (ST500)	On Line
Background	On Line
Calling (Native Application)	On Line
Device Locked	On Line
Terminate ST500	Off Line
UC Log out	Off Line
Power OFF	Off Line

- ST500 must have a UC activation key to support InUC. If the activation key is not present, UC settings in ST500 will not show.
- When clicking the UC tab of ST500, InUC Web Client logs in automatically from UC settings of ST500.
- ST500 mode is not available for browsers.
- ST500 mode is the only mode available in ST500 UC Tab.
- ST500 UC Tab will still log in even if SIP registration fails.
- When using automatic profile switching, each profile must have the same UC account defined.
- In ST500 mode, when the user receives an IM, a Device Notification is displayed.
- If UC Include message contents is turned off in the ST500 profile>Telephone Service>Notifications, the body of the notification when a message is received shows "You have a message".
- Tapping the new message notification opens the ST500 application to the UC tab.
- New IM notification is only supported with a SIM card.
- The SL2100 must be connected to the Internet to be able to receive new IM notification.
- When multiple IM notifications are received from the same sender, the most recent notification is displayed on Android.
- The number of new messages is shown on the UC tab icon in ST500.
- All of instant messages are erased by the following operations.
 - Swiping down while on the UC tab of ST500.
 - Turn OFF the device
 - Loss of connection to the SL2100
- Screen rotation is disabled in ST500 mode. Only the vertical layout is supported.
- The Buddy List is displayed as List Display in ST500 mode. Card Display is not supported in ST500 mode.
- When a Web Conference is opened from the UC tab in ST500 on Android, Chrome is opened.
- Answering an incoming voice call while a Web Video Conference is in progress is not supported.
- Establishing a Web Video Conference when ST500 is in a voice conversation is not supported. The voice call must be ended before creating a new Web Video Conference.
- If the smart device switches to sleep mode while a Web Video Conference is in progress, the other conference member's video, voice and display sharing On/Of may not function properly.

Default Settings

None

System Availability

Required Component(s)

- SL2100 Version 3.00 software
 - Android: Android 9.0.0 with Google Chrome 83 or higher, ST500 v5.0.9 or higher
 - VOIPDB
 - SL2100 IN-UC CLIENT-01 LIC(License Code 0081)
-

Related Features

In UC Web Client

Guide to Feature Programming

Programs for this feature, please refer to:

In UC Web Client

These are the commonly assigned programs for this feature.

Settings for the UNIVERGE ST500 - InUC Web Client ST500 Integration

The following programs are required for the ST500 application.

ST500 UC Setting	SL2100 Programming
UC User ID	20-57-01 UC User Information Settings - ID
UC User Password	20-57-02 UC User Information Settings - Password
Server Address	Enter Domain Name used when acquiring the certificate.
Server Port	10-20-01 LAN Setup for External Equipment - Device 8 TCP Port - or - 90-54-03 PC/Web Programming - Web Programming – TCP Port (HTTPS)

To Install SSL Certificate, refer to:

InUC Web Client – Certificate Registration

UNIVERGE ST500 Installation

For ST500 Installation, please refer to the following manuals.

UNIVERGE ST500 for Android CONFIGURATION MANUAL

Operation

None

InUC Web Client – Certificate Registration

Description

The following features use https protocol to establish encrypted connection.

Video Conference with WebRTC

ST500 - InUC Web Client integration

The certificate is required to use https protocol.

To generate the certificate, the DNS server must resolve the domain name of SL2100 system.

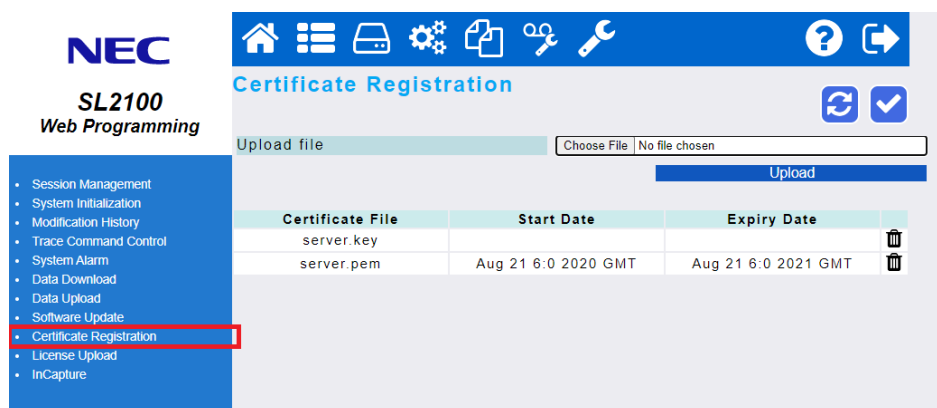
When using SSL certificate approved by a certificate authority:

The certification can be installed at Web Programming.

1. Login to Web Programming (IN Level)



2. Click on Maintenance Button on Web Programming Home Screen.



3. Click on Certificate Registration.
4. Browse and select the certificate file (PEM file) provided by certificate provider.

Certificate File	Start Date	Expiry Date	
server.key			
server.pem	Aug 21 6:0 2020 GMT	Aug 21 6:0 2021 GMT	

5. Click on Choose File button
6. Browse and select the private key file (KEY or PEM file) used to create CSR (certificate signing request) file.
7. Click on Upload button.
8. Go to system programming.

Program 90-54-04 Certificate
Set 1 to use uploaded certificate.

Program 10-72-01 Network Security Setup - Server Certificate
Enter the Server Certificate file name.

Program 10-72-02 Network Security Setup - Private Key
Enter Private Key for the SSL certificate



To apply the certificate, a system reboot is required after the above programming.

Limitations

- The certificate must be renewed each time it expires.
- If using a certificate purchased from a certificate provider:
 - Android does not support Intermediate Certificates. If it is an Intermediate Certificate, it must be loaded to the Android device as well as the SL2100.

Default Settings

None

Related Features

In UC Web Client

Video Conference with Web RTC

Guide to Feature Programming

Program No.	Program Name / Description	Input Data	Default
10-72-01	Network Security Setup - Server Certificate Assign the Server Certificate file's name for SL2100	Up to 32 characters	No Setting
10-72-02	Network Security Setup - Private Key Assign the Private Key file's name for SL2100	Up to 32 characters	No Setting
90-54-04	PC/Web Programming - Certificate Set to 1 to use uploaded certificate, the system uses an uploaded certificate in Programming 10-72.  <i>This setting requires the system reboot.</i>	0 = Use default 1 = Use uploaded certificate	0

Operation

None

IP Multiline Station (SIP)

Description

The SL2100 system supports IP Terminals. IP Terminals have the similar look and functionality of typical Multiline Terminals, but they are connected to the CPU via IP rather than by a hardwired connection to a Digital Station port.

The following IP Multiline Terminal support IP extensions:

- IP7[]-8IPLD-C1 TEL (BK)
- ITK-24CG-1A (BK) TEL
- ITK-32LCG-1A(BK)TEL

IP to TDM Conversion

When an IP Terminal calls a Multiline Terminal, Single Line Terminal, Voice Mail, or a trunk, the speech must be converted from an IP to TDM (Time Division Multiplexing) technology.

Built-in VoIP on the CPU : 8 channel (Initially bundled)

Built-in VoIP on the CPU : Additional 8 channel (License controlled, Ver 4.00 or higher)

VOIPDB : 128 channel

IP Multiline Terminals

The IP Multiline Terminal operates the same way as a digital Multiline Terminal. The IP Multiline Terminal has all of the features and flexibility you expect from a digital Multiline Terminal. The difference is that the IP Multiline Terminal uses an RJ-45 for connection to the IP network, rather than an RJ-61 connection to a 082U-B1 or 008U-()1.

LAN Connection

The IP Terminal has two RJ-45 connections on the back marked **PC** and **LAN**. This allows the IP Terminal and a PC to share one cable run and switch port.

If installing an IP Terminal at a location that has a PC connected to the data network, one of the following methods can be used:

- Using a different cable:
 - Leave the PC connected to the LAN.
 - Patch a switch port to the new cable run.
 - Connect a CAT 5 straight-through cable from the wall outlet to the **LAN** port on the IP Terminal.
- Sharing the existing cable:
 - Unplug the cable from the PC Network Interface Card (NIC).
 - Connect the cable to the **LAN** port on the IP Terminal.
 - Connect a new straight-through patch lead from the PC NIC to the PC port on the IP Terminal.

Powering the IP Terminal

Power can be provided to the IP Terminal by the following methods:

- Power over Ethernet (PoE)

All IP Multiline Terminals can be powered using Power over Ethernet (PoE) 802.3af.

PoE (Power Over Ethernet) is a LAN technology that allows standard 10Base-T/100Base-TX data cables to pass electrical current from a power source to a requesting end device.
- Local Power

The ITK-24CG-1[] TEL has a connector on the back for external power. This is supplied by an AC adapter that outputs +27VDC requiring a separate power outlet per IP telephone. Loss of power in the building will prevent the telephones from functioning.



An external power supply (such as AC adapter) is not supported for IP7[]-8IPLD-C1 TEL and ITK-

 *32LCG-1[] TEL.
Only use the NEC supplied power supply.*

NAPT

This function is used to establish SIP communication with the main device and RTP communication among SIP Terminals through the NAT on an IP network.

- NAT Traversal

The NAPT (Network Address Port Translation) feature gives the SL2100 the ability to “traverse” its own subnet. With NAPT used in the SL2100, the network administrator can place the CPU and the VoIPDB in the customers LAN while still making it accessible to users outside the local LAN.

- Static NAT

This method is used to convert an address (a WAN-side address for the NAT router) previously specified in the terminal configuration. For this method, a conversion table is statically set up for the NAT router, and then a packet for a specific port is transferred to a specific terminal by using the port forwarding function of the NAT router.

- Dynamic NAT

This method is used to automatically acquire the WAN-side global address for the NAT router and convert it.

NAT Traversal

Besides ordinary NAPT feature SL2100 supports NAT Traversal which does not require Port Forwarding setting at remote side router. This feature is effective when PRG 15-05-45 is set "1" (On). Example of NAT Traversal network and necessary settings for System and IP Terminal are shown in below [Figure 1-23 Example- NAT Traversal](#), [Table 1-34 Example - System Setting](#) and [Table 1-35 Example - IP Terminal Setting](#).

 *Actual input data should be set according to the required system.*

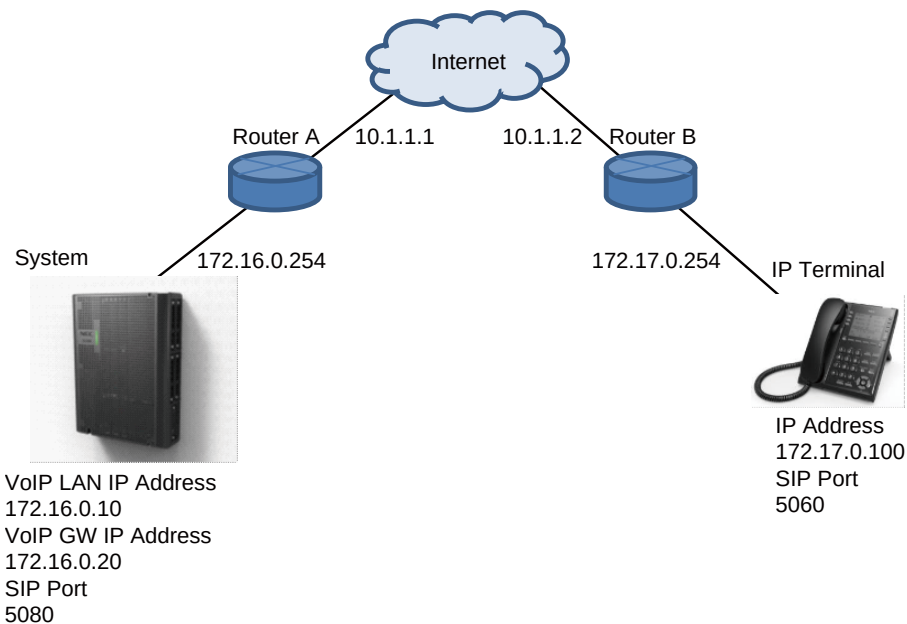


Figure 1-23 Example- NAT Traversal

Table 1-34 Example - System Setting

Index	PRG	Default	Input Data	Remark
1	10-12-03	0.0.0.0	172.16.0.254	LAN IP address of Router A
2	10-12-07	0.0.0.0	10.1.1.1	WAN IP address of Router A
3	10-12-09	172.16.0.10	172.16.0.10	LAN IP address of VOIPDB
4	10-12-10	255.255.0.0	255.255.0.0	Subnet Mask of VOIPDB
5	10-46-14	0:OFF	1:ON	NAT Mode
6	15-05-45	1	1	NAT RTP send port choice

Index	PRG	Default	Input Data	Remark
8	84-26-01	172.16.0.20	172.16.0.20	VOIP DSP IP address

Table 1-35 Example - IP Terminal Setting

Index	Name	Default	Input Data
1	IP Address	0.0.0.0	172.17.0.100
2	Default Gateway	0.0.0.0	172.17.0.254
3	Subnet Mask	0.0.0.0	255.255.0.0
4	NAT Traversal Mode	1:Disable	2:Dynamic
5	WAN Mate IP Address	0.0.0.0	10.1.1.1
6	WAN SIP Mate Port	5060	5080

Table 1-36 Port Forwarding Settings of MAIN Location Router

Port	IP Address Port is Forwarded To	Remark
5080 (UDP)	172.16.0.10	Signaling port and must be forwarded to the IP Address assigned in PRG 10-12-09
5081 (UDP)	172.16.0.10	Secondary signaling port and must be forwarded to the IP Address assigned in PRG 10-12-09
10020 ~ 10147 (UDP)	172.16.0.20	Voice ports and must be forwarded to the IP Address assigned in PRG 84-26-01



Port forwarding does not need to be assigned at the Remote Terminal locations.

- IP Multiline Terminal Setting of "NAT Traversal Mode" needs "Dynamic". "Static" is unsupported.
- Port Forwarding setting to system side Router A is necessary.
- When PRG 15-05-45 is set to 1 the manual table setting for port forwarding is unnecessary at remote side Router B, but it needs NAT function setting itself. If PRG 15-05-45 is set to 0 then port forwarding at the Remote side router is required. This feature requires installation of a VoIPDB.
- Depend on the router it may close the port being used if packet exchange is not performed during a certain time frame. In this case change PRG 84-23-01 and PRG 84-23-02 to a shorter interval.
- SIP ALG function of ALL routers in the network must be disabled.
- The SL2100 Desktop Application does not support Network Address Translation(NAPT). If a user would like to connect the Desktop Application through an Internet Connection the use of a VPN will be required.
- If there is excessive packet loss on the network, IP phones will play a warning tone during conversations. To disable this tone set PRG 15-05-31 to "0".
- Multicast RTP is not supported.
- Peer to Peer is possible only between the IP Terminals under the same router.
- NAPT is supported for NEC IP Multiline Terminal and all other third party Standard SIP terminals by this feature.
- After starting SIP negotiation for the call if any RTP packet can't be received from the terminal within 10 seconds, the call is dropped and IP Terminal indicates below notice on the LCD.

```

1-4  FRI  8:53PM
Can't send RTP packets
List      Dir      ICM

```

- Each NAPT terminal can have a separate Register and Subscribe expire timer.

Peer to Peer

An IP Terminal can send and receive RTP packets to/from another IP Terminal without using the DSP resources on the VoIPDB. This operation only allows intercom calls between the IP Terminals.

If a digital multiline terminal or trunk is part of the call a DSP resource on the VoIPDB is required. If, while on a peer to peer call, a conference call is initiated, the peer to peer connection is released and a new non peer to peer connection is created using the VoIPDB. If the third party drops out of the conversation, the call reverts to a peer to peer call (silence may be heard while this conversion is made by the system).

Although the peer to peer feature is supported for IP Station-to-IP Station calls, the SL2100 chassis must still have a registered VoIPDB installed in the system.

With Barge-In, a short silence may be heard if the following occurs:

- A peer to peer call receives a Barge-In without a Barge-In tone.
- A peer to peer call receives a Barge-In with Monitor mode.
- When the established Barge-In is disconnected.
- Peer to peer is a programmable feature that may be enabled or disabled (Program 15-05-50).

System Tones and Ring Tones

IP Terminals do not use PRG 80-01: Service Tone Setup entries. The tones are generated locally by the IP Terminal. When a Door Box chime rings an IP Terminal, the system activates the chimes using a ring command. Because of this, if the volume is adjusted while the door chime is sounding, the ringing volume of the IP Terminal is also adjusted.

Music on Hold

Music on Hold is also provided by the IP Terminal. The settings in PRG 10-04: Music on Hold Setup are ignored except to determine whether or not music should be provided. If PRG 10-04-02 is set to **0**, music on hold is not heard. If PRG 10-04-02 is set to **1** or **2**, music is provided by the IP Terminal.

Registration Mode

The SL2100 has three types of registration for IP Terminals, Plug and Play, Automatic, and Manual programmed in PRG 10-46-01:

- Plug and Play mode - when the phone boots up it reports the extension assigned in the phone or chooses the next available extension in the system. No password is required.
- Automatic mode - the SIP user name and password must be entered in the actual IP Terminal. The phone comes up as the extension associated with the user name and password is entered.
- Manual mode - when the phone boots up it prompts the user to enter a user ID and password before logging in. If a user ID and password are set in the SIP User settings of the phone, as with Automatic mode, the phone does not prompt for login. This allows some phones to come up automatically and some phones to prompt for login. In manual mode, the phones that do not have a user ID and password set in the phone are prompted to log in. A user can also logoff the IP Terminal to allow another user to login with their own user ID and password.

To logoff the IP Terminal:

Press the Down Arrow Softkey, press the Prog Softkey, and then press the LOGOFF Softkey.

Multiple Logon

The same user name and password can be assigned to multiple extensions when using Automatic or Manual Registration. This makes it easier on the user by only having to remember one password. For example, if a user has an IP Multiline Terminal and uses Desktop Applications with the Enhancement bundle controlling the IP Multiline, three different ports are used in the system. Even though all three can be assigned the same user name and password.

Registration Override

When Manual mode is used, Registration Override can be used. Registration Override allows a user to login at one phone, and later login at another phone and keep the same extension number. This is

useful in the case where an office user has an IP Multiline Terminal at work and at home or a Softphone they use on the road. They log in at work to use the office terminal, and when they get home or are on the road they login the home terminal or Softphone. When this happens the office terminal is logged out and they have the same extension number at home or on the road.

Override is supported in a SL2100 system that had a 3rd Party CTI connection to the CPU (i.e., Desktop Apps Shared Services) or to a terminal with a 1st Party CTI connection (i.e., PC Assistant/ Attendant and Softphone or 1st Party TAPI driver). Override with CTI is supported on a per station basis using PRG 15-05-39 with certain restrictions.

System IP Terminals and Analog Trunks

Due to the nature of analog-to-digital conversion, considerable echo may be encountered when using Analog Trunks with IP Terminals.

- In every system that has analog trunks and IP Terminals PRG 90-68 (Side Tone Auto Setup) must be run per trunk to minimize any echo problems.
- All phones and trunks must be idle in order to perform the Side Tone Auto Setup test. If any phone or trunk is in use, "Busy" will be displayed when trying to run 90-68-01.
- All phones will become unresponsive while the Side Tone Auto Setup tests are running.
- Due to all Analog trunks being different, padding of the Analog Trunks in PRG 81-07 and PRG 14-01 may be necessary. Even after the pad changes are made, an echo may still be present the first few seconds of the call while echo cancellers are learning the characteristics of the circuit on this call.
- For best performance, it is recommended to use digital trunks when using IP Terminals.



Digital (ISDN, T-1, and SIP) trunks do not suffer from this problem.

Conditions

- More than 17 IP Multiline Terminals are not recommended when the same Virtual Extension Keys are assigned to each IP Multiline Terminal.
- The voice quality of VoIPDB depends on variables such as available bandwidth, network latency and Quality of Service (QoS) initiatives, all of which are controlled by the network and Internet service providers. Because these variables are not under its control, NEC cannot guarantee the performance of the user's IP-based remote voice solution. Therefore, NEC recommends connecting VoIPDB equipment through a local area network using a Private IP address.
- IP Multiline Stations must register with the IP address of the VoIPDB. The IP Multiline stations registering via a URL is not supported.
- If an internal paging group has only IP Multiline Stations, multicast is used for the page. IP Multiline Terminals must have a gateway programmed to accomplish a multicast transmission. When an actual gateway device does not exist on the network, a dummy gateway address on the same subnet must be defined. If the paging group has any TDM stations or an external speaker, multicast is not used and the gateway is not required.
- When using Multiple Logon, the same Personal ID index can be assigned to multiple IP Terminals or Softphone.
- Two ports of the same terminal type (PRG 15-05-26) cannot be assigned to the same Personal ID index (PRG 15-05-27).
- PRG 10-46-01 must be set to 1 (Auto) or 2 (Manual) for Multiple Logon to work.
- When three ports are assigned the same Personal ID index in PRG 15-05-27, if PRG 15-05-26 is not set for those ports, the terminal types will be assigned based on order of login. If PRG 15-05-26 is set, the login order does not matter and they will assign the correct port.
- The Override feature functions the same as single login.
- Setting PRG 15-02-46 to 0 (enable) will allow the backlit display to remain on.
- Each IP multiline phone except 8IPLD terminal that is registered to the SL2100 requires the following license: SL2100 IP EXT-01 LIC (License Code 5111).

Restrictions

- When using IP Terminals, assigning the following features to a large number of terminals (16 or more) is not recommended:
 - The same Trunk Line assignment (squared key system)
 - The same Virtual Extension assignment
 - Paging key with LED ON assignment
 - The same location Park key
 - The same BLF key assignment
 - Day Night Mode Change key assignment
 - The same VM Mail Box key assignment
 - Trunk Group key
 - Trunk Group All Line Busy Indication
- One call cannot ring more than 8 simultaneous IP extensions at the same time if the call originates from ring group or a virtual.
- An SIP Multiline Terminal can override another SIP Multiline Terminal or a Softphone.
- A Softphone can override another Softphone or an SIP Multiline Terminal.
- Override does not support SIP Multiline Terminal with DSS console or Softphone with DSS Console.
- The SL2100 Desktop Application does not support Network Address Translation (NAT). Because of this, any Desktop Applications must appear to be on the same network as the SL2100 VoIP Interface (VoIPDB). For remote Desktop Applications, like SP310 Softphone, this can be achieved by a VPN connection to the network the SL2100 resides on.
- When using Override with an active CTI connection, PRG 15-05-39 must be enabled for the extensions that will be overridden. The overriding terminal must be of the same type and number of line keys as the terminal to be overridden. If the types of terminals and number of keys are different between overriding and overridden phones, the Telephony Service Providers (1st Party and 3rd Party) may not function properly.

Default Settings

None

System Availability

Terminals

All IP Multiline Terminals

Required Software

None

Required Component(s)

CPU

VoIPDB



The VoIPDB is only a requirement if more than the built in (8) DSP resources on the CPU are required. Adding the VoIPDB provides an additional (8) DSP resources for a total of (16). If more than (16) DSP resources are required, additional IP Channel licenses are required.

SL2100 IP EXT-01 LIC (License Code 5111)



This license is not required for 8IPLD Terminal.

Related Features

None

Guide to Feature Programming

IP Multiline Station (SIP):

Program No.	Program Name	Input Data	Default
10-12-02	CPU Network Setup - Subnet Mask	128.0.0.0 192.0.0.0 224.0.0.0 240.0.0.0 248.0.0.0 252.0.0.0 254.0.0.0 255.0.0.0 255.128.0.0 255.192.0.0 255.224.0.0 255.240.0.0 255.248.0.0 255.252.0.0 255.254.0.0 255.255.0.0 255.255.128.0 255.255.192.0 255.255.224.0 255.255.240.0 255.255.248.0 255.255.252.0 255.255.254.0 255.255.255.0 255.255.255.128 255.255.255.192 255.255.255.224 255.255.255.240 255.255.255.248 255.255.255.252 255.255.255.254 255.255.255.255	255.255.255.0
10-12-03	CPU Network Setup - Default Gateway	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0
10-12-09	CPU Network Setup - IP Address (VoIPDB)	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	172.16.0.10
10-46-01	IP MLT Server Information Setup - Register Mode	0 = Plug and Play 1 = Auto 2 = Manual	0
15-05-15	IP Telephone Terminal Basic Data Setup - CODEC Type	1 = Type 1 2 = Type 2 3 = Type 3 4 = Type 4 5 = Type 5	1
15-05-39	IP Telephone Terminal Basic Data Setup - CTI Override Mode	0 = Disable 1 = Enable	0
15-05-45	IP Telephone Terminal Basic Data Setup - NAT plug & play	0 = OFF 1 = ON	1
15-05-47	IP Telephone Terminal Basic Data Setup - Registration Expire Timer for NAT	0 = Disable 60 ~ 65535 (sec)	180
15-05-48	IP Telephone Terminal Basic Data Setup - Subscriber Expire Timer for NAPT	0 = Disable 60 ~ 65535 (sec)	180
84-10-01	ToS Setup - ToS Mode	0 = Disable (Invalid) 1 = IP Precedence 2 = Diffserv	0
84-10-07	ToS Setup - Priority (D.S.C.P. - Differentiated Services Code Point)	0 ~ 63	0
84-22-01	IP MLT Logon Information Setup - User ID	Up to 32 characters	No Setting
84-22-02	IP MLT Logon Information Setup - Password	Up to 16 characters	No Setting

Program No.	Program Name	Input Data	Default
84-22-03	IP MLT Logon Information Setup - User ID Omission	0 = Off 1 = On	0
84-22-04	IP MLT Logon Information Setup - Log Off	0 = Off 1 = On	1
84-22-05	IP MLT Logon Information Setup - Nick Name	Up to 32 characters	No Setting
84-26-01	VoIP Basic Setup (DSP) - IP Address	xxx.xxx.xxx.xxx	172.16.0.20 ~
84-26-02	VoIP Basic Setup (DSP) - RTP Port Number	0 ~ 65534	VoIP GW 1 = 10020~10051

IP Multiline Station (SIP) with NAPT:

Program No.	Program Name	Input Data	Default
10-12-01	CPU Network Setup - IP Address	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	192.168.0.10
10-12-03	CPU Network Setup - Default Gateway	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0
10-12-07	CPU Network Setup - NAPT Router IP Address(Default Gateway [WAN])	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0
10-12-09	CPU Network Setup - IP Address (VoIPDB)	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	172.16.0.10
10-12-10	CPU Network Setup - Subnet Mask (VoIPDB)	128.0.0.0 192.0.0.0 224.0.0.0 240.0.0.0 248.0.0.0 252.0.0.0 254.0.0.0 255.0.0.0 255.128.0.0 255.192.0.0 255.224.0.0 255.240.0.0 255.248.0.0 255.252.0.0 255.254.0.0 255.255.0.0 255.255.128.0 255.255.192.0 255.255.224.0 255.255.240.0 255.255.248.0 255.255.252.0 255.255.254.0 255.255.255.0 255.255.255.128 255.255.255.192 255.255.255.224 255.255.255.240 255.255.255.248 255.255.255.252 255.255.255.254 255.255.255.255	Refer to the programming manual for all the possible valid subnet mask entries. (default = 255.255.0.0)

Program No.	Program Name	Input Data	Default
10-20-01	LAN Setup for External Equipment - TCP Port	Available values are: 0 ~ 65535	External Device 1 (CTI Server) = 0 External Device 2 (ACD-MIS) = 0 External Device 4 (Networking System) = 0 External Device 5 (SMDR Output) = 0 External Device 6 (DIM Output) = 0 External Device 8 (UC Web Application) = 0 External Device 9 (1st Party CTI) = 0 External Device 11 (O&M Server) = 8010 External Device 12 (Traffic Report Output) = 0 External Device 13 (Room Data Output for Hotel Service) = 0 External Device 14 (IP-DECT Directory Access) = 0 External Device 15 (Presence) = 0
10-46-06	IP MLT Server Information Setup - Register Port	0 ~ 65535	5080
10-46-13	IP MLT Server Information Setup - Subscribe Session Port	0 ~ 65535	5081
10-46-14	IP MLT Server Information Setup - NAT Mode	0 = Off 1 = On	0
10-58-01	Network Address - Network Address	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.254.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0
10-58-02	Network Address - Subnet Mask	128.0.0.0 / 192.0.0.0 224.0.0.0 / 240.0.0.0 248.0.0.0 / 252.0.0.0 254.0.0.0 / 255.0.0.0 255.128.0.0 255.192.0.0 255.224.0.0 255.240.0.0 255.248.0.0 255.252.0.0 255.254.0.0 255.255.0.0 255.255.128.0 255.255.192.0 255.255.224.0 255.255.240.0 255.255.248.0 255.255.252.0 255.255.254.0 255.255.255.0 255.255.255.128 255.255.255.192 255.255.255.224 255.255.255.240 255.255.255.248 255.255.255.252 255.255.255.254 255.255.255.255	255.255.0.0
15-05-45	IP Telephone Terminal Basic Data Setup - NAT Plug and Play	0 = Disable 1 = Enable	0

Program No.	Program Name	Input Data	Default
15-05-47	IP Telephone Terminal Basic Data Setup - Registration Expire Timer for NAT	0 = Disable 60 ~ 65535 (sec)	180
15-05-48	IP Telephone Terminal Basic Data Setup - Subscriber Expire Timer for NAPT	0 = Disable 60 ~ 65535 (sec)	180
84-23-01	IP MLT Basic Information Setup - Registration Expire Timer	60 ~ 65535 seconds	180 seconds
84-23-02	IP MLT Basic Information Setup - Subscribe Expire Timer	60 ~ 65535 seconds	3600 seconds
84-24-28	IP MLT CODEC Basic Information Setup - Audio Capability Priority	0 = G.711 2 = G.729 3 = G.722	0
84-26-01	VoIP Basic Setup (DSP) - IP Address	xxx.xxx.xxx.xxx	172.16.0.20 ~
84-26-02	VoIP Basic Setup (DSP) - RTP Port Number	0 ~ 65534	10020
84-26-03	VoIP Basic Setup (DSP) - RTCP Port Number	RTP Port Number + 1	10021

In addition to the above programming, define the programming options as required for the system features. Refer to the SL2100 Programming Manual for programming details.

Operation

None

IP Single Line Terminal (SIP)

Description

SIP (Session Initiation Protocol) is used for Voice over Internet Protocol. It is defined by the IETF (Internet Engineering Task Force) RFC3261. Other RFC designations, such as RFC3842, refer to a later implementation of SIP and may be supported by the SL2100. Commonly called SIP Station, this feature is used for IP Stations using SIP.

Maximum capacity of 112 SIP stations are supported.

SIP analyzes requests from clients and retrieves responses from servers, then sets call parameters at either end of the communication, handles call transfer, and terminates. Typically, such features, including but not limited to Voice over IP services, are available from an SIP service provider.

The VoIPDB application can support up to 112 TDM Talk paths. This total may be shared among SIP Stations or SIP Trunks. This is a required component of SIP implementation in the SL2100.

The SL2100 CPU contains a regular TCP/RTP/IP stack that can handle real-time media, support industry standard SIP (RFC 3261) communication on the WAN side, and interface with the VoIPDB.

SIP IP Stations use the VoIPDB. The VoIPDB controls and interprets RTP messaging from the SIP IP Terminal to the SL2100 CPU.

The VoIPDB supports only those codecs that are considered to provide toll-quality equivalent speech path. The following voice compression methods are supported for the IP Station SIP feature:

- G.711 A-law - Highest Bandwidth
- G.722 - Wideband
- G.729 - Mid-Range Bandwidth

For the minimum bandwidth requirements for each voice call refer to [Table 1-37 Minimum Bandwidth Requirements](#). This includes all the overhead of VoIP communication, including signaling).

Table 1-37 Minimum Bandwidth Requirements

Codec	Transmit Data Rate	Receive Data Rate	Time Between Packets	Packetization Delay	Default Jitter Buffer Delay	Theoretical Maximum MOS
G.711 A-law	90 Kbps	90 Kbps	20ms ^{*1}	1.5 ms	2 datagrams (40ms)	4.4
G.722	64 Kbps	64 Kbps	20ms ^{*1}	1.0 ms	2 datagrams (40ms)	4.5
G.729	34 Kbps	34 Kbps	20ms ^{*1}	15.0 ms	2 datagrams (40ms)	4.07

^{*1}. When an IP Soft Phone is connected, set Time Between Packets to 100ms.

- The VoIPDB is an end-point on the IP network from the network administration perspective.
- The CPU uses SIP Protocol to provide telephony services between remote stations through the IP Network. This is an IETF/ITU standards-based protocol.
- Speech-connection audio quality depends greatly on the available bandwidth between the stations in the data network. Because Internet is an uncontrolled data network compared to an Intranet, using this application in Intranet WAN environment with known (or controlled and assured) Quality of Service (QoS) is highly recommended.

- The VoIPDB uses two addresses, one address is for signaling and the other address for voice traffic.
- An on-board RJ-45 connector provides a WAN/LAN connection. Voice and signaling data to/from the IP Stations are converted into IP Frames and transmitted through the Data Communication IP Network.
- The VoIPDB supports a maximum of 112 VoIP connections.
- Duplex mode (Auto or Full) and speed (10 or 100 mbps) are configured via SL2100 unit programming.

In voice communication, particularly Internet telephony, the **Mean Opinion Score (MOS)** provides a numerical measure of the quality of human speech at the circuit destination. The scheme uses subjective tests (opinionated scores) that are mathematically averaged to obtain a quantitative indicator of the system performance. The maximum MOS is 5.0.

- SL2100 supports a 100 rel option and Session Timer option.
- SL2100 supports Early Media.
- SL2100 SIP restricts an outgoing call under the following conditions:
 - SIP configuration failed
 - SIP registration failed
 - Lack of VoIPDB resource
 - Lack of a VoIPDB bandwidth
- Both port numbers can be configured by system data.
- ToS Support.

Conditions

- Documentation for Polycom devices are available at <http://www.polycom.com/voicedocumentation>.
- Quick User Guides for supported Polycom devices are available at <http://www.necntac.com> under **Technical Documentation/Telephony/Polycom Soundstation** (valid Username and Password required).
- SIP Stations which support RFC 3842 (Message Waiting) receive Message Waiting Lamp indications.
- SIP Station - VoIPDB supports NAT traversal.
- SIP Station - VoIPDB does not support a Blind Transfer feature.
- Supports video codecs H.264, H.263, and H.261.
- Video is supported when P2P for standard SIP is turned on. (PRG 15-05-50 SIP Peer-to-Peer Mode ON)
- Auto start video when call is answered is not supported.
- SIP Station and SIP Trunk require a license key for activation.
- SIP protocol (RFC3261) is used.
- SIP Station uses the VoIPDB as a media gateway.
- Default UDP listen port for a SIP station is 5070. Both port numbers can be configured by system data.
- SL2100 Station registration policy supports an authentication feature. Enabling this policy prevents the registered telephone from unexpected override.
- SL2100 supports HOLD and TRF feature on the basis of IETF draft.
 - draft-ietf-sipping-service-examples-09.txt
 - Section 2.5 (Transfer - Attended) of draft-ietf-sipping-service-examples-15.txt
 - draft-ietf-sip-session-timer-10.txt
- The SL2100 CPU is the registration server for the SIP stations. The configurable IP Address is located in PRG 10-12-09 (SL2100 Network Setup - IP Address).
- T.38 (Fax) is supported for 3rd Party SIP "IP Single Line Terminal (SIP)" station ports.
- PRG 15-03-03 must be set to 1 (Special) at the receiving terminal in order for T.38 to function.
- When using 3rd party SIP stations, the SIP server name can not contain a parenthesis.

- The Exclusive Hold Recall Timer is used when an internal call from a Single Line telephone or 3rd party SIP telephone is placed on Hold.
- Each SIP phone that is registered to the SL2100 requires the following license: SL2100 IP EXT-01 LIC (License Code 5111).
- The system has the ability to receive DTMF information in SIP INFO messages sent by Standard SIP terminals. This allows the SIP Terminal to initiate features during a ringing state such as Camp-On and Message Waiting. SIP terminals must be able to support this feature and have it enabled.
- If Program 15-05-49 is set to **1: Allowed any time**, SIP INFO is received upon arrival.
- If Program 15-05-49 is set to **2: Allowed while RTP is not available**, SIP INFO is received while RTP is not established. An In-band method such as RFC2833 is used once the voice path is established.
- SIP INFO functions independently from other DTMF methods such as RFC2833. This means SIP terminals should send DTMF information by a single method, otherwise the system will receive both separately causing double digits.
- The system time can be provided using NTP time server updates to standard SIP terminals.

Table 1-38 Feature Support Table for Standard SIP Device

Feature Name	Standard SIP	Comments	Note
Abbreviated Dialing/Speed Dial	No		
Account Code - Forced/Verified/Unverified	Yes	Depending on SIP device the account code may have to be part of the dial string.	
Account Code - Forced/Verified/Unverified	No		
Account Code Entry	Yes	Depending on SIP device the account code may have to be part of the dial string.	
Account Code Entry	No		
Alarm	No		
Alarm Reports	No		
Alphanumeric Display	Yes	Some SIP devices have Alphanumeric Displays and are backlit. However, the display is not updated with CPU messages.	
Analog Communications Interface (ACI)	No		
Ancillary Device Connection	No		
Answer Hold/Automatic Hold	No		
AspireNet	Yes		
Attendant Call Queuing	No		
Automatic Call Distribution (ACD)	No		
Automatic Release	Yes		
Automatic Route Selection (ARS/F-Route)	Yes		
Background Music	No		
Barge-In	Yes		
Call Arrival (CAR) Keys	No		
Call Duration Timer	No	Call Duration timer is a function of the client device and is not the system timer.	
Call Forwarding	Yes	Can be programmed in 24-09-xx, through feature code from administrator desk set and from the SIP device using dial access codes. In some cases Call Forwarding can be set on SIP device itself but this not system side forwarding.	
Call Forwarding with Follow Me	No		

Feature Name	Standard SIP	Comments	Note
Call Forwarding, Off-Premise	Yes	Can be programmed in 24-09-xx, through feature code from administrator desk set and in some cases from the SIP device using dial access codes.	
Call Forwarding/Do Not Disturb Override	No		
Call Monitoring	No		
Call Redirect	No		
Call Waiting/Camp-On	No		
Callback	Yes		
Caller ID Caller Return	Yes	Caller ID Call Return is a SIP device feature not a system feature.	
Caller ID	Yes	Caller ID is shown only on ISDN or Analog CO trunks that are directed at the SIP device. Caller ID will not display for calls transferred to the SIP device.	
Central Office Calls, Answering	Yes		
Central Office Calls, Placing	Yes		
Class of Service	Yes		
Clock/Calendar Display/Time and Date	No		
Code Restriction/Toll Restriction	Yes		
Code Restriction Override/Toll Restriction Override	No		
Code Restriction, Dial Block/Toll Restriction, Dial Block	Yes		
Conference	Yes		
Conference, Remote	Yes		
Conference, Voice Call/Privacy Release	No		
Data Line Security	Yes	Barge-In is not supported.	
Delayed Ringing	No		
Department Calling	No		
Department Step Calling	Yes		
Dial Pad Confirmation Tone	No		
Dial Tone Detection	No		
Dialing Number Preview	Yes		
Direct Inward Dialing (DID)	Yes		
Direct Inward Line (DIL)	Yes		
Direct Inward System Access (DISA)	No		
Direct Station Selection (DSS) Console	No		
Directed Call Pickup	Yes		
Directory Dialing	No		
Distinctive Ringing, Tones and Flash Patterns	No		
Do Not Disturb (DND)	Yes	Do Not Disturb (DND) can be set from the SIP device using dial access codes. In some cases Do Not Disturb can be set via the SIP device but is not system side DND.	

Feature Name	Standard SIP	Comments	Note
Door Box	Yes	Door Box will not ring a SIP device. A SIP device can call a door box but cannot activate the relay.	
Drop Key	No		
Flash	No		
Flexible System Numbering	Yes		
Flexible Timeouts	Yes		
Forced Trunk Disconnect	No		
Group Call Pickup	Yes		
Group Listen	No		
Handset Mute/Handset Cutoff	Yes	Handset mute is a function of the SIP device.	
Handsfree and Monitor	Yes	Hands-free is a feature of the SIP device.	
Handsfree Answerback/Forced Intercom Ringing	No		
Handset Operation	Yes		
Hold	Yes		
Hotel/Motel	No		
Hotline	Yes	A SIP device can be a hotline destination, but cannot originate a hotline call.	
Howler Tone Service	No		
Intercom	Yes		
InMail	Yes		
IP Multiline Station (SIP)	No		
IP Trunk - (SIP) Session Initiation Protocol	Yes		
IP Trunk - H.323	No		
ISDN Compatibility	Yes		
Last Number Redial	No		
Line Preference	No		
Long Conversation Cutoff	Yes		
Meet Me Conference	No		
Meet Me Paging	Yes		
Meet Me Paging Transfer	Yes	A SIP device can receive a Meet Me Paging Transfer but it cannot originate a Meet Me Paging transfer call.	
Memo Dial	No		
Message Waiting	No		
Microphone Cutoff	Yes	Microphone Cutoff is a function of the SIP device.	
Multiple Trunk Types	Yes		
Music on Hold	Yes		
Name Storing	No		
Night Service	No		
Off-Hook Signaling	No		
One-Touch Calling	No		
Operator	Yes		
Paging, External	Yes	A SIP device can only initiate an Internal, External or All Call Page. It cannot receive either Internal or All Call pages or display page information.	

Feature Name	Standard SIP	Comments	Note
Paging, Internal	Yes	A SIP device can only initiate an Internal, External or All Call Page. It cannot receive either Internal or All Call pages or display page information.	
Park	No		
PBX Compatibility/Behind PBX	Yes		
PC Programming	Yes		
Prime Line Selection	Yes	Prime Line Selection can be assigned for Standard SIP devices, however when this is done the telephones cannot access ICM dial tone.	
Private Line	Yes		
Programmable Function Keys	No		
Programming from a Multiline Terminal	No		
Pulse to Tone Conversion	No		
Redial Function	No	Call Redial Function is a function of the client device and not the system.	
Repeat Redial	No		
Reverse Voice Over	No		
Ring Groups	Yes		
Ringdown Extension (Hotline), Internal/External	Yes	A SIP device can be a ring down destination but cannot originate a ring down call.	
Room Monitor	No		
Save Number Dialed	No		
Secondary Incoming Extension	No		
Secretary Call (Buzzer)	No		
Secretary Call Pickup	No		
Selectable Display Messaging	No		
Selectable Ring Tones	Yes	Selectable Ring Tones is a function of the client device.	
Serial Call	No		
Single Line Terminals	No		
Softkeys	No		
Station Hunt	No		
Station Message Detail Recording	Yes		
Station Name Assignment - User Programmable	No		
Station Relocation	No		
Tandem Ringing	No		
Tandem Trunking (Unsupervised Conference)	No		
Tone Override	No		
Traffic Reports	No		
Transfer	Yes	Transferred calls cannot be pulled back once transfer is initiated.	
Trunk Group Routing	Yes		
Trunk Groups	Yes		
Trunk Queuing/Camp-On			
Uniform Call Distribution (UCD)	No		

Feature Name	Standard SIP	Comments	Note
User Programming Ability			
Virtual Extensions	No	Limited user customization available.	
Voice Mail Integration (Analog)	Yes		
Voice Call & Signal Switching	Yes	Can only send voice/signal switch	
Voice Over	No		
Voice Response System (VRS) - Call Forwarding – Park and Page	Yes		
Volume Controls	Yes	Volume control is a function of the client device.	

Out of Range Notification

- When the out of range timer (Program 24-02-15) expires, CFW is performed when Program 24-09-01 is set to 2-5 and the dial is set to the suitable place of Program 24-09-02~24-09-05. If CFW is not set, the calling terminal hears a Lock-out tone shown in [Table 1-39 Tones when calling the SIP terminal in out of range](#) and the following Out of Range notice shown in [Figure 1-24 Example of LCD indication for out of range](#) is displayed on the originators LCD.

Table 1-39 Tones when calling the SIP terminal in out of range

SIP terminal State	
Out of Range or Power Off	Busy (Speaking)
Lock-out Tone (PRG80-01 Service Tone No.16)	Busy Tone (PRG80-01 Service Tone No.6)

1-26 MON 12:00 PM
 SIP OUT OF RANGE
 InPg ExPg P/U ↓

Figure 1-24 Example of LCD indication for out of range

- Out of Range transfer is supported as Call Forward No Answer. See below [Figure 1-25 Out of Range transfer Flow Chart](#) for more detail.

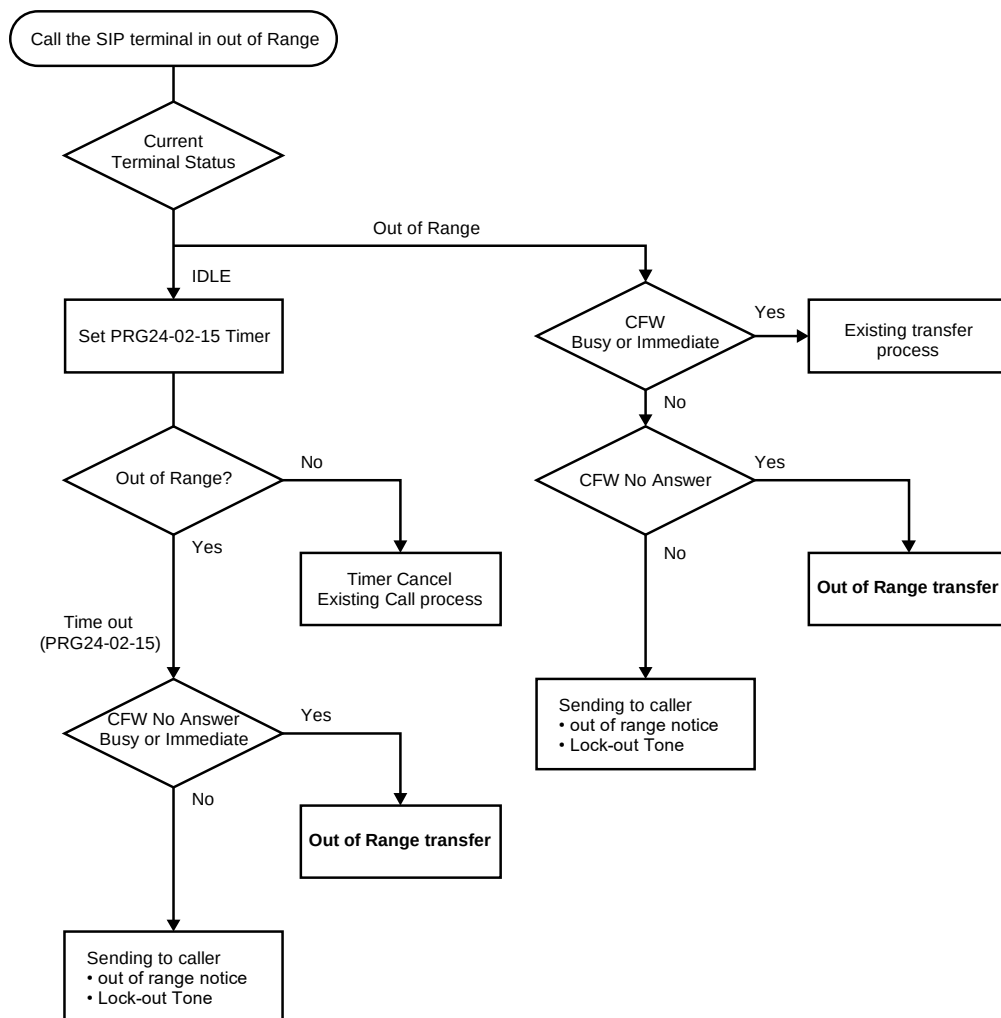


Figure 1-25 Out of Range transfer Flow Chart

- When a call comes into an idle SIP terminal which has not been recognized as out of range, the system waits for the timer in PRG24-02-15 (default 4sec) to expire to determine if the terminal is Out of Range state or not.
- When the SIP terminal starts ringing and then moves to out of range, the terminal keeps ringing because the terminal is no longer under the control of the system. In this case the Out of Range transfer is not applied.
- Out of Range transfer is applied to an individual call only, group incoming calls or paging calls to a SIP terminal are not applied.
- In case of Ring Transfer to the SIP terminal Out of Range transfer is not applied. It follows No Answer timer in PRG24-02-03.
- In case of internal call from other standard SIP terminal, lock-out tone is not applied. Caller hears Busy Tone.

NAT Mode for SIP Phone

- Plug and Play function for remote router is supported as well as NAT feature for SIP MLT.
- When PRG 10-33-05 NAT mode for SIP Phone is set 1 = Enable, P2P mode for SIP Phone becomes always Off regardless PRG 15-05-50 setting.
- NAT mode for SIP Phone which can not use SIP P2P mode and standard SIP video call feature which uses P2P mode cannot establish in same system.

- When connecting multiple SIP Phones via NAT, PRG 15-05-18 has to be set to admit the registration of multiple SIP Phones which are using same IP address.
- In the router/firewall that the SL2100 resides behind port forwarding is required. Port forwarding at the SIP Terminal end is not required as long as PRG 15-05-45 (Plug and Play) is enabled, which it is by default. The ports that must be forwarded to the SL2100 are as follows:
UDP Port 5070 MUST be forwarded to the IP Address assigned in PRG 10-12-09. UDP Ports 10020 ~ 10083 MUST be forwarded to the IP Address assigned in PRG 84-26-01.

Default Settings

None

System Availability

Terminals

SIP Terminals Compliant with RFC 3261, RFC 3262, RFC 3264 (Session Description Protocol), RFC 1889 (Real Time Protocol).

Required Component(s)

CPU

Built-In VoIP (CPU)/VoIPDB

SL2100 IP EXT-01 LIC (License Code 5111)

SL2100 IP CHANNEL-16 LIC (License Code 5103)

- When more than 16 channel is required (using VoIPDB)

SL2100 B-IN VOIP EX LIC (License Code 5104)

- When more than 8 channel is required (using Built-in VoIP)
- SL2100 Ver 4.00 or higher

Related Features

IP Single Line Telephone (SIP)

Call Forwarding

Guide to Feature Programming

VoIP Settings:

Program No.	Program Name	Input Data	Default
10-12-03	CPU Network Setup - Default Gateway	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0
10-12-09	CPU Network Setup - IP Address (VoIPDB)	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	172.16.0.10

Program No.	Program Name	Input Data	Default
10-12-10	CPU Network Setup - Subnet Mask (VoIPDB)	128.0.0.0 192.0.0.0 224.0.0.0 240.0.0.0 248.0.0.0 252.0.0.0 254.0.0.0 255.0.0.0 255.128.0.0 255.192.0.0 255.224.0.0 255.240.0.0 255.248.0.0 255.252.0.0 255.254.0.0 255.255.0.0 255.255.128.0 255.255.192.0 255.255.224.0 255.255.240.0 255.255.248.0 255.255.252.0 255.255.254.0 255.255.255.0 255.255.255.128 255.255.255.192 255.255.255.224 255.255.255.240 255.255.255.248 255.255.255.252 255.255.255.254 255.255.255.255	Refer to the programming manual for all the possible valid subnet mask entries. (default = 255.255.0.0)
10-19-01	VoIPDB DSP Resource Selection - VoIPDB DSP Resource Selection	0 = Common use for both IP extensions and trunks 1 = Use for IP extensions 2 = Use for SIP trunks 3 = User for Networking 5 = Blocked 6 = Common without unicast paging 7 = Multicast paging 8 = Unicast paging	Resource 1 ~ 128 = 0
15-03-03	Single Line Telephone Basic Data Setup - Terminal Type	0 = Normal 1 = Special	0
15-05-50	IP Telephone Terminal Basic Data Setup - Peer to Peer Mode	0 = Off 1 = On	1

VoIP ToS Setup:

The SL2100 supports Quality of Service (QoS) Marking for the Session Initiation Protocol (SIP).

Program No.	Program Name	Input Data	Default
84-10-01	ToS Setup - ToS Mode	0 = Disable (Invalid) 1 = IP Precedence 2 = Diffserv	0

IP Extension Numbering:

Program No.	Program Name	Input Data	Default
11-02-01	Extension Numbering - Extension Number	Dial (Up to 8 digits)	Extension Port Number : Extension Number 001 ~ 064 : 101 ~ 164 065 ~ 128 : No Setting

SIP Extension Codec Information:

Program No.	Program Name	Input Data	Default
84-19-01	SIP Extension CODEC Information Basic Setup - Number of G.711 Audio Frame	1 = 10 ms 2 = 20 ms 3 = 30 ms 4 = 40 ms	2
84-19-02	SIP Extension CODEC Information Basic Setup - G.711 Silence Detection (VAD) Mode	0 = Disable 1 = Enable	0
84-19-03	SIP Extension CODEC Information Basic Setup - G.711 Type	0 = A-law 1 = μ -law	0
84-19-04	SIP Extension CODEC Information Basic Setup - G.711 Jitter Buffer - Minimum	0 ~ 255 ms	20
84-19-05	SIP Extension CODEC Information Basic Setup - G.711 Jitter Buffer - Standard	0 ~ 255 ms	40
84-19-06	SIP Extension CODEC Information Basic Setup - G.711 Jitter Buffer - Maximum	0 ~ 255 ms	80
84-19-07	SIP Extension CODEC Information Basic Setup - G.729 Audio Frame	1 ~ 6 (1 = 10 ms, 2 = 20ms, etc.)	2
84-19-08	SIP Extension CODEC Information Basic Setup - G.729 Silence Compression (VAD) Mode	0 = Disable 1 = Enable	0
84-19-09	SIP Extension CODEC Information Basic Setup - G.729 Jitter Buffer - Minimum	0 ~ 300 ms	20
84-19-10	SIP Extension CODEC Information Basic Setup - G.729 Jitter Buffer - Standard	0 ~ 300 ms	40
84-19-11	SIP Extension CODEC Information Basic Setup - G.729 Jitter Buffer - Maximum	0 ~ 300 ms	80
84-19-17	SIP Extension CODEC Information Basic Setup - Jitter Buffer Mode	1 = static 3 = adaptive immediately	3
84-19-18	SIP Extension CODEC Information Basic Setup - Silence Compression (VAD) Threshold	1 ~ 30 (self-adjustment and - 19 dB ~ + 10 dB) 1 = - 19 dB (- 49 dBm) : 20 = 0 dB (- 30 dBm) : 29 = 9 dBm (- 21 dBm) 30 = 10 dBm (- 20 dBm)	20
84-19-28	SIP Extension CODEC Information Basic Setup - Priority Codec Setting	0 = G.711 PT 1 = Not Used 2 = G.729 PT 3 = G.722 4 = G.726 5 = Not Used	0
84-19-33	SIP Extension CODEC Information Basic Setup - G.722 Audio Frame	1 = 10 ms 2 = 20 ms 3 = 30 ms 4 = 40 ms	3
84-19-35	SIP Extension CODEC Information Basic Setup - G.722 Jitter Buffer - Minimum	0 ~ 255 ms	30
84-19-36	SIP Extension CODEC Information Basic Setup - G.722 Jitter Buffer - Standard	0 ~ 255 ms	60
84-19-37	SIP Extension CODEC Information Basic Setup - G.722 Jitter Buffer - Maximum	0 ~ 255 ms	120
84-19-38	SIP Extension CODEC Information Basic Setup - G.726 Audio Frame	1 = 10 ms 2 = 20 ms 3 = 30 ms 4 = 40 ms	3

Program No.	Program Name	Input Data	Default
84-19-39	SIP Extension CODEC Information Basic Setup - G.726 Silence Compression (VAD) Mode	0 = Disable 1 = Enable	0
84-19-40	SIP Extension CODEC Information Basic Setup - G.726 Jitter Buffer - Minimum	0 ~ 255 ms	30
84-19-41	SIP Extension CODEC Information Basic Setup - G.726 Jitter Buffer - Standard	0 ~ 255 ms	60
84-19-42	SIP Extension CODEC Information Basic Setup - G.726 Jitter Buffer - Maximum	0 ~ 255 ms	120
84-19-49	SIP Extension CODEC Information Basic Setup - RTP Filter	0 = Disable 1 = Enable 2 = Enable (include SSRC)	0
84-33-01	SIP Extension CODEC Information Basic Setup - FAX Relay Mode	0 = Disable 1 = Enable 2 = Enable Port Mode	0
84-33-02	SIP Extension CODEC Information Basic Setup - T.38 Protocol Mode	1 = U/R 2 = RTP 3 = UDPTL	1
84-33-06	SIP Extension CODEC Information Basic Setup - FAX Maximum Rate	0 = V.27ter, 4800 bps 1 = V.29, 9600 bps 2 = V.17, 14400 bps	2
84-33-10	SIP Extension CODEC Information Basic Setup - TCF Handling Method	0 = Receive TCF signal by VoIPDB 1 = Through TCF signal to external FAX	1
84-33-18	SIP Extension CODEC Information Basic Setup - T.38 RTP Format Payload Number	0, 2, 8, 96 ~ 127	103
84-34-01	VoIPDB DTMF Setup - DTMF Relay Mode	0 = Disable 1 = RFC2833 2 = H.245	0
84-34-02	VoIPDB DTMF Setup - DTMF Payload Number	96 ~ 127	110

SIP Extension Basic Information Setup:

Program No.	Program Name	Input Data	Default
84-20-01	SIP Extension Basic Information Setup - Registrar/Proxy Port	1 ~ 65535	5070
84-20-02	SIP Extension Basic Information Setup - Session Timer Value	0 ~ 65535	180 seconds
84-20-03	SIP Extension Basic Information Setup - Minimum Session Timer Value	0 ~ 65535	180 seconds
84-20-04	SIP Extension Basic Information Setup - Called Party Info	0 = Request URI 1 = To Header	0
84-20-05	SIP Extension Basic Information Setup - Expire Value of Invite	0 ~ 256 seconds	180 seconds
84-26-01	VoIP Basic Setup (DSP) - IP Address	xxx.xxx.xxx.xxx	172.16.0.20 ~
84-26-02	VoIP Basic Setup (DSP) - RTP Port Number	0 ~ 65534	10020
84-26-03	VoIP Basic Setup (DSP) - RTCP Port Number	RTP Port Number + 1	10021

IP Terminal Configuration:

Program No.	Program Name	Input Data	Default
15-01-01	Basic Extension Data Setup - Extension Name	Up to 12 Characters	No Setting
15-05-02	IP Telephone Terminal Basic Data Setup - IP Phone Fixed Port Assignment	MAC address 00-00-00-00-00-00 ~ FF-FF-FF-FF-FF-FF	00-00-00-00-00-00
15-05-07	IP Telephone Terminal Basic Data Setup - Using IP Address	Read Only: 0.0.0.0 ~ 255.255.255.255	Refer to the Programming Manual for the default values.
15-05-16	IP Telephone Terminal Basic Data Setup - Authentication Password	Up to 24 characters Version 3.00 or higher: Enter 8 or more characters. Password must contain at least one uppercase letter, one lowercase letter and a number.	No Setting
15-05-18	IP Telephone Terminal Basic Data Setup - IP Duplication Allowed Mode	0 = Disable 1 = Enable	0
15-05-40	IP Telephone Terminal Basic Data Setup - Calling name display info via trunk for standard SIP	0 = Both name and number 1 = Name only 2 = Number only 3 = None	0
15-05-43	IP Telephone Terminal Basic Data Setup - Video Mode	0 = Disable 1 = Enable	0
15-05-49	IP Telephone Terminal Basic Data Setup - Receiving SIP INFO	0 = Disable 1 = Allowed any time 2 = Allowed while RTP is not available	1

Out of Range Notification:

Program No.	Program Name	Input Data	Default
24-02-03	System Options for Transfer - Delayed Call Forwarding Time	0 ~ 64800 seconds	10
24-02-15	System Options for Transfer - SIP Out of Range Timer	0 ~ 30 seconds	4
24-09-01	Call Forward Split Settings - Call Forwarding Type	0 = Call Forwarding Off 1 = Call Forwarding with Both Ringing 2 = Call Forward when No Answer 3 = Call Forwarding All Calls 4 = Call Forwarding when Busy or Not Answered 5 = Call Forwarding when Busy	0
24-09-02	Call Forward Split Settings - CO Call Forwarding Destination for Both Ring, All Call, No Answer	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
24-09-03	Call Forward Split Settings - Intercom Call Forwarding Destination for Both ring, All Call, No Answer	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting

Program No.	Program Name	Input Data	Default
24-09-04	Call Forward Split Settings - CO Call Forwarding Busy Destination	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
24-09-05	Call Forward Split Settings - Intercom Call Forwarding Busy Destination	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
80-01	Service Tone Setup - Lockout Tone (No.16)		Refer to Programming Manual.

NAT Mode for Standard SIP terminal

Program No.	Program Name	Input Data	Default
10-12-03	CPU Network Setup - Default Gateway	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0
10-12-07	CPU Network Setup - NAPT Router IP Address(Default Gateway [WAN])	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0
10-33-02	SIP Registrar/Proxy Information Basic Setup - Authentication Mode	0 = Disable 1 = Enable	1
10-33-05	SIP Registrar/Proxy Information Basic Setup - NAT Mode	0 = Disable 1 = Enable	0
10-37-01	UPnP Setup - UPnP Mode	0 = Disable 1 = Enable	0
10-58-01	Network Address - Network Address	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.254.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0

Program No.	Program Name	Input Data	Default
10-58-02	Network Address - Subnet Mask	128.0.0.0 / 192.0.0.0 224.0.0.0 / 240.0.0.0 248.0.0.0 / 252.0.0.0 254.0.0.0 / 255.0.0.0 255.128.0.0 255.192.0.0 255.224.0.0 255.240.0.0 255.248.0.0 255.252.0.0 255.254.0.0 255.255.0.0 255.255.128.0 255.255.192.0 255.255.224.0 255.255.240.0 255.255.248.0 255.255.252.0 255.255.254.0 255.255.255.0 255.255.255.128 255.255.255.192 255.255.255.224 255.255.255.240 255.255.255.248 255.255.255.252 255.255.255.254 255.255.255.255	255.255.0.0
15-05-16	IP Telephone Terminal Basic Data Setup - Authentication Password	Up to 24 characters Version 3.00 or higher: Enter 8 or more characters. Password must contain at least one uppercase letter, one lowercase letter and a number.	No Setting
15-05-45	IP Telephone Terminal Basic Data Setup - NAT plug & play	0 = OFF 1 = ON	1
15-05-47	IP Telephone Terminal Basic Data Setup - Registration Expire Timer for NAT	0 = Disable 60 ~ 65535 (sec)	180
15-05-48	IP Telephone Terminal Basic Data Setup - Subscriber Expire Timer for NAPT	0 = Disable 60 ~ 65535 (sec)	180
15-05-50	IP Telephone Terminal Basic Data Setup - Peer to Peer Mode	0 = Off 1 = On	1

SIP Terminal Example

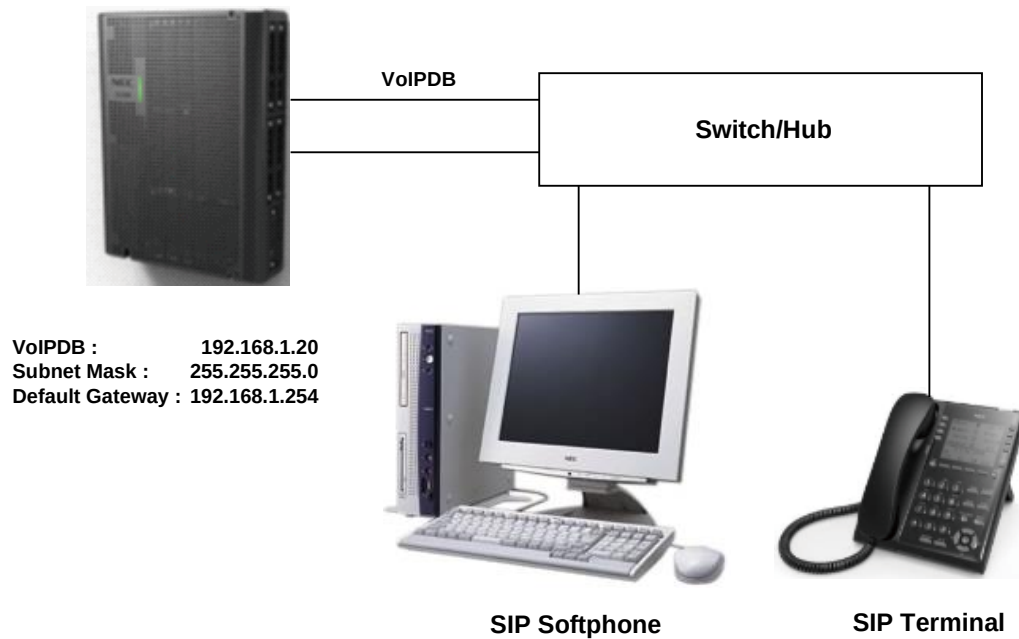


Figure 1-26 Example - SIP Terminal

The following menu items require programming in your SIP IP Terminal (consult SIP Terminal vendor specific documentation):

Program/ Item No.	Description/Selection	Default Assigned Data	Comments
1	IP Address	0.0.0.0	Enter a Static IP Address for the SIP Terminal.
2	Subnet Mask	0.0.0.0	Enter the Subnet Mask Address.
3	Default Gateway	0.0.0.0	Enter the Default Gateway address.
4	VoIPDB Address	0.0.0.0	Enter the VoIPDB IP Address.  This information can be located in PRG 10-12-09 SL2100 Network Setup IP Address.
5	Extension Number	0	Assign the SIP Terminal extension. This information must match PRG 11-02-01 Extension Numbering.

Operation

None

IP Single Line Telephone (SIP) - Blocked-list Check

Description

With Version 3.00 or higher, the Blocked-list Check feature monitors SIP phone to protect the system against IP phone fraud. When a potential fraudulent activity is found, the suspicious IP Address will be automatically added to the blocked-list. The system does not respond to the IP address in the list. IP addresses can also be added to the list manually.

Conditions

- Version 3.00 or higher is required.
- A maximum of 100 IP addresses can be added to the blocked-list.
- Standard SIP Phone via NAT can be monitored.
- IP Address can be added to the blocked-list automatically or manually.
- When an IP Address is automatically added to the blocked-list, alarm reports can be generated (Program 90-10-01 Alarm Type 79).
- When the blocked-list gets full, alarm reports can be generated (Program 90-10-01 AlarmType 78).
 - When an IP Address is automatically added and the list gets full, the alarm report will be generated.
 - An IP Address can be added manually from Phone/Web/PC Programming. If the list gets full, the alarm report will be generated after log out or disconnected from System Programming mode
- Alarm Report (Type 78 and 79) can be checked in WebPC or PC Programming.
- When the list is full, no additional IP addresses can be added automatically. If it occurs, Alarm Report will be generated. To continue this feature, remove any unnecessary IP Address from the System Programming mode.
- To delete an IP Address from the Blocked-list, enter 0.0.0.0 against the unnecessary IP Address in Program 90-82-01.



Incorrect configuration of a Standard SIP Terminal may add the IP Address to the blocked-list automatically.

Default Settings

None

System Availability

Terminals

None

Required Component(s)

Built-In VoIP (CPU)/VoIPDB

Related Features

IP Single Line Telephone (SIP)

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-33-05	SIP Registrar/Proxy Information Basic Setup – NAT Mode	0 = Disable 1 = Enable	0
90-81-01	SIP Access Reject Setting – Reject Function	0 = Disable 1 = Enable	0
90-81-02	SIP Access Reject Setting – Maximum Authentication Error Times	1 ~ 10	3
90-82-01	SIP Access Reject Table – IP Address	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0
90-82-02	SIP Access Reject Table – Day/Time Verification	DD/MM/YY hh:mm:ss DD: Day MM: Month YY: Year hh: Hour mm: Minute ss: Second	No Setting

Operation

None

IP Single Line Telephone (SIP) – PUSH Notification

Description

This feature is a function to request the PUSH Notification Service to send the PUSH Notification to the VoIP Application, such as ST Series which PUSH Notification feature is Enabled, from the SL2100. The PUSH Notification Request is made via the PUSH Proxy to the PUSH Notification Service provided by a provider. The PUSH Notification Service is a service that deliver the PUSH Notification payload to application in the background that operate on the terminal device, such as a smartphone.

The VoIP Application in the background is in the sleep state and cannot receive the incoming event by a SIP message, but when the PUSH Notification is delivered by the PUSH Notification Service, it is possible to temporarily process the SIP message. The SL2100 requests the PUSH Notification Service to send the PUSH Notification when sending the incoming event by the SIP message to the VoIP Application.

 *iOS11 and later do not assure the receiving of incoming call notifications when the VoIP Application is running in the background. This feature is made under the assumption that the terminals being used are equipped with iOS11 or later. For Android, version 6.0 or later is supported.*

Definitions of Terms

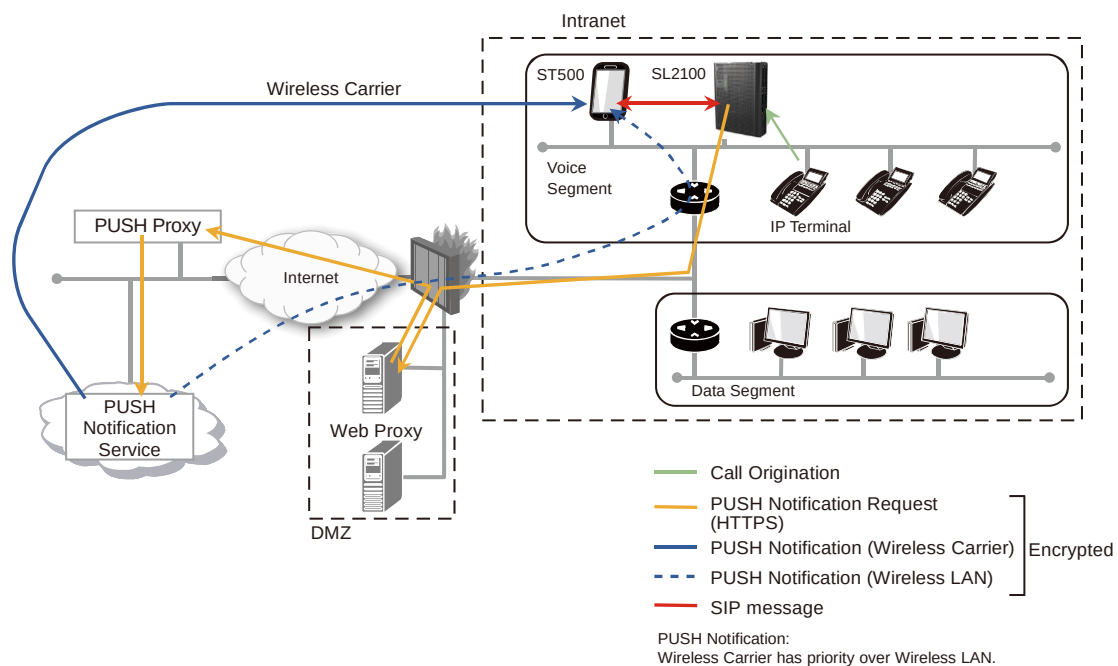
Table 1-40 Terms within Push Notification feature

Terms	Description	Remarks
VoIP Application	Application software that provides the extension features for smartphones and can be used as a station accommodated in the Telephony Server.	ST500, ST450
PUSH Notification Service	A service that sends the PUSH Notification to an application on terminal devices. The PUSH Notification Service to be used depends on the terminal device OS.	APNs (Apple Push Notification service), which is an Internet-based server, is used to send the PUSH Notification to the application on the iOS. Also, Android is used FCM (Firebase Cloud Messaging)
PUSH Notification	A message that is sent to an application on terminal devices from the PUSH Notification Service. It is receivable even when the application is not active on the device.	
PUSH Notification Request	A message that is sent from the Telephony Server to the PUSH Notification Service via the PUSH Proxy, requesting for sending a PUSH notification to an application on a terminal.	
PUSH Proxy	A Server that relays the PUSH Notification Request to the specified PUSH Notification Service upon receiving them from the Telephony Server.	An Internet-based server
Application ID	An ID that uniquely identifies an application on a device for sending the PUSH Notification.	
Device Token	An identifier that uniquely identifies a device for sending the PUSH Notification.	

Operation when there is an incoming call to the VoIP Application

1. When the SL2100 receives a call request to the VoIP Application, it sends the PUSH Notification Request (HTTPS) to the PUSH Proxy before calling the VoIP Application.
2. The PUSH Proxy sends the PUSH Notification Request to the specified PUSH Notification Service when the PUSH Proxy receives the PUSH Notification Request from the SL2100. After that, the PUSH Notification Service sends the PUSH Notification to the VoIP Application.
3. When the VoIP Application receives the PUSH Notification, it updates its registration to the SL2100.
4. At the same time as when the SL2100 receives the registration update, it starts calling the VoIP Application to terminate the incoming call.

With this feature, the SL2100 sends a PUSH Notification request for terminating an incoming call or sending a MWI (message waiting indication: RFC3842) notification to the VoIP Application.



Requirements for using PUSH Notification

Table 1-41 Requirements for using PUSH Notification

Item		Requirements
VoIP Application	Supported OS	iOS 11 or higher / Android 6.0 or higher
	Supported firmware version	ST500 iOS Ver 2.0.0 or higher ST450 iOS Ver 8.0.0 or higher ST500 Android Ver 6.1.0 or higher
Telephony Server		SL2100 V2.00 or higher
PUSH Proxy		aus01.nec-pushproxy.com
PUSH Notification Service		Apple Push Notification service (APNs) / Firebase Cloud Messaging (FCM)

Conditions

Important Notice

- When the VoIP Application with PUSH Notification enabled is in a logout state, it cannot receive incoming calls. To receive incoming calls, making the VoIP Application foreground once or restarting the VoIP Application to register to the SL2100 is required. The conditions for a logout state are as follows:

- A system reset is performed



It is recommended to set the data for the services such as Department Hunting/Call Forwarding when the Standard SIP terminal is unable to receive a call.

Software Conditions

- For using PUSH Notification Service, SL2100 V2.00 or higher Main Software is required.

Service Conditions

- The terminals where the VoIP Application runs will receive the PUSH Notifications from the PUSH Notification Service. Therefore, each terminal must contain a SIM card or be able to access the Internet via Wi-Fi. It is recommended to use the terminal with SIM card even when using Wi-Fi. (It may take time until become available when the terminal moves to wireless radio range from outside.)
- The SL2100 requires Internet connection because the PUSH Proxy runs on an Internet- based server. For security reasons, it is strongly recommended that a firewall be set up between the SL2100 and the PUSH Proxy.
- To access the PUSH Proxy, FQDN for the PUSH Proxy is already configured on the SL2100. When not using Web Proxy, setting the address for the DNS server (primary/ secondary) is required for IP address resolution.
- This service feature is only available for situations in which the PUSH Notification can be sent to the VoIP Application via the PUSH Proxy connected to the SL2100.
- The VoIP Application must complete the communication with the PUSH Notification Service and register itself to the SL2100 in advance of receiving a PUSH Notification.



The registration information contains the Application ID and the device token which are required for the PUSH Notification.

- In this service, the SL2100 uses the PUSH Notification Service such as APNs or FCM via the PUSH Proxy. It is the service that depends on external network service and cannot be involved in troubles with the following factors;
 - Network path failure
 - PUSH Proxy failure
 - PUSH Notification Service failure
 - Communication failure between PUSH Notification Service and the terminal device

For this reason, out of the obstacles found in the message on the SL2100 side, it is necessary to deal with the network path or external network service side rather than the SL2100.

- Unlike the other SIP terminals, the VoIP Application with PUSH Notification enabled does not periodically send REGISTER update to the SL2100. However, the SL2100 maintains the login state of the VoIP Application even if it does not receive REGISTER update. As a result, even if the VoIP Application is out of service area or in an unusable state, it will not be logged out and the license will remain consumed. If the VoIP Application is no longer used, perform Program 90-23 to release the license.
- The timer of SIP Out of Range (Program 24-02-15) must be adjusted to the customer's network environment. The SIP terminal with Push Proxy enable may be unable to receive a call because its default value is short.

Conditions for Terminal Accommodation

- Standard SIP Terminals with or without Push Notification enabled can both be accommodated.

- The PUSH Notification related data must be enabled on the VoIP Application configuration screen. Refer to the manual for each VoIP Application for the settings.
- While a VoIP Application with PUSH Notification enabled is logged in to the system, if another VoIP Application with the PUSH Notification disabled/unsupported logs in with the same station number, an override automatically occurs. The overridden VoIP Application, the one with the PUSH Notification enabled, is logged out and not be able to use this feature.
- HTTPS connections are used for sending a PUSH Notification request. Depending on the network configuration, it is necessary to assign Web Proxy-related data by the Program 10-76-04/05 in order to relay the Web Proxy.
- When a calling party makes a call to the VoIP Application, the VoIP Application is not called until the PUSH Notification is received and the registration to the SL2100 is completed. During the period, the calling party continues to hear silence.
- The clock of the SL2100 must be adjusted to the current time. A significant difference between the set time and the current time may cause a connection failure to the PUSH Proxy.

Default Settings

None

System Availability

Terminals

Standard SIP Terminals

Required Component(s)

None

Related Features

IP Single Line Telephone (SIP)

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-76-01	Push Notification Service Basic Setup - Domain Name	Maximum 128 character strings	Refer to Table 1-42 Default .
10-76-02	Push Notification Service Basic Setup - Access Key	Maximum 64 character strings	A2Hi123s>Y=RB x4u5DIt7wO9?? 0M<2@JMsCD8 QErFX:N96GyD BLsK6NsJZ;P2V63
10-76-03	Push Notification Service Basic Setup - Server Certificate	Maximum 32 character strings	-
10-76-04	Push Notification Service Basic Setup - HTTPS proxy server address	0.0.0.0 ~ 255.255.255.255	0.0.0.0
10-76-05	Push Notification Service Basic Setup - HTTPS proxy server port	1 ~ 65535	8080

Program No.	Program Name	Input Data	Default
24-02-15	SIP Out of Range Timer	0 ~ 30 sec	4
90-23-01	Deleting Registration of IP Telephones	Maximum of eight digits. [Del.IP-Phone]: Dial 1 + press Hold	

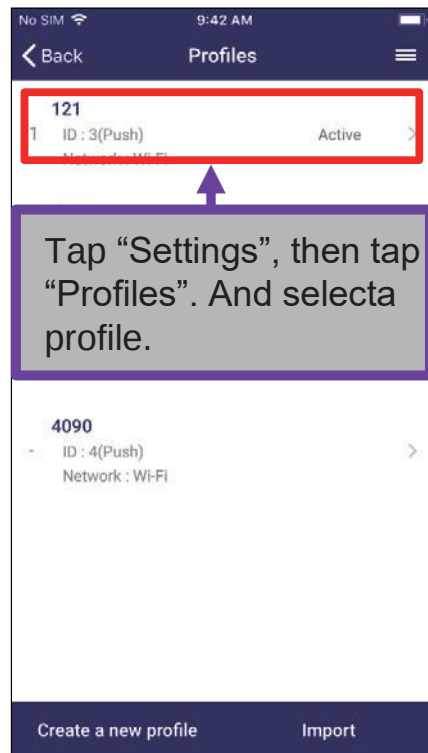
Table 1-42 Default

Program No.	Default
10-76-01	aus01.nec-pushproxy.com

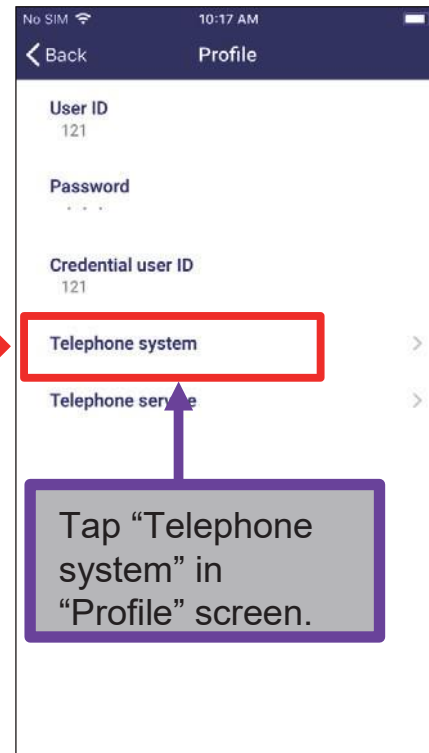
Operation

For iOS

Step 1:



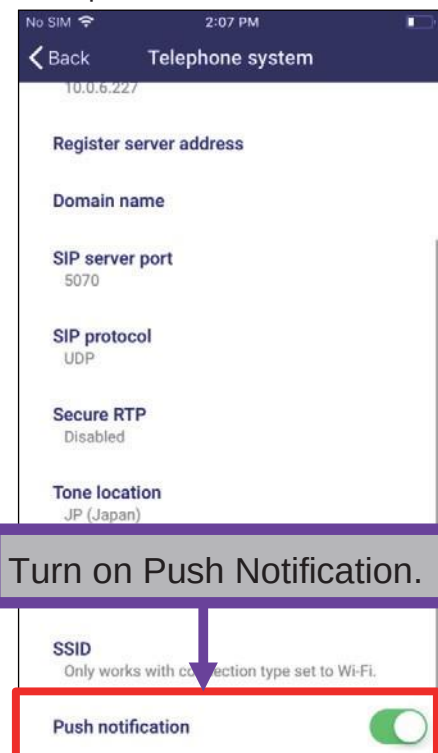
Step 2:



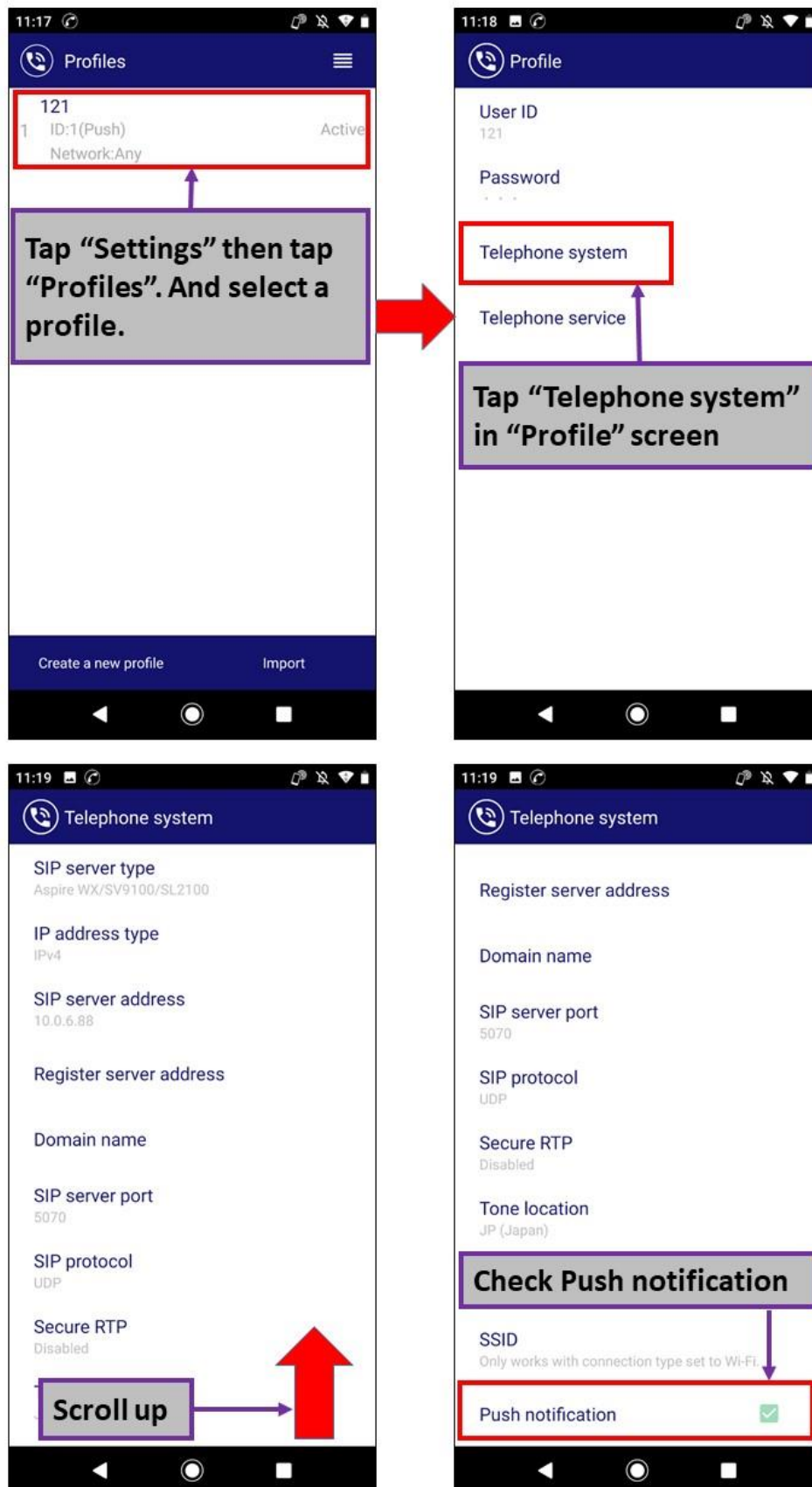
Step 3:



Step 4:



For Android



IP Single Line Telephone (SIP) – TLS Connection Support

Description

With Ver 2.00 or higher, TLS protocol is supported on STD SIP terminals. The SIP message encryption acts only between "SL2100 and STD SIP terminals".

By default, the TLS Registrar/Proxy Port in Program 84-20-07 is set to 0. To register a STD SIP terminal using TLS it is necessary to assign the TLS Registrar/Proxy Port.

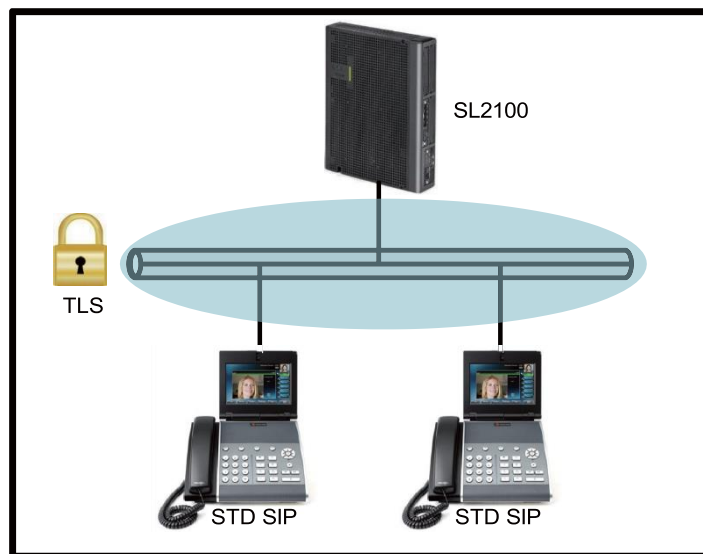


Figure 1-27 TLS Configuration

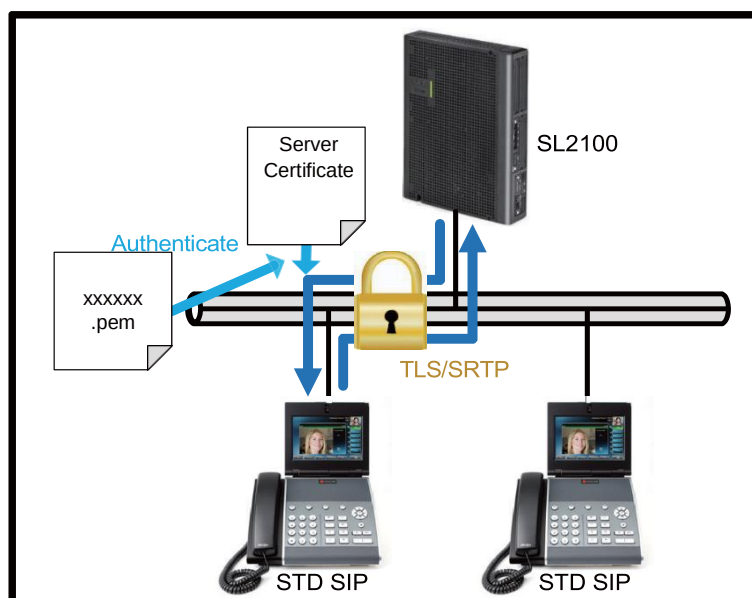


Figure 1-28 SL2100 Authentication

Conditions

- NAT Traversal is supported.
- The TLS STD SIP terminals do not support P2P call even if P2P settings are programmed.
- This feature does not support the terminals which do not use REGISTER method (Program 15-24-04).
- DNS server is required for ST500, to match with the Domain when the Certificate is authenticating.

TLS Support

- The SIP signaling packets between SL2100 and TLS STD SIP terminals are encrypted.
- The TLS connection is disconnected in the following cases:
 - Reset of SL2100
 - Restart of STD SIP terminal
 - Network Disconnection

SL2100 Certificate and Private Key

- Registered certificate on SL2100 is used when SL2100 receives a request for TLS connection.
- If no certificate file name is set in Program 10-72 then SL2100 uses self-signed certificate for TLS connection.
- Only the certificate consisting of "PEM format" is supported. The extension of certificate file is ".pem" or ".PEM" and the extension of private key file is ".key" or ".KEY".
- The file name can consist of a maximum of 32 characters including the extension.
- The SL2100 system retains "certificate" and "key" files even after system restart and cold start.
- The "Certificates" and "Keys" will be saved in "CERT" folder.
- The certificates can be checked, added and deleted by Web Programming under "Certificate Registration".
- Only IN level User can use "Certificate Registration" on Web Programming.
- "Certificate Registration" is not displayed when SA level or UA level user logs in.
- If server certificate and private key file name set in Program 10-72 are not registered with SL2100, the STD SIP cannot be registered using TLS.
- If the private key file name set in Program 10-72-02 is invalid, the STD SIP cannot be registered using TLS.
- The import of CA certificate on different terminal are explained in the following table:

Table 1-43 Import CA Certificate Requirements

Terminal	Certificate Format	Certificate Import Method
Polycom	• Format PEM • Extension .pem or .crt	A certificate is downloaded from a file server (FTP, TFTP and Web Server) and the certificate is imported.
ST500 (iOS)	• Format PEM • Extension .pem or .crt	• A certificate is attached to a mail and the certificate of attached file is imported. • A link of a certificate file is chosen from a web browser and the certificate is imported. • Android only - Its possible to import a certificate from microSD.
ST500 (Android)	• Format PEM • Extension .crt	
ITX-3370-1[]()TEL	• Format PEM	• A certificate is imported via the Web GUI. • Open a certificate on your PC with text editor. • Copy CA certificate/private key/private key password, and paste it to the Web GUI.

- The conditions of a TLS connection:

Table 1-44 TLS Certificate Conditions

Terminal	CA Certificate of a Terminal	Note
Polycom/ST500/ITX-3370-1W	A valid and relevant CA Certificate should be used.	If Domain Name is used for CN in a certificate then DNS server is required.

SRTP Support

- Voice Encryption acts between SL2100 and STD SIP terminals.
- To encrypt voice packets, it is necessary to enable SRTP Mode (Program 84-27-03 "enable").
- The behavior of SIP message encryption and voice packets encryption depend on both Program 15-05-51 and Program 84-27-03 shown below:

Table 1-45 SIP Message Encryption

Program 15-05-51 (Read Only) Transport Protocol	Program 84-27-03 SRTP Mode	Behavior
TLS	1: Enable	SIP messages and the voice packets are encrypted.
	0: Disable	SIP messages are encrypted, voice packets are not.
UDP/TCP	1: Enable	SIP messages and voice packets are not encrypted.
	0: Disable	

- When a TLS registered STD SIP terminal calls to a non TLS registered STD SIP terminal or SIP MLT, the call will be non-P2P even if P2P settings are programmed and SRTP is enabled.
- If SRTP mode is enabled, the VoIP resource is not decreased.
- Alarm 74 display on Multiline terminal set in program 90-50-01 are shown below:

Table 1-46 Example of Terminal Display Alarms

Error	Cause	Correction	Display
License not available	Encryption license not installed.	License check passes. (When the TLS connection is re-established or a TLS SIP call is initiated.)	TLS ALM (P:00) No License
Error in Server Certificate (Program 10-72-01)	Failed to validate Server Certificate.	When SL2100 receives offer of TLS connection, after setting correct file in Program 10-72-01.	TLS ALM (P: 00) Cert Err02
Error in Private Key (Program 10-72-02)	Failed to validate Private Key.	When SL2100 receives offer of TLS connection, after setting correct file in Program 10-72-01.	TLS ALM (P: 00) Cert Err03

Default Settings

None

System Availability**Terminals**

- Polycom VVX500 (v5.9.7.12459)
- ST500
- ITX-3370-1W

Required Component(s)

- Built-In VoIP **(CPU)** /VoIPDB
- SL2100 Ver 2.00
- SL2100 ENCRYPTION LIC

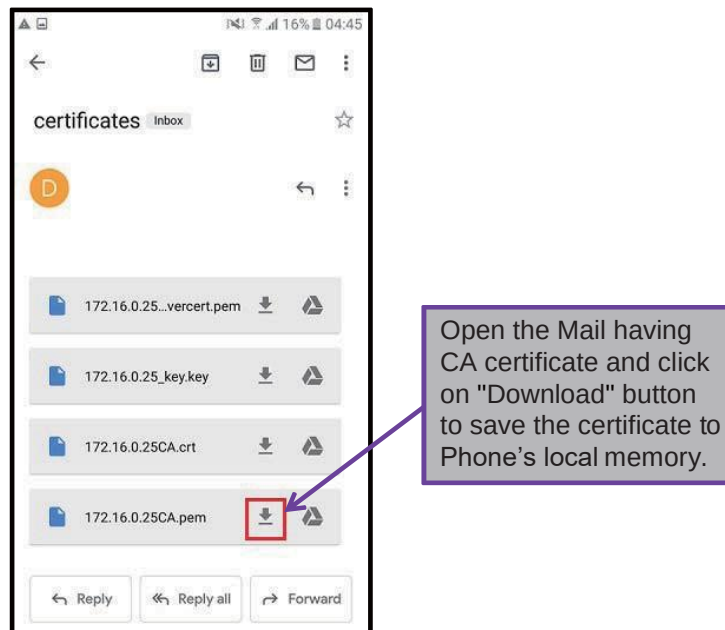
CA Certificate import on ST500 (Smartphone)

The CA certificate on ST500 can be imported by using:

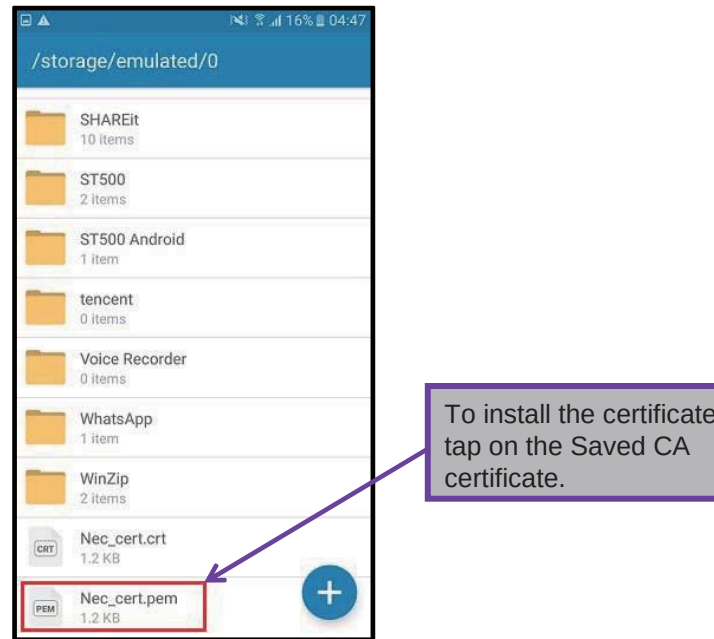
- Mail Server
- Micro SD card
- Webserver

Using Mail Server

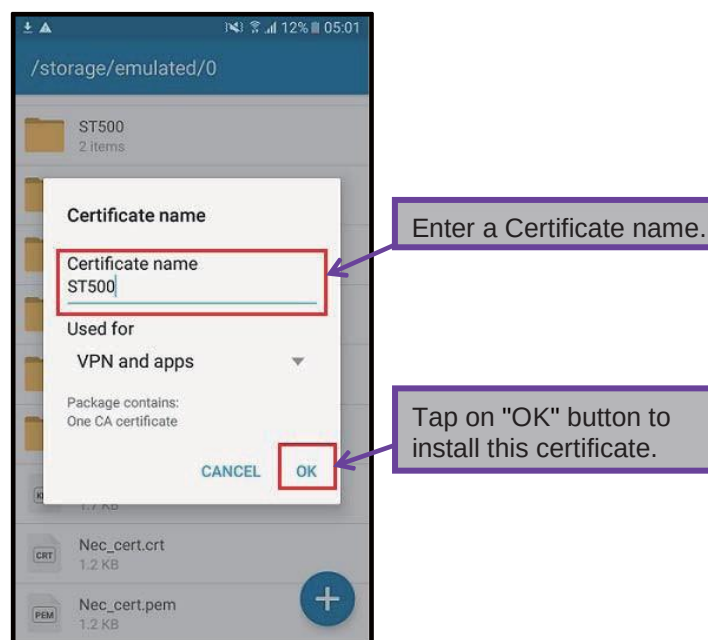
- Attach the CA certificate to a mail and send it to ST500 user's mail address.
- ST500 users access the mail account on android device where ST500 is installed, and check the mail having CA certificate.
- Now Click on the attached CA Certificate to download the CA certificate.



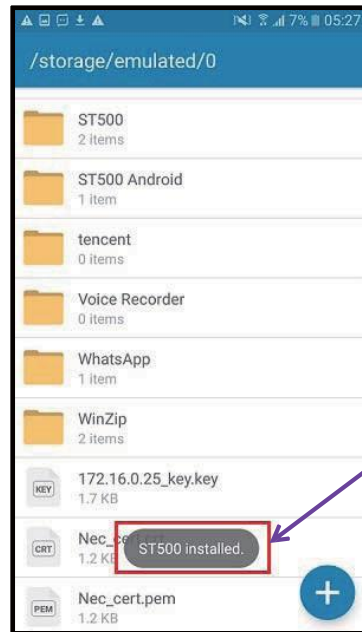
- CA certificate is downloaded in local memory space in device of ST500.



- Enter a Certificate name and click on "OK" button to install the certificate.



- After successful installation of certificate, a success message POPs-UP.



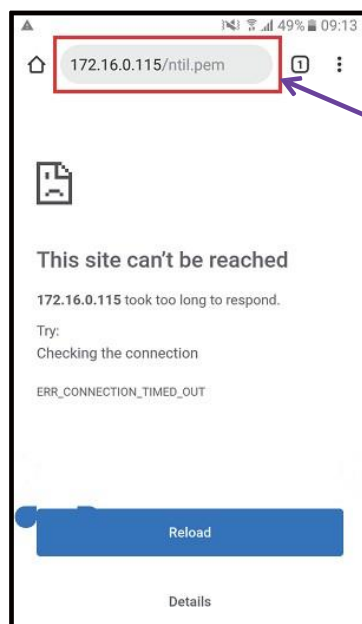
A message for successful installation of certificate pops-up.



The installed certificates can be viewed under User of "Security Certificates".

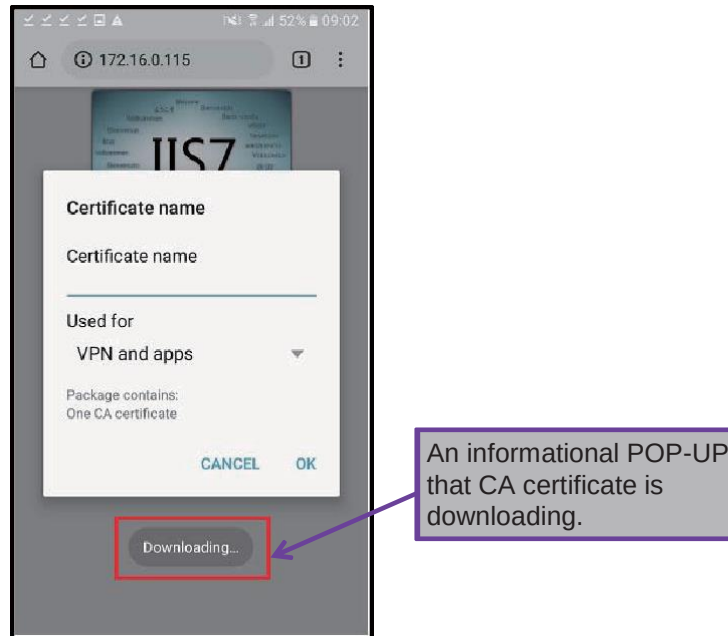
Using WEB-Server

- Place the CA certificate in root directory of WEB-Server.
ST500 users access the WEB-Server on android/iOS device's browser where ST500 is installed.
- Now enter the URL to access the certificates.

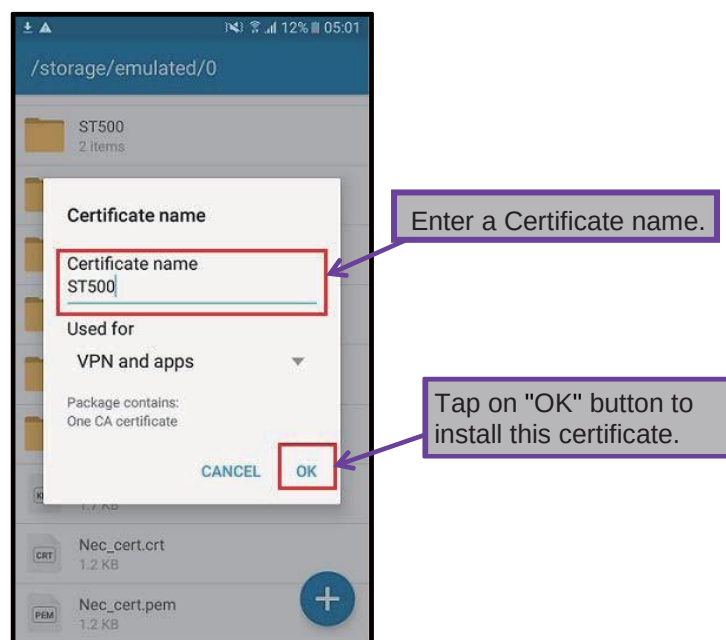


Enter the URL (http://ip/path/filename.pem) in the browser.

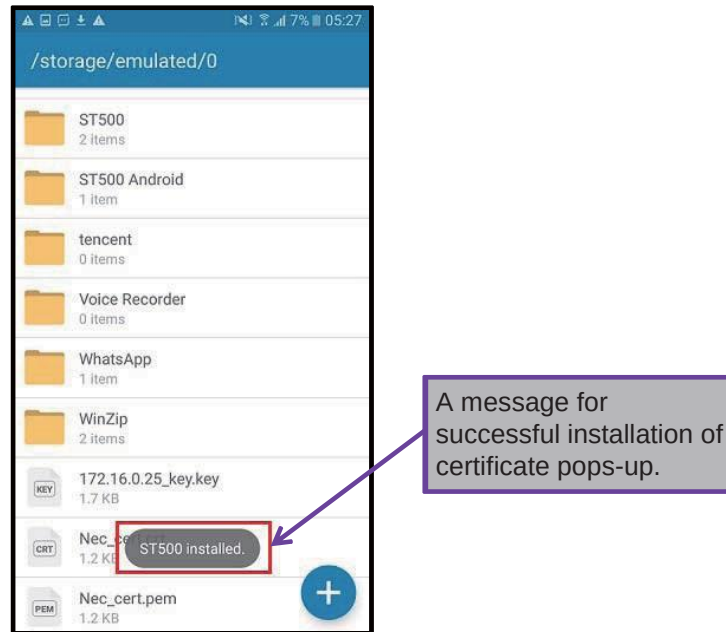
- CA certificate is downloaded to the device.



- Enter a Certificate name and click on "OK" button to install the certificate.



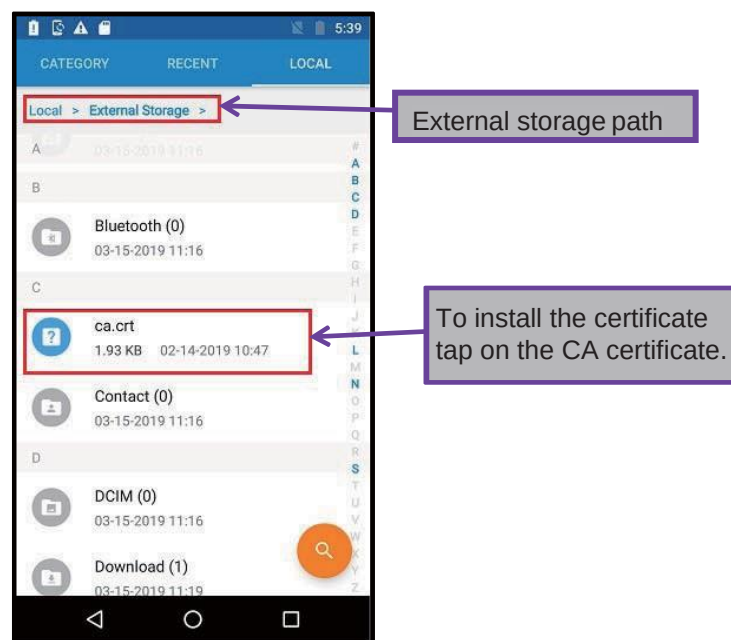
- After successful installation of certificate, a success message POPs-UP.



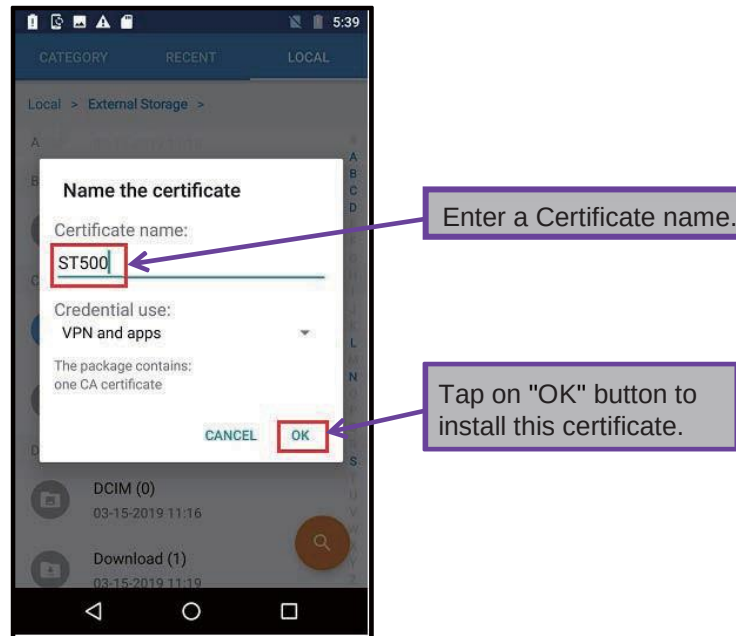
 The installed certificates can be viewed under User of "Security Certificates (Android)".

Using SD Card

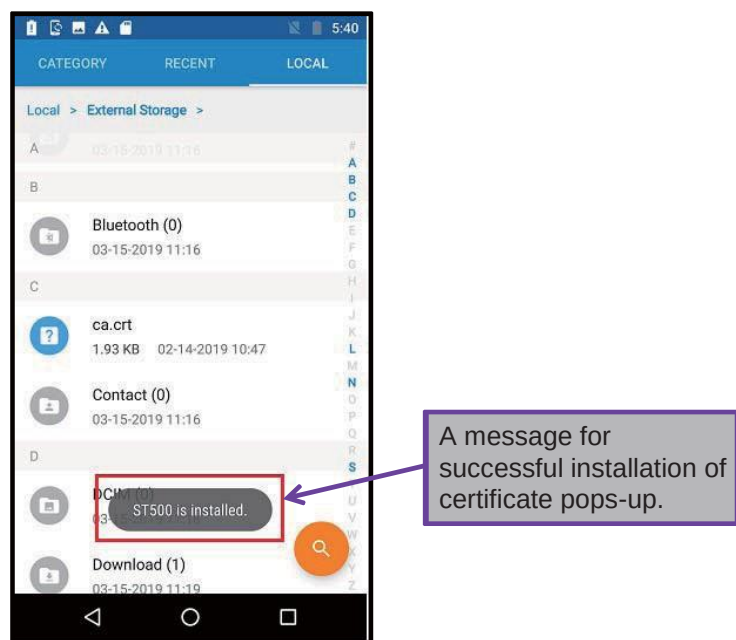
- Go to the External storage path where the SD card Placed.
- Tap on the CA certificate to install it.



- Enter a Certificate name and click on "OK" button to install the certificate.



- After successful installation of certificate, a success message POPs-UP.



 The installed certificates can be viewed under User of "Security Certificates (Android)".

Import CA Certificate on Polycom VVX500

- The CA certificate on Polycom VVX500 can be imported using:
 - FTP Server
 - TFTP Server
 - Web Server
- Open the web management interface of the Polycom VVX500 and browse to the **Settings** -> **Network** -> **TLS** menu.
- Select the desired Application CA container and enter the URL to the certificate file using either FTP, TFTP or HTTP.

- The **Install** button should activate once a properly formatted URL is entered. Click **Install**, the device should report that the SSL certificate was successfully installed.

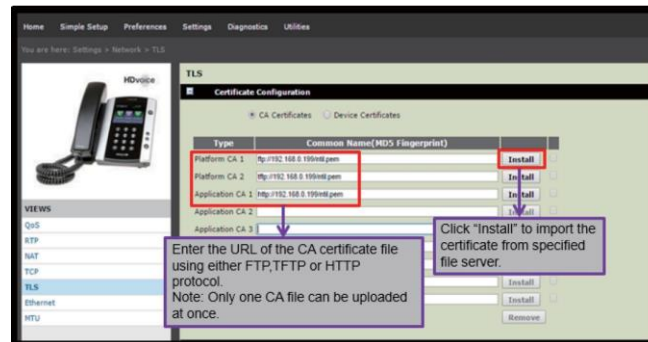


Figure 1-29 TLS Certificate Configuration Screen

After successful import of CA certificate the following screen appears:

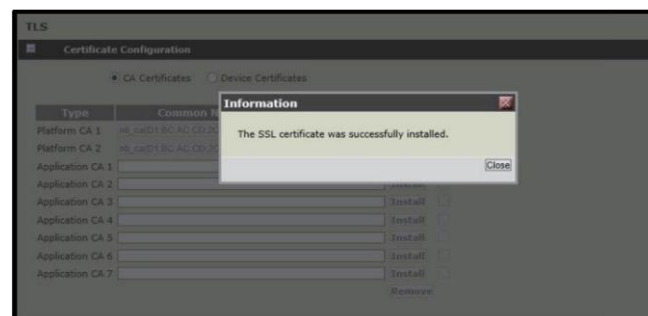


Figure 1-30 SSL Certificate Successfully Installed

The imported certificate is displayed.

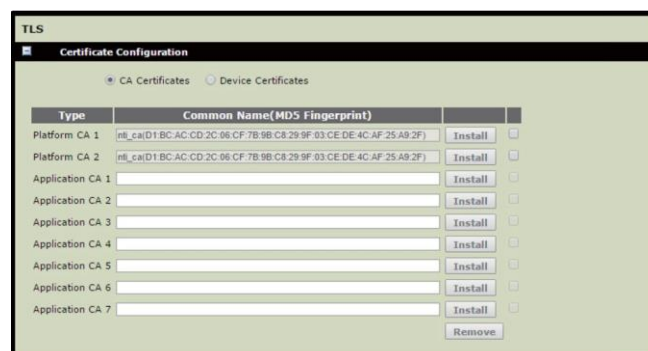


Figure 1-31 Example of Imported CA Certificates

Import CA Certificate on ITX-3370-1W

- The CA certificate on ITX-3370-1W can be imported using the Web GUI.
- Refer to the IP Phone GT890 Administration Guide (ST500) - SIP-TLS section.

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-72-01	Network Security Setup - Server Certificate	Maximum of 32 characters	No Setting
10-72-02	Network Security Setup - Private Key	Maximum of 32 characters	No Setting

Program No.	Program Name	Input Data	Default
15-05-51	IP Phone Basic Setup - Transport Protocol	0 = UDP 1 = TCP 2 = TLS	0
84-27-03	VOIPDB Basic Setup - SRTP Mode Setup	0 = Disable 1 = Enable	0
84-27-04	VOIPDB Basic Setup - SRTP Mode Select	0 = Mode1	0
84-20-07	SIP Extension Basic Setup - TLS Registrar/Proxy Port	0 ~ 65535	0
90-10-01	System Alarm Setup - Alarm Type Alarm 74	0 = Not Set 1 = Major Alarm 2 = Minor Alarm	0
90-50-01	System Alarm Display Setup - System Alarm Display Telephone	Up to eight digits	No setting

Operation

Certificate Registration in Web Programming:

1. Login to Web Programming at IN level.

NEC
SL2100
Web Programming

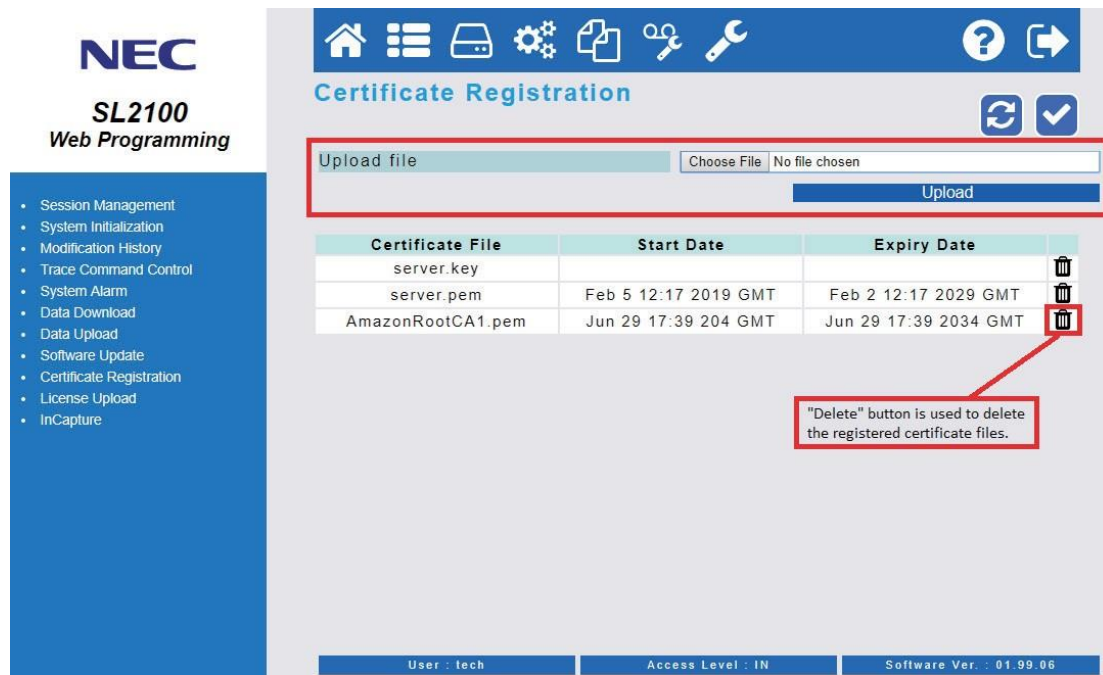
- Session Management
- System Initialization
- Modification History
- Trace Command Control
- System Alarm
- Data Download
- Data Upload
- Software Update
- **Certificate Registration**
- License Upload
- InCapture

Session Management

User	Type	Access Level	Time of Login	Time of Last Activity	Logout
tech (this session)	Web	IN	28 Feb 01:21:43 2018	28 Feb 01:28:02 2019	

User : tech Access Level : IN Software Ver. : 01.99.06

- Click on **Certificate Registration**.



- Browse or Select the certificate file and click on **Upload** button.
If no file is selected or invalid extension is selected the error is displayed.
- A maximum of ten files can be registered and if registered files are 10 or more, an error message "There is no available space in the storage" is displayed.
- There is a list of the Certificate and Private Key files registered with SL2100 on the Certificate Registration page. "Start Date" and "Expiry Date" columns of Private Key file are displayed as blank.
- The page is reloaded if the certificate has been uploaded and the certificate file's name is displayed in the list.
- To delete, find the certificate file and select the **Delete** button located on the same line.

IP Trunk - (SIP) Session Initiation Protocol

Description

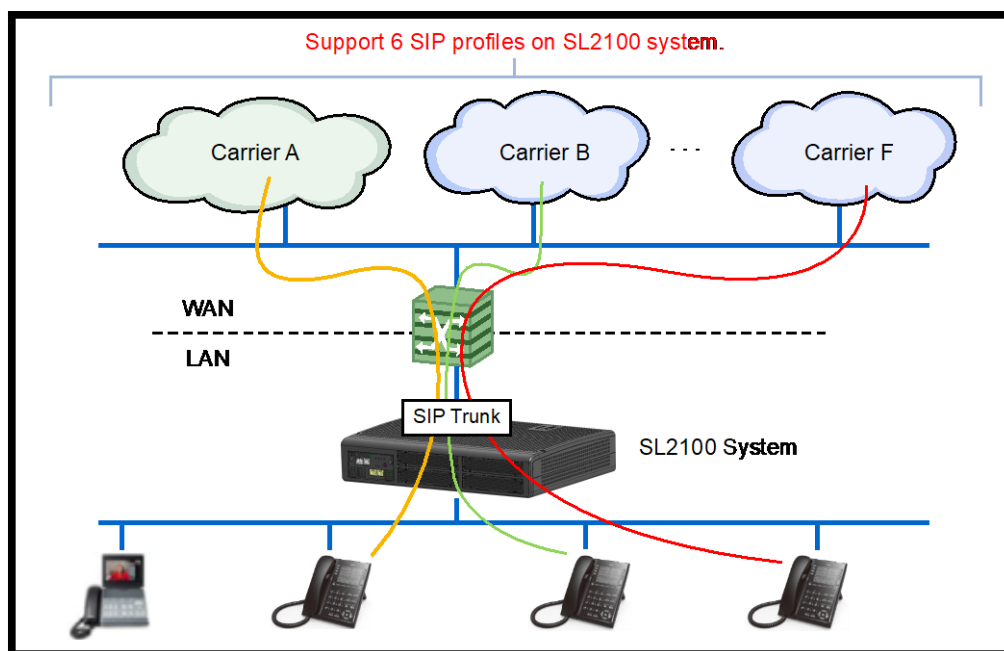
The SL2100 IP Trunk SIP package sends the real time voice over the corporate LAN or WAN. The voice from the telephone is digitized and then put into frames to be sent over a network using Internet protocol.

Using VoIPDB equipment at a gateway (a network point that acts as an entrance to another network), the packetized voice transmissions from users in the company are received and routed to other parts of the company Intranet (local area or wide area network) or they can be sent over the Internet using CO lines to another gateway.

Depending on the requirements and resource allocation in the LAN/WAN/Internet, the VoIPDB - SIP can be configured to use any of the following voice compressions:

- G.711 A-law - Highest Bandwidth
- G.729 (a) - Most often used
- The LAN/WAN or Internet connection is provided by a 10 Base-T/100 Base-TX Ethernet.

The SL2100 supports a maximum of six SIP Profiles allowing you to connect to a multiple of SIP Carriers and have different SIP System Interconnections at the same time.



VAD Enhancement

RTP voice data always transmitted during VoIP talking even if a user is not speaking. If VAD (Voice activity Detection) is enabled in a system, the system can stop sending RTP voice data while a user is not speaking.

This enhancement improves this VAD determination method by using SIP negotiation.

VBD on SIP Trunk

Voice Band Data (VBD) is what is called modem over IP. This feature enables use of VBD (Voice Band Data) by System. If use VBD. Analog modem signal is converted into voice band data and can be submitted via SIP Trunk.

For a list of vendors that have successfully completed interoperability certification go to <http://www.necntac.com> and refer to Technical Documentation.

SIP Trunk E.164 Support

With the SIP Trunk E.164 Support enabled the PBX is able to support SIP configurations where the number presentation within the SIP messages is formatted using the E.164 international numbering scheme. Specifically the system is able to handle the '+' digit when required as the International Access Code.

For example a normal international SIP call could be dialed and presented from the system as follows;
Number dialed = **00441202223344**

Request-URI: Invite sip: 00441202223344@172.16.18.100 SIP/2.0

However with SIP Trunk E.164 Support enabled the SIP call could be presented once dialed as below;

Request-URI: Invite sip:+441202223344@172.16.18.100 SIP/2.0

This presentation can be a requirement of certain SIP ITSPs (Internet Telephony Service Providers) so it is necessary the PBX can handle these calls and modify any SIP messages to the correct format accordingly.

Below is the full list of SIP header fields used by this feature:

Request-URIToFromP-Asserted IdentityP-Preferred Identity

SIP Trunk E.164 CLIP Enhancement

With the SIP Trunk E.164 CLIP Enhancement enabled, when an incoming SIP call from an external ITSP is presented at the system with a "+" in the From header field as the international access code, it is recognized and displayed as an international call at the terminal display and also logged in the terminals incoming caller history, allowing any outbound calls made from a multiline terminals caller history possible using this numbering scheme.

This presentation can be a requirement of certain SIP ITSPs (Internet Telephony Service Providers) so it is necessary the PBX can handle these calls and modify any SIP messages to the correct format accordingly.

FAX path through mode

When SIP Carrier does not support the T.38 Fax relay function, FAX relay can be established using FAX Path through mode via SIP trunk.

SIP Multi Profile Support

With the SL2100 you can have six SIP Profiles allowing you to connect to six different SIP Carriers, or allow you to have a SIP System Interconnection and connection to a SIP Carrier.

Conditions

- A maximum of 64 IP Trunks are supported in the SL2100.
- The SL2100 can support six SIP profiles. Multiple carriers or SIP System can be used at the same time.
- A SIP profile is set to each SIP trunk in Program 14-18-05.
- Calling Party Name is not provided for outgoing calls on SIP trunks.
- E.164 is supported for all carrier choices (PRG 10-29-14).
- E.164 CLIP feature is only possible from Multiline Terminal.
- If VAD is Enable, RTP forwarding (PRG 10-26-02) is not running.
- PRG 84-13-65 applies to system not by each codec.

- VAD can negotiate by SIP using G.711 or G.729.
- VBD is supported on the VoIPDB.
- VBD on SIP is only supported on SLT terminal.
- When modem signal is detected during a talking, a Codec is changed to VBD Codec.
- VBD supports G.711/G.729 (PCMU/PCMA) codec.
- The selection of mode (FAX or VBD) is per terminal.



Fax Connection may not work properly when it is in VBD Mode.

- VBD supports the one way switching from Voice session to VBD. VBD to Voice session is not supported. When VBD session is done, the session will be closed.
- VBD feature is not dependent on Carrier Type (PRG 10-29-14).
- VBD only supports only when the analog terminal and SIP Trunk is connected to a same system.
- When changed into VBD codec, VoIPDB cancels VAD and Echo canceller automatically.
- When use the FAX path through mode (PRG 84-33-01=2), same FAX codec type must be set on both end systems. If the codec does not match, the FAX call would be failed. Supported FAX codec is G.711, and G.726.
- To make FAX call, PRG 15-03-03 has to set "1 = Special Terminal" and PRG 15-03-18: "0 = Fax".
- SIP Multi Profiles must be configured with unique SIP Port numbers per profile. i.e. Profile 1 could use the default SIP port 5060 and Profile 2 could be configured to use 5062.
- SIP Multi Profile carrier configurations must be reachable through the same IP gateway. i.e. the default gateway in PRG 10-12-03 must be able to route traffic to the carrier configured in Profile 1 and also be able to route traffic to the System Interconnection configured in Profile 2.
- SIP Multi Profile carrier configurations must be reachable through the same DNS server settings.
- For SIP Multi Profile programming areas you will now require an index selection as to whether Profile 1 to Profile 6 is to be configured.

PRG	Name	Note
10-28	SIP System Information Setup	Index added. Select from Profile 1 to Profile 6.
10-29	SIP Server Information Setup	Index added. Select from Profile 1 to Profile 6.
10-36	SIP Trunk Registration Information	Index added. Select from Profile 1 to Profile 6.
15-16	SIP Register ID Setup for Extension	Index added. Select from Profile 1 to Profile 6.
21-19	IP Trunk (SIP) Calling Party Number Setup for Extensions	Index added. Select from Profile 1 to Profile 6.
84-13	SIP Trunk CODEC Information Setup	Index added. Select from Profile 1 to Profile 6.
84-14	SIP Trunk Information Basic Setup	Index added. Select from Profile 1 to Profile 6.
84-31	VoIPDB Echo Canceller Setup	Index added. Select from Profile 1 to Profile 6.
84-33	FAX over IP Setup	Index added. Select from Profile 1 to Profile 6.
84-34	VoIPDB DTMF Setup	Index added. Select from Profile 1 to Profile 6.
84-38	VoIPDB Network Side Echo Canceller	Index added. Select from Profile 1 to Profile 6.
84-39	SIP Trunk Message Customization	Index added. Select from Profile 1 to Profile 6.

Default Settings

None

System Availability

Terminals

All Multiline Terminals

Required Component(s)

SL2100 IP TRUNK-01 LIC (License Code 5001)

CPU

VoIPDB



The VoIPDB is only a requirement if more than the built in (8) DSP resources on the CPU are required. Adding the VoIPDB provides an additional (8) DSP resources for a total of (16). If more than (16) DSP resources are required, additional IP Channel licenses are required.

Related Features

None

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-02-01	Location Setup - Country Code	Dial (up to four digits) : 0 ~ 9, *, #	61
10-02-02	Location Setup - International Access Code	Dial (up to four digits) : 0 ~ 9, *, #	00
10-02-03	Location Setup - Other Area Access Code	Dial (up to two digits) : 0 ~ 9, *, #	0
10-12-03	CPU Network Setup - Default Gateway	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0
10-12-05	CPU Network Setup - NIC Interface	0 = Auto Detect 1 = 100Mbps, Full Duplex 2 = 100Mbps, Half Duplex 3 = 10Mbps, Full Duplex 4 = 10Mbps, Half Duplex	0
10-12-07	CPU Network Setup - NAPT Router IP Address(Default Gateway [WAN])	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0
10-12-08	CPU Network Setup - ICMP Redirect	0= NO, Signaling packets will follow the ICMP redirect message. 1= YES, Signaling packets will NOT follow the ICMP redirect message.	0
10-12-09	CPU Network Setup - IP Address (VoIPDB)	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	172.16.0.10

Program No.	Program Name	Input Data	Default
10-12-10	CPU Network Setup - Subnet Mask (VoIPDB)	128.0.0.0 192.0.0.0 224.0.0.0 240.0.0.0 248.0.0.0 252.0.0.0 254.0.0.0 255.0.0.0 255.128.0.0 255.192.0.0 255.224.0.0 255.240.0.0 255.248.0.0 255.252.0.0 255.254.0.0 255.255.0.0 255.255.128.0 255.255.192.0 255.255.224.0 255.255.240.0 255.255.248.0 255.255.252.0 255.255.254.0 255.255.255.0 255.255.255.128 255.255.255.192 255.255.255.224 255.255.255.240 255.255.255.248 255.255.255.252 255.255.255.254 255.255.255.255	Refer to the programming manual for all the possible valid subnet mask entries. (default = 255.255.0.0)
10-12-11	CPU Network Setup - NIC Setup	0 = Auto Detect 1 = 100 Mbps, Full Duplex 3 = 10 Mbps, Full Duplex 5 = 1 Gbps, Full Duplex	0
10-19-01	VoIPDB DSP Resource Selection - VoIPDB DSP Resource Selection	0 = Common use for both IP extensions and trunks 1 = Use for IP extensions 2 = Use for SIP trunks 5 = Blocked 6 = Common without unicast paging 7 = Multicast paging 8 = Unicast paging	Resource 1 ~ 128 = 0
10-23-01	SIP System Interconnection Setup - System Interconnection	0 = No (Disable) 1 = Yes (Enable)	0
10-23-02	SIP System Interconnection Setup - IP Address	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0
10-23-04	SIP System Interconnection Setup - Dial Number	Up to 12 digits (0 ~ 9)	No Setting
10-28-01	SIP System Information Setup - Domain Name	Up to 64 Characters (ex. : UserID@HostName.DomainName) (SIP Profile:1-6)	No Setting
10-28-02	SIP System Information Setup - Host Name	Up to 48 Characters (ex. : UserID@HostName.DomainName) (SIP Profile:1-6)	No Setting
10-28-03	SIP System Information Setup - Transport Protocol	0 = UDP 1 = TCP (SIP Profile:1-6)	0
10-28-05	SIP System Information Setup - Domain Assignment	0 = IP Address 1 = Domain Name (SIP Profile:1-6)	0
10-28-06	SIP System Information Setup - IP Trunk Port Binding	0 = Disable 1 = Enable (SIP Profile:1-6)	0
10-29-01	SIP Server Information Setup - Default Proxy (Outbound)	0 = Off 1 = On (SIP Profile:1-6)	0
10-29-02	SIP Server Information Setup - Default Proxy (Inbound)	0 = Off 1 = On (SIP Profile:1-6)	0

Program No.	Program Name	Input Data	Default
10-29-03	SIP Server Information Setup - Default Proxy IP Address	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254 (SIP Profile:1-6)	0.0.0.0
10-29-04	SIP Server Information Setup - Default Proxy Port Number	0 ~ 65535 (SIP Profile:1-6)	5060
10-29-05	SIP Server Information Setup - Registrar Mode	0 = None 1 = Manual (SIP Profile:1-6)	0
10-29-06	SIP Server Information Setup - Registrar IP Address	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254 (SIP Profile:1-6)	0.0.0.0
10-29-07	SIP Server Information Setup - Registrar Port Number	0 ~ 65535 (SIP Profile:1-6)	5060
10-29-11	SIP Server Information Setup - Registrar Domain Name	Up to 128 Characters (SIP Profile:1-6)	No Setting
10-29-12	SIP Server Information Setup - Domain Name	Up to 64 Characters (SIP Profile:1-6)	No Setting
10-29-13	SIP Server Information Setup - Proxy Host Name	Up to 48 Characters (SIP Profile:1-6)	No Setting
10-29-14	SIP Server Information Setup - SIP Carrier Choice	0 ~ 26 1 = Carrier A 2 = Carrier B : 7 = Carrier G 8 = Carrier H : 26 = Carrier Z (SIP Profile:1-6)	0
10-29-15	SIP Server Information Setup - Registration Expiry (Expire) Time	120 ~ 65535 seconds (SIP Profile:1-6)	3600
10-29-16	SIP Server Information Setup - Register Sub Mode	0 = Off (Allow invalid Invite message) 1 = On (Deny invalid Invite message) (SIP Profile 1-6)	0
10-29-20	SIP Server Information Setup - Authentication Trial	0 ~ 9 (SIP Profile:1-6)	1
10-29-21	CPU Network Setup - Network Address Port Translation (NAPT) Router Setup	0 = No (Disable) 1 = Yes (Enable) (SIP Profile:1-6)	0
10-36-01	SIP Trunk Registration Information Setup - Registration	0 = Disable 1 = Enable (SIP Profile:1-6)	0
10-36-02	SIP Trunk Registration Information Setup - User ID	Up to 32 Characters When assigning the User ID, the ID may contain only alpha characters. (A space and/or special characters are not allowed in the User ID field). (ex. : UserID@HostName.DomainName) (SIP Profile:1-6)	No Setting
10-36-03	SIP Trunk Registration Information Setup - Authentication User ID	Up to 64 Characters (SIP Profile:1-6)	No Setting
10-36-04	SIP Trunk Registration Information Setup - Authentication Password	Up to 64 Characters (SIP Profile:1-6)	No Setting

Program No.	Program Name	Input Data	Default
10-37-01	UPnP Setup - UPnP Mode	0 = Disable 1 = Enable	0
10-37-02	UPnP Setup - Retry Time	0, 60 ~ 3600 (1 ~ 59 cannot be input)	60
14-01-24	Basic Trunk Data Setup - Trunk-to-Trunk Outgoing Caller ID through Mode	0 = Disable (Caller ID not forwarded out.) 1 = Enable (Caller ID is forwarded out.)	0
14-02-01	Analog Trunk Data Setup - Signaling Type (DP/DTMF)	0 = Dial Pulse (10 PPS) 1 = Dial Pulse (20 PPS) 2 = DTMF	2
14-05-01	Trunk Group - Trunk Group Number	Trunk Port 1 ~ 128 = Priority 1 ~ 128	Refer to the Programming Manual for the default values.
14-12-01	SIP Register ID Setup for IP Trunk - Register ID	0 ~ 31	0
14-12-02	SIP Register ID Setup for IP Trunk - Pilot Register ID	0 ~ 31	0
14-18-05	IP Trunk Data Setup - SIP Profile (SIP Trunk)	1 = Profile 1 2 = Profile 2 3 = Profile 3 4 = Profile 4 5 = Profile 5 6 = Profile 6	1
15-03-03	Single Line Telephone Basic Data Setup - Terminal Type	0 = Normal 1 = Special	0
15-16-01	SIP Register ID Setup for Extension - Register ID	None, 0 ~ 31 (SIP Profile:1-6)	No Setting
21-17-01	IP Trunk (SIP) Calling Party Number Setup for Trunk - Calling Party Number	Up to 16 digits (1 ~ 0, *, #)	No Setting
21-19-01	IP Trunk (SIP) Calling Party Number Setup for Extension - Calling Party Number	Up to 16 Digits (1 ~ 0, *, #) (SIP Profile:1-6)	No Setting
22-02-01	Incoming Call Trunk Setup - Trunk Service Type	0 = Normal 1 = VRS (second dial tone if no VRS installed) 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delayed VRS 7 = ANI/DNIS 8 = DID (DDI) Mode Switching	0
44-02-01	Dial Analysis Table for ARS/F-Route Access - Dial	Up to eight digits (Use line key 1 for a Don't Care digit, @)	No Setting
44-02-02	Dial Analysis Table for ARS/F-Route Access - Service Type	0 = No setting (None) 1 = Extension Call (Own) 2 = ARS/F-Route Table (F-Route) 3 = Dial Extension Analyze Table (Option)	0
44-02-03	Dial Analysis Table for ARS/F-Route Access - Additional Data	1 = Delete Digit = 0 ~ 255 (255 = Delete All Digits) 2 = 0 ~ 100 (0 = No Setting) 3 = Dial Extension Analyze Table Number = 0 ~ 4 (0 = No Setting)	0
44-05-01	ARS/F-Route Table - Trunk Group Number	0 = No Setting 1 ~ 50 = Trunk Group 255 = Extension Call	0

Program No.	Program Name	Input Data	Default
44-05-09	ARS/F-Route Table - Maximum Digit		0
84-10-01	ToS Setup - ToS Mode	0 = Disable (Invalid) 1 = IP Precedence 2 = Diffserv	0
84-10-02	ToS Setup - Priority, IP Precedence	0 ~ 7 0 = Low 7 = High	0
84-10-03	ToS Setup - Low Delay	0 ~ 1 0 = Normal Delay, Low Delay	0
84-10-04	ToS Setup - Wideband (Throughout)	0 ~ 1 0 = Normal Throughput 1 = High Throughput	0
84-10-05	ToS Setup - High Reliability	0 ~ 1 0 = Normal Reliability 1 = Low Reliability	0
84-10-07	ToS Setup - Priority (D.S.C.P. - Differentiated Services Code Point)	0 ~ 63	0
84-13-01	SIP Trunk CODEC Information Basic Setup - Number of G.711 Audio Frame	1 = 10 ms 2 = 20 ms 3 = 30 ms 4 = 40 ms (SIP Profile:1-6)	2
84-13-02	SIP Trunk CODEC Information Basic Setup - G.711 Silence Detection (VAD) Mode	0 = Disable 1 = Enable (SIP Profile:1-6)	0
84-13-03	SIP Trunk CODEC Information Basic Setup - G.711 Type	0 = A-law 1 = μ -law (SIP Profile:1-6)	0
84-13-04	SIP Trunk CODEC Information Basic Setup - G.711 Jitter Buffer - Minimum	0 ~ 300 ms (SIP Profile:1-6)	20
84-13-05	SIP Trunk CODEC Information Basic Setup - G.711 Jitter Buffer - Minimum	0 ~ 300 ms (SIP Profile:1-6)	40
84-13-06	SIP Trunk CODEC Information Basic Setup - G.711 Jitter Buffer - Maximum	0 ~ 300 ms (SIP Profile:1-6)	80
84-13-07	SIP Trunk CODEC Information Basic Setup - G.729 Audio Frame	1 ~ 6 (1 = 10 ms, 2 = 20 ms, etc.) (SIP Profile:1-6)	2
84-13-08	SIP Trunk CODEC Information Basic Setup - G.729 Silence Compression (VAD) Mode	0 = Disable 1 = Enable (SIP Profile:1-6)	0
84-13-09	SIP Trunk CODEC Information Basic Setup - G.729 Jitter Buffer - Minimum	0 ~ 300 ms (SIP Profile:1-6)	20
84-13-10	SIP Trunk CODEC Information Basic Setup - G.729 Jitter Buffer - Standard	0 ~ 300 ms (SIP Profile:1-6)	40
84-13-11	SIP Trunk CODEC Information Basic Setup - G.729 Jitter Buffer - Maximum	0 ~ 300 ms (SIP Profile:1-6)	80
84-13-17	SIP Trunk CODEC Information Basic Setup - Jitter Buffer Mode	1 = static 3 = adaptive immediately (SIP Profile:1-6)	3

Program No.	Program Name	Input Data	Default
84-13-18	SIP Trunk CODEC Information Basic Setup - Silence Compression (VAD) Threshold	1 ~ 30 (self-adjustment and - 19 dB ~ + 10dB) 1 = - 19 dB (- 49 dBm) : 20 = 0dB (- 30 dBm) : 29 = 9 dBm (- 21 dBm) 30 = 10dBm (- 20 dBm) (SIP Profile:1-6)	20
84-13-28	SIP Trunk CODEC Information Basic Setup - Priority Codec Setting	0 = G.711 PT 1 = Not Used 2 = G.729 PT 3 = G.722 PT 4 = G.726 PT 5 = Not Used 6 = G.711 Only 7 = G.729 Only (SIP Profile:1-6)	0
84-34-02	VoIPDB DTMF - DTMF Payload Number	96 ~ 127 (SIP Profile:1-6)	110
84-34-01	VoIPDB DTMF - DTMF Relay Mode	0 = Disable 1 = RFC2833 2 = H.245 (SIP Profile:1-6)	0
84-13-33	SIP Trunk CODEC Information Basic Setup - G.722 Audio Frame	1 = 10 ms 2 = 20 ms 3 = 30 ms 4 = 40 ms (SIP Profile:1-6)	3
84-13-35	SIP Trunk CODEC Information Basic Setup - G.722 Jitter Buffer - Minimum	0 ~ 300 ms (SIP Profile:1-6)	30
84-13-36	SIP Trunk CODEC Information Basic Setup - G.722 Jitter Buffer - Standard	0 ~ 300 ms (SIP Profile:1-6)	60
84-13-37	SIP Trunk CODEC Information Basic Setup - G.722 Jitter Buffer - Maximum	0 ~ 300 ms (SIP Profile:1-6)	120
84-13-38	SIP Trunk CODEC Information Basic Setup - G.726 Audio Frame	1 = 10 ms 2 = 20 ms 3 = 30 ms 4 = 40 ms (SIP Profile:1-6)	3
84-13-39	SIP Trunk CODEC Information Basic Setup - G.726 Silence Compression Mode	0 = Disable 1 = Enable (SIP Profile:1-6)	0
84-13-40	SIP Trunk CODEC Information Basic Setup - G.726 Jitter Buffer - Minimum	0 ~ 300 ms (SIP Profile:1-6)	30
84-13-41	SIP Trunk CODEC Information Basic Setup - G.726 Jitter Buffer - Standard	0 ~ 300 ms (SIP Profile:1-6)	60
84-13-42	SIP Trunk CODEC Information Basic Setup - G.726 Jitter Buffer - Maximum	0 ~ 300 ms (SIP Profile:1-6)	120
84-13-49	SIP Trunk CODEC Information Basic Setup - RTP Filter	0 = Disable 1 = Enable (IP) 2 = Enable (IP + SSRC) (SIP Profile:1-6)	0
84-33-01	FAX over IP - Fax Relay mode	1 = Enable 2 = Each Port Mode (SIP Profile:1-6)	0

Program No.	Program Name	Input Data	Default
84-33-02	FAX over IP - T.38 Protocol mode	0 = R/U 1 = U/R 2 = RTP 3 = UDPTL (SIP Profile:1-6)	1
84-33-06	FAX over IP - T.38 FAX Max Speed	1 = V.27ter, 4800 bps 2 = V.29, 9600 bps (SIP Profile:1-6)	2
84-33-08	FAX over IP - Low Speed Data Redundancy	0 ~ 2 (SIP Profile:1-6)	0
84-33-09	FAX over IP - High Speed Data Redundancy	0 ~ 2 (SIP Profile:1-6)	0
84-33-10	FAX over IP - TCF Handling	0 = Local 1 = Network (SIP Profile:1-6)	1
84-33-05	FAX over IP - T.38 RTP Format Payload Number	96 ~ 127 (SIP Profile:1-6)	100
84-13-65	SIP Trunk CODEC Information Basic Setup - VAD Negotiation on SDP	0 = Disable 1 = Enable (SIP Profile:1-6)	0
15-03-18	Single Line Telephone Basic Data Setup - Select Special Terminal Type	0 = Fax 1 = Modem	0
84-13-66	SIP Trunk CODEC Information Basic Setup - Voice Band Data (VBD)	0 = Disable 1 = Enable (SIP Profile:1-6)	0
84-13-67	SIP Trunk CODEC Information Basic Setup - VBD Payload Type	96 ~ 127 (SIP Profile:1-6)	97
84-14-06	SIP Trunk Basic Information Setup - SIP Trunk Port Number	1 ~ 65535 (SIP Profile:1-6)	Profile 1 = 5060 Profile 2 = 5062 Profile 3 = 5090 Profile 4 = 5092 Profile 5 = 5094 Profile 6 = 5696
84-14-07	SIP Trunk Basic Information Setup - Session Timer Value	0 ~ 65535 (SIP Profile:1-6)	0
84-14-08	SIP Trunk Basic Information Setup - Minimum Session Timer Value	0 ~ 65535 (SIP Profile:1-6)	1800
84-14-09	SIP Trunk Basic Information Setup - Called Party Information	0 = Request URI 1 = To Header (SIP Profile:1-6)	0
84-14-10	SIP Trunk Basic Information Setup - URL Type	0 = SIP-URL 1 = TEL-URL (SIP Profile:1-6)	0
84-14-11	SIP Trunk Basic Information Setup - URL/To HeaderSetting Information	0 = Proxy Server Domain 1 = SIP UA Domain (SIP Profile:1-6)	0
84-14-13	SIP Trunk Basic Information Setup - SIP Trunk Incoming/Outgoing via E164SIP_URI	0 = Off 1 = Mode 1 2 = Mode 2 3 = Mode 3 (SIP Profile:1-6)	0
84-14-15	SIP Trunk Basic Information Setup - 100rel Settings	0 = Use default Settings 1 = Use opposite Default Setting (SIP Profile:1-6)	0
84-14-16	SIP Trunk Basic Information Setup - SIP Trunk SIP-URI E.164 Incoming Mode	0 = OFF 1 = Mode 1 2 = Mode 2 (SIP Profile:1-6)	0

Program No.	Program Name	Input Data	Default
84-14-17	SIP Trunk Basic Information Setup - Call Forward Moved Temporarily Support	0 = Disabled 1 = 302 Return (SIP Profile:1-6)	0
84-14-18	SIP Trunk Basic Information Setup - Keep Alive by OPTION Interval Timer	60 ~ 3600 (s) (SIP Profile:1-6)	180
84-14-19	SIP Trunk Basic Information Setup - Keep Alive by OPTION Fail Limit	1 ~ 5 times (SIP Profile:1-6)	1
84-14-20	SIP Trunk Basic Information Setup - Option Keep Alive User ID	Max 32 Strings (SIP Profile:1-6)	ping
84-26-01	VoIP Basic Setup (DSP) - IP Address	xxx.xxx.xxx.xxx	172.16.0.20
84-26-02	VoIP Basic Setup (DSP) - RTP Port Number	0 ~ 65534	10020
84-26-03	VoIP Basic Setup (DSP) - RTCP Port Number	RTP Port Number + 1	10021
84-31-01	VoIPDB Echo Cancellation Setup - TDM Echo Canceller mode	0 = Disable 1 = Enable (for SIP Trunk Profile 1-6)	1
84-31-02	VoIPDB Echo Cancellation Setup - TDM Echo Canceller NLP mode(2W)	0 = Disable 1 = Enable 2 = Echo Path Mode 3 = Echo Path Auto Detect Mode (for SIP Trunk Profile 1-6)	1
84-31-03	VoIPDB Echo Cancellation Setup - TDM Echo Canceller ComfortNoise mode	0 = Disable 1 = Enable (for SIP Trunk Profile 1-6)	1
84-31-05	VoIPDB Echo Cancellation Setup - TDM Echo Canceller Tail Displacement	0 ~ 89 (0 ms ~ 890 ms) (for SIP Trunk Profile 1-6)	0
84-31-06	VoIPDB Echo Cancellation Setup - TDM Echo Canceller tail length	1 = 32 ms 2 = 48 ms 3 = 64 ms 4 = 80 ms 5 = 96 ms 6 = 112 ms 7 = 128 ms (for SIP Trunk Profile 1-6)	7
84-31-07	VoIPDB Echo Cancellation Setup - TDM Echo Canceller Default ERL Level	0 ~ 6 (- 9 dB ~ + 9 dB) 0 = - 9 dB 1 = - 6 dB 2 = - 3 dB : 5 = 6 dB 6 = 9 dB (for SIP Trunk Profile 1-6)	5
84-31-08	VoIPDB Echo Cancellation Setup - TDM Echo Canceller Echo Type	1 = Line Echo Canceller 2 = Acoustic Echo Canceller (for SIP Trunk Profile 1-6)	1
84-31-10	VoIPDB Echo Cancellation Setup - TDM TX Level Control	0 = Disable 1 = TX Control Mode 2 = TX Automatic Level Control Mode 3 = TX HLC (high Level) (for SIP Trunk Profile 1-6)	3
84-31-11	VoIPDB Echo Cancellation Setup - TDM TX Voice Level Control Mode	0 ~ 16 (-24 dB ~ +24 dB) 0 = -24 dB 1 = -21 dB : 8 = 0 dB : 15 = 21 dB 16 = 24 dB (for SIP Trunk Profile 1-6)	9

Program No.	Program Name	Input Data	Default
84-31-12	VoIPDB Echo Canceller Setup - TDM TX Automatic Level Control Level	0 ~ 12 (-42 dBm ~ -6 dBm) 0 = -42 dBm 1 = -39 dBm : 7 = -21 dBm : 11 = -9 dBm 12 = -6 dBm (for SIP Trunk Profile 1-6)	7
84-31-13	VoIPDB Echo Canceller Setup - TDM TX HLC Threshold	0 ~ 42 (-42 dBm ~ 0 dBm) 0 = -42 dBm 1 = -41 dBm : 41 = -1 dBm 42 = 0 dBm (for SIP Trunk Profile 1-6)	41
84-31-14	VoIPDB Echo Canceller Setup - TDM TX Gain Compression Mode	0 = Disable 1 = Enable (for SIP Trunk Profile 1-6)	1
84-31-15	VoIPDB Echo Canceller Setup - TDM TX Gain Compression Threshold	0 ~ 42 (-42 dBm ~ 0 dBm) 0 = -42 dBm 1 = -41 dBm : 41 = -1 dBm 42 = 0 dBm (for SIP Trunk Profile 1-6)	41
84-31-16	VoIPDB Echo Canceller Setup - TDM RX Level Control	0 = Disable 1 = RX Level Control Mode 2 = RX Automatic Level Control Flag (for SIP Trunk Profile 1-6)	0
84-31-17	VoIPDB Echo Canceller Setup - TDM RX Level Control Level	0 ~ 16 (-24 dB ~ +24 dB) 0 = -24 dB 1 = -21 dB : 8 = 0 dB : 15 = 21 dB 16 = 24 dB (for SIP Trunk Profile 1-6)	8
84-31-18	VoIPDB Echo Canceller Setup - TDM RX Automatic Level Control Level	0 ~ 12 (-42 dBm ~ -6 dBm) 0 = -42 dBm 1 = -39 dBm : 7 = -21 dBm : 11 = -9 dBm 12 = -6 dBm (for SIP Trunk Profile 1-6)	7
84-38-01	VoIPDB Network Side Echo Canceller Setup - Echo Canceller mode	0 = Disable 1 = Enable (for SIP Trunk Profile 1-6)	0
84-38-02	VoIPDB Network Side Echo Canceller Setup - Echo Canceller NLP mode	0 = Disable 1 = Enable (for SIP Trunk Profile 1-6)	0
84-38-03	VoIPDB Network Side Echo Canceller Setup - Echo Canceller ComfortNoise mode	0 = Disable 1 = Enable (for SIP Trunk Profile 1-6)	1
84-38-05	VoIPDB Network Side Echo Canceller Setup - Echo Canceller Tail Displacement	0 ~ 87 (0 ms ~ 870 ms) (for SIP Trunk Profile 1-6)	0

Program No.	Program Name	Input Data	Default
84-38-06	VoIPDB Network Side Echo Canceller Setup - Echo Canceller Tail Length	1 = 32 ms 2 = 48 ms 3 = 64 ms 4 = 80 ms 5 = 96 ms 6 = 112 ms 7 = 128 ms (for SIP Trunk Profile 1-6)	7
84-38-07	VoIPDB Network Side Echo Canceller Setup - Echo Canceller Default ERL Level	0 ~ 6 (- 9 dB ~ + 9 dB) 0 = - 9 dB 1 = - 6 dB 2 = - 3 dB : 5 = 6 dB 6 = 9 dB (for SIP Trunk Profile 1-6)	5
84-38-08	VoIPDB Network Side Echo Canceller Setup - Echo Canceller Echo Type	0 = Disable 1 = Line Echo Canceller 2 = Acoustic Echo Canceller (for SIP Trunk Profile 1-6)	0
84-38-10	VoIPDB Network Side Echo Canceller Setup - Tx Level Control	0 = Disable 1 = Tx Level Control mode 2 = Tx Automatic Level Control mode 3 = HLC (for SIP Trunk Profile 1-6)	0
84-38-11	VoIPDB Network Side Echo Canceller Setup - Tx Level Control Level	0 ~ 16 (- 24 ~ 24 dB) 0 = - 24 dB 1 = - 21 dB 2 = - 18 dB : 8 = 0 dB : 14 = 18 dB 15 = 21 dB 16 = 24 dB (for SIP Trunk Profile 1-6)	8
84-38-12	VoIPDB Network Side Echo Canceller Setup - Tx AutomaticLevelControl Level	0 ~ 12 (- 42 dbm ~ - 6 dbm) 0 = - 42 dBm 1 = - 39 dBm : 7 = - 21 dBm : 11 = - 9 dBm 12 = - 6 dBm (for SIP Trunk Profile 1-6)	7
84-38-13	VoIPDB Network Side Echo Canceller Setup - Tx HLC Threshold	0 ~ 42 (- 42 dBm ~ 0 dBm) 0 = - 42 dBm 1 = - 41 dBm : 42 = 0 dBm (for SIP Trunk Profile 1-6)	41
84-38-14	VoIPDB Network Side Echo Canceller Setup - Tx Signal Limiter mode	0 = Disable 1 = Enable (for SIP Trunk Profile 1-6)	0
84-38-15	VoIPDB Network Side Echo Canceller Setup - Tx Signal Limiter Threshold	0 ~ 42 (- 42 dBm ~ 0 dBm) 0 = - 42 dBm 1 = - 41 dBm : 42 = 0 dBm (for SIP Trunk Profile 1-6)	41

Program No.	Program Name	Input Data	Default
84-38-16	VoIPDB Network Side Echo Canceller Setup - Rx Level Control	0 = Disable 1 = RX Level Control Mode 2 = RX Automatic Level Control Flag (for SIP Trunk Profile 1-6)	0
84-38-17	VoIPDB Network Side Echo Canceller Setup - RTP Rx LevelControl Level	0 ~ 16 (- 24 dB ~ + 24 dB) 0 = - 24 dB 1 = - 21 dB : 8 = 0 dB : 15 = 21 dB 16 = 24 dB (for SIP Trunk Profile 1-6)	8
84-38-18	VoIPDB Network Side Echo Canceller Setup - Rx AutomaticLevelControl Level	0 ~ 12 (- 42 dBm ~ - 6 dBm) 0 = - 42 dBm 1 = - 39 dBm : 7 = - 21 dBm : 11 = - 9 dBm 12 = - 6 dBm (for SIP Trunk Profile 1-6)	7
84-31-37	VoIPDB Echo Canceller Setup - Echo Canceller NLP mode (4W)	0 = Disable 1 = Enable (for SIP Trunk Profile 1-6)	1
90-10-01	System Alarm Setup - Alarm type		Refer to Programming Manual.

Operation

SIP Trunk E.164 Support:

To make a call using E.164 number format:

1. Lift the handset or press **Speaker**.

2. Dial **00441202223344#**.

The system automatically modifies the required header fields of the SIP INVITE message using the configuration settings in the table below before forwarding to the ITSP.

PRG 84-14-13	PRG 10-02-01	PRG 10-02-02	Description Calling Party Number = 44 1509555123 Called Party Number = 00441202223344
0	44	-	Request-URI: Invite sip: 0044 1202223344@172.16.18.100 SIP/2.0 To header: To:sip:00441202223344@172.16.18.100 From header: From<sip: 44 1509555123 @172.16.0.10>
	No Setting	-	Request-URI: Invite sip: 0044 1202223344@172.16.18.100 SIP/2.0 To header: To:sip:00441202223344@172.16.18.100 From header: From<sip: 44 1509555123 @172.16.0.10>
1	44	-	Request-URI: Invite sip:+ 4400 441202223344@172.16.18.100 SIP/2.0 To header: To:sip:+ 4400 441202223344@172.16.18.100 From header: From<sip:+ 44 44 1509555123 @172.16.0.10>
	No Setting	-	Request-URI: Invite sip:+ 0044 1202223344@172.16.18.100 SIP/2.0 To header: To:sip:+ 0044 1202223344@172.16.18.100 From header: From<sip:+ 44 1509555123@172.16.0.10>
2	-	00	Request-URI: Invite sip:+441202223344@172.16.18.100 SIP/2.0 To header: To:<sip:+441202223344@172.16.18.100> From header: From<sip: 441509555123@172.16.0.10> P-Asserted-Identity: P-Asserted-Identity<441509555123@172.16.0.10> P-Preferred-Identity: P-Preferred-Identity<441509555123@172.16.0.10>
	-	No Setting	Request-URI: Invite sip: 00441202223344@172.16.18.100 SIP/2.0 To header: To:<sip: 00441202223344@172.16.18.100> From header: From<sip:441509555123@172.16.0.10> P-Asserted-Identity: P-Asserted-Identity<441509555123@172.16.0.10> P-Preferred-Identity: P-Preferred-Identity<441509555123@172.16.0.10>
3	-	-	Request-URI: Invite sip: 0044 1202223344@172.16.18.100 SIP/2.0 To header: To:sip: 0044 1202223344@172.16.18.100 From header: From<sip:+ 44 1509555123@172.16.0.10>

SIP Trunk E.164 CLIP Enhancement

Delete the + only from an incoming SIP INVITE using E.164 numbering scheme:

PRG 84-14-16	PRG 84-14-13	Description/Comments
0: OFF	0: OFF Or 1: Mode 1	When a + is presented as the international access code in a SIP INVITE for incoming calls then delete the + only.

< Example Output >

Incoming call from : +4902131795770

Displayed in terminal incoming caller history as:

```
01:          4902131795770
*    3-5 11:17
↑      ↓    Store  DEL
```

Original

Delete and replace the + and matched country code from an incoming SIP INVITE using E.164 numbering scheme:

PRG 84-14-16	PRG 84-14-13	Description/Comments
1: Mode 1	1: Mode 1	With a SIP INVITE for incoming calls. When a + is presented as the international access code along with a country code that DOES NOT match the value in PRG 10-02-01, then delete the + and add the international access code value in PRG 10-02-02 only. Or With a SIP INVITE for incoming calls. When a + is presented as the international access code along with a country code that DOES match the value in PRG 10-02-01, then delete the + and country code but DO NOT add the international access code value.

< Example Output >

Incoming call from: +4902131795770

PRG 10-02-02 = 00

Displayed in terminal incoming caller history as:

```
01:      4902131795770
*    3-5 11:17
↑      ↓      Store  DEL
```

Original

```
01:      004902131795770
*    3-5 11:17
↑      ↓      Store  DEL
```

PRG 10-02-01 = 0

```
01:      02131795770
*    3-5 11:17
↑      ↓      Store  DEL
```

PRG 10-02-01 = 49

Delete and replace the + and matched country code from an incoming SIP INVITE using E.164 numbering scheme:

PRG 84-14-16	PRG 84-14-13	Description/Comments
2: Mode 2	1: Mode 1	With a SIP INVITE for incoming calls. When a + is presented as the international access code along with a country code that DOES NOT match the value in PRG 10-02-01, then delete the + and add the international access code value in PRG 10-02-02 only. Or With a SIP INVITE for incoming calls. When a + is presented as the international access code along with a country code that DOES match the value in PRG 10-02-01, then delete the + and country code but DO NOT add the international access code value.

< Example Output >

Incoming call from: +4902131795770

PRG 10-02-02 = 00

PRG 10-02-03 = 9

Displayed in terminal incoming caller history as:

01:	4902131795770
*	3-5 11:17
↑	↓ Store DEL

Original

01:	004902131795770
*	3-5 11:17
↑	↓ Store DEL

PRG 10-02-01 = 0

01:	902131795770
*	3-5 11:17
↑	↓ Store DEL

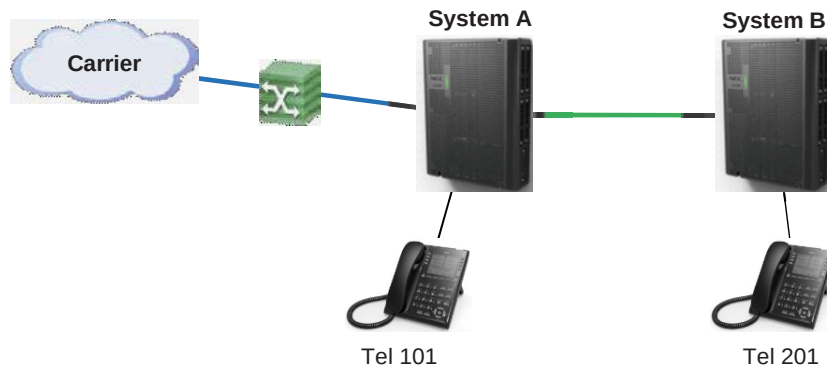
PRG 10-02-01 = 49

Making an outgoing call from history of incoming calls:

1. From an idle multiline terminal.
2. Press soft key **List**.
3. Press soft key **CID**.
4. Press **Speaker**.

SIP Multi Carrier Support**SIP Carrier and System Interconnection (Example):**

SIP Trunks are assigned to System A. The number of ports available are 16 ports. Profile 1 is port 1-8. Profile 2 is port 9-16. Profile 1 is connected to a SIP carrier. Profile 2 is a SIP System Interconnection (System B). When the user in system A makes an outbound call, the ARS service will be used. When the user dials "050", SIP carrier will be selected, and dials "2@@", SIP System Interconnection will be selected.



System Data

System A Configuration

Table 1-47 IP Settings

PRG	Name	Data
10-12	CCPU Network Setup	Default Gateway = 172.16.10.254 NAT Route = 1 (Yes) Default Gateway (WAN) = 10.1.1.254 IP Address (VoIP) = 172.16.10.10 Subnet Mask (VoIP) = 255.255.0.0
84-26	VoIPDB Basic Setup	Slot #1: IP Address = 172.16.10.20

Table 1-48 System Numbering Plan

PRG	Name	Data
11-01	System Numbering	Dial 1: 3 digits, Extension Access Dial 0: 1 digits, Trunk Access
11-02	Extension Numbering	• Port 1 ~ 32: Extension Number = 101 ~ 132
11-09	Trunk Access Code	Trunk Access Code = 0
26-01	Automatic Route Selection Service	ARS Service = 1 (Enable)
26-02	Dial Analysis Table for ARS/LCR	• Table 1 Dial = 050 Service Type = 1 (TRG) Additional Data = 3 • Table 2 Dial = 2 Service Type = 1 (TRG) Additional Data = 5

Table 1-49 IP Trunks

PRG	Name	Data
10-23	IP System Interconnection Setup	• System No: 1 System Interconnection = 1 IP Address = 172.16.20.10 Dial = 2
10-28	SIP System Information Setup	• SIP Profile 1 Domain Name = xxx.xxx.ne.jp Host Name = xxxxx Domain Assignment = 1 (Domain) • SIP Profile 2 none

PRG	Name	Data
10-29	SIP Server Information Setup	- SIP Profile 1 Default Proxy = 1 (On) Register Mode = 1 (Manual) Domain Name = xxx.yyy.zzz.ne.jp Carrier Choices = 1 (Carrier A) - SIP Profile 2 Default Proxy Port Number = 5062 Carrier Choices = 0 (Standard)
10-36	SIP Registration Information Setup	- SIP Profile 1, Register ID 0 Registration = 1 (On) User ID = v123456 Password = xxxxxxxxxx - SIP Profile 2, Register ID 0 Registration = 1 (On) User ID = 100
10-40	IP Trunk Availability	Index 1 Trunk Type = 1 (SIP) Start Port = 1 Number of Ports = 16
10-29	SIP Server Information Setup	SIP Profile 1 (Fixed) DNS Mode = 1 (On) DNS IP Address = 172.16.10.254
14-05	Trunk Group	- Port: 1 ~ 8 Group = 3 - Port: 9 ~ 16 Group = 5
14-18-05	IP Trunk Data Setup	- Port: 1 ~ 8 SIP Profile = 1 (Profile 1) - Port: 9 ~ 16 SIP Profile = 2 (Profile 2)
22-02	Incoming Service Type Setup	- Port: 1 ~ 8, Day/Night Mode: 1 ~ 8 Service Type = 3 (DID) - Port: 9 ~ 16, Day/Night Mode: 1 ~ 8 Service Type = 5 (Tie Line)
84-14-06	SIP Trunk Basic Information Setup	- SIP Profile 1 SIP Trunk Port Number = 5060 - SIP Profile 2 SIP Trunk Port Number = 5062

System B Configuration

Table 1-50 IP Settings

PRG	Name	Data
10-12	CCPU Network Setup	IP Address (VoIP) = 172.16.20.10 Subnet Mask (VoIP) = 255.255.0.0
84-26	VoIPDB Basic Setup	Slot #1: IP Address = 172.16.20.20

Table 1-51 System Numbering Plan

PRG	Name	Data
11-01	System Numbering	Dial 2: 3 digits, Extension Access Dial 0: 1 digits, Trunk Access
11-02	Extension Numbering	Port 1 ~ 32: Extension Number = 201 ~ 232
11-09	Trunk Access Code	Trunk Access Code = 0
26-01	Automatic Route Selection Service	ARS Service = 1 (Enable)

PRG	Name	Data
26-02	Dial Analysis Table for ARS/LCR	- Table 1 - Dial = 1 - Service Type = 1 (TRG) - Additional Data = 5

Table 1-52 IP Trunks

PRG	Name	Data
10-23	IP System Interconnection Setup	- System No: 1 - System Interconnection = 1 - IP Address = 172.16.10.10 - Dial = 1
10-36	SIP Registration Information Setup	- SIP Profile 1, Register ID 0 - Registration = 1 (On) - User ID = 200
10-29	SIP Server Information Setup	- SIP Profile 1 - Default Proxy Port Number = 5062 - Carrier Choices = 0 (Standard)
10-40	IP Trunk Availability	- Index 1 - Trunk Type = 1 (SIP) - Start Port = 1 - Number of Ports = 8
14-05	Trunk Group	- Port: 1 ~ 8 - Group = 5
14-18-05	IP Trunk Data Setup	- Port: 1 ~ 8 - SIP Profile = 1 (Profile 1)
22-02	Incoming Service Type Setup	- Port: 1 ~ 8, Day/Night Mode: 1 ~ 8 - Service Type = 5 (Tie Line)
84-14-06	SIP Trunk Basic Information Setup	- SIP Profile 1 - SIP Trunk Port Number = 5062

Operation

1. TEL 101 makes outbound call to SIP carrier

No.	Operation	LED	Tone	LCD 123456789012345678901234	Note
1	Off Hook		DT	<i>Clock/Calendar</i>	
2	Dial "0" + "050"	LK01 (G) ON	NT	Line 001 050 <i>Soft key</i>	
3	Dial "12345678"	LK01 (G) ON	RBT	Line 001 05012345678 <i>Soft key</i>	

2. TEL 101 makes outbound call to SIP carrier

No.	Operation	LED	Tone	LCD 123456789012345678901234	Note
1	Off Hook		NT	<i>Clock/Calendar</i>	
2	Dial "0" + "2"	LK09 (G) ON	NT	Line 009 2 <i>Soft key</i>	
3	Dial "01"	LK09 (G) ON	RBT	Line 009 201 <i>Soft key</i>	

IP Trunk - H.323

Description

H.323 is an International Telecommunication Union (ITU) standard for Packet Based Multimedia Communication Systems. The SL2100 can use H.323 to connect to another SL2100 system or a third-party product.

The feature set is limited. When using H.323, it is impossible to use the advanced networking features. The SL2100 Voice over IP Trunk - H.323 package sends the real-time voice over the corporate LAN or WAN. The voice from the telephone is digitized and then put into frames to be sent over a network using Internet Protocol.

The SL2100 Voice over IP Trunk - H.323 package allows communication using standard H.323 (Normal and Fast Start) Protocol and allows connectivity to any H.323 standards compliant voice gateway and gatekeeper. This VoIPDB also allows Registration and Authentication Server (RAS) support to register with an RAS Server and use Gatekeeper for dynamic call routing.

The VoIPDB - H.323 is an optional interface that can provide IP trunks and Tie Lines. It can operate in the following modes:

- COI
- COID
- DID
- TLI
- DTI

Depending on the requirements and resource allocation in the LAN/WAN/Internet, the VoIPDB - H.323 can be configured to use any of the following voice compressions:

- G.729 Low bandwidth requirement is used on most Wide Area Network links.
- G.711 High bandwidth requirement is usually used on Local Area Networks.
- G.722 This codec is useful in fixed network, Voice over IP applications, where the required bandwidth is typically not prohibitive.

Conditions

- A maximum of 64 IP Trunks are supported in the SL2100.
- Calling Party Name is not provided for outgoing calls on H.323 trunks.

Default Settings

None

System Availability

Terminals

All Multiline Terminals

Required Component(s)

CPU with VoIPDB

Related Features

None

Guide to Feature Programming



The items highlighted in gray are read only and cannot be changed.

Program No.	Program Name	Input Data	Default
10-03-01	ETU Setup	128	Refer to Programming Manual.
10-12-03	CPU Network Setup - Default Gateway	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0
10-12-09	CPU Network Setup - IP Address (VoIPDB)	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	172.16.0.10
10-12-10	CPU Network Setup - Subnet Mask (VoIPDB)	128.0.0.0 192.0.0.0 224.0.0.0 240.0.0.0 248.0.0.0 252.0.0.0 254.0.0.0 255.0.0.0 255.128.0.0 255.192.0.0 255.224.0.0 255.240.0.0 255.248.0.0 255.252.0.0 255.254.0.0 255.255.0.0 255.255.128.0 255.255.192.0 255.255.224.0 255.255.240.0 255.255.248.0 255.255.252.0 255.255.254.0 255.255.255.0 255.255.255.128 255.255.255.192 255.255.255.224 255.255.255.240 255.255.255.248 255.255.255.252 255.255.255.254 255.255.255.255	Refer to the programming manual for all the possible valid subnet mask entries. (default = 255.255.0.0)
10-17-02	H.323 Gatekeeper Setup - Gatekeeper IP Address	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0
10-17-04	H.323 Gatekeeper Setup - Preferred Gatekeeper	Maximum 124 characters	No Setting
10-18-01	H.323 Alias Address Setup - Alias Address	Dial up to 12 digits (0 ~ 9, *, #)	No Setting
10-18-02	H.323 Alias Address Setup - Alias Address Type	0 = E164	0
10-23-01	SIP System Interconnection Setup - System Interconnection	0 = No (Disable) 1 = Yes (Enable)	0
10-23-02	SIP System Interconnection Setup - IP Address	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0
10-23-04	SIP System Interconnection Setup - Dial Number	Up to 12 digits (0 ~ 9)	No Setting
14-02-01	Analog Trunk Data Setup - Signaling Type (DP/DTMF)	0 = Dial Pulse (10 PPS) 2 = DTMF	2
14-05-01	Trunk Group - Trunk Group Number	Trunk Port 1 ~ 128 = Priority 1 ~ 128	Refer to the Programming Manual for the default values.

Program No.	Program Name	Input Data	Default
14-06-01	Trunk Group Routing - Trunk Group	0 = Not Set 001 ~ 050 = Trunk group No. 101 ~ 150 = 100 + Networking System No. 1001 ~ 1050 = 1000 + Route Table No.	Refer to the Programming Manual for the default values.
20-08-13	Class of Service Options (Outgoing Call Service) - Set Calling Party Number	0 = Off (when set to Off the system will not send any outbound calling party information.) 1 = On (when set to ON the system will send calling party information for the station or trunk.)	COS 01 ~ 15 = 1
20-09-02	Class of Service Options (Incoming Call Service) - Caller ID Display	0 = Off 1 = On	COS 01 ~ 15 = 1
21-17-01	IP Trunk (SIP) Calling Party Number Setup for Trunk - Calling Party Number	Up to 16 digits (1 ~ 0, *, #)	No Setting
21-18-01	IP Trunk (H.323) Calling Party Number Setup for Extension - Calling Party Number	Up to 16 digits (1 ~ 0, *, #)	No Setting
22-02-01	Incoming Call Trunk Setup - Trunk Service Type	0 = Normal 1 = VRS (second dial tone if no VRS installed) 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delayed VRS 7 = ANI/DNIS 8 = DID (DDI) Mode Switching	0
44-02-01	Dial Analysis Table for ARS/F-Route Access - Dial	Up to eight digits (Use line key 1 for a Don't Care digit, @)	No Setting
44-02-02	Dial Analysis Table for ARS/F-Route Access - Service Type	0 = No setting (None) 1 = Extension Call (Own) 2 = ARS/F-Route Table (F-Route) 3 = Dial Extension Analyze Table (Option)	0
44-02-03	Dial Analysis Table for ARS/F-Route Access - Additional Data	1 = Delete Digit = 0 ~ 255 (255 = Delete All Digits) 2 = 0 ~ 100 (0 = No Setting) 3 = Dial Extension Analyze Table Number = 0 ~ 4 (0 = No Setting)	0
44-05-01	ARS/F-Route Table - Trunk Group Number		0
44-05-09	ARS/F-Route Table - Maximum Digit		0
84-01-02	H.323 Trunk Basic Information Setup - Number of G.711 audio frames	1 ~ 4	3
84-01-03	H.323 Trunk Basic Information Setup - G.711 VAD mode	0 = Disable 1 = Enable	0
84-01-04	H.323 Trunk Basic Information Setup - G.711 Type	0 = A-law 1 = μ -law	0
84-01-05	H.323 Trunk Basic Information Setup - Number of G.729 audio frames	1 ~ 6	3
84-01-06	H.323 Trunk Basic Information Setup - G.729 VAD mode	0 = Disable 1 = Enable	0
84-01-07	H.323 Trunk Basic Information Setup - G.729 Jitter Buffer(min)	0 ~ 300 ms	30
84-01-08	H.323 Trunk Basic Information Setup - G.729 Jitter Buffer (average)	0 ~ 300 ms	60

Program No.	Program Name	Input Data	Default
84-01-09	H.323 Trunk Basic Information Setup - G.729 Jitter Buffer (average)	0 ~ 300 ms	120
84-01-15	H.323 Trunk Basic Information Setup - Jitter Buffer Mode	1 = Fixed 3 = Self adjusting	3
84-01-16	H.323 Trunk Basic Information Setup - G.711 Jitter Buffer (min)	0 ~ 300 ms	30
84-01-17	H.323 Trunk Basic Information Setup - G.711 Jitter Buffer (average)	0 ~ 300 ms	60
84-01-18	H.323 Trunk Basic Information Setup - G.711 Jitter Buffer (max)	0 ~ 300 ms	120
84-01-22	H.323 Trunk Basic Information Setup - VAD Threshold	1 ~ 30 (- 19 dB ~ + 10 dB and self adjustment) 1 = - 19 dB (- 49 dBm) : 20 = 0 dB (- 30 dBm) : 29 = 9 dB (- 21 dBm) 30 = 10 dB (- 20 dBm)	20
84-01-33	H.323 Trunk Basic Information Setup - Priority CODEC setting Priority of voice encoding method.	0 ~ 3 0 = G711_PT 1 = Not Used 2 = G729_PT 3 = G722_PT	0
84-33-06	FAX over IP Setup - T.38 FAX Max Speed	1 = V.27ter, 4800 bps 2 = V.29, 9600 bps	2
84-33-08	FAX over IP Setup - T.38 Error protection depth for Signaling	0 ~ 2	0
84-33-09	FAX over IP Setup - T.38 Error protection depth for Data	0 ~ 2	0
84-33-10	FAX over IP Setup - TCF Operation Setting	1 = Training signal (TCF) of the fax is locally generated and checked. 2 = Training signal (TCF) of the fax is sent over the network.	1
84-33-01	FAX over IP Setup - FAX Relay Mode	0 = Disable 1 = Enable 2 = Each port mode	0
84-34-01	VoIPDB DTMF Setup - DTMF Relay Mode	0 = Disable 1 = RFC2833 2 = H.245	0
84-01-63	H.323 Trunk Basic Information Setup - Number of G.722 audio frames	1 ~ 4 1 = 10 ms 2 = 20 ms 3 = 30 ms 4 = 40 ms	3
84-01-65	H.323 Trunk Basic Information Setup - G.722 Jitter Buffer (min)	0 ~ 300 ms	30
84-01-66	H.323 Trunk Basic Information Setup - G.722 Jitter Buffer (average)	0 ~ 300 ms	60
84-01-67	H.323 Trunk Basic Information Setup - G.722 Jitter Buffer (max)	0 ~ 300 ms	120

Operation

None

IP Trunk – TLS Support on SIP Trunk

Description

With Version 3.00 or higher, the TLS protocol is supported on SIP trunks. The SIP message encryption acts only between the SL2100 and a SIP server or a SL2100 and SL2100 (SIP Interconnection).

Conditions

- NAT Traversal is not supported.
- Packets between SL2100 and SIP terminals are not encrypted.
- TLS does not work with carrier type D, J and M.

TLS with SIP Server

- Trusted connection is possible by authentication of SIP server. For authentication, the root certificate of a SIP server to SL2100 must be registered.
- If no root certificate is registered to the SL2100, creating a TLS connection is possible but it would not be trusted.
- Only certificates using a PEM format is supported. The extension of a certificate file is .pem or .PEM.
- The file name, including the extension is limited to a maximum of 32 characters.
- The SL2100 system retains certificate files even after system restart.
- Certificates can be checked, added and deleted by WebPro under Certificate Registration.
- Only MF level or IN level User can use Certificate Registration on WebPro. Certificate Registration is not displayed when SA level or UA level user logs in.
- If the user set something in Program 84-14-22, the SIP Server is authenticated and if it fails, the TLS connection would not be possible.
- If the user set nothing in Program 84-14-22, the authentication is skipped, and SL2100 tries to create an untrusted connection.
- The trunk cannot be used if:
 - The input certificate is invalid. (ex. error in the term of validity)
 - The input certificate does not exist.
- If the certificate set in Program 84-14-22 has expired or been deleted, the new TLS connection cannot be created and the trunk cannot be used. This will not affect a communication that is already established.

TLS with SIP Connection

- To compose SIP interconnection, there are following cases.
 - No authentication
Setting a certificate is not necessary. If no CA Certificate is set, it is connected unconditionally without authentication. Encryption is also done in this case.
 - Authenticate as SL2100 interconnection Group
All systems have the same server certificate, key and CA Certificate.
 - Authenticate each system
The systems have respective server certificates and keys. Other systems have the corresponding CA Certificate.
- The SL2100 Server Certificate and Private Key are both used when the SL2100 receives a request of TLS connection.
- When a server certificate is not registered, the SL2100 uses a self-signed certificate.
- Only certificates using a PEM format is supported. The extension of certificate file is .pem or .PEM.
- The supported extension of a Private Key file is .key or .KEY.
- The file name, including the extension is limited to a maximum of 32 characters.
- The SL2100 system retains certificate files even after system restart.
- Certificates can be checked, added and deleted by WebPro under Certificate Registration.
- Only MF level or IN level users can use Certificate Registration on WebPro. Certificate Registration is not

displayed when SA level or UA level user logs in.

- Certificate file name is set in Program 10-72-01 and Private Key file name is set in Program 10-72-02, if the same certificate doesn't exist in SL2100 system, the trunk cannot be used.
- When the server certificate is set in Program 10-72-01, the Private Key must be set in Program 10-72-02. If the Private Key is invalid or doesn't exist, the trunk cannot be used.

SRTP Support

- To encrypt voice packets, set Program 84-27-03 (SRTP Mode) to **1 Enable**.
- If TLS protocol is not used, an encryption of voice packets will not work, even if SRTP Mode is set to enable.
- In the case of SIP interconnection, if P2P is Off between two standard SIP terminals while they are communicating and SRTP is enabled, the voice packets are encrypted. P2P settings are Program 14-18-03 (P2P Mode) set to **0 Disable** and Program 15-05-50 (Peer to Peer Mode) set to **0 Disable**.
- In case of SIP interconnection, if two standard SIP Terminals have a P2P external call, the voice packets aren't encrypted even though SRTP is enabled because they don't go through the SL2100. P2P settings are Program 14-18-03 (P2P Mode) set to **1 Enable** and Program 15-05-50 (Peer to Peer Mode) set to **1 Enable**.

- Refer to Example of Terminal Display Alarms for examples of displayed alarms (Program 90-50-01).

Error	Cause	Correction	Display (28 Characters)
License not available	Encryption license not installed.	License check passes. (When the TLS connection is reestablished or a TLS SIP call is initiated.)	<pre> 1-1 MON 0:00AM TLS ALARM(P:00) No License List Dir VMsg ↓ </pre>
Error in CA Certificate (Program 84-14-22)	Failed to validate CA Certificate.	When TLS connection executes, after setting correct file in Program 84-14-22 (Profile: XX).	<pre> 1-1 MON 0:00AM TLS ALARM(P:XX) Cert Error01 List Dir VMsg ↓ </pre> XX: SIP Profile
Error in Server Certificate (Program 10-72-01)	Failed to validate Server Certificate.	When SL2100 receives offer of TLS connection, after setting correct file in Program 10-72-01.	<pre> 1-1 MON 0:00AM TLS ALARM(P:00) Cert Error02 List Dir VMsg ↓ </pre>
Error in Private Key (Program 10-72-02)	Failed to validate Private Key.	When SL2100 receives offer of TLS connection, after setting correct file in Program 10-72-01.	<pre> 1-1 MON 0:00AM TLS ALARM(P:00) Cert Error03 List Dir VMsg ↓ </pre>
Error in Server Authentication	Failed to authenticate server.	When SL2100 can initiate TLS connection.	<pre> 1-1 MON 0:00AM TLS ALARM(P:XX) Auth ErrorYY List Dir VMsg ↓ </pre> XX: SIP Profile YY: Authentication Result 01: Certificate is not yet valid 02: Certificate has expired 03: Self-signed Certificate 04: Can't identify server 00: Internal error Refer to Authentication Result for Error Codes.

Authentication Result

Code	Error	Reason
01	Certificate is not yet valid	The certificate in Program 84-14-22 is not yet valid or is expired. Or the certificate received from SIP server is not yet valid or is expired.
02	Certificate has expired	
03	Self-signed Certificate	The certificate received from SIP server is Self-Signed certificate and same certificate is not set in Program 84-14-22.
04	Can't identify server	Can't identify server using a certificate in Program 84-14-22.

Default Settings

None

System Availability**Terminals**

None

Required Component(s)

- Built-In VoIP (CPU)/VoIPDB
- 0030-SL2100 Encryption Lic

Related Features

None

Guide to Feature Programming

The Level 1, Level 2 and Level 3 columns indicate the programs that are assigned when programming this feature in the order they are most commonly used. These levels are used with PCPro and WebPro wizards for feature programming.

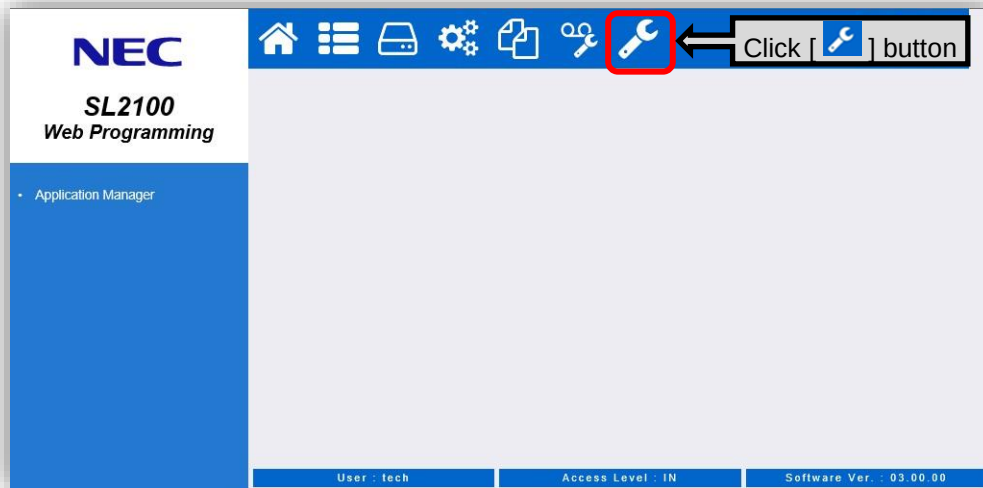
- Level 1 – these are the most commonly assigned programs for this feature.
- Level 2 – these are the next most commonly assigned programs for this feature.
- Level 3 – these programs are not often assigned and require an expert level working knowledge of the system to be properly assigned.

Program Number	Program Name/Description	Input Data	Default	Level		
				1	2	3
10-28-03	SIP System Information Setup – Transport Protocol Define the Transport type. This option is always set to UDP.	0 = UDP 1 = TCP 2 = TLS Profile 1 ~ 2	0	X		
10-72-01	Network Security Setup – Server Certificate Assign the Server Certificate file's name for SL2100.	Maximum of 32 characters	No setting		X	
84-14-21	SIP Trunk Basic Information Setup – SIP Trunk TLS Port Number Assign the SIP Trunk TLS Port Number.	0 ~ 65535	Defaults: 5061 = SIP Profile 1 5063 = SIP Profile 2 5091 = SIP Profile 3 5093 = SIP Profile 4 5095 = SIP Profile 5 5097 = SIP Profile 6		X	
84-14-22	SIP Trunk Basic Information Setup – TLS Certificate Assign the Certificate file's name for TLS.	Maximum of 32 characters	No setting		X	
84-27-03	IPL Basic Setup – SRTP Mode Setup Enable/Disable SRTP mode to Enable/Disable voice packet encryption.	0 = Disable 1 = Enable	0		X	
90-10-01	System Alarm Setup – Alarm Type Set the alarm type 74. Alarm 74 Set system alarm for TLS SIP error information.	0 = Not Set 1 = Major Alarm 2 = Minor Alarm	0		X	

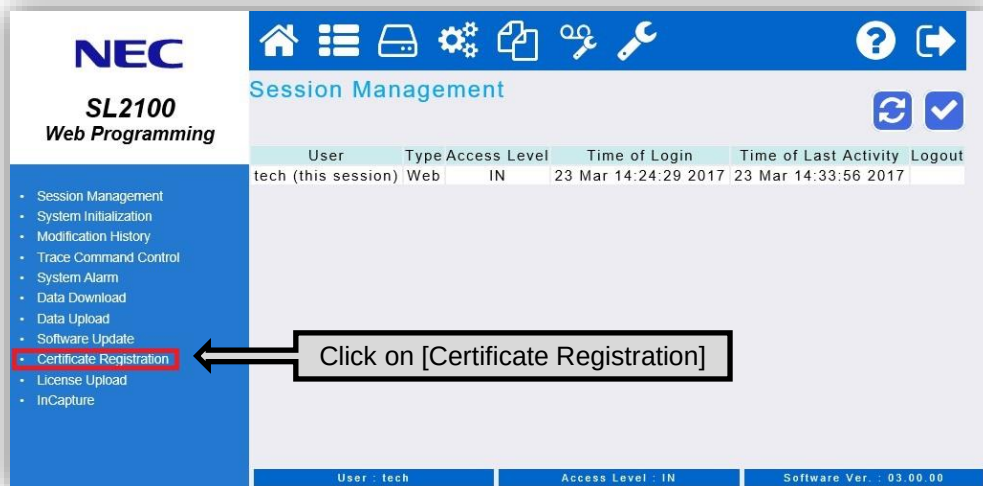
Operation

Certificate Registration in WebPro:

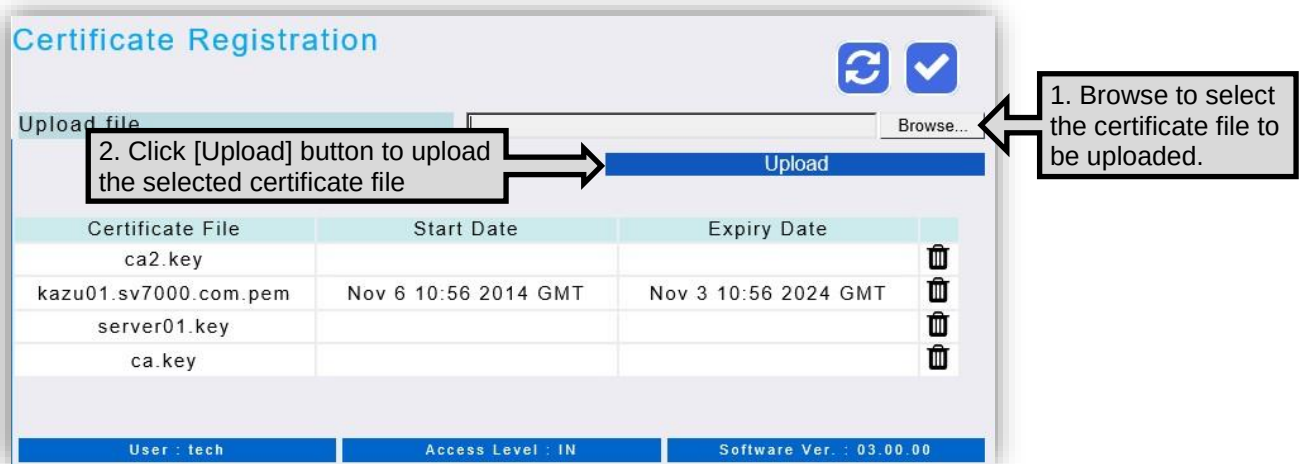
1. Login to WebPro at MF or IN level.
2. Click [] button to go to [Session Management] menu.



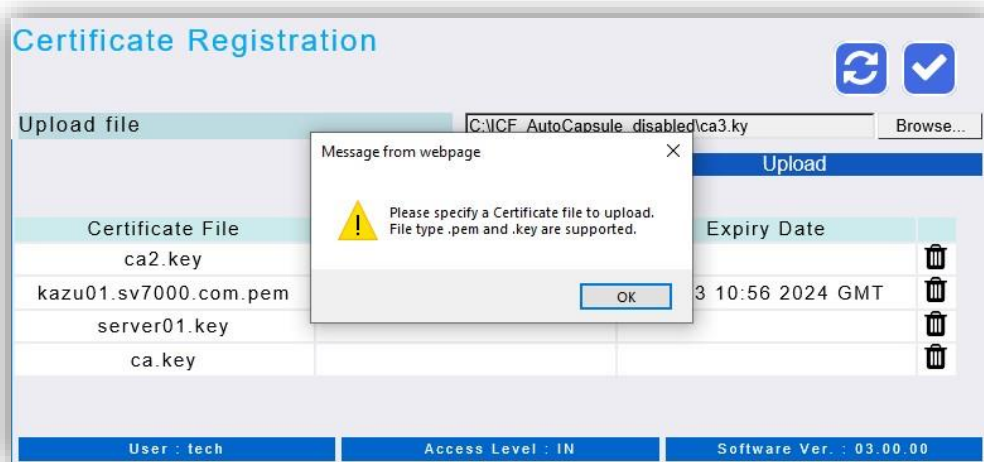
3. Under Administration, click on Certificate Registration.



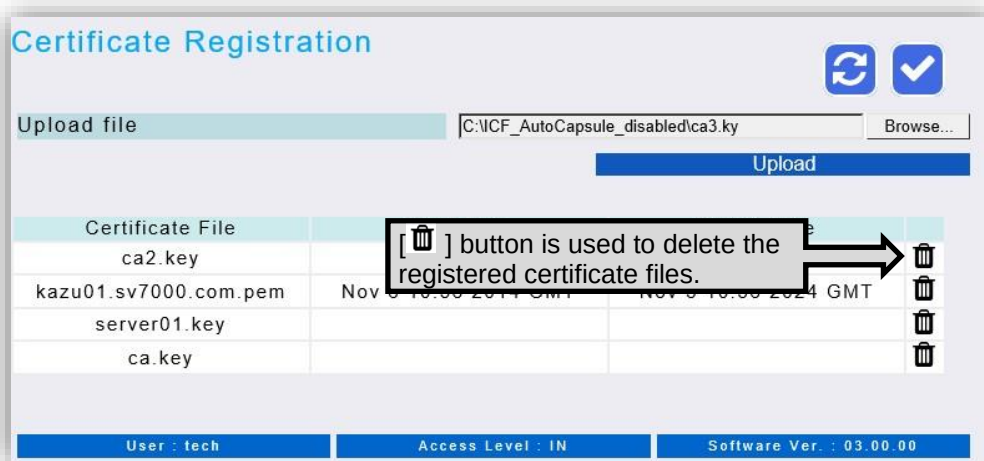
4. Select the certificate file and click on Upload.



5. If no file is selected or invalid extension is selected the following error is displayed:



6. A maximum of 10 files can be registered. With 10 registered files, the Upload button is deactivated, preventing the user from registering a new file.
7. There is a list of the Certificate and Private Key files registered with SL2100 on the Certificate Registration page. Not Before and Not After columns of Private Key files are displayed as a blank.
8. The page is reloaded if the certificate has been uploaded and the certificate file's name is displayed in the list.
9. To delete, find the certificate file and select the [] button located on the same line.



ISDN Compatibility

Description

ISDN-BRI

Integrated Service Digital Network - Basic Rate Interface (ISDN-BRI) is a Public Switched Telephone Network (PSTN) service that provides two B channels and a D channel (2B + D) for voice call trunking. The B channels provide two voice path connections. Caller ID is usually a standard feature on ISDN- BRI provided trunks. Caller ID indication displays the calling party telephone number on the LCD of the Multiline Terminal for CO incoming calls. This interface provides voice communication path only.

ISDN-PRI

ISDN-PRI (Integrated Service Digital Network - Primary Rate Interface) is a Public Switched Telephone Network (PSTN) service that provides 30 B channels and 2 D channels (30B+2D) for trunking. Caller ID indication displays the calling party telephone number on the LCD of the Multiline Terminal for CO incoming calls. This interface provides voice communication path only.

ISDN - BRI/PRI Features

- **DID Line Service**
When configured for DID Line Service, the trunks emulate Loop Start or Ground Start trunks for outgoing calls and DID trunks for incoming calls.
- **Calling Line Identification Presentation (CLIP)**
PRG 10-03-05: ETU Configuration - CLIP Information Announcement, will allow the Calling Party Number IE in the Setup Message for a call when placed out an ISDN Trunk.
- **Calling Party Number (CPN) Presentation from Station**
Calling Party Number (CPN) Presentation from Station allows each unique station or virtual extension 10-digit number (representing the DID number of the originating station) to be sent out over the ISDN Network, if it is programmed. If there is no Extension Calling Number assigned, the system will send the calling number for the ISDN trunk. If both the extension and trunk information is programmed, the extension information is sent as it takes priority.
- **Calling Party Name:**
If programmed, Calling Party Name allows the station name to be sent out over the ISDN network. A system wide name can be programmed to be sent over the network or the name can be defined on a per station basis. If both are programmed, the system wide name takes priority over the station name.
- **SMDR Includes Dialed Number**
The SMDR report can optionally print the trunk name (entered in system programming) or the number the incoming caller dialed (i.e., the dialed ISDN digits). This gives you the option of analyzing the SMDR report based on the number your callers dial. (This option also applies to a DID trunk.)
- **Display Shows Why Caller ID is Not Available**
With Caller ID enabled, the system provides information for ISDN calls that do not contain the Caller ID information. If the Caller ID information is restricted, the telephone display shows PRIVATE. If the system is not able to provide Caller ID information because the Telco information is not available, then the display shows OUT OF AREA.

Conditions

- Primary Rate Interface (PRI):
The system is compatible with ISDN Primary Rate Interface (PRI) services. PRI services currently supported include:
 - Basic PRI Call Control (BCC)
 - Display of incoming caller's name and number when allowed by Telco
 - Routing in the system based on the number the caller dialed
 - ISDN maintenance functions (such as In Service/Out of Service Messaging)
 - Speech and 3.1 KHz audio

PRI capability requires the installation of 1PRIDB-C1. Each PRI circuit provides 32 PRI channels (30B + 2D). The T1/PRI Interface uses a single slot. When installed, the T1/PRI Interface uses the first block of 32 consecutive trunks.
- When using fractional PRI, the board comes up as zero ports until PRG 10-03-21 is set to the 4/8/12/16/20/24/28(auto), and then reset.
- If fractional PRI has the number of ports changed, the Trunk Port number might change if they become split or fit into an empty gap of trunk ports.
- If using a CSU/DSU, PRG 10-03-13 must be set to 0. If not using a CSU/DSU, PRG 10-03-13 must be set to 1~7 or anything other than 0.
- Restrictions for Calling Party Name:
The SL2100 supports receiving the name from the Network in supported formats only and cannot send the Calling Name. Refer to [Table 1-53 Restrictions for Calling Party Names](#).

Table 1-53 Restrictions for Calling Party Names

Protocols	Name Delivery Formats
NI-2	Facility Information Elements
4ESS (AT&T Custom)	Not Supported
AT&T 5ESS Lucent Custom	Facility Information Element
DMS-100 (Custom) *	Display Information Element *
DMS-100 (National; ISDN) **	Facility Information Element **

* Nortel Specification NIX-A211-1

** Nortel Specification NIS-A233-1

- CO Line Service is not supported.
ISDN - PRI cannot be configured for CO Emulation

- B-Channel to Trunk Association

When an Incoming ISDN-BRI/PRI call is received, the system assigns the lowest trunk number of the ISDN circuit to the incoming call associated with the B-Channel. When an Outgoing call is placed using the ISDN-BRI/PRI, the system assigns the Trunk and B-Channel association according to the chart below. This is based on the Trunk-to-Trunk Group and Trunk Group Priority assignment in (PRG 14-05-01).

Refer to the charts below for examples(23B):

Incoming Call		Trunk Number	B-Channel Number
Station User Talking on TK009	→	9	1
		10	2
		11	3
		12	4
		13	5
		14	6
		15	7
		16	8
		17	9
		18	10
		19	11
		20	12
		21	13
		22	14
		...31	...23
		← Incoming call from the Network on Channel 23. In most cases, the Network will control/select the B-Channel used for an incoming call.	

Outgoing Call		Trunk Number	Trunk Group	Trunk Priority	B-Channel Number
Station user places outgoing trunk all by dialing Trunk Access code. Outgoing call is placed on the associated B-Channel.	→	9	1	9	1
		10	1	8	2
		11	1	7	3
		12	1	6	4
		13	1	5	5
		14	1	4	6
		15	1	3	7
		16	1	2	8
		17	1	1	9
		18	2	3	10
		19	2	2	11
		20	2	1	12
		21	3	1	13
		22	3	10	14
		...31	3	...1	...23



In addition to PRI interface ETUs, PRI also requires a CSU/DSU Unit and interconnecting cables to interface with the Telco.

- Basic Rate Interface (BRI)

Caller ID Name to Single Line Terminal is NOT supported for ISDN (BRT) Trunks.

The system is compatible with ISDN Basic Rate Interface (BRI) services. BRI services currently supported include:

 - Basic BRI Call Control (BCC)
 - Point-to-Point BRI Terminal Connection (no daisy-chaining)
 - Multipoint BRI Terminal Connection (daisy-chaining)

BRI services require the installation of 2BRIDB-C1. Each 2BRIDB-C1 has two BRI circuits. The 2BRIDB-C1 mounted to the 082U-B1/008U-()1/000U-C1 board.

For each BRI line, two different Terminal Endpoint Unidentified (TEIs) are assigned to two different Service Profile Identifiers (SPIDs).

The two different SPIDs for each BRI line, are related to different trunk logical port numbers. One BRI provides two trunk logical ports when it is connected to a CO line. Each SPID is assigned to a different TEI. This relationship is made in the initialization of the BRI line when it is connected to the CO.

This relationship between SPID and TEIs are created as follows.

LOGICAL-PORT-NUMBER + 0 = SPID-1

LOGICAL-PORT-NUMBER + 1 = SPID-2

When using the SMDR reports for BRI, all incoming BRI calls are displayed under the CLASS column as IVIN.
- Automatic Data Link Failure Recovery

If a data link error is detected by the BRI ETU, the system tries to recover the data link and send the SPID to the central office. To provide this enhancement, the BRI ETU must be able to indicate to the system when a data link error has occurred.

In addition to the BRI Interface ETU, BRI Services require the installation of NT1 Network Terminators and interconnecting cabling.
- CO Line Service is not supported

ISDN-BRI cannot be configured for CO Emulation
- BRI and DID Callers with Non-Matching SPID Numbers

This feature allows you to determine whether the system checks the called party number with the SETUP message and the SPID setup. Depending on the system programming, this can allow DID calls to be received on BRI trunks and direct them according to the DID Translation Table (PRG 22-11).
- Special Conditions Related to Ordering DID Service For ISDN-BRI

Telcos may refer to this in different ways. The reference Verizon uses to order such service is Additional Directory Numbers with no new terminating equipment (only a dialable number). When you want Additional Directory Numbers to hunt when a B-Channel is busy, the service may be called Busy Diversion.
- Calling Party Number (CPN) presentation from station is available for virtual extensions.
- The trunk setting (PRG 20-19-09) for sending the caller name on outgoing ISDN calls takes priority over the same setting for the station (PRG 15-01-01).
- When programmed, Calling Party Name will be sent on calls that originate from a station (MLT, SLT, or IP Multiline) or an incoming trunk (Analog or ISDN).
- Calling Party Name supports up to 12 ASCII characters.
- When a call originates from a virtual extension, the Calling Party Name for the virtual extension is sent. It does not follow the setting in PRG 15-18-02.
- Calling Party Name is dependant upon the carrier. The network carrier must allow the SL2100 to edit the Calling Party Name information.
- SL2100 does not support ISDN sub-addressing.

Default Settings

None

System Availability

Terminals

Not Applicable

Required Component(s)

To provide ISDN-PRI trunk connection:

- 1PRIDB-C1

To provide ISDN-BRI trunk connection:

- 2BRIDB-C1
- NT-1 for each BRI (locally provided)

Related Features

Central Office Calls, Answering

Central Office Calls, Placing

Direct Inward Dialing (DID)

Direct Inward Line (DIL)

Forced Trunk Disconnect

Station Message Detail Recording

Transfer

Guide to Feature Programming

ISDN - BRI Installation:

Program No.	Program Name	Input Data	Default
10-03-01	ETU Setup (BRIA PKG) - ISDN Line Mode	0 = No Setting 1 = T-Point 2 = S-Point 3 ~ 5 = Not Used 6 = S-Point (Leased Line)	1
10-03-03	ETU Setup (BRIA PKG Setup) - Connection Type	0 = Point-to-Multipoint 1 = Point-to-Point	0
10-03-04	ETU Setup (BRIA PKG Setup) - Layer 3 Timer Type	1 ~ 5	1
10-03-08	ETU Setup (BRIA PKG Setup) - Dial Sending Mode	0 = Enblock Sending 1 = Overlap Sending	1
10-03-09	ETU Setup (BRIA PKG Setup) - Dial Information Element	0 = Keypad Facility 1 = Called Party Number	1
21-12-01	ISDN Calling Party Number Setup for Trunks - Calling Party Number Data	Maximum of 16 digits (0 ~ 9, *, #) Most Telco's will only accept 10 digits.	No Setting

ISDN - PRI Installation:

Program No.	Program Name	Input Data	Default
10-03-04	ETU Setup (PRTA PKG Setup) - Layer 3 Timer Type	1 ~ 5	1
10-03-06	ETU Setup (PRTA PKG Setup) - Length of Cable	0 = Level 1 1 = Level 2 2 = Level 3 3 = Level 4 4 = Level 5	2
10-03-08	ETU Setup (PRTA PKG Setup) - Dial Sending Mode	0 = Enblock Sending 1 = Overlap Sending	1
10-03-09	ETU Setup (PRTA PKG Setup) - Dial Information Element	0 = Keypad Facility 1 = Called Party Number	1
10-03-18	ETU Setup (PRTA PKG Setup) - Type of Number	0 = Unknown 1 = International number 2 = National number 3 = Network Specific number 4 = Subscriber number 5 = Abbreviated number	0
10-03-19	ETU Setup (PRTA PKG Setup) - Numbering Plan Identification	0 = Unknown 1 = ISDN numbering plan 2 = Data numbering plan 3 = Telex numbering plan 4 = National standard numbering plan 5 = Private numbering plan	0
10-03-20	ETU Setup (PRTA PKG Setup) - Network Exchange Selection	0 = Standard 3 = DMS (A211) 4 = 5ESS 5 = DMS (A233) 6 = 4ESS 7 = NI2	0
10-03-21	ETU Setup (PRTA PKG Setup) - PRI Number of Ports	0 = Auto 1 = 4 Ports 2 = 8 Ports 3 = 12 Ports 4 = 16 Ports 5 = 20 Ports	0
10-39-01	Fractional Setup - Fractional	0 = Disable (when disabled the system will assign the PRI as a full PRI trunks.) 1 = Enable (when enabled the system will not assign any trunks to the PRI, the trunks must be manually configured.)	0
10-51-01	PRTA Mode Selection- PRI Selection	0 = PRI	0: PRI
14-05-01	Trunk Group - Trunk Group Number	Trunk Port 1 ~ 128 = Priority 1 ~ 128	Refer to Programming Manual.
21-01-03	System Options for Outgoing Calls - Trunk Inter-digit Time (External)	0 ~ 64800 seconds	10
21-12-01	ISDN Calling Party Number Setup for Trunks - Calling Party Number Data	Maximum of 16 digits (0 ~ 9, *, #) Most Telco's will only accept 10 digits.	No Setting

DID Services for either ISDN - BRI or PRI:

Program No.	Program Name	Input Data	Default
22-02-01	Incoming Call Trunk Setup - Trunk Service Type	0 = Normal 1 = VRS (second dial tone if no VRS installed) 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delayed VRS 7 = ANI/DNIS 8 = DID (DDI) Mode Switching	0
22-09-01	DID Basic Data Setup - Dial-In Receive digit	1 ~ 8	2
22-11-01	DID Translation Table - Received Number	Maximum eight digits (0 ~ 9, *, #, @)	Refer to Programming Manual.
22-11-02	DID Translation Table - Target Number	Maximum 36 digits (0 ~ 9, *, #, @)	Refer to Programming Manual.

Calling Party Number Presentation for either ISDN - BRI or PRI:

Program No.	Program Name	Input Data	Default
10-03-05	ETU Setup (PRTA PKG Setup) - CLIP Information Announcement	0 = No 1 = Yes	1
15-01-04	Basic Extension Data Setup - ISDN Caller ID	0 = Disabled (CPN is NOT sent.) 1 = Enabled (CPN is sent.)	1
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-08-13	Class of Service Options (Outgoing Call Service) - Set Calling Party Number	0 = Off (when set to Off the system will not send any outbound calling party information.) 1 = On (when set to ON the system will send calling party information for the station or trunk.)	COS 01 ~ 15 = 1
21-12-01	ISDN Calling Party Number Setup for Trunks - Calling Party Number Data	Maximum of 16 digits (0 ~ 9, *, #) Most Telco's will only accept 10 digits.	No Setting
21-13-01	ISDN Calling Party Number Setup for Extensions - Calling Party Number Data	Maximum of 16 digits (0 ~ 9, *, #) Most Telco's will only accept 10 digits.	No Setting

ISDN - PRI Network Specific Assignment:

Program No.	Program Name	Input Data	Default
26-02-07	Dial Analysis Table for ARS/LCR - Network Specified Parameter Table	0 ~ 16	0

Program No.	Program Name	Input Data	Default
26-12-01	Network Specific Parameter Table for ARS - Called Party Number - Type of Number Selection	0 = System Default 1 = Unknown 2 = International No. 3 = National No. 4 = Network Specific No. 5 = Subscriber No. 6 = Abbreviated No.	0
26-12-02	Network Specific Parameter Table for ARS - Called Party number - Numbering Plan Identification Selection	0 = System Default 1 = Unknown 2 = ISDN Plan 3 = Data Plan 4 = Telex Plan 5 = National Standard Plan 6 = Private Plan	0
44-05-11	ARS/F-Route Table - Network Specified Parameter Table	0 ~ 16	0

SMDR Dialed Digits for either ISDN - BRI or PRI:

Program No.	Program Name	Input Data	Default
35-02-15	SMDR Output Options - CLI/DID Number Switching	0 = CLI (CLIP) 1 = DID Calling Number 2 = Calling Party Name	0
35-02-16	SMDR Output Options - Trunk Name or Received Dialed Number	0 = Trunk Port Name 1 = Received Dialed Number 2 = Both 3 = Both (8digits)	0

General ISDN Programs:

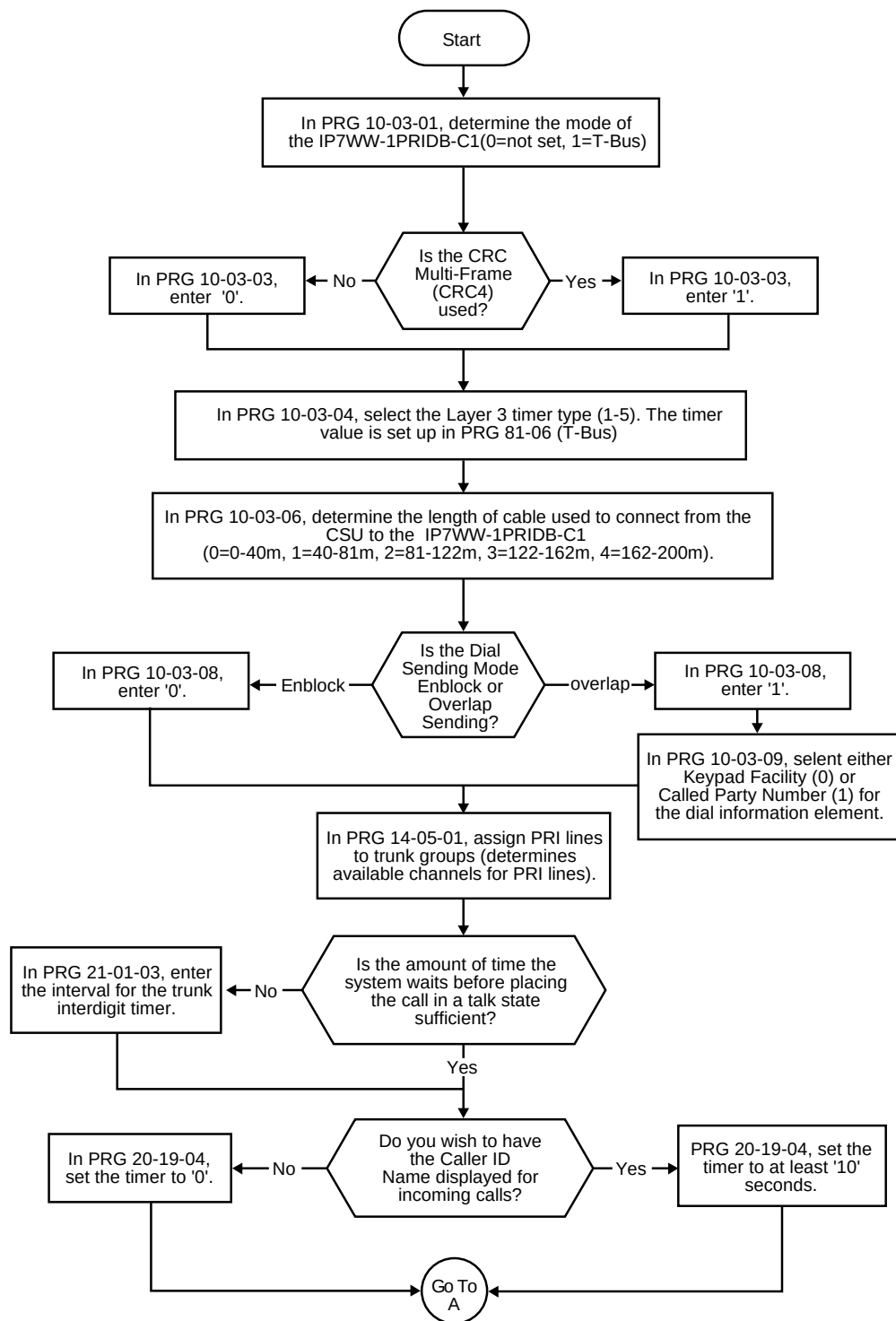
Program No.	Program Name	Input Data	Default
14-01-13	Basic Trunk Data Setup - Trunk-to-Trunk Transfer	0 = Disable (No) 1 = Enable (Yes)	1
15-02-29	Multiline Telephone Basic Data Setup - PB Back Tone Level	1 ~ 63 (- 15.5 dB ~ + 15.5 dB)	32 (0 dB)
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-09-02	Class of Service Options (Incoming Call Service) - Caller ID Display	0 = Off 1 = On	COS 01 ~ 15 = 1
20-09-03	Class of Service Options (Incoming Call Service) - Sub Address Identification	0 = Off 1 = On	COS 01 ~ 15 = 0
20-11-11	Class of Service Options (Hold/Transfer Service) - Automatic On-Hook Transfer	0 = Off 1 = On	COS 01 ~ 15 = 0
20-11-14	Class of Service Options (Hold/Transfer Service) - Trunk-to-Trunk Transfer Restriction	0 = Off 1 = On	COS 01 ~ 15 = 0
20-11-21	Class of Service Options (Hold/Transfer Service) - Restriction for Tandem Trunking on Hang Up	0 = Allow 1 = Deny	COS 01 ~ 15 = 0

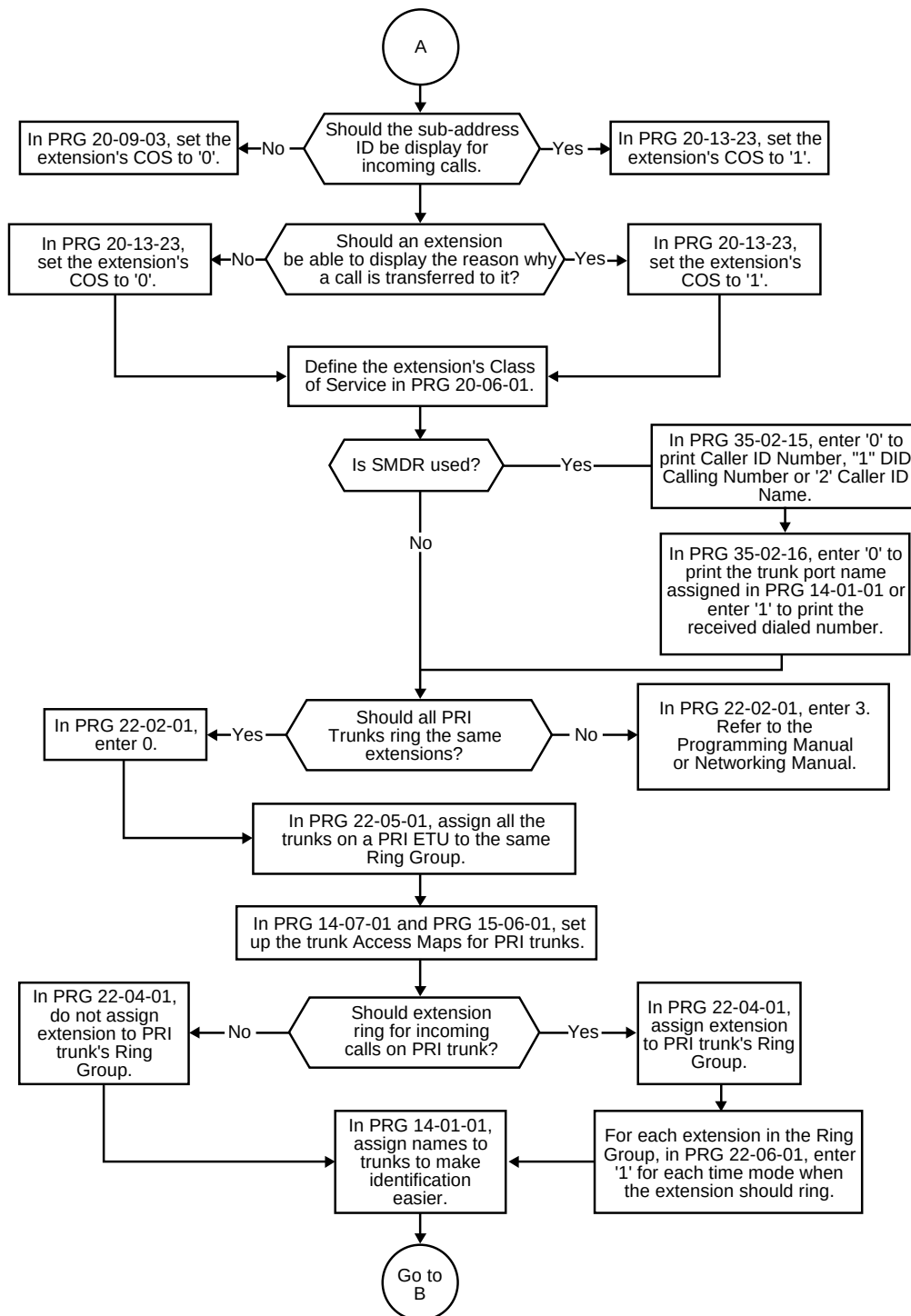
Program No.	Program Name	Input Data	Default
20-13-23	Class of Service Options (Supplementary Service) - Display the Reason for Transfer	0 = Off 1 = On	COS 01 ~ 15 = 0
20-19-04	System Options for Caller ID - Wait Facility IE Timer	0 ~ 64800 seconds	10
20-25-14	ISDN Options - No Response Release Send	0 = Off 1 = On	0
20-07-26	Class of Service Options (Administrator Level) - Dial-In Mode Switch	0 = Off (Station cannot control DDI switching.) 1 = On (Station can control DDI switching.)	COS 1 ~ 15 = 1
22-13-01	DID Trunk Group to Translation Table Assignment - Translation Table	0 ~ 20 (0 = No Setting)	1
22-17-04	Dial-In Conversion Table Area Setup for Time Pattern - Dial-In Conversion Table Number	1 ~ 1000 (These are the table entries in PRG 22-11.)	0

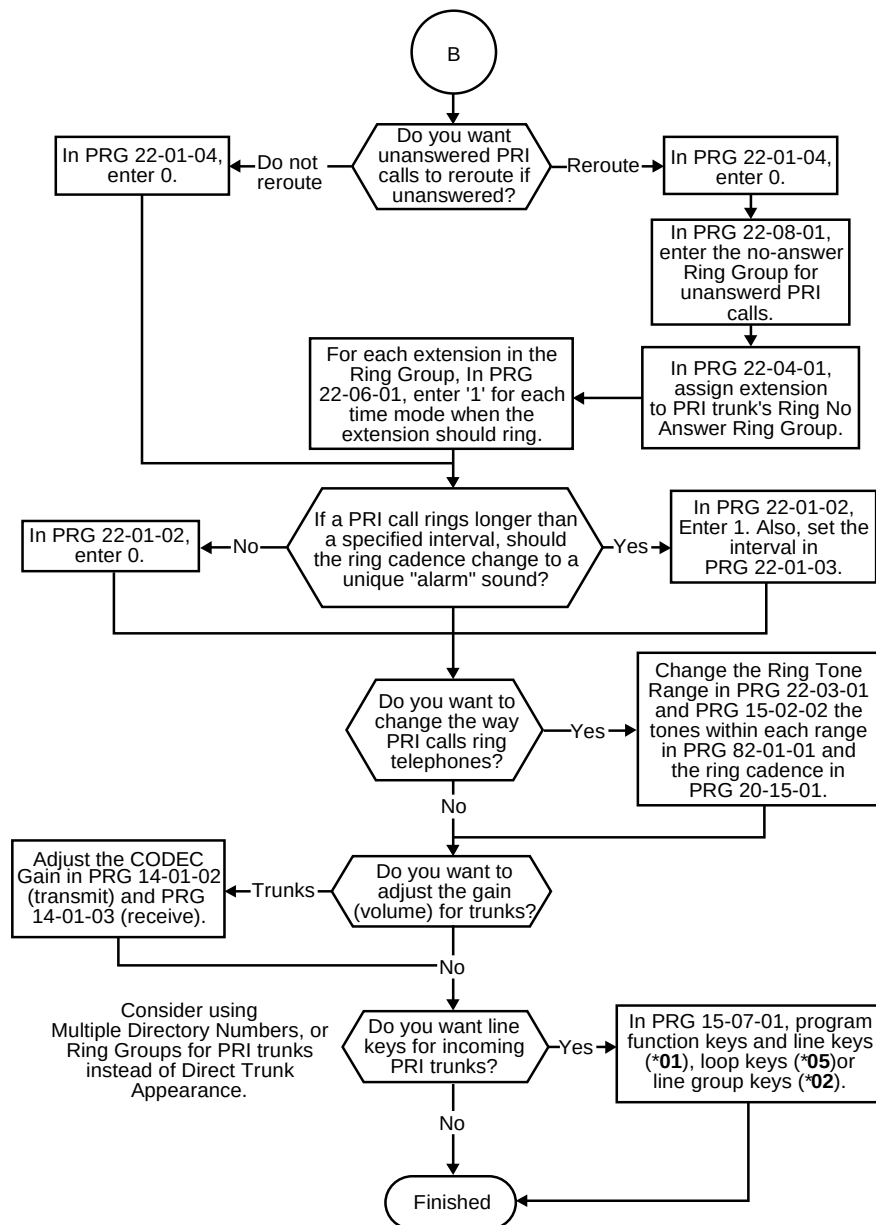
Operation

None

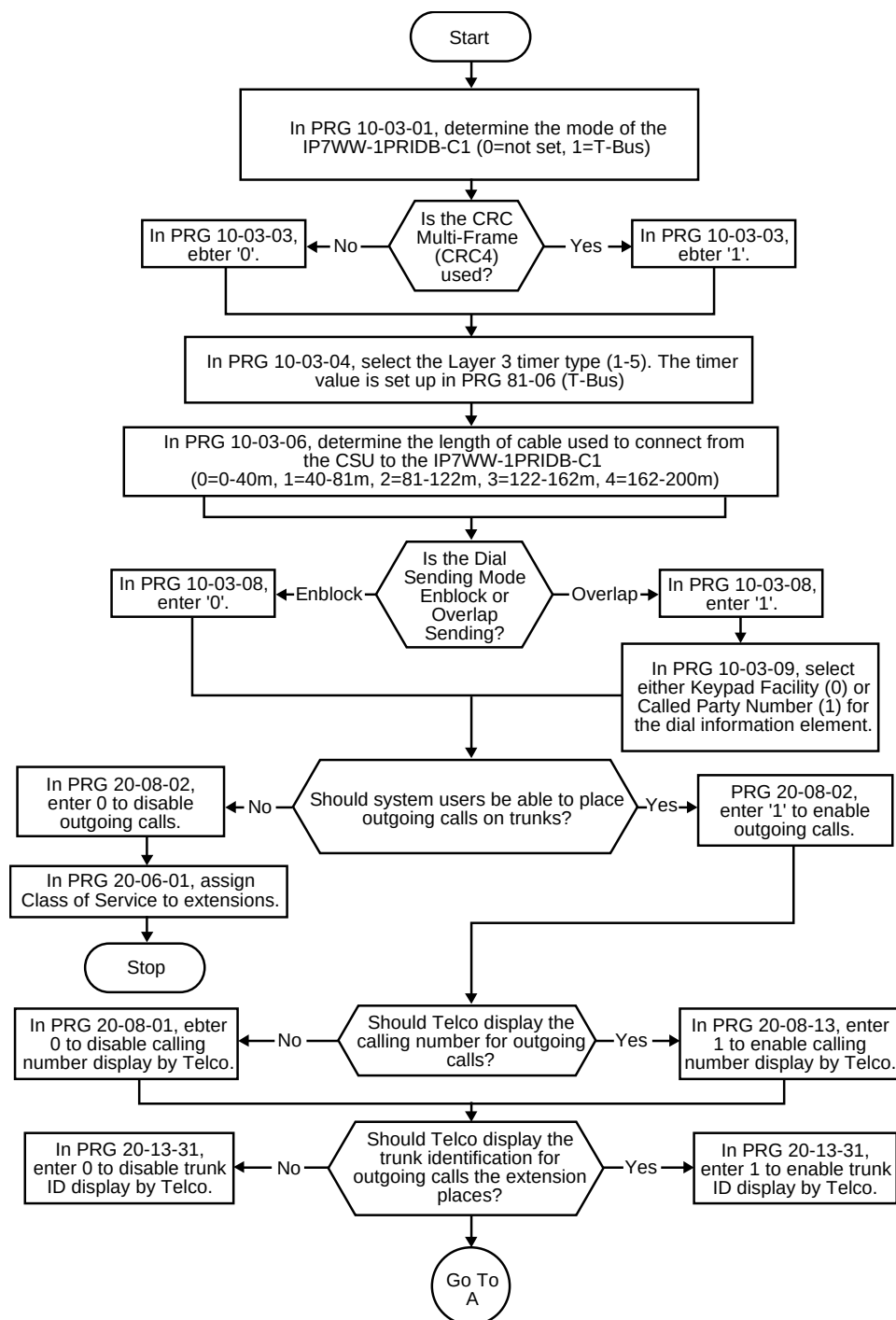
Programming Flowchart for ISDN-PRI - Answering Calls

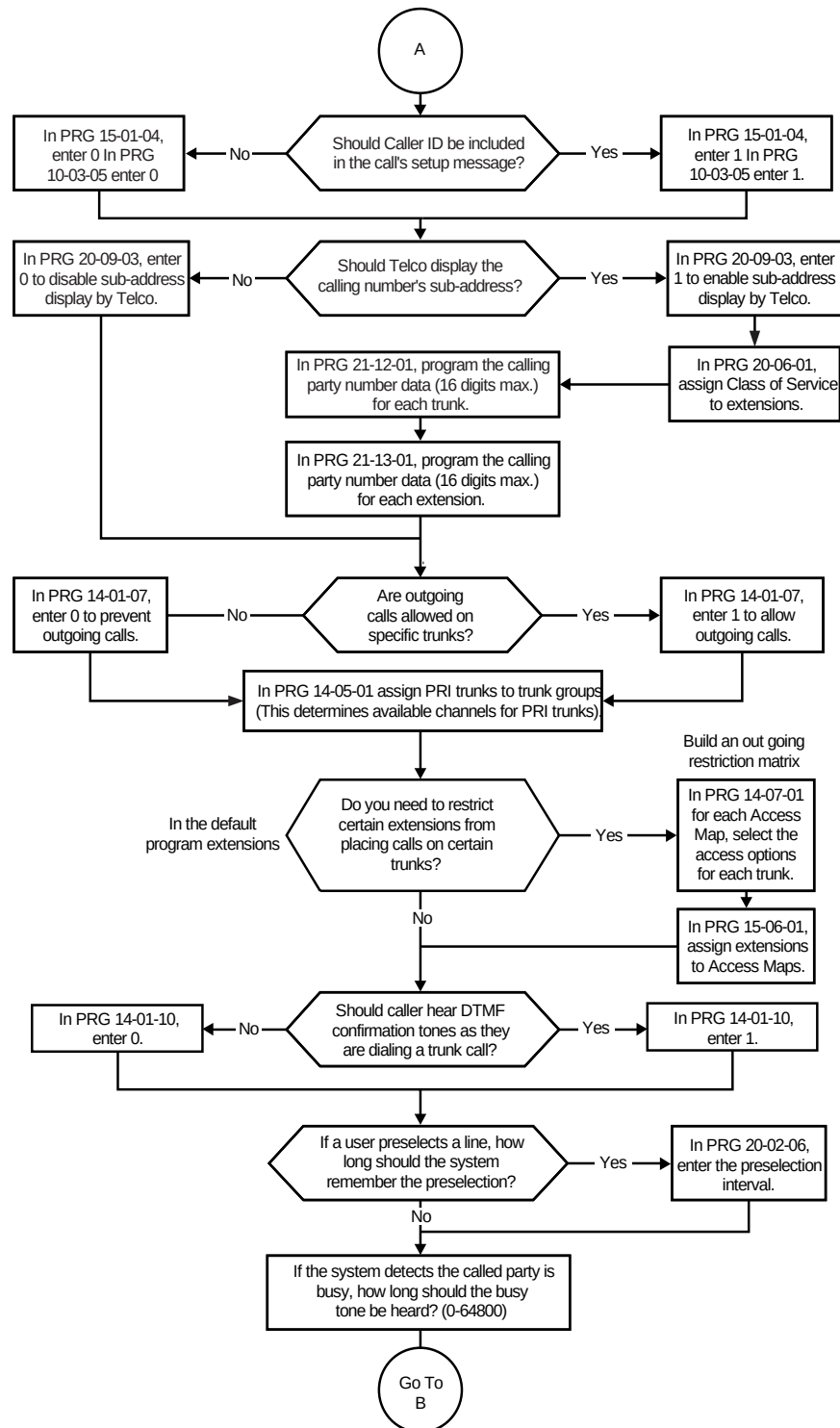


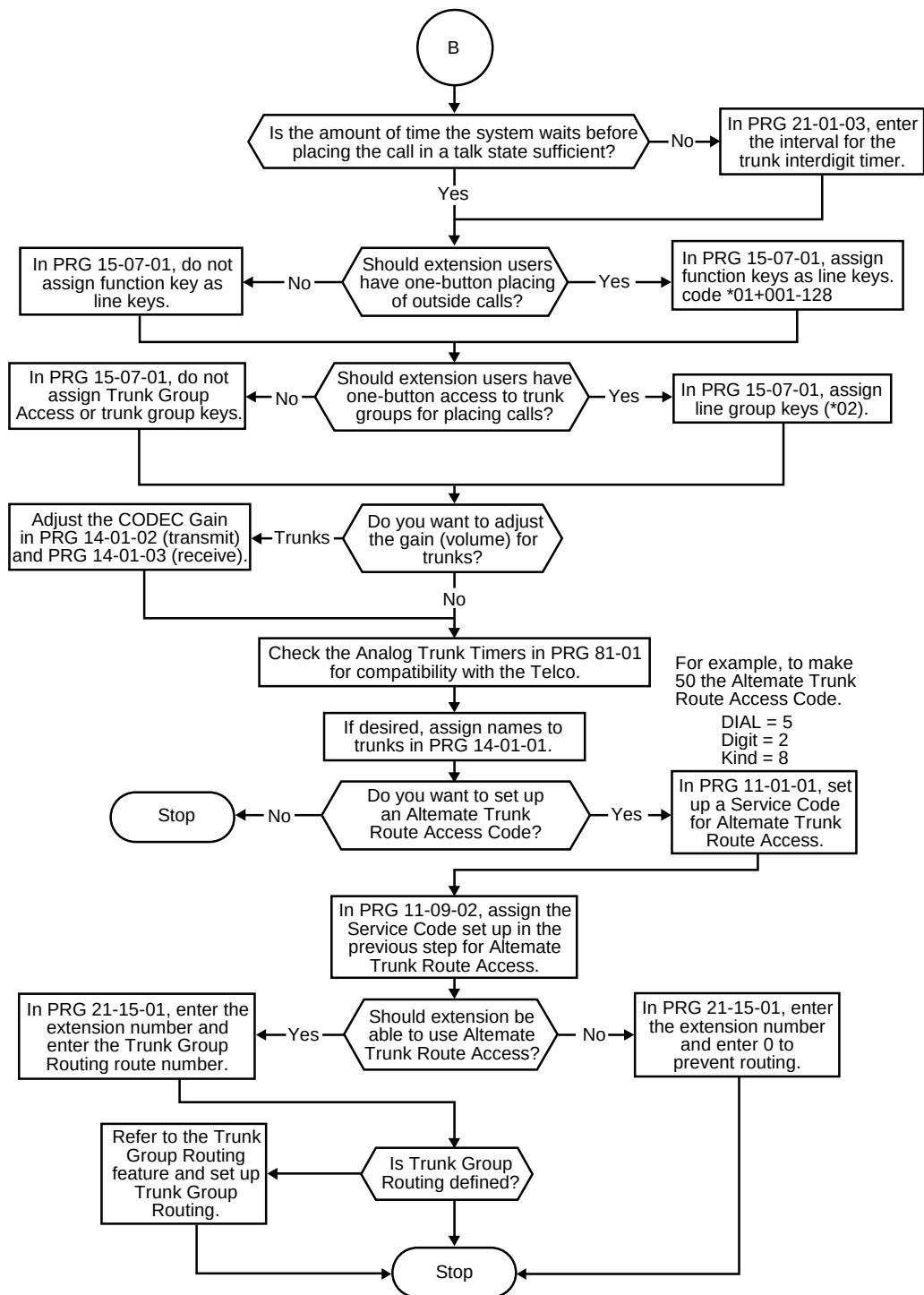




Programming Flowchart of ISDN-PRI - Placing Calls







ISDN Compatibility - Collect Call Blocking

Description

The Collect Call Blocking feature allows for either blocking incoming ISDN collect call from the trunk or from the extension.

If an incoming ISDN call has a reverse charging information element in the setup message, the call is treated as a collect call and the system can block (reject) the call. If the above information element is not included in the setup message, it is treated as normal incoming call.

Conditions

- Collect Call Blocking works on both ISDN PRI and BRI lines.
- Selection of Collect Call Blocking follows both trunk base settings (PRG 14-01-46) and extension base settings (PRG 20-09-09).
- Collect call via VRS/DISA allows only trunk base settings (PRG 14-01-46), extension base settings are not usable.
- Collect call via DIL/DID/TIE allows both trunk base and extension base settings. To enable Collect Call Blocking both settings have to set "On".
- Collect call via a normal incoming call allows both trunk base and extension base settings. If one extension in a ring group is set for Collect Call Blocking, this feature works for all extensions which belong to that incoming ring group.
- Even if the incoming collect call is blocked, SMDR prints a record as reject call.

System Availability

Required Component(s)

- 2BRIDB-C1
- 1PRIDB-C1

Related Features

Central Office Calls, Answering

Direct Inward Dialing (DID)

Direct Inward Line (DIL)

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
14-01-46	Basic Trunk Data Setup - Collect Call Blocking	0 = Disable 1 = Enable	0

Program No.	Program Name	Input Data	Default
20-09-09	Class of Service Options (Incoming Call Service) - Deny Collect Call Receiving	0 = Off 1 = On	COS 01 ~ 15 = 0

Last Number Redial

Description

Last Number Redial allows an extension user to quickly redial the last number dialed. For example, a user may quickly recall a busy or unanswered number without manually dialing the digits.

Last Number Redial saves in system memory the last 36 digits a user dials. The number can be any combination of digits 0~9, # and *. The system remembers the digits regardless of whether the call was answered, unanswered or busy. The system normally uses the same trunk group as for the initial call. However, the extension user can preselect a specific trunk if desired.

In a case of standard mode (PRG 15-02-60 is set 0), when pressing the Redial key, the display indicates REDIAL [#] / SYS. The user can then press # to redial the number displayed, or enter a System Speed Dialing bin number to be dialed. Pressing the Redial key repeatedly will scroll through the last 10 numbers dialed.

Cursor Key Operation

In a case of standard mode (PRG 15-02-60 is set 0), by pressing the Left Cursor key the user can access the Redial and Incoming Call History menus. The flow chart below shows the menu access sequence. If the terminal is not allowed to have the Dial Preview feature, these menus cannot be accessed.

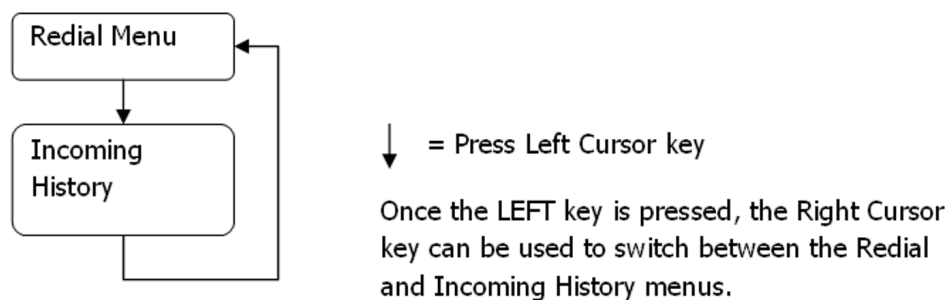


Figure 1-32 Left Cursor Key Operation Flow Chart

Conditions

- Redial List requires the use of a display telephone. Single Line Terminals can not use this feature.
- When using Automatic Route Selection, ARS selects the trunk for the call unless the user preselects.
- When using Advanced mode 1 or 2 (PRG 15-02-60 set to 1 or 2) Last Number Redial only work when the phone is idle.

Default Settings

Enabled

System Availability

Terminals

All Stations

Required Component(s)

None

Related Features

Automatic Route Selection (ARS/F-Route)

Repeat Redial

Save Number Dialed

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-12-12	Service Code Setup (for Service Access) - Last Number Dial	0~9, *, # Maximum of 8 digit	#5
11-12-17	Service Code Setup (for Service Access) - Clear Last Number Dialing Data	0~9, *, # Maximum of 8 digit	776
15-02-13	Multiline Telephone Basic Data Setup - Redial List Mode	0 = ICM/Trunk (Extension/Trunk Mode) 1 = Trunk Mode	0
20-08-05	Class of Service Options (Outgoing Call Service) - Dial Number Preview (Preset Dial)	0 = Off 1 = On	COS 01 ~ 15 = 1

Operation

To redial your last call (When set PRG 15-02-60:0):

- Without lifting the handset, press the **Redial** key.

 The last dialed number is displayed.

- To redial the last number, dial #.

- OR -

Search for the desired number from the Redial List by pressing the **Redial** or VOLUME ▲ or ▼ key.

- OR -

Press the Left Cursor key once and the VOLUME ▲ or ▼ key to find number.

- Lift the handset or press **Speaker** key to place the call.

 The system automatically selects a trunk from the same group as your original call and dials the last number dialed.

- OR -

1. At the Multiline Terminal, press **Speaker** key or lift the handset (optional).



The system automatically selects a trunk from the same group as your original call.

2. Press the **Redial** key.

- OR -

At the Single Line Terminal, lift the handset.

3. Dial **#5**.



The system automatically selects a trunk from the same group as your original call and dials the last number dialed.

To check the number saved for Last Number Redial (When set PRG 15-02-60:0):

1. Press the **Redial** or **Left Cursor** key once.



The stored number displays for six seconds. The stored number dials out if you:

- Lift the handset,
- Press an idle line key,
- or -
- Press **Speaker** key

2. Press **Exit** key.

To erase the stored number:

1. At the Multiline Terminal, press **Speaker** key or lift handset.

- OR -

At the Single Line Terminal, lift the handset.

2. To Clear all the stored number, dial **776**.

To redial the last number, you can do the following: (When set PRG 15-02-60:1 or 2):

1. Press the **Right Cursor** key once and the **Up** or **Down Cursor** key to find number.
2. After the number been selected you can make a call by following ways:
 - Press **Speaker** key.
 - Lift the Handset.
 - Press the **Right Cursor** key once.
 - Press the **Enter Cursor** key.



The system automatically selects a trunk from the same group as your original call and dials the last number dialed.

- OR -

1. At the Multiline Terminal, press **Speaker** key or lift the handset (optional).



The system automatically selects a trunk from the same group as your original call.

2. Dial **#5**.



The system automatically selects a trunk from the same group as your original call and dials the last number dialed.

To check the number saved for Last Number Redial (When set PRG 15-02-60:1 or 2)

1. Press the **Right Cursor** key once.



The stored number dials out if you:

- *Lift the handset,*
- or -
- *Press **Speaker** key.*

2. Press **Exit** key.

To erase the stored number:

1. At the Multiline Terminal, press **Speaker** key or lift handset.
- OR -
At the Single Line Terminal, lift the handset.
2. To clear all stored number, dial **776**.

LCR-Least Cost Routing

Description

Least Cost Routing allows the SL2100 system to automatically select the indirect carrier defined by routing table within the system. An indirect carrier is accessed via the PSTN lines connected to the SL2100 (these are the direct carrier lines), a special access code is used to select the indirect carrier, all dialled digits are passed to the indirect carrier for routing of the call to the destination. The routing tables list the leading digits of numbers dialled by the users and the associated indirect carrier access code. It is possible to route calls to more than one indirect carrier.

Conditions

- The PSTN number accepted by the indirect carrier may vary, consult the carrier for details. Special attention must be given to Emergency calls (Police/Fire/Ambulance etc.), if you route emergency calls to an indirect carrier you must confirm that they will accept this type of call. It is normal practice to have an 'override code' that the users can dial to route the call to a chosen carrier (direct or indirect) in the event of faults with the carrier.
- F-Route/ARS operation takes place on the digits dialled by the user, before the trunk is seized. LCR will use the digits sent to line i.e after translation by F-Route/ARS.
- Toll Restriction takes place on the digits dialled by the user. Toll Restriction check will take place after any F-Route/ARS operation and before the LCR operation.
- Local area calls can not be routed via an indirect carrier that also has Cost Center Codes enabled. This is due to the order that the digits are dialled out by the SL2100. Local calls can be routed via an indirect carrier if Cost Center Codes are not required.

Default Settings

Disabled

System Availability

Terminals

Multiline Terminals

Required Component(s)

None

Related Features

Cost Center Code

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
14-01-23	Basic Trunk Data Setup - Least Cost Routing	0 = LCR Off 1 = LCR On 2 = LCR On (Cost Center Code only)	0
26-01-04	Automatic Route Selection (ARS/F-Route) Service - LCR Mode Option	0 = UK style 1 = Not UK style	1
26-02-01	Dial Analysis Table for ARS/LCR - Dial	Maximum of 16 digits (0 ~ 9, *, #, @)	No Setting
26-02-06	Dial Analysis Table for ARS/LCR - LCR Carrier Table	0 ~ 25	0
26-05-01	LCR Carrier Table - Delete Digits	0 - 16	0
26-05-02	LCR Carrier Table - Access Code	Maximum 16 digits (0 ~ 9, *, #, P, @) P = Pause @ = Change to DTMF or wait for Connect	No Setting
26-05-03	LCR Carrier Table - Authorization Code Table	0 ~ 10 (0 = No Authorization code)	0
26-05-04	LCR Carrier Table - Cost Center Code	0 = Not Used 1 = Used	0
26-06-01	LCR Authorization Code Table - Authorization Code	Up to 10 digits	No Setting
26-07-01	LCR Cost Center Code Table - Cost Center Code	Up to 8 digits	Extension Number
26-08-01	LCR Manual Override Access Code Table - Manual Override Code	Maximum 4 digits (0 ~ 9, *, #)	No Setting
26-09-01	LCR Manual Override Exemption Table - Exemption Number	Maximum 4 digits (0 ~ 9, *, #) Do not include the Access Code.	Table 1 = 000 Table 2 ~ 25 = No Setting

Note 1) Change to DTMF Operation

In PRG 26-05-02 the @ symbol will have different operation for Analogue trunks or ISDN trunks.

Analogue Trunks

At the point in the dialled digits where the @ appears the SL2100 will revert to DTMF dialling. This is only required when the analogue trunk is set the Loop Disconnect dialling in PRG 14-02-01.

ISDN Trunks

At the point in the dialled digits where the @ appears the SL2100 will stop dialling and wait for the CONNECT from the indirect carrier. The SL2100 will then continue to dial DTMF in the B-channel. The DTMF digits will be received by the indirect carrier for routing.

This is only required for indirect carriers that have a two stage setup process where the Access code is dialled in the D-channel to the direct carrier and all other digits are dialled as DTMF in the B-channel to the indirect carrier.

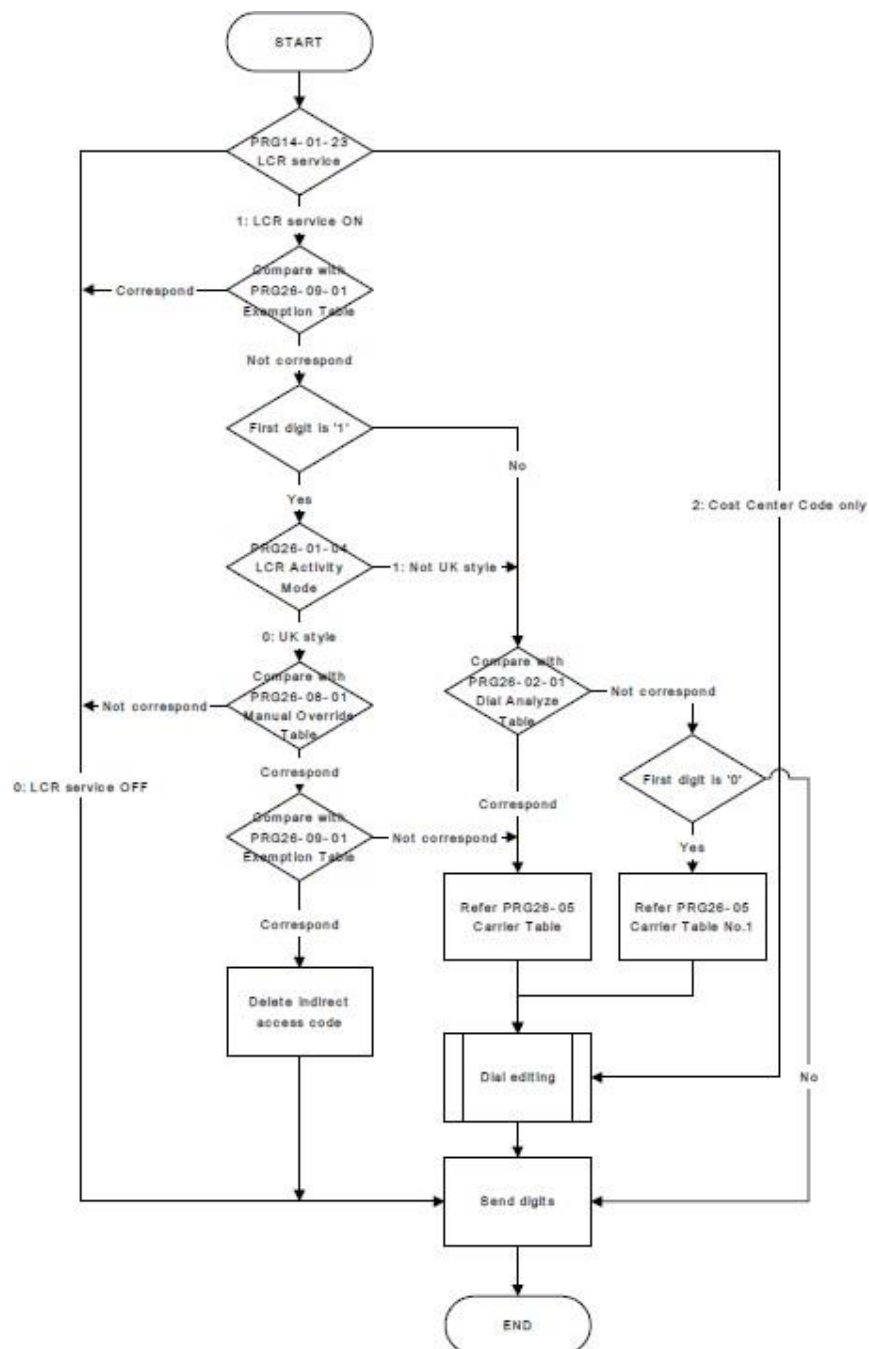
Note 2) Order of LCR Routing Digits

When a user dials a number that is routed by LCR the individual LCR elements will be dialled to line as shown below.

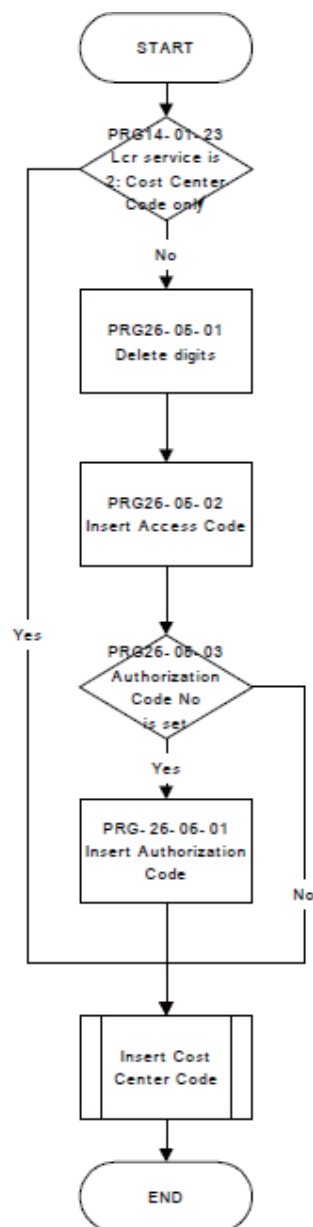
<Access Code> <Authorisation Code> <CCC> <Delete leading digits> <Dialled digits>

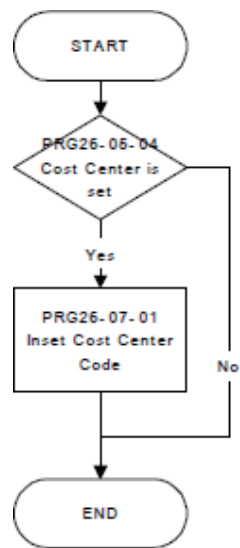
Operation

LCR Operation Flow Diagram



LCR Dial LCR Dial Editing



LCR Cost Center Code

Licensing

Description

Licenses are used to activate certain features and applications for the SL2100. The SL2100 system provides the following licenses:

System Licenses:

System Capacity

- IP Channel - Additional VoIP Resource License (Initially 8 channels bundled)
- IP Extension (STD-SIP) - Standard SIP Terminal License
- Mobile Extension - Additional Mobile Extension Port License (Initially 4 Ports bundled)

System Feature License

- Hotel/Motel - This licenses the system to run the Hotel/Motel feature.
- Encryption (VoIP) - Encryption (including TLS) License for Multiline IP Terminal
- 16 Channel VOIP - Additional 8 Channel Built-in VoIP License
- 128 Channel VOIP - Additional 16 Channel VOIPDB License
- InACD - This license the system to run the Automatic Call Distribution feature.
- AspireNet - This license the number of remote system that can be connected to the main system.

Voice Mail (Embedded)

- InMail Channel - InMail Channel License is not available. 4ch is initially available in CPU-C1 and enable to increase the number of channels by mount the EXIFB (4ch -> 16ch).
- InMail Advance - InMail Advanced Features License
 - E-Mail Notification
 - Cascading message notification
 - Find-Me/Follow-Me
 - Password option
 - Hotel/Motel

Applications:

Desktop Application

- Softphone - This licenses the number of Desktop Applications that can be used for Softphone.
- Desktop Client - This licenses the number of Desktop Applications that can be run.

60 Day Free License

The 60 Day Free License comes with the CPU. It allows for all the features to be active for 60 days. The count down starts on the first power on and ends at midnight of the 60th day.

- By default, the 60 Day Free License is set to disabled. The 60 day count down starts when the system is initially powered on and continues if the 60 Day Free License is disabled or enabled.
- The CPU works for 1440 hours from the first time powered on.
- The clock counts down only when the power supply in the Chassis is ON - battery is not in effect.
- If the CPU is removed, or the system is powered OFF, the countdown stops.
- Every time the clock is changed, the CPU free license (60 days) loses one hour.
- While the free license is active the user can increase the port size of the system to maximum by using PRG 90-55.

Default Settings

60 Day Free License is disabled.

System Availability

Terminals

None

Required Component(s)

Refer to the particular feature for required component(s).

Related Features

None

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-48-01	License Activation - Software Key Code	20-digit character	No Setting
10-48-02	License Activation - Activation Code	8-digit hexadecimal number	No Setting
10-48-03	License Activation - Feature Code	7-digit number	No Setting
10-49-01	License File Activation - Save License File on SD Card	Dial 1 + Hold (Press Hold to cancel.)	None
10-50-01	License Information - License Name	Read Only: Character	None
10-50-02	License Information - License Quantity	Read Only: 0 ~ 32767	None
10-50-03	License Information - Campaign License Quantity	Read Only: 0 ~ 32767	None
10-50-04	License Information - Campaign License Remaining Days	Read Only: 0 ~ 9999	None
10-52-01	Free/Demo License Information - Remaining days of Free/Demo License	Read Only: 0 ~ 9999	None
90-55-01	Free License Select - Start Free License	0 = Stop 1 = Start	0

Table 1-54 License Information

License Code	License Name	Description	Type	Min	Max	Note
5104	SL2100 B-IN VOIP EX LIC	Additional VoIP Resource License for Built-in VoIP (Ver 4.00 or higher)	CH Base	On/Off		Initially bundled 8ch on Built-in VoIP
5103	SL2100 IP CHAN- NEL-16 LIC	Additional VoIP Resource License (16ch per Lic) for VOIPDB	CH Base	1	7 (112ch)	Initially bundled 16ch on VoIPDB

License Code	License Name	Description	Type	Min	Max	Note
5001	SL2100 IP TRUNK-01 LIC	IP Trunk License	Port Base	1	64	5001
5111	SL2100 IP EXT-01 LIC	IP Extension License for Std-SIP Terminal, UT880 and DT900 series.	Port Base	1	112	Except for 8IPLD Terminal
0030	SL2100 ENCRYPTION LIC	Encryption (including TLS) License for Multi-Line IP Terminal	System Base	On/Off		Except for China
5091	SL2100 ASPIRE-NET-01 LIC	AspireNet License (Enable to connect between SL/Pyxis/SV81/91)	CH Base	1	128	Max Node: 50
0047	SL2100 REMOTE CONF-01 LIC	Conference Bridge (Remote Conf.) License	Bridge Base	1	4	
1013	SL2100 VM E-MAIL NOTIFY LIC	InMail E-Mail Notification License	System Base	On/Off		
0007	SL2100 HOTEL LIC	Hotel/Motel Feature License	System Base	On/Off		
5201	SL2100 MOBILE EXT-01 LIC	Additional Mobile Extension Port License	Port Base	1	108	Initially bundled 4 on CPU-C1
0081 0082	SL2100 IN-UC CLIENT-01 LIC	InUC Web Client License with call control Call Control is up to 112.	Port Base	0	128	
0080	SL2100 WEB VIDEO CNF-01 LIC	Web Video Conference License for InUC Web Client	Session Base	1	28	
0084	SL2100 IN-UC BRWSR TEL-01 LIC	In-UC Browser Phone License	user base	1	112	
5301 5303	SL2100 SOFTPHONE-01 LIC	Softphone License for UC Suite	user base	1	112	
0046	SL2100 PMS LIC	PMS Feature License for 64 Rooms	user base	On/Off		
3522	SL2100 INHOTEL LIC	InHotel application License	System Base	On/Off		
3517	SL2100 INHOTEL ROOM-01 LIC	InHotel Room License (1 Room)	user base	1	64	
3512	SL2100 INGUARD LIC	Toll Fraud Guard License	System Base	On/Off		
3513	SL2100 LUA PMS LIC	PMS API Converter License	System Base	On/Off		

Operation

There are four different ways to activate the licenses in the system:

Manual Enter Software Key Code

1. In PRG 10-48-01 enter the Software Key Code.
2. In PRG 10-48-02 enter the activation code.
3. In PRG 10-48-03 enter the feature code(s) in the Software Key Code.
4. In PRG 10-48-03 hit the Submit Softkey.

Manually Load the License File via the SD Card

1. Manually register the software key.
2. Save the License file to the SD Card.
3. Install the SD Card onto the CPU.
4. In PRG 10-49-01 assign to 1 and then hit transfer.



Multiple License files can be loaded at the same time.

Upload the License File via WebPro/PCPro

1. Manually register the software key.
2. Save the license file.
3. Connect to the system.
4. Go to the Feature Activation screen.
5. Click on Load File.
6. Select the location of the license file to upload.

Auto Register the License for the System

1. Connect to the system.
2. Go to the Feature Activation screen.
3. Enter email Address and Password.
4. Add Software Key code(s).



If left blank, it registers all attached licenses for the Hardware Key code.

5. Click on Auto Register.

Line Preference

Description

Line Preference determines how a Multiline Terminal user places and answers calls. There are two types of Line Preference: Incoming Line Preference and Outgoing Line Preference.

Incoming Line Preference

Incoming Line Preference establishes how a Multiline Terminal user answers calls. When a call rings the Multiline Terminal, lifting the handset answers either the ringing call (for Ringing Line Preference) or seizes an idle line (for Idle Line Preference). The idle line can provide either Intercom or trunk dial tone (see Outgoing Line Preference below). Ringing Line Preference helps users whose primary function is to answer calls (such as a receptionist). Idle Line Preference is an aid to users whose primary function is to place calls (such as a telemarketer).

Outgoing Line Preference

Outgoing Line Preference sets how a Multiline Terminal user places calls. If a Multiline Terminal has Outgoing Intercom Line Preference, the user hears Intercom dial tone when they lift the handset. If a Multiline Terminal has Outgoing Trunk Line Preference, the user hears trunk dial tone when they lift the handset. Outgoing Line Preference also determines what happens at extensions with Idle Line Preference. The user hears either trunk (dial **0**) or Intercom dial tone.

Auto-Answer of Non-Ringing Lines

With Auto-Answer of Non-Ringing Lines, an extension user can automatically answer trunk calls that ring other extensions (not their own). This would help a user that has to answer calls for co-workers that are away from their desks. When the user lifts the handset, they automatically answer the ringing calls based on Trunk Group Routing programming. The extension user's own ringing calls, however, always have priority over calls ringing other co-worker's extensions.

Conditions

- If a Multiline Terminal extension has more than one call ringing its line keys, Ringing Line Preference answers the calls on a first-in first-answered basis.
- DILs do not affect Incoming Line Preference operation.
- Trunks ring extensions according to Ring Group programming.
- If an extension gets trunk dial tone when the user lifts the handset, the system uses the dial **0** routing to select the trunk. This bypasses ARS.

Default Settings

Enabled

System Availability

Terminals

Multiline Terminals

Required Component(s)

None

Related Features

Direct Inward Line (DIL)

Ring Groups

Trunk Groups

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
14-05-01	Trunk Group - Trunk Group Number	Trunk Port 1 ~ 128 = Priority 1 ~ 128 Trunk Group Number = 0 ~ 50	Refer to Programming Manual.
14-06-01	Trunk Group Routing - Trunk Group	0 = Not Set 001 ~ 050 = Trunk group No. 101 ~ 150 = 100 + Networking System No. 1001 ~ 1050 = 1000 + Route Table No.	Refer to the Programming Manual for the default values.
14-07-01	Trunk Access Map Setup - Access Map	0 = No access 1 = Outgoing access only 2 = Incoming access only 3 = Access only when trunk on Hold 4 = Outgoing access and access when trunk on Hold 5 = Incoming and access when trunk on Hold 6 = Incoming and outgoing access 7 = Full access	Access Map 1 ~ 128 = Trunk Ports 1~128 assigned with option 7 access (incoming and outgoing access and access when trunk is on Hold).
15-01-02	Basic Extension Data Setup - Outgoing Trunk Line Preference	0 = Off 1 = On	0
15-02-10	Multiline Telephone Basic Data Setup - Ringing Line Preference for Trunk Calls	0 = Idle (Off) 1 = Ringing (On)	1
15-06-01	Trunk Access Map for Extensions - Trunk Access Map Number	001 ~ 128	1
20-10-07	Class of Service Options (Answer Service) - Automatic Off-Hook Answer	0 = Off 1 = On	COS 01 ~ 15 = 0
22-01-01	System Options for Incoming Calls - Incoming Call Priority	0 = Intercom Call Priority 1 = Trunk Call Priority	1
22-04-01	Incoming Extension Ring Group Assignment - Extension Number	Maximum eight Digits	Group01 has 101, 102, 103, 104, 105, 106, 107, and 108 (First 8 ports ringing)
22-05-01	Incoming Trunk Ring Group Assignment - Incoming Group Number	0 = No Setting 01 ~ 50 = Incoming Group 102 = VMI 103 = Centralized VM	1
23-03-01	Universal Answer/Auto Answer - Route Table Number	0 ~ 50	0

Operation

Ringing Trunk or intercom (ICM) call:

Lift the handset or press **Speaker** key.



The setting assigned for PRG 15-02-10 and PRG 22-01-01 determines which call is answered first.

Long Conversation Cutoff

Description

For incoming and outgoing central office calls, each trunk can be programmed to disconnect after a defined time. The timer begins when the trunk is seized and disconnects the call after the time expires.

When used with the Warning Tone for Long Conversation feature, the system can provide a warning tone on outgoing trunks calls before the call is disconnected.

Conditions

- Long Conversation Cutoff can disconnect incoming and outgoing CO calls after a set time.
- Long conversation cutoff is controlled separately for DISA.
- Using the Warning Tone for Long Conversation feature allows users on outgoing calls to hear a warning tone prior to the call disconnecting.

Default Settings

Disabled

System Availability

Terminals

All Terminals

Required Component(s)

None

Related Features

Central Office Calls, Answering

Central Office Calls, Placing

Direct Inward System Access (DISA)

Multiple Trunk Types

Warning Tone for Long Conversation

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
14-01-14	Basic Trunk Data Setup - Long Conversation Cutoff	0 = Disable (No) 1 = Enable (Yes)	0
14-01-15	Basic Trunk Data Setup - Long Conversation Alarm Before Cutoff	0 = Disable (No) 1 = Enable (Yes)	0
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-13-02	Class of Service Options (Supplementary Service) - Long Conversation Cutoff (Incoming)	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-03	Class of Service Options (Supplementary Service) - Long Conversation Cutoff (Outgoing)	0 = Off 1 = On	COS 01 ~ 15 = 0
20-21-03	System Options for Long Conversation - Long Conversation Cutoff for Incoming Call	0 ~ 64800 seconds	0
20-21-04	System Options for Long Conversation - Long Conversation Cutoff for Outgoing Call	0 ~ 64800 seconds	0

Operation

This feature is automatic once it is programmed.

Loop Keys

Description

Loop keys are uniquely programmed function keys that simplify placing and answering trunk calls. There are three types of loop keys: Incoming Only, Outgoing Only and Both Ways.

Incoming Only Loop Keys

Incoming Only loop keys are for answering trunk calls. An extension can have an incoming loop key for a specific trunk group (fixed) or a “catch all” loop key for any trunk group (switched). Fixed loop keys allow an extension user to tell the type of call by the ringing key. Switched loop keys are ideal for an extension with a large number of feature keys. In addition, switched loop keys are a destination for any trunk not on a line key or fixed loop key. Incoming Only loop keys also receive Transferred trunk calls.

Outgoing Only Loop Keys

Outgoing Only loop keys are for placing trunk calls. An extension can have outgoing loop keys for a specific trunk group or for ARS access. When a user presses the loop key, they get dial tone from the first available trunk in the group (or from ARS if programmed). Outgoing Only loop keys help ensure that an extension will always have a key available for placing calls.

Both Ways Loop Keys

Both Ways loop keys combine the functions of both Incoming Only and Outgoing Only loop keys. Both Ways loop keys work well for extension users that handle a moderate amount of calls and don't separate keys for incoming and outgoing calls. Both Ways loop keys also receive Transferred trunk calls.

An extension can have many loop keys - of any type. You can program an operator, for example, with four loop keys for incoming calls and four for outgoing calls.

Once a loop key call is set up, the user can handle it like any other trunk call. For example, the user can place the call on Hold, Transfer it to a co-worker or send it to a Park Orbit.

An incoming call will ring the first available loop key, beginning with the lowest numbered key. If keys 1-3 are loop keys, for example, the first incoming call rings key 1. If key 1 is busy, the next call rings key 2. If keys 1 and 2 are busy, the next call rings key 3. If all three keys are busy, additional incoming calls queue for the first available key.

Conditions

When a station is talking to a caller on a loop key, and a second DID or DIL call rings the users phone, or if the second call to the phone was via a ring group, the outside caller will be connected when the user presses **Hold** key + loop key.

Default Settings

Disabled

System Availability

Terminals

Multiline Terminals

Required Component(s)

None

Related Features

Automatic Route Selection (ARS) / Central Office Calls, Answering / Central Office Calls, Placing

 Program incoming and outgoing access and routing options.

Off Hook Signaling

 If enabled, a user hears Call Waiting beeps if additional calls are waiting behind a loop key.

Programmable Function Keys

 If you have a line and loop key for the same trunk, the line key has precedence. An incoming call rings the line key, not the loop key. When you press the loop key for an outgoing call, the line key lights.

Ring Groups

 Trunks ring terminals according to their Ring Group assignments (PRG 22-04 and PRG 22-05). **Direct**

Inward Dialing (DID) / Direct Inward Line (DIL) / Direct Inward System Access (DISA)

 Transferred DID, DIL and DISA calls do not require ring group programming.

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
14-05-01	Trunk Group - Trunk Group Number	Trunk Port 1 ~ 128 = Priority 1 ~ 128 Trunk Group number = 0 ~ 50	Refer to Programming Manual.
14-07-01	Trunk Access Map Setup - Access Map	0 = No access 1 = Outgoing access only 2 = Incoming access only 3 = Access only when trunk on Hold 4 = Outgoing access and access when trunk on Hold 5 = Incoming and access when trunk on Hold 6 = Incoming and outgoing access 7 = Full access	Access Map 1 ~ 128 = Trunk Ports 1~128 assigned with option 7 access (incoming and outgoing access and access when trunk is on Hold).
15-06-01	Trunk Access Map for Extensions - Trunk Access Map Number	001 ~ 128	1

Program No.	Program Name	Input Data	Default
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
15-13-01	Loop Keys - Outgoing Option	0 ~ 50 (0 = Assigns the Loop Key for ARS, 1 ~ 50 = Assigns the Loop Key to the trunk group specified)	0: Programming Function Key No. = 01 ~ 24
15-13-02	Loop Keys - Incoming Option	0 ~ 50 (0 = Assigns the Loop Key to all trunk groups, 1 ~ 50 = Assigns the Loop key to the trunk group specified)	0: Programming Function Key No. = 01 ~ 24
20-09-01	Class of Service Options (Incoming Call Service) - Second Call for DID/DISA/DIL/E&M Override	0 = Off (2nd call will not be allowed.) 1 = On (2nd call is allowed.)	COS 01 ~ 15 = 1
20-07-10	Class of Service Options (Administrator Level) - Programmable Function Key Programming (Appearance Level)	0 = Off 1 = On	COS 01 ~ 15 = 1
22-04-01	Incoming Extension Ring Group Assignment - Extension Number	Maximum eight Digits	Group01 has 101, 102, 103, 104, 105, 106, 107, and 108 (First 8 ports ringing)
22-05-01	Incoming Trunk Ring Group Assignment - Incoming Group Number	0 = No Setting 01 ~ 50 = Incoming Group 102 = VMI 103 = Centralized VM	1

Operation

To place a call on a loop key:

- Press outgoing or both ways loop key.
 *You hear dial tone and the key lights green.*
- Dial number.

To answer a call on a loop key:

Listen for ringing a look for a flashing loop key.

- Press the loop key.
 *The key lights green and you connect to the call.*

To program a loop key:

- Press the **Speaker** key.
- Dial **752**.
- Press the key you want to program as a loop key.
- Dial ***05**.

5. Dial the loop key type:
 - 0 = Incoming only
 - 1 = Outgoing only
 - 2 = Both ways (incoming and outgoing)
6. Dial the loop key routing option for incoming, outgoing, or incoming and outgoing calls:
 - 000 = Trunk Group Routing or ARS (if installed)
 - 001~050 = Trunk Groups

 *If you selected option 2 in step 5 above, enter the incoming Trunk Group followed by the outgoing Trunk Group.*
7. Press **Speaker** key to hang up.

Maintenance

Description

The SL2100 system has several utilities to assist in troubleshooting and diagnosing problems both during and after installation.

Side Tone Auto Setup

Per each analog trunk (or all analog trunks) the most suitable Codec Filter setting for PRG 81-07 can be automatically adjusted using PRG 90-68-01 and 02.

During the trunk measurement process, the following LCD indications are provided.

- During measurement: Measurement (x/5)
x= number of measurements
- Measure complete: Complete
- Error condition: Error
- Trunk busy: Busy

After successful measurement, the option to copy the same settings to all analog trunks is shown.



Side Tone Auto Setup available when the system is in an idle condition.

Remote maintenance using PCPro

PCPro can remotely access the SL2100 for maintenance and diagnostics. Within PCPro, the debug terminal can be accessed to monitor the systems activity and logging. PCPro also has built-in reports that can display alarm data. If need be, an option in PCPro allows the technician to reset or initialize the system remotely. If the technician determines the problem is isolated to a specific slot, PCPro can reset only the slot in question.

Quick System Check-up

You can check the System Information, VoIPDB Information and IP Address by doing a simple operation. Here are the information you can get from the operation mode: (For future information refer to [Navigation Key](#))

Table 1-55 Quick System Check-up

Setting Name	Description	Operation Mode		
		15-02-60:0 (Standard)	15-02-60:1 (Navigation)	15-02-60:2 (Soft Key)
System Information	Shows the following: • Version Information • MAC Address • Hardware Key	Enter Key + 3	Enter Key + 820 + Enter Key	Menu + 93 + Enter Key
VoIPDB Information	Shows the following: • Type of VoIP Hardware • Number of VoIP Channels (Top Right) • MAC Address • Active/Reserved	Enter Key + 4	Enter Key + 830 + Enter Key	Menu + 94 + Enter Key
IP Address Information	Shows the following: • System (CPU) IP Address • VoIPDB IP Address	Enter Key + 6	Enter Key + 840 + Enter Key	Menu + 96 + Enter Key

Reference of SRAM information via Web / PC Pro

The following data saved at SRAM is checked using PRG93-xx via Web/PC Pro.

This program is Read-Only.

For the PRG93-xx, the data can be referred by WebPro/PCPro/TelPro.

User Pro can not access to PRG93-xx.

The user level for which this function can be used is the following.

2 = IN (Installer Level)

3 = SA (System Administrator Level 1)

Program No.	Program Name	Input Data	Default
93-01-01	- Day/Night mode	1 = Mode 1 2 = Mode 2 3 = Mode 3 4 = Mode 4 5 = Mode 5 6 = Mode 6 7 = Mode 7 8 = Mode 8	No Setting
93-02-01	- Set Automatic Transfer to Transfer	0 = Disable 1 = Enable	No Setting
93-02-02	- Trunk Port Disable by Service code	0 = Disable 1 = Enable	No Setting
93-03-01	- Call Forward-All/No Answer/BothRing	0 = Call Forwarding off 1 = Call Forwarding with Both Ringing 2 = Call Forwarding when No Answer 3 = Call Forwarding All Call	No Setting
93-03-02	- Call Forwarding Destination for Both Ring, All Call, No Answer	0 ~ 9, *, #, P, R, @ (Up to 36 digits)	No Setting
93-03-03	- Call Forward-Busy	0 = Call Forward-Off 1 = Call Forward-Busy or No answer 2 = Call Forward-Busy	No Setting
93-03-04	- Call Forwarding Busy destination	0 ~ 9, *, #, P, R, @ (Up to 36 digits)	No Setting
93-03-05	- Call Forwarding – Follow-Me	0 = Disable 1 = Enable	No Setting
93-03-06	- Call Forwarding Follow-Me destination	Extension Number (Up to 8 digits)	No Setting
93-03-07	- Do Not Disturb	0 = No Setting 1 = DND External 2 = DND intercom 3 = DND Transfer 4 = DND All	No Setting
93-03-08	- Message Waiting (Set)	Extension Number (Up to 8 digits)	No Setting
93-03-09	- Message Waiting (Rec)	Extension Number (Up to 8 digits)	No Setting
93-03-10	- Alarm Clock 1	0 = Disable 1 = Enable	No Setting
93-03-11	- Preset time at Alarm 1	Time set in Alarm Clock 1.  When PRG93-03-11 is "0", '00 : 00' is indicated.	No Setting
93-03-12	- Alarm Clock 2	0 = Disable 1 = Enable	No Setting

Program No.	Program Name	Input Data	Default
93-03-13	- Preset Time at Alarm 2	Time set in Alarm Clock 2.  When PRG93-03-11 is "0", /00 : 00 is indicated.	No Setting
93-03-14	- Forced Intercom Ring (ICM Call Type)	0 = Disable(Voice1) 1 = Enable(Signal)	No Setting
93-03-15	- BGM	0 = Disable 1 = Enable	No Setting
93-03-16	- Key Touch Tone	0 = Disable 1 = Enable	No Setting
93-03-17	- Dial Block	0 = Disable 1 = Enable	No Setting
93-03-18	- Repeat Dial	0 = Disable 1 = Enable	No Setting
93-03-19	- Headset Mode Switching	0 = Disable 1 = Enable	No Setting
93-03-20	- Headset Ringing Mode Switching	0 = Disable 1 = Enable	No Setting
93-04-01	- Redial Data	Dial Data 1 ~ 9, 0, *, #, P, R, @ (Up to 36 digits)	No Setting
93-04-02	- Name	Up to 12 characters	No Setting
93-05-01	- Set Automatic transfer at Department Group call	0 = Disable 1 = Enable	No Setting
93-05-02	- Set Delayed transfer at Department Group call	0 = Disable 1 = Enable	No Setting
93-05-03	- Set DND at Department Group call	0 = Disable 1 = Enable	No Setting

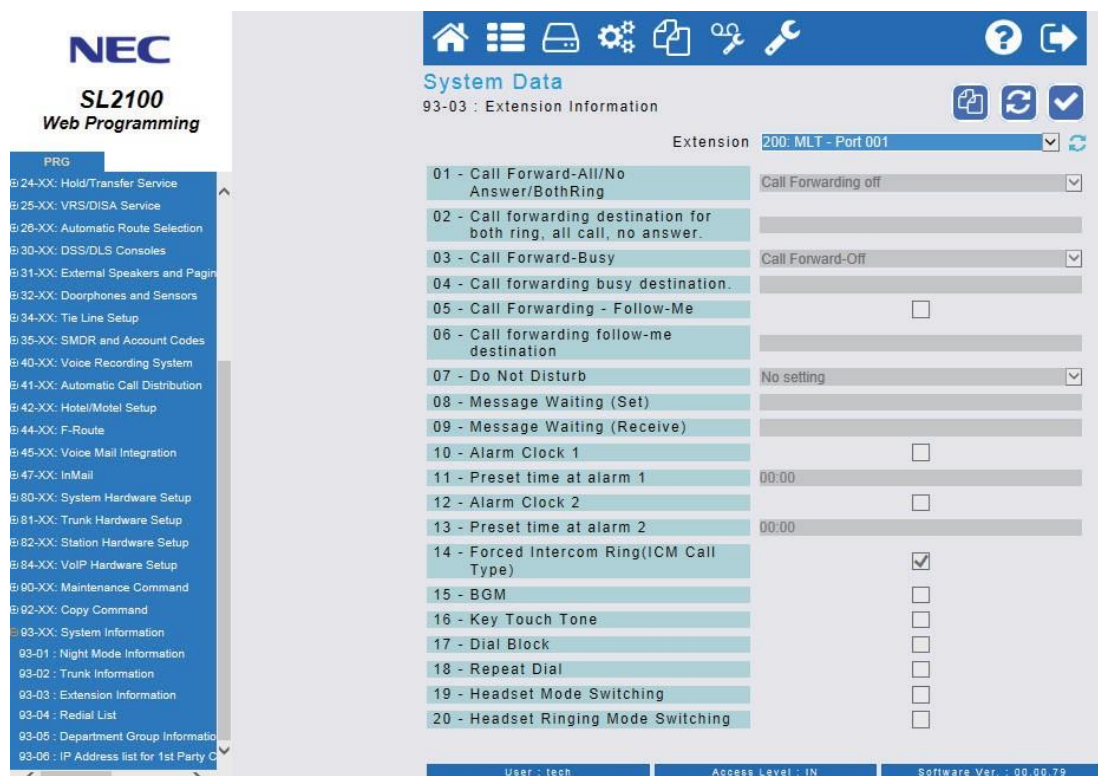
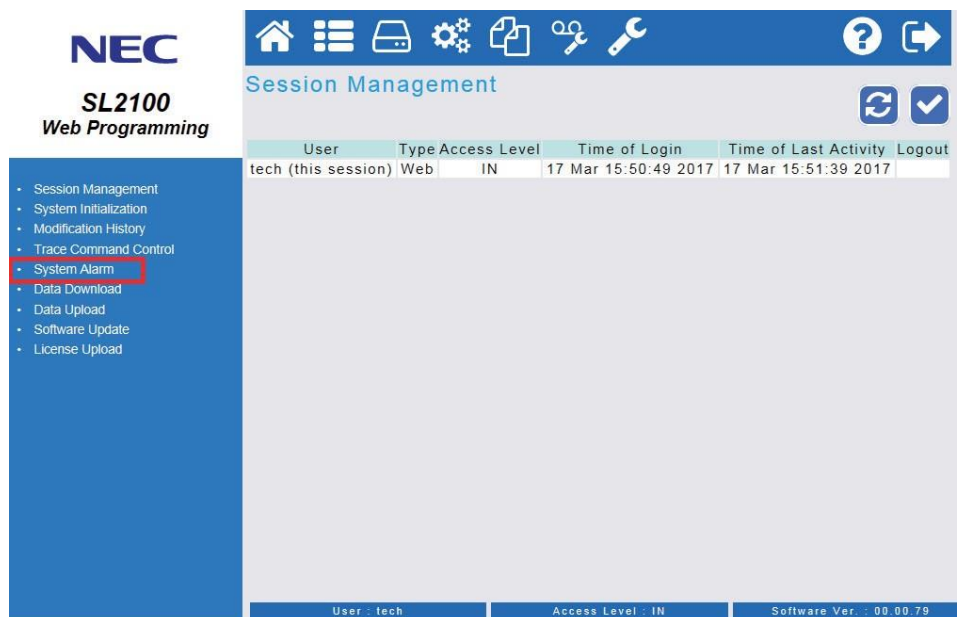


Figure 1-33 <Example: PRG93-03-xx>

System alarm display via Web Pro

The system alarm is displayed in Web Pro.

1. Click Maintenance Icon  on the Home screen.
2. Display shows Session Management screen and Click "System Alarm" at the left side menu.



3. Display shows System Alarm screen.
The system alarm can be displayed up to 100 alarm reports.
Web Pro does not support an alarm report output.

The user level for which this function can be used is the following.

2 = IN (Installer Level)

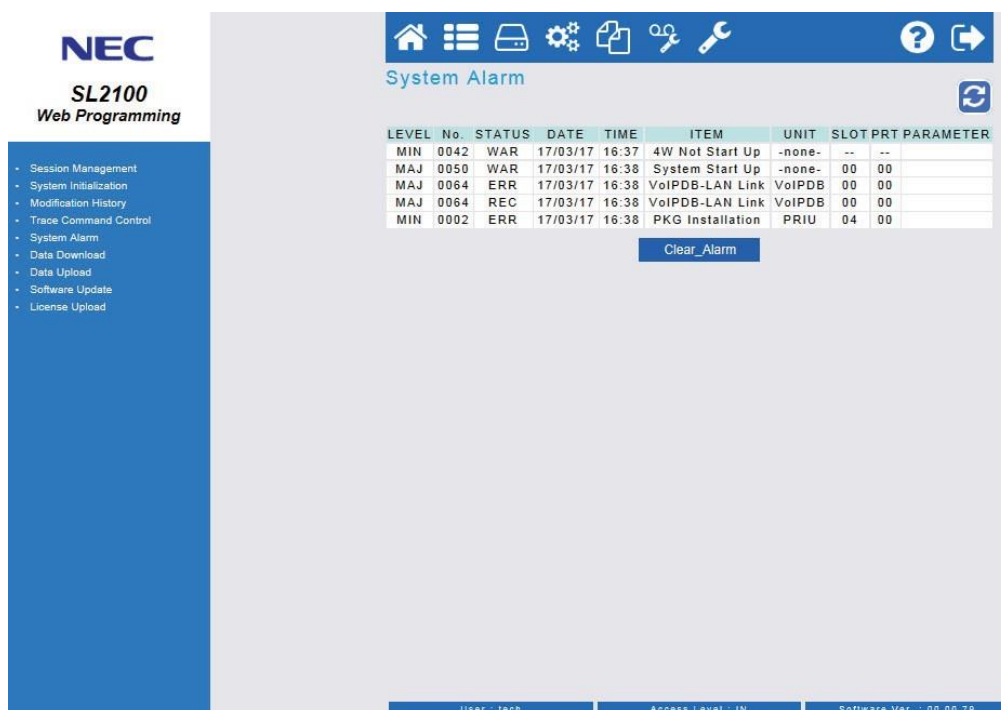


Figure 1-34 <Sample Image>

PRG90-60 T1/ISDN layer status information display via Web / PC Pro

Web /PC Pro can refer to PRG90-60 (T1/ISDN Layer Status Information).

This program is displays layer status information for T1/PRI/BRI boards.

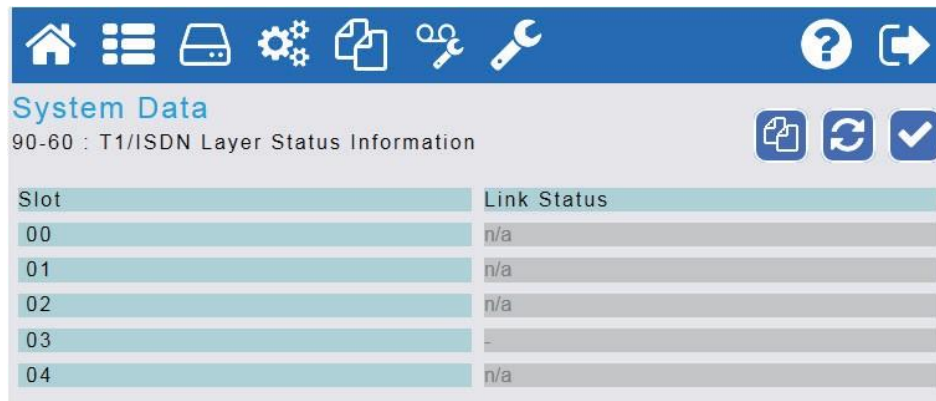
- = No link

0 = Link

N/A = except BRI or PRI board is mounted.

The user level for which this function can be used is the following.

2 = IN (Installer Level)



Slot	Link Status
00	n/a
01	n/a
02	n/a
03	-
04	n/a

Figure 1-35 <Sample Image>

Conditions

Side Tone Auto Setup

- The system needs to be idle for the Side Tone Auto Setup to be used.
- When measured trunk is busy, disconnected, outgoing call restricted, or selected trunk is not analog trunk, ERROR will be displayed on the LCD of the programming terminal.

Default Settings

Enabled

System Availability

Terminals

None

Required Component(s)

PCPro application to use PCPro.

Web Browser to use WebPro.

Related Features

None

Programming

Program No.	Program Name	Input Data	Default
81-07-01	CODEC Filter Setup for Analog Trunk Port - CO-DEC Filter Type	0 = Type 0 1 = Type 1 2 = Type 2 3 = Type 3 4 = Type 4 5 = Type 5 6 = Type 6 7 = Type 7 8 = Type 8 9 = Type 9 10 = Type 10 11 = Type 11 12 = Type 12 13 = Type 13 14 = Type 14 15 = Type 15	7
90-68-01	Side Tone Auto Setup - Adjustment Start	Trunk Port Number 001 ~ 128	No Setting
90-68-02	Side Tone Auto Setup - 1 digit data	Dial (1 digit)	0

Operation

None

Maintenance - Automatic System Update

Description

The SL2100 periodically accesses an external "Software Maintenance Server" to confirm whether there is a new CPU software version available. If a newer CPU software version other than the currently installed version is available on the server, the SL2100 starts downloading the latest software package and then upgrade the version immediately or at a scheduled date and time, as configured in the system.

 *DNS setting (PRG 10-12-13) is mandatory for Automatic update or Network Download from the server.*

 *During Software Upgrading is in Progress, do not interact with browser window until firmware update is completed and system has restarted.*

During a system restart, the main software is written to CPU flash memory. Do Not Unplug the Power Cord while the flash memory is in-write state as this will damage the CPU. The CPU flash memory write will take 15 minutes.

Automatic Software Check and Update

Automatic Software Check

The SL2100 periodically accesses the software maintenance server at defined time and date of each month to confirm whether there is a newer CPU software is available other than the currently installed version. After checking, if a later software version is available on the server then a message "There is newer version available" is displayed on Home and Software Update page.

Automatic Software Update

If the SL2100 detects a newer software, the SL2100 downloads the software and reboots the system at a scheduled date and time to update the software.

Manual Software Update

Manual Update (Network Download)

The SL2100 checks the update information from the maintenance server when a user initiates the update process manually. If the SL2100 detects a newer software other than the installed, the SL2100 starts downloading the software. After downloading, the SL2100 reboots immediately or at scheduled date and time as configured in the system.

After checking the update from the server, if the installed software is latest then a message "Your software version is the latest" is displayed.

Manual Update (Upload from PC)

A software (.bin) file can be uploaded from PC and the SL2100 reboots immediately or at scheduled date and time as configured in the system to update the software.

Conditions

- DNS setting (PRG 10-12-13) is mandatory for Network Download or Automatic Update from the server.
- If the Auto-Upgrade feature is performed, the SL2100 will reboot automatically to complete the upgrade procedure. The reboot can be immediate or date and time can be configured.
- The upgrade process takes approximately 15-20 minutes to complete. During this time the phone system will be out of service.
- No SD card is required on the SL2100 for storing the software package.

Default Settings

None

System Availability

Required Component(s)

Browsers: Internet Explorer11, Mozilla Firefox, Google Chrome

Related Features

None

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-12-01	CPU Network Setup - IP Address	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	192.168.0.10
10-12-02	CPU Network Setup - Subnet Mask	128.0.0.0 192.0.0.0 224.0.0.0 240.0.0.0 248.0.0.0 252.0.0.0 254.0.0.0 255.0.0.0 255.128.0.0 255.192.0.0 255.224.0.0 255.240.0.0 255.248.0.0 255.252.0.0 255.254.0.0 255.255.0.0 255.255.128.0 255.255.192.0 255.255.224.0 255.255.240.0 255.255.248.0 255.255.252.0 255.255.254.0 255.255.255.0 255.255.255.128 255.255.255.192 255.255.255.224 255.255.255.240 255.255.255.248 255.255.255.252 255.255.255.254 255.255.255.255	255.255.255.0
10-12-03	CPU Network Setup - Default Gateway	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0
10-12-09	CPU Network Setup - IP Address (VoIPDB)	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	172.16.0.10

Program No.	Program Name	Input Data	Default
10-12-10	CPU Network Setup - Subnet Mask (VoIPDB)	128.0.0.0 192.0.0.0 224.0.0.0 240.0.0.0 248.0.0.0 252.0.0.0 254.0.0.0 255.0.0.0 255.128.0.0 255.192.0.0 255.224.0.0 255.240.0.0 255.248.0.0 255.252.0.0 255.254.0.0 255.255.0.0 255.255.128.0 255.255.192.0 255.255.224.0 255.255.240.0 255.255.248.0 255.255.252.0 255.255.254.0 255.255.255.0 255.255.255.128 255.255.255.192 255.255.255.224 255.255.255.240 255.255.255.248 255.255.255.252 255.255.255.254 255.255.255.255	Refer to the programming manual for all the possible valid subnet mask entries. (default = 255.255.0.0)
10-12-13	CPU Network Setup - DNS Primary Address	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.25.255.254	0.0.0.0
90-36-01	Software Update Time Setting - Automatic Update	0 = Disable 1 = Enable	Disable
90-36-04	Software Update Time Setting - Week	1 = Monday 2 = Tuesday 3 = Wednesday 4 = Thursday 5 = Friday 6 = Saturday 7 = Sunday	Tuesday
90-36-05	Software Update Time Setting - Hour	0 ~ 23 = Hour (Default = 0)	23
90-36-06	Software Update Time Setting - Minute	0 ~ 59 = Minute (Default = 0)	0
90-36-08	Software Update Time Setting - Manual Update	0 = Disable 1 = Enable	Disable
90-36-09	Software Update Time Setting - Month	1 = January 2 = February 3 = March 4 = April 5 = May 6 = June 7 = July 8 = August 9 = September 10 = October 11 = November 12 = December	January
90-36-10	Software Update Time Setting - Day	1 ~ 31	1
90-36-12	Software Update Time Setting - Hour	0 ~ 23	0
90-36-13	Software Update Time Setting - Minute	0 ~ 59	0
90-36-14	Software Update Time Setting - Automatic Update Check	(Read Only)	Enable
90-36-16	Software Update Time Setting - Day	1 ~ 31	 Default value is system specific.
90-36-18	Software Update Time Setting - Hour	0 ~ 23	 Default value is system specific.
90-36-19	Software Update Time Setting - Minute	0 ~ 59	 Default value is system specific.

Operation

Automatic Software Check and Update

1. Automatic Update Check

For automatic update check, do the required network settings including DNS so that "Software Maintenance Server" is reachable with its FQDN.

The "Automatic Update Check" time is read only under PRG 90-36 as shown in figure. This is system specific and fixed.

System Data
90-36 : Software Update Time Setting

01 - Automatic Update	Disable
04 - Week	Tuesday
05 - Hour	23
06 - Minute	0
08 - Manual Update	Disable
09 - Month	January
10 - Day	1
12 - Hour	0
13 - Minute	0
14 - Automatic Update Check	Enable
16 - Day	8
18 - Hour	2
19 - Minute	33

SL2100 checks the software update to the server at 2:33 AM on the 8th of each month

After checking, if a newer software is available on the server then a message "There is newer version available" is displayed on Home and Software update page as shown in figure.

There is newer version available.

Software Update

If the installed software is latest then following message is displayed on the software update page.

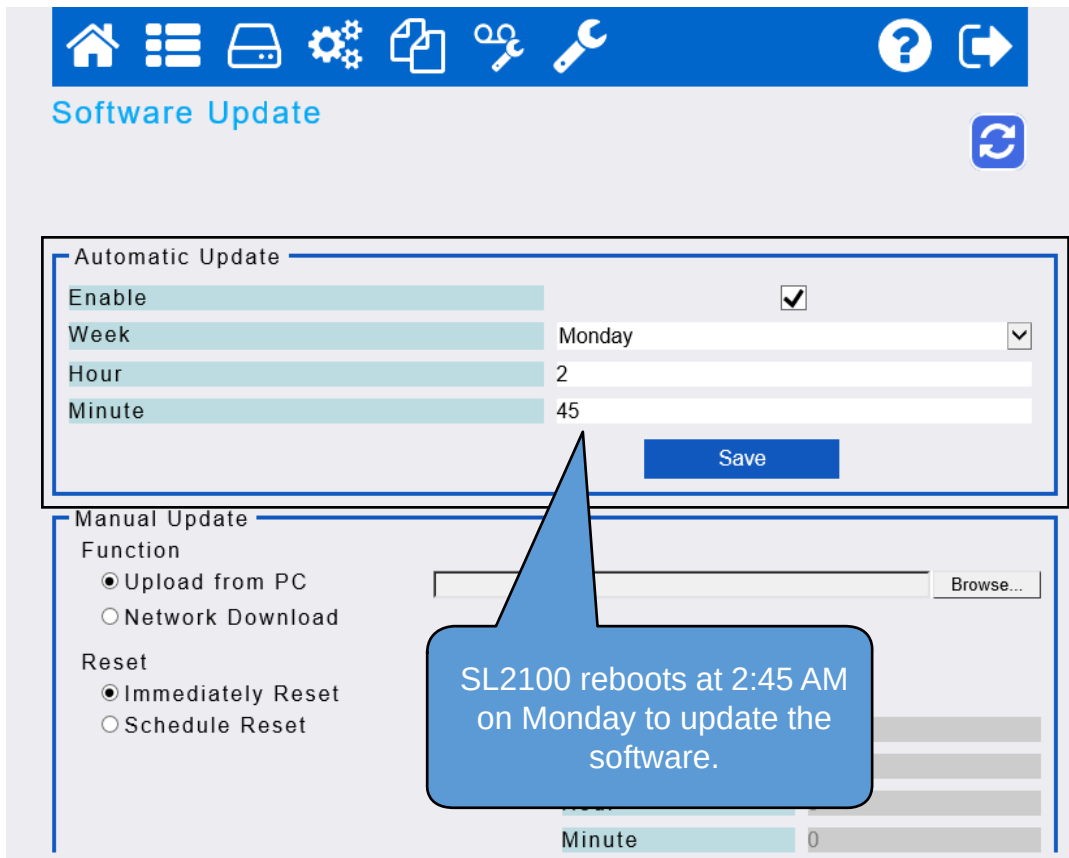
Software Update

Your software version is the latest.

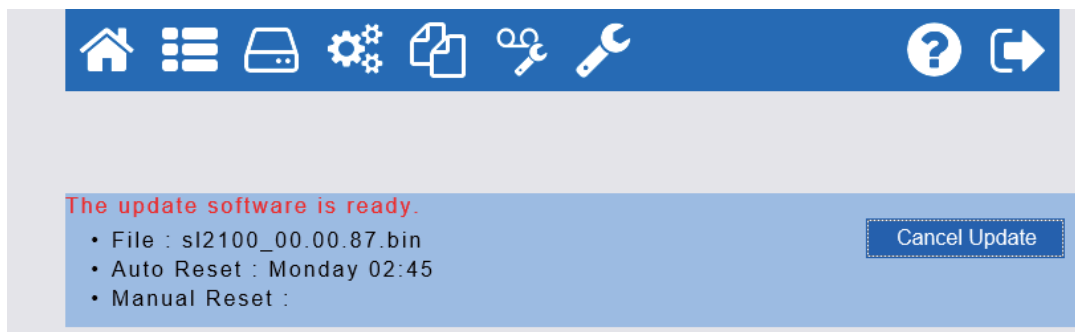
2. Automatic Update

- Do the following settings as mentioned in figure under "Automatic Update" of software update page. This enables automatic software download along with reboot time.

 However this enable the automatic download function but the automatic download time is taken from PRG 90-36-16/18/19.



- After doing settings on software update page, click on "Save" button.
The SL2100 starts downloading the software at 2:33AM of 8th of each month if a newer software is available. After downloading the software, webpro displays a message "The update software is ready" as shown in figure. User can cancel the update by pressing the "Cancel Update" button.



The SL2100 will reboot at 2:45 AM on Monday and the software will be updated.

Manual Software Update

Manual Update (Network Download)

- Select "Network Download" with either "Immediately Reset" or "Schedule Reset".

The screenshot shows the 'Software Update' configuration window. At the top is a blue header bar with icons for home, menu, device, settings, document, search, and tools, along with a help icon and a refresh icon. Below the header, the 'Software Update' title is displayed. The main configuration area includes an 'Enable' checkbox, a 'Week' dropdown menu set to 'Monday', and input fields for 'Hour' (set to 2) and 'Minute'. A callout bubble points to the 'Network Download' radio button under the 'Function' section, stating 'Select "Network Download".'. Another callout bubble points to the 'Schedule Reset' radio button under the 'Reset' section, stating 'Do these settings in case of "Schedule Reset".'. A third callout bubble points to the 'Immediately Reset' radio button, stating 'Select either "Immediately Reset" or "Schedule Reset".'. Below the 'Reset' section, there are input fields for 'Month' (1), 'Day' (1), 'Hour' (0), and 'Minute' (0). A 'Browse...' button is located next to the 'Schedule Reset' radio button. At the bottom, there are 'Start' and 'Cancel' buttons. A callout bubble points to the 'Start' button, stating 'Click on "Start".'.

Software Update

Enable ☐

Week Monday

Hour 2

Minute

Function

☐ Upload from PC

☒ Network Download

Reset

☒ Immediately Reset

☐ Schedule Reset

Month 1

Day 1

Hour 0

Minute 0

Start Cancel

Callouts:

- Select "Network Download".
- Do these settings in case of "Schedule Reset".
- Select either "Immediately Reset" or "Schedule Reset".
- Click on "Start".

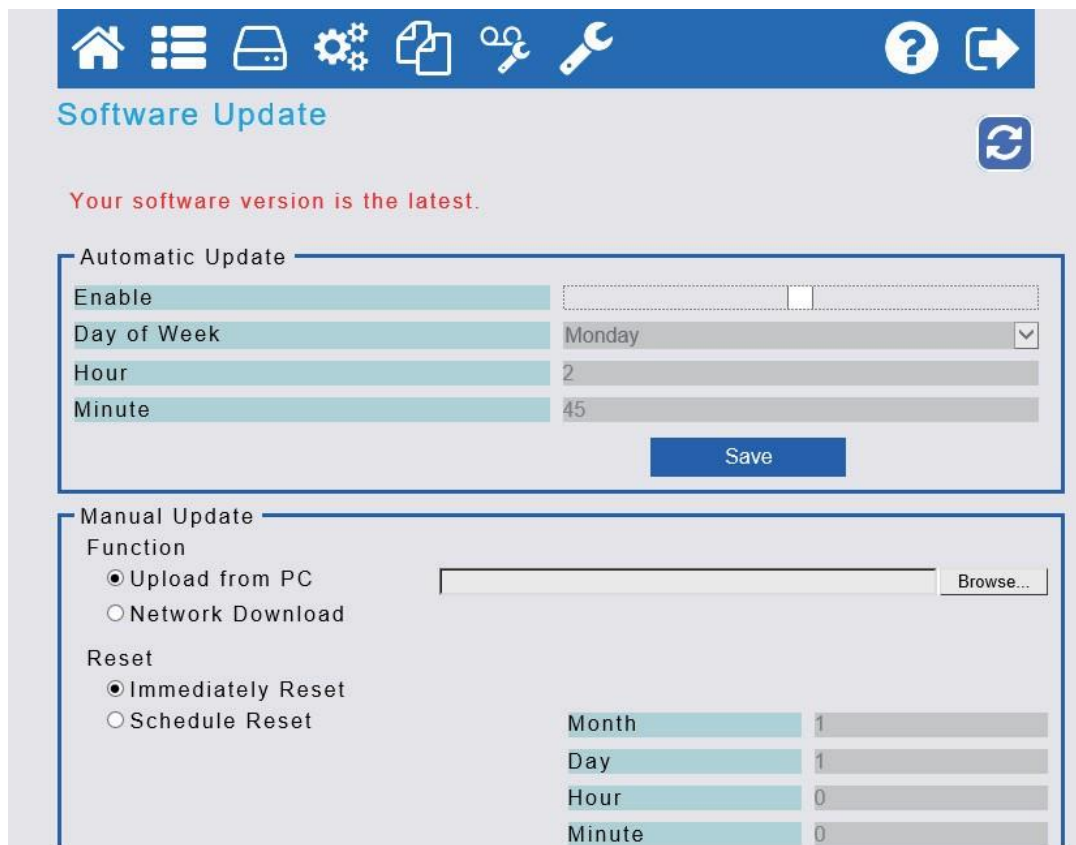
- On clicking "Start" button following window appears. Click on Ok button to proceed.

The screenshot shows the 'Software Update' window. At the top is a blue header bar with icons for Home, Menu, Device, Settings, File, Tools, and a question mark. Below the header, the title 'Software Update' is displayed. A confirmation dialog box titled 'Message from webpage' is centered on the screen, asking 'Are you sure you would like to proceed?' with 'OK' and 'Cancel' buttons. In the background, the 'Automatic Update' section has 'Enable' checked, 'Day of Week' set to 'Monday', 'Hour' set to '2', and 'Minute' set to '45'. The 'Manual Update' section has 'Function' set to 'Network Download' and 'Reset' set to 'Immediately Reset'. There are 'Start' and 'Cancel' buttons at the bottom right.

- On clicking "OK", the SL2100 checks for update and following window is displayed:

The screenshot shows the 'Software Update' window with the status 'Checking update' displayed in red text. The 'Automatic Update' section is active, showing 'Enable' checked, 'Week' set to 'Monday', 'Hour' set to '2', and 'Minute' set to '45'. A 'Save' button is visible. The 'Manual Update' section is also visible, with 'Function' set to 'Upload from PC' and 'Reset' set to 'Immediately Reset'. There are 'Browse...' and 'Start' buttons.

If current software is latest then following window is displayed:



Software Update

Your software version is the latest.

Automatic Update

Enable ☐

Day of Week

Hour

Minute

Save

Manual Update

Function

☒ Upload from PC **Browse...**

☐ Network Download

Reset

☒ Immediately Reset

☐ Schedule Reset

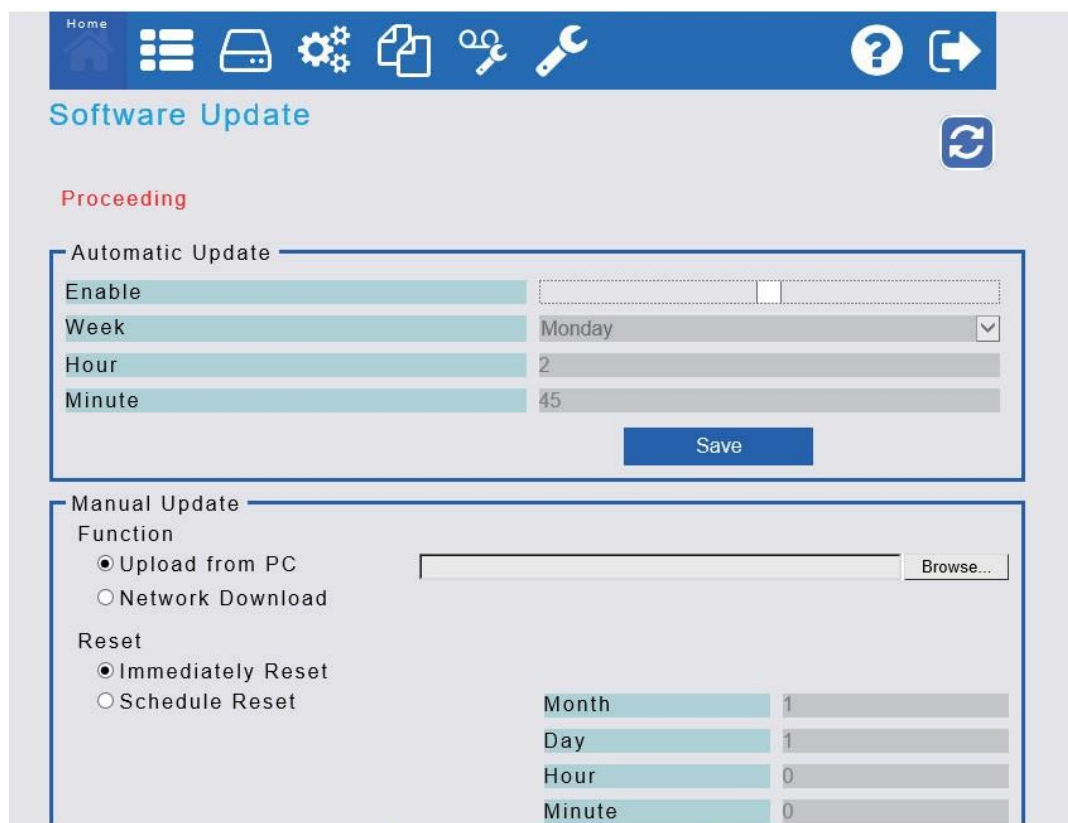
Month

Day

Hour

Minute

If the new software is available on the server then the SL2100 starts downloading the new software from the server and "Proceeding" is displayed on software update page and the page refreshes every 10 seconds.



Software Update

Proceeding

Automatic Update

Enable ☐

Week

Hour

Minute

Save

Manual Update

Function

☒ Upload from PC **Browse...**

☐ Network Download

Reset

☒ Immediately Reset

☐ Schedule Reset

Month

Day

Hour

Minute

After completing the firmware downloading the SL2100 reboots as per setting either "Immediately" or "scheduled".



Software Update

The software will be updated after system reboot.

Automatic Update

Enable

Week

Hour

Minute

Monday

2

45

Save

Manual Update

Function

Upload from PC

Network Download

Reset

Immediately Reset

Schedule Reset

Month

Day

Hour

Minute

1

1

0

0

In case of "Scheduled Reset", the following window is displayed:

Maintenance - Automatic System Update

652

Software Update

The software will be updated after system reboot.

Automatic Update

Enable ☐

Week: Monday

Hour: 2

Minute: 45

Save

Manual Update

Function

☒ Upload from PC Browse...

☐ Network Download

Reset

☒ Immediately Reset

☐ Schedule Reset

Month: 1

Day: 1

Hour: 9

Minute: 45

Start Cancel

In case of "Scheduled Reset" after downloading the software, webpro displays a message "The update software is ready" as shown in figure. User can cancel the update by pressing the "Cancel Update" button.

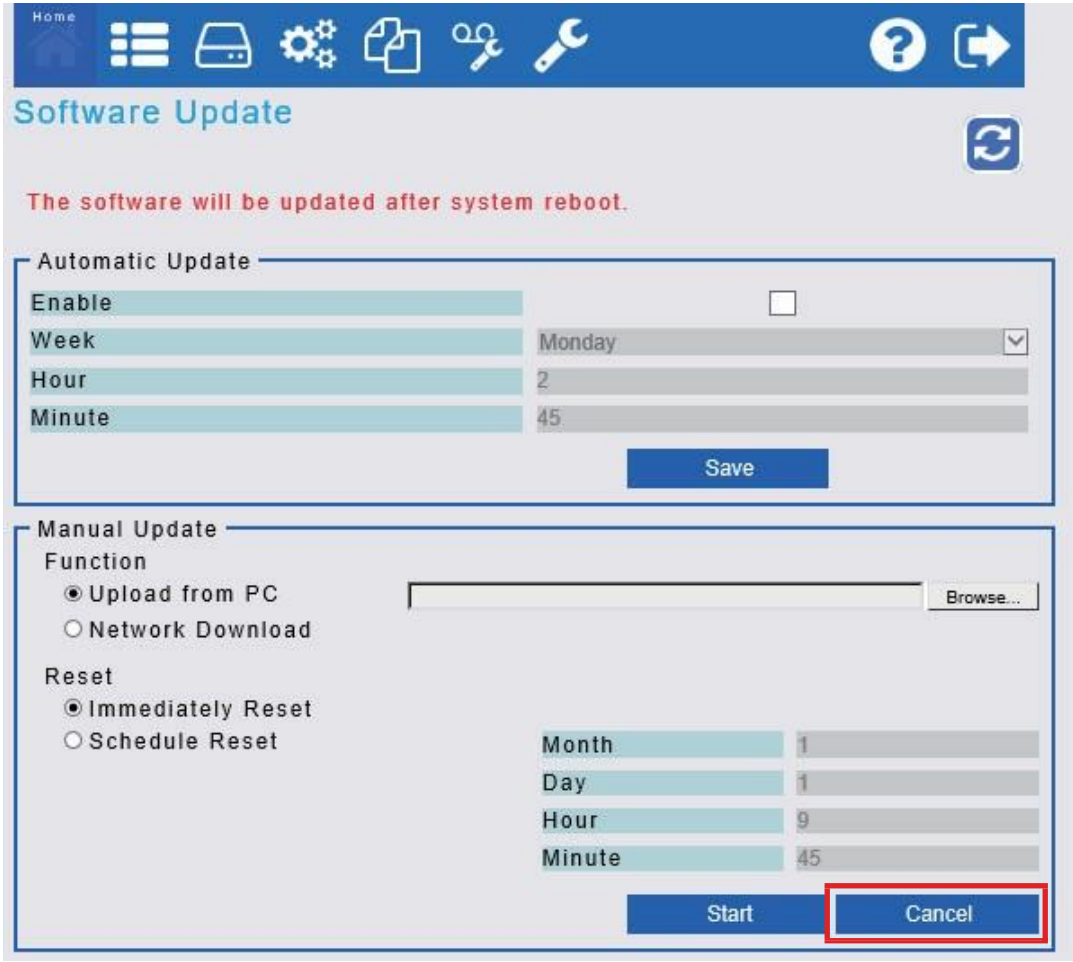
The update software is ready.

- File : sl2100_00.00.92.bin
- Auto Reset :
- Manual Reset : 01/01 09:45

Cancel Update

Cancel Schedule Reset

With "Schedule Reset", if "Cancel" button is pressed then schedule reset is cancelled:



The image shows a 'Software Update' configuration window. At the top, there is a blue header bar with icons for Home, menu, device, settings, documents, and tools, along with a help icon and a refresh icon. Below the header, the title 'Software Update' is displayed in blue. A red message states: 'The software will be updated after system reboot.' The window is divided into two main sections: 'Automatic Update' and 'Manual Update'. The 'Automatic Update' section has a sub-section 'Automatic Update' with a 'Save' button. It includes an 'Enable' checkbox, a 'Week' dropdown menu set to 'Monday', and 'Hour' and 'Minute' input fields set to '2' and '45' respectively. The 'Manual Update' section has a sub-section 'Manual Update' with a 'Function' section containing 'Upload from PC' (selected) and 'Network Download' (unselected), and a 'Reset' section containing 'Immediately Reset' (selected) and 'Schedule Reset' (unselected). There is a 'Browse...' button next to the 'Upload from PC' option. Below the 'Reset' section, there are 'Month', 'Day', 'Hour', and 'Minute' input fields set to '1', '1', '9', and '45' respectively. At the bottom right, there are 'Start' and 'Cancel' buttons, with the 'Cancel' button highlighted by a red rectangle.

Home

Software Update

The software will be updated after system reboot.

Automatic Update

Enable ☐

Week Monday

Hour 2

Minute 45

Save

Manual Update

Function

☒ Upload from PC Browse...

☐ Network Download

Reset

☒ Immediately Reset

☐ Schedule Reset

Month 1

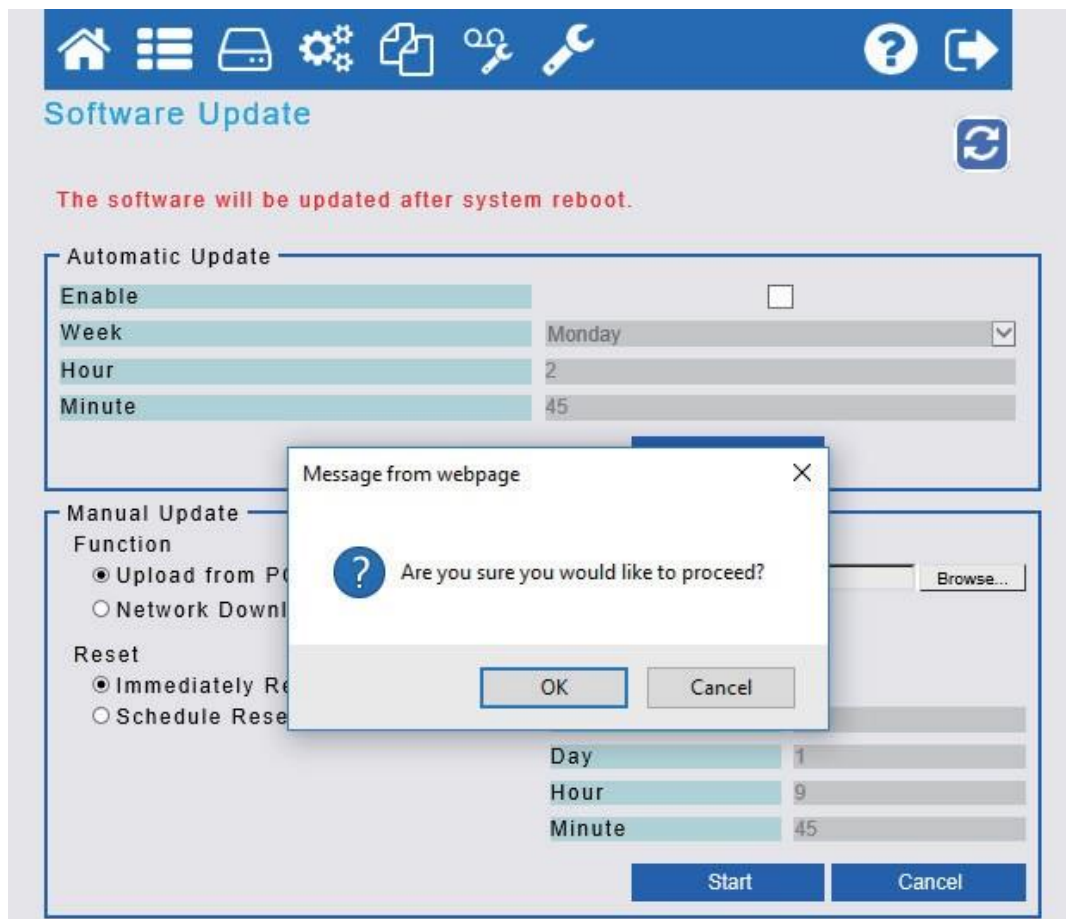
Day 1

Hour 9

Minute 45

Start Cancel

After pressing the cancel button following window is displayed:



On pressing "OK", the "Cancel" button is disabled as follows:

Home

Software Update

The software will be updated after system reboot.

Automatic Update

Enable ☐

Week Monday

Hour 2

Minute 45

Save

Manual Update

Function

☒ Upload from PC Browse...

☐ Network Download

Reset

☒ Immediately Reset ☐ Schedule Reset

Month 1

Day 1

Hour 0

Minute 0

Start Cancel

Now "Schedule Reset" is cancelled and on Home Page, The following window is displayed where Manual Reset time is removed now:

Home

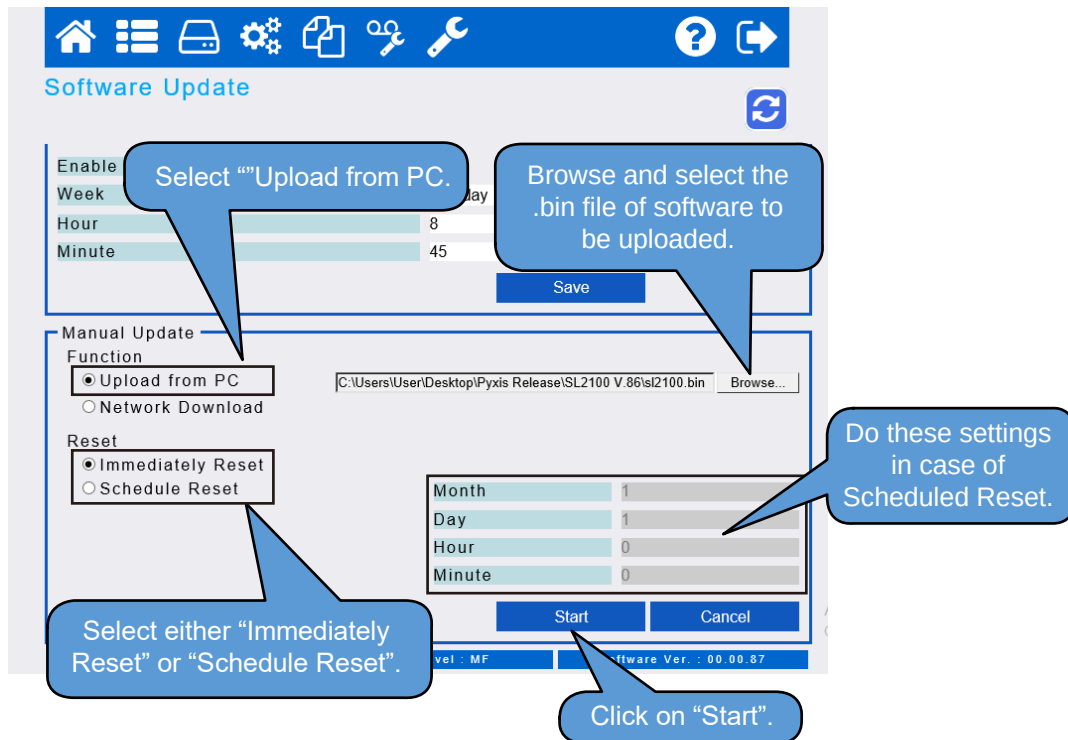
The update software is ready.

- File : sl2100_00.00.92.bin
- Auto Reset :
- Manual Reset :

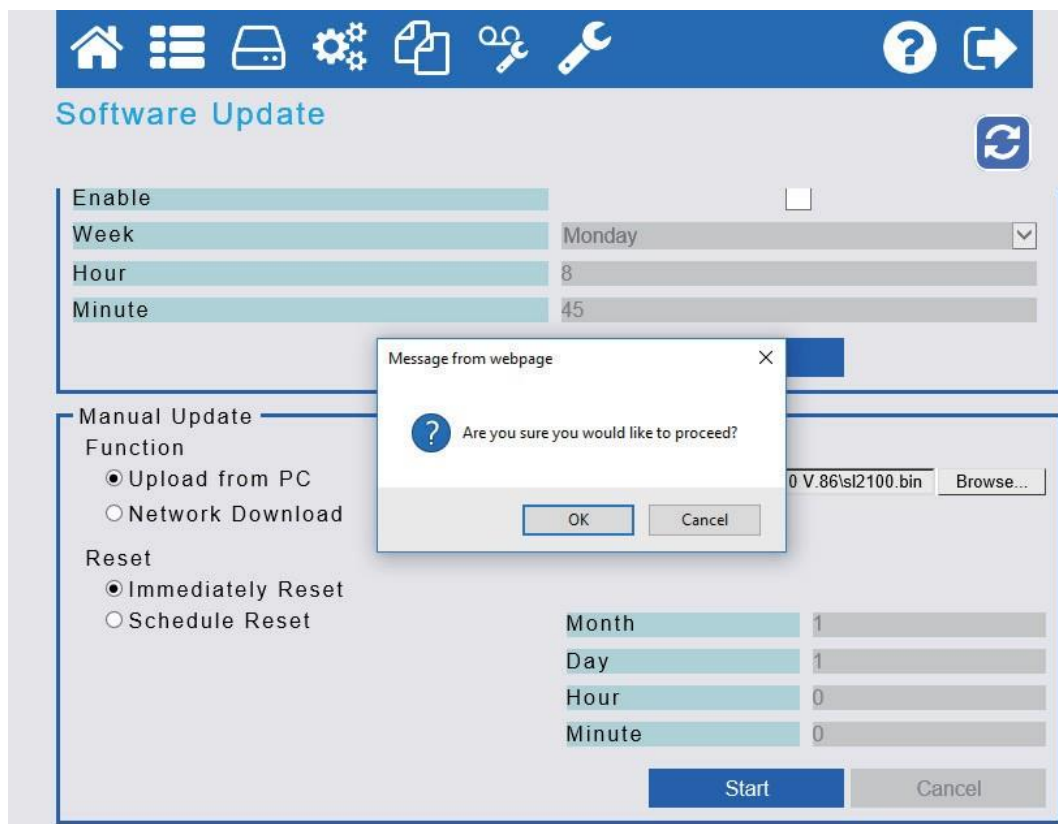
Cancel Update

Manual Update (Upload from PC)

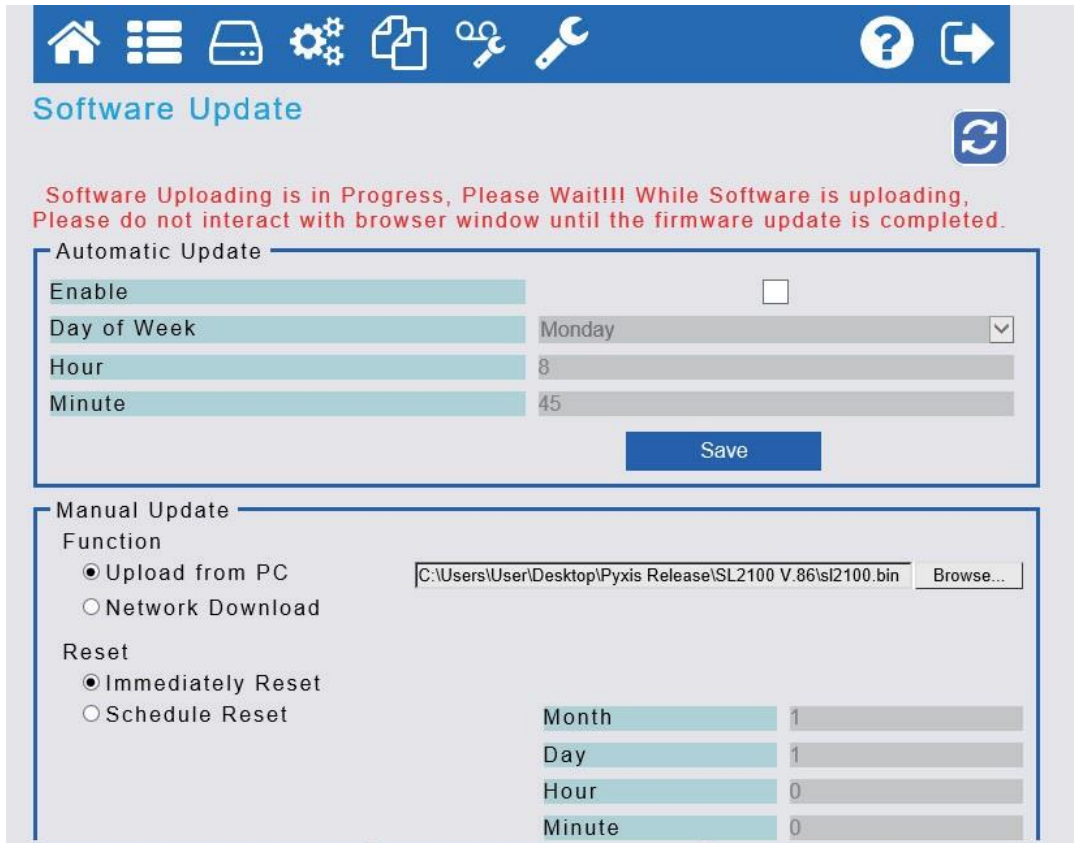
- Select "Upload from PC" and browse to upload the .bin software file to be uploaded. Select either "Immediately Reset" or "Schedule Reset".



- On clicking "Start" button following window is displayed, Click on "OK" button to proceed.



- On clicking OK, Software uploading starts and following window is displayed:



Software Update

Software Uploading is in Progress, Please Wait!!! While Software is uploading, Please do not interact with browser window until the firmware update is completed.

Automatic Update

Enable ☐

Day of Week Monday

Hour 8

Minute 45

Save

Manual Update

Function

☒ Upload from PC C:\Users\User\Desktop\Pyxis Release\SL2100 V.86\sl2100.bin Browse...

☐ Network Download

Reset

☒ Immediately Reset

☐ Schedule Reset

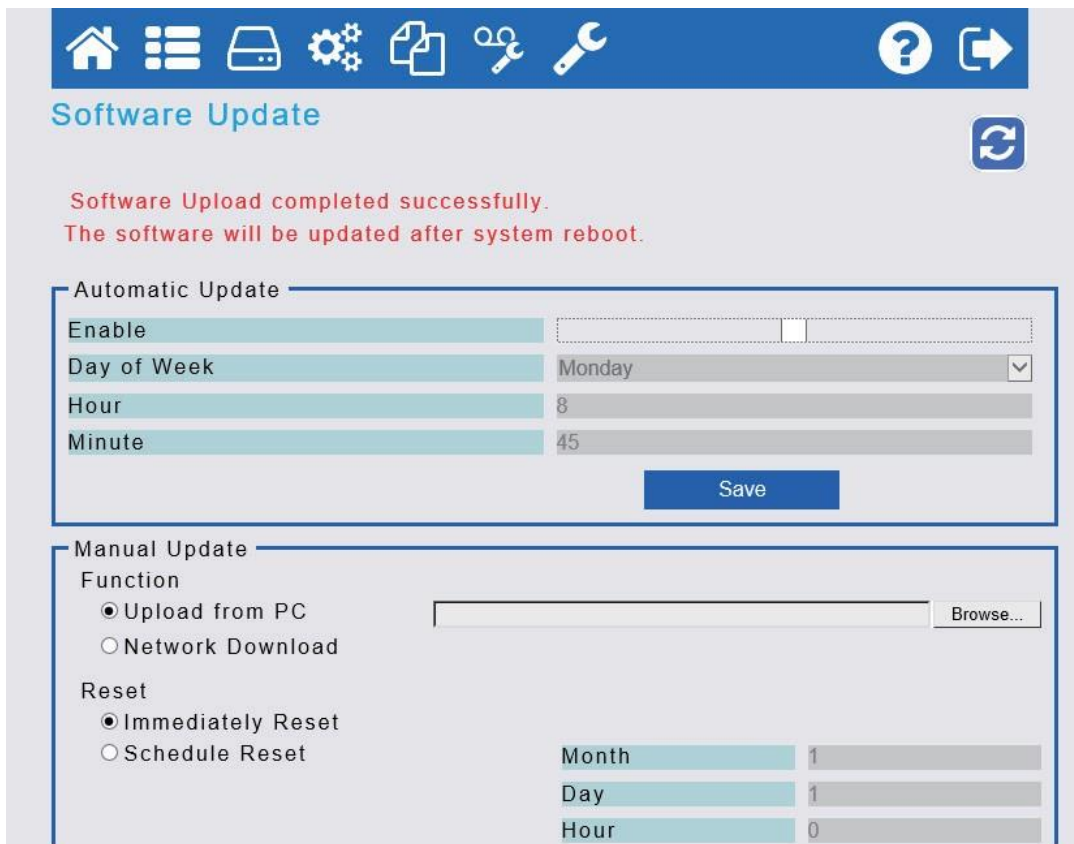
Month 1

Day 1

Hour 0

Minute 0

- After completing the software uploading, following window is displayed:



Software Update

Software Upload completed successfully.
The software will be updated after system reboot.

Automatic Update

Enable ☐

Day of Week Monday

Hour 8

Minute 45

Save

Manual Update

Function

☒ Upload from PC Browse...

☐ Network Download

Reset

☒ Immediately Reset

☐ Schedule Reset

Month 1

Day 1

Hour 0

In case of "Immediately Reset" the SL2100 reboots immediately and software is updated.

In case of "Scheduled Reset", the following window is displayed:

Software Update

Software Upload completed successfully.
The software will be updated after system reboot.

Automatic Update

Enable ☐

Week

Hour

Minute

Save

Manual Update

Function

☒ Upload from PC **Browse...**

☐ Network Download

Reset

☒ Immediately Reset

☐ Schedule Reset

Month

Day

Hour

Minute

Start **Cancel**

In case of "Scheduled Reset" after downloading the latest software webpro displays a message "The update software is ready" on home page. User can cancel the update by pressing "Cancel Update" Button.

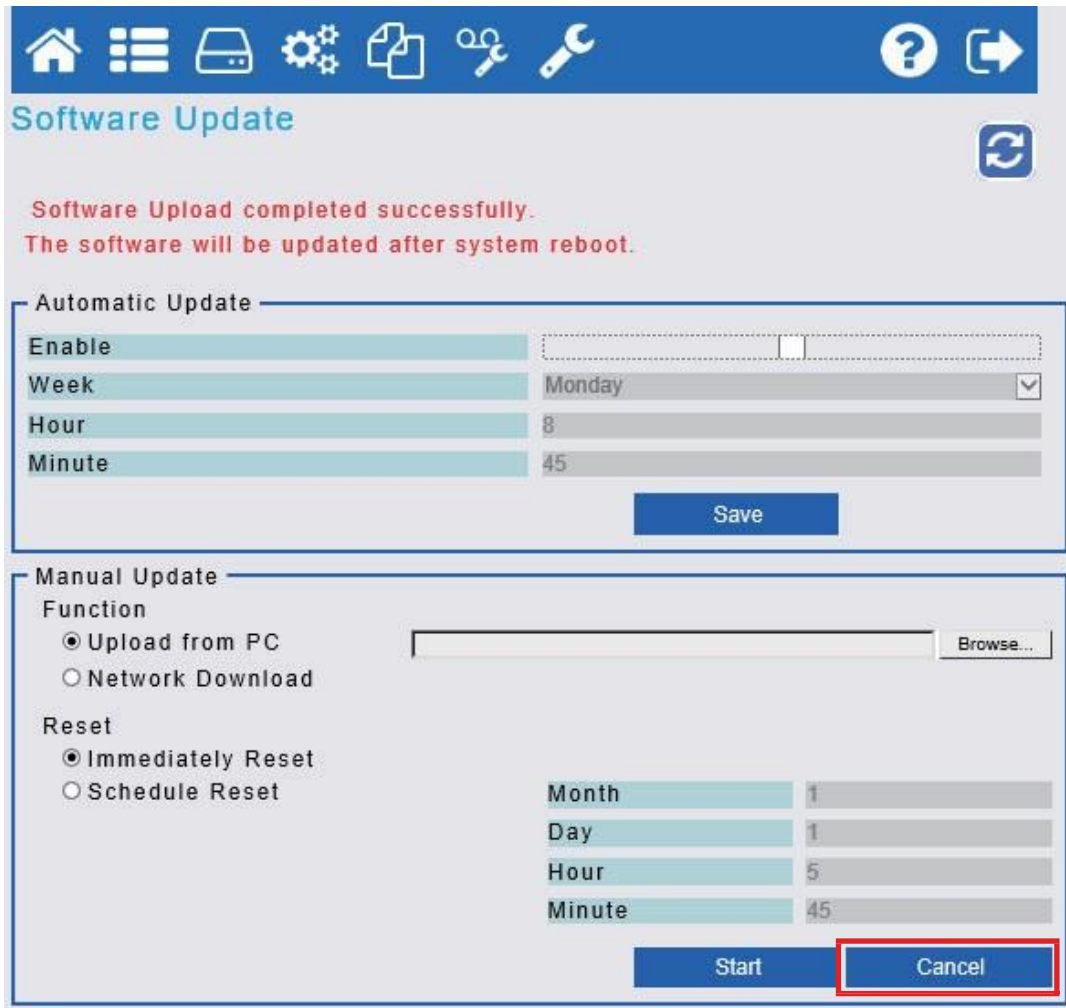
The update software is ready.

- File : sl2100.bin
- Auto Reset :
- Manual Reset : 01/01 05:45

Cancel Update

Cancel Schedule reset (upload from PC)

In case of "Scheduled Reset" system reboots at defined time but if "Cancel" button is pressed then scheduled reset is cancelled:



The image shows a 'Software Update' window with a blue header bar containing icons for home, list, device, settings, file, tools, and a refresh button. Below the header, a message states: 'Software Upload completed successfully. The software will be updated after system reboot.' The window is divided into two sections: 'Automatic Update' and 'Manual Update'. The 'Automatic Update' section has fields for 'Enable' (checkbox), 'Week' (dropdown menu showing 'Monday'), 'Hour' (text field with '8'), and 'Minute' (text field with '45'), followed by a 'Save' button. The 'Manual Update' section has a 'Function' section with radio buttons for 'Upload from PC' (selected) and 'Network Download', and a 'Browse...' button. Below this is a 'Reset' section with radio buttons for 'Immediately Reset' (selected) and 'Schedule Reset'. To the right of the 'Reset' section are fields for 'Month' (1), 'Day' (1), 'Hour' (5), and 'Minute' (45). At the bottom are 'Start' and 'Cancel' buttons, with the 'Cancel' button highlighted by a red rectangle.

Software Update

Software Upload completed successfully.
The software will be updated after system reboot.

Automatic Update

Enable ☐

Week Monday

Hour 8

Minute 45

Save

Manual Update

Function

☒ Upload from PC Browse...

☐ Network Download

Reset

☒ Immediately Reset

☐ Schedule Reset

Month 1

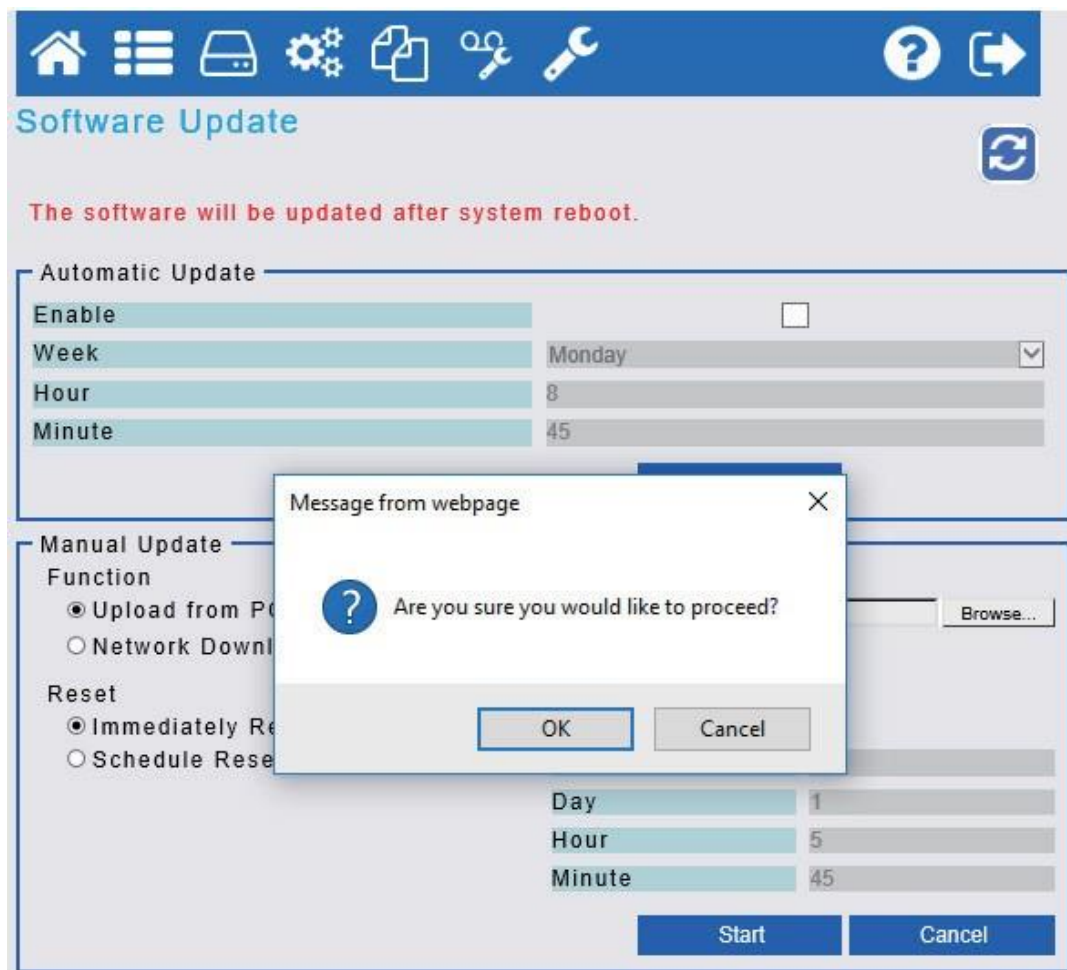
Day 1

Hour 5

Minute 45

Start Cancel

After pressing the cancel button following window is displayed:



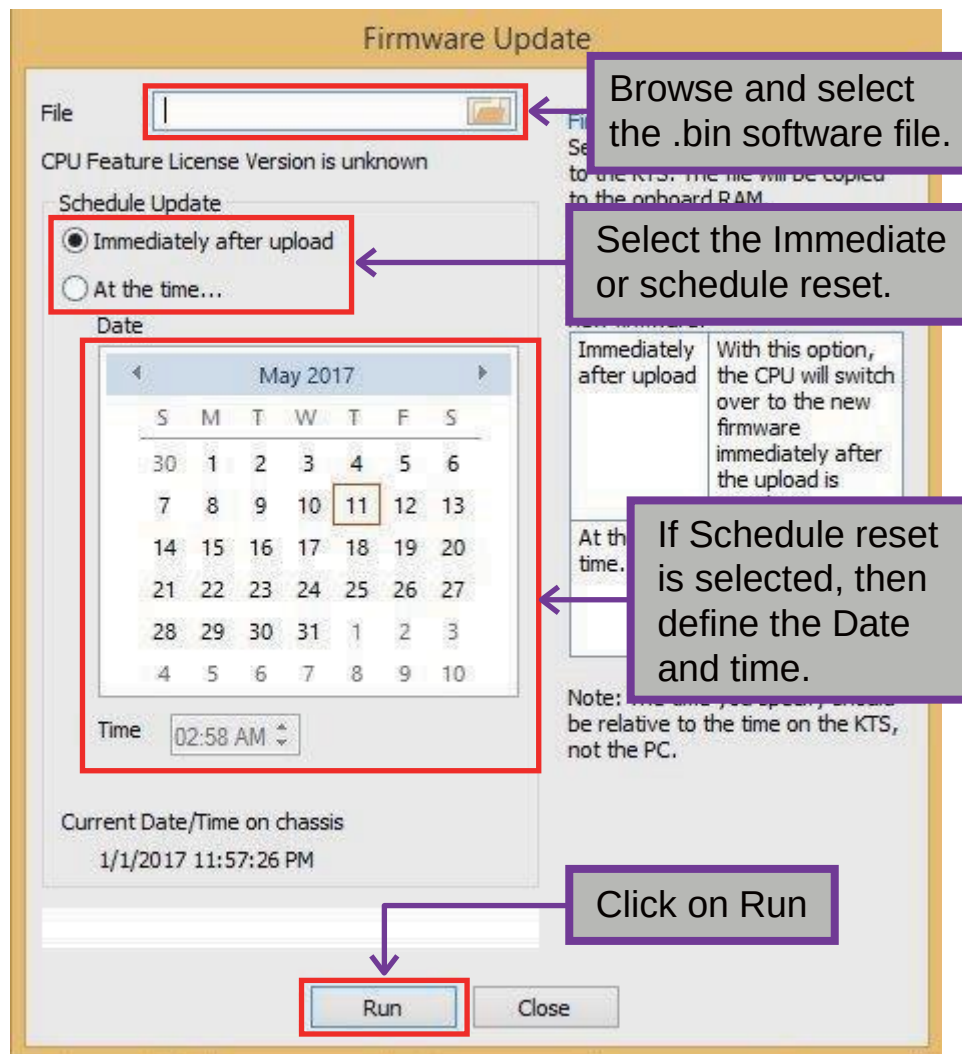
On pressing "OK" the "Cancel" button will be disabled as shown in figure:

Now "Schedule Reset" is cancelled and on Home Page the following window is displayed:

Software Update using PCPro

1. Obtain the firmware package file from NEC.
2. Open and login to PCPro.
3. Connect PCPRO to the SL2100 system.
4. Under the Home Menu -> Maintenance Zone, select the "Upgrade SW" option.
5. In the firmware update window, browse and select the Firmware Package file.
For example, the file name might be 'MainSWv0.36.bin'.
6. Select the schedule Update:
 - Immediately after upload
 - At the time ...
If you select "At the time..." select the date and time at which you want SL2100 system to reset and switch over to the new software version.

7. Click Run (Start). PCPro uploads the firmware package file.
8. Once upload is finished system will reset itself either immediately or at scheduled time as per configuration.



When System resets, PCPro will automatically disconnect.

Maintenance-Packet Capture

Description

With Version 2.00 or higher, the SL2100 supports packet capture feature. This feature is available with Web Programming where the link "InCapture" is provided on the Home - Maintenance page of Web programming. Packets sent and received by the SL2100 are saved in a pcap file format. The saved packet file can be downloaded from WebPro and the contents can be checked using the packet capture tool (e.g. Wireshark). This feature helps to capture network packets without changing any network configuration while performing an installation or troubleshooting various issues.

Conditions

- The Packet Capture configuration is done using Web Programming.
The packet capture can not set from the PCPro.
- This feature is available with an access level of IN.
- Packets sent and received by the SL2100 are the target of Packet Capture except broadcast packet e.g. ARP packets.
- Program 84-26-01 is not the target of a Packet Capture.
- Date, time and size are shown for all saved files.
- A captured file can be downloaded by clicking on the Download icon. The file can be downloaded even if the packet capture is in progress.
- A captured file can be removed by clicking on the remove icon. The file cannot be deleted while packet capture is in progress.
- The files are displayed in ascending order of date.
- In order to start capture, the following conditions must be satisfied.
 - Number of saved pcap files should be less than 10.
 - The remaining capacity of the SD card should be more than 100 MB or the remaining capacity of CPU without SD card should be more than 25 MB.



If either one of the conditions is not satisfied, the capture will fail.

- If a Packet Capture is in progress, a second capture cannot be started (i.e., using another browser window). If attempted, the error "already running" is displayed. The page then refreshes showing the progress of the capture already running.
- When start of a file capture fails, the following errors based on conditions will be displayed.

Condition	Message
Error	Starting packet capture is failure. Please confirm filter setting and start once again.
ending	The previous end processing of packet capturing is operating. Please wait a moment.
Capacity of storage is less than requirement size	There is not enough space in disk. More than 100 MB(with SD card) or 25MB(without SD card) of space is needed.
The number of pcap files is 10	Can't save beyond 10 files. Please delete stored files.
Running	Already running

- To download a file, click the "Download" icon. If a selected file is already removed, downloading is unavailable.
- To delete a file, click the "Delete" icon.

- Deleting will fail in the following case.

- While capturing.
- The selected file is already deleted.

In this case, the following message will be shown.

"Downloading and Deleting is unavailable while capturing. In another case, that file already may be deleted or may be using."

- The Packet capture page is automatically reloaded approximately every five seconds while packet capture is in progress.
- A message "Running capture...Once the capture has been started, do not attempt to edit any fields" will be displayed on the page.
- The Packet capture still continues if the packet capture page is closed during packet capture execution.
- During packet capture execution, filtering is performed for each packet to be sent and received from the SL2100, and saves the packets as per the filter selection.
- A packet capture stops with the following conditions:
 - When clicking the stop icon.
 - When the remaining capacity of the SD card is less than 100 MB or CPU without SD card is less than 25 MB.
 - When the system is powered off.
- When the packet capture stops, the "Stop" button changes to gray and "Start" button becomes active.
- Once a Packet capture has been stopped it cannot be stopped again. For example, by using two browser windows to stop an already stopped packet capture, an error is displayed.

Statement
Stop failure. Already Stopped.

- The file name of the captured file is in the following format using the HW key code and the timestamp.
 XXXXXXXXXXXX_YYMMDDhhmmss.pcap
 XXXXXXXXXXXX : HW key code
 YYMMDDhhmmss : timestamp
 e.g. When HW key code is 123456789ABC and the date is 2019/01/07 01:27:56.
 123456789ABC_190107012756.pcap
- If a file with the same name already exists, the existing file will be replaced with new file.
- A filter can be applied based on protocol, IP address and port number.

- A protocol and port number of the system feature are indicated as below.

Filter Name	PRG	Program Name	Protocol		Default	Remarks
			UDP	TCP		
HTTP (Webpro and Lua Application Manager)	90-54-01	PC/Web Programming Setting-WebPro TCP Port Number		○	Version 3.00 or higher: 0 Version 2.xx or lower: 80	
UC Web Application	10-20-01 index 8	UC Web Application		○	0	
SIP Trunk	10-29-04 index 1-6	Default Proxy Port			5060	
	10-29-07 index 1-6	Registrar Port			5060	
	84-14-06 index 1-6	SIP Trunk Port Number			[index1] 5060 [index2] 5062 [index3] 5090 [index4] 5092 [index5] 5094 [index6] 5096	
IP-MLT	10-46-06	Registrar Port	○		5080	
	10-46-13	Subscribe Session Port	○		5081	
	10-47-01	Registrar Port		○	6080	
SIP Extension	84-20-01	Register/Proxy Port	○	○	5070	
	84-20-07	TLS Register/Proxy Port		○	0	

- If the Port number is set to "0", the port filter is not applied.
- When a port is specified, only the selected protocol packets whose port numbers are matched will be saved.
- When both IP address and port number are specified for a device filter, the TCP / UDP packets that satisfy both are saved.
- If a Device filter is enabled and neither Device IP Address nor Device Port are defined, the Packet capture will start and all packets will be captured.
- The filter concept works on the basis of a port no. defined in the SL2100 for a selected protocol. It is also possible that same port no. may also exist for some external device which communicates with the SL2100 and those packets will also be captured as per this concept for a common port number.
- When a packet capture for all packets is used, all packets sent and received from the SL2100 are captured which may degrade performance. Unless required, this feature should not be used with all packet captures during normal operation.

Default Settings

None

System Availability

Terminals

None

Required Component(s)

- System LAN port (Using Built-In VoIP(CPU))
- System VoIP port

- SL2100 Ver 2.00 or higher

Related Features

None

Guide to Feature Programming

None

Operation

Login to Web Programming with the Installer access level. The Home screen will be displayed and click on "Maintenance". Maintenance page will be displayed with a "InCapture" link.

The screenshot displays the NEC SL2100 Web Programming interface. On the left is a blue sidebar with the NEC logo and the title "SL2100 Web Programming". Below the title is a list of menu items: Session Management, System Initialization, Modification History, Trace Command Control, System Alarm, Data Download, Data Upload, Software Update, Certificate Registration, License Upload, and InCapture (which is highlighted with a red box). The main content area has a blue header with icons for Home, Menu, Device, Settings, File, Key, and a circled wrench icon. Below the header, the "InCapture" section is visible. It includes a "Start" button and a "Stop" button. There are two filter sections: "Feature Filter" and "Device Filter". Each filter section has a "Filter Enable" checkbox, a "Protocol Setting" dropdown menu (set to "ALL"), and a "Local Port" or "Device Port" input field (set to "0"). At the bottom, there is a table with four columns: "Start Date", "Size(KB)", "Download", and "Delete".

Figure 1-36 Packet Capture Screen

Click on this link to see the settings available in this feature (refer to [Figure 1-36 Packet Capture Screen](#)).

- **Start/Stop:** This function works like a button to Start and Stop the capture. Before starting, make the required inputs and filters are defined.

- **Feature Filter:** Select the packet capture target filters for the SL2100. The following Protocol filters are supported:

- All
- TCP/UDP
- TCP
- UDP
- SIP
- HTTP

When a Feature Filter is selected for packet capture, the system will capture all packets having those port numbers.

- **Device Filter:** A Device Filter can be used to capture packets specific to an external device e.g., IP phones which communicate with the SL2100. The device IP address, port number or both can be defined as filters per requirement.



- If both SIP/HTTP in feature filter and Local Port are set, then all packets of both SIP/HTTP and local Port will be captured.
- If both All/TCP/UDP in feature filter and Local Port are set, then all packets between All/TCP/UDP and local Port will be captured.
- If Feature Filter and Device Filters are both used, packets which use both conditions will be captured.

- **Captured Files:** List of captured files are shown here. Maximum of 10 files can be stored.

- Date: Displays date and time when the packet capture starts.
- Size (KB): Displays size of the captured file.
- Download: File can be downloaded by clicking on Download Button.
- Delete: Saved file can be removed by clicking on Remove button.

Examples:

- When only Feature Filter is selected:

The Feature Filter TCP is selected (refer to [Figure 1-37 Example of Feature Filter Settings](#)). The system will capture all TCP packets sent or received by the SL2100 irrespective of port numbers.

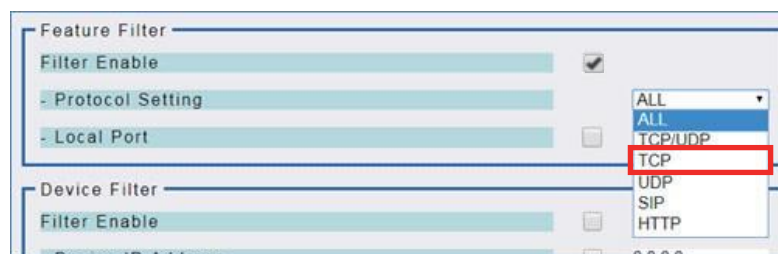


Figure 1-37 Example of Feature Filter Settings

- When both Feature Filter and Device filters are selected:

The Feature filter TCP is selected along with Device filter IP address (refer to [Figure 1-38 Example of Device Filter Settings](#)). TCP packets sent or received between the SL2100 IP address and Device IP address 172.16.0.101 are captured. Even when other devices are communicating with the SL2100, only selected device IP address packets will be captured.

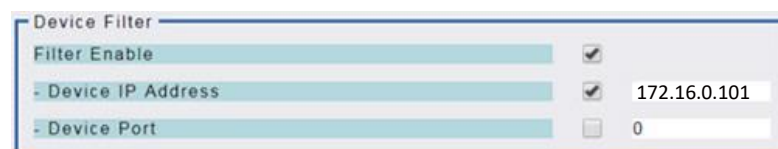


Figure 1-38 Example of Device Filter Settings

Meet Me Conference

Description

With Meet Me Conference, an extension user can set up a Conference with their current call and up to 16 other internal or external parties. Each party joins the Conference by dialing a Meet Me Conference code. Meet Me Conference lets extension users have a telephone meeting - without leaving the office.

The CPU provides two blocks of 16 conference circuits, allowing each block to have any number of internal or external parties conferenced up to the block limit of 16.

Conditions

None

Default Settings

Enabled

System Availability

Terminals

Multiline Terminals

Required Component(s)

None

Related Features

Conference

Meet Me Paging

Programmable Function Keys

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.

Program No.	Program Name	Input Data	Default
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-10-06	Class of Service Options (Answer Service) - Meet-Me Conference and Paging	0 = Off 1 = On	COS 01 ~ 15 = 1
31-01-04	System Options for Internal/External Paging - Privacy Release Time	0 ~ 64800 seconds	90 seconds



For additional programming for Paging, refer to the [Paging External](#) and [Paging Internal](#) features.

Operation

Meet Me External Conference

To make a Meet Me External Conference:

Multiline Terminal

1. While on a call, press **Conf** softkey or **Conf** key (PRG 15-07 or SC **751: 07**).
2. Dial Paging code [External **703**, or Combined (***1**)] and the Paging Zone.
3. Announce the zone.
4. When a co-worker answers your page, press the **Conf** softkey or press **Conf** key (PRG15-07 or SC 751: **07**) twice.
5. Repeat steps 1~4 for each co-worker you want to add.

Single Line Terminal

1. While on a call, hookflash and dial **#1**.
2. Dial Paging code [Internal **701**, External **703**, or Combined (***1**)] and the Paging Zone.
3. Announce the zone.
4. When a co-worker answers your page, press hookflash twice.
5. Repeat steps 1~4 for each co-worker you want to add.

To join a Meet Me External Conference:

1. At the Multiline Terminal, press **Speaker** key.
- **OR** -
At a Single Line Terminal, lift the handset.
2. Dial **765**.
3. Dial the announced External Paging Zone code (1~3).



You connect to the other parties.

Meet Me Internal Conference

To make a Meet Me Internal Conference:

Multiline Terminal

1. While on a call, press **Conf** softkey or **Conf** key (PRG15-07 or SC 751: **07**).
2. Dial Paging code [Internal **701**, or Combined (***1**)] and the Paging Zone.
3. Announce the zone.
4. When a co-worker answers your page, press the **Conf** softkey or press **Conf** key (PRG15-07 or SC 751: **07**) twice.
5. Repeat steps 1~4 for each co-worker you want to add.

Single Line Terminal

1. While on a call, hookflash and dial **#1**.
2. Dial Paging code [Internal **701**, or Combined (***1**)] and the Paging Zone.
3. Announce the zone.
4. When a co-worker answers your page, press hookflash twice.
5. Repeat steps 1~4 for each co-worker you want to add.

To join a Meet Me Internal Conference:

1. At the Multiline Terminal, press **Speaker** key (or lift the handset).
- **OR** -
At the Single Line Terminal, lift the handset.
2. Dial **763** (if your extension is in the zone called).
- **OR** -
Dial **764** and the zone number (if your extension is not in the zone called).
- **OR** -
Press the **Meet Me Conference/Paging Pickup** key (PRG 15-07-01 or SC **751**: 23) if your extension is in the zone called.

Meet Me Paging

Description

Meet Me Paging allows an extension user to Page a co-worker and privately meet with them on a Page zone. The Paging zone is busy to other users while the meeting takes place. While the co-workers meet on the zone, no one else can hear the conversation, join in or make an announcement using that zone. Meet Me Paging is a good way to talk to a co-worker when their location is unknown. If the co-worker can hear the Page, they can join in the conversation.

Conditions

- With Meet Me Paging Transfer, a user can page a co-worker and have the call automatically transfer when the co-worker answers the page.
- An extension access to internal and external page zones affects the Meet Me Paging feature.
- Internal and External Paging keys simplify Meet Me Paging operation.

Default Settings

Enabled

System Availability

Terminals

Multiline Terminals

Required Component(s)

External zone paging requires a Paging System be installed in the system.

Related Features

Meet Me Conference

Meet Me Paging Transfer

Paging, External

Paging, Internal

Programmable Function Keys

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-12-21	Service Code Setup (for Service Access) - Meet-Me Answer to Specified Internal Paging Group	0~9, *, # Maximum of 8 digit	764
11-12-22	Service Code Setup (for Service Access) - Meet-Me Answer to External Paging	0~9, *, # Maximum of 8 digit	765
11-12-23	Service Code Setup (for Service Access) - Meet-Me Answer in Same Paging Group	0~9, *, # Maximum of 8 digit	763
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-10-06	Class of Service Options (Answer Service) - Meet-Me Conference and Paging	0 = Off 1 = On	COS 01 ~ 15 = 1
31-02-01	Internal Paging Group Assignment - Internal Paging Group Number	0 ~ 50 (0 = No setting)	All stations = 1
31-02-02	Internal Paging Group Assignment - Internal All Call Paging Receiving	0 = Off 1 = On	1

 For additional programming information on Paging, refer to [Paging, External](#) and [Paging, Internal](#) features.

Operation

Meet Me External Page

To make a Meet Me External Page:

- At Multiline Terminal, press **Speaker** key or pick up the handset.
- OR -
At the Single Line Terminal, lift the handset.
- Dial Paging code [External **703**, or Combined (*1)] and the Paging Zone.
- Announce the zone.

- OR -

- At the Multiline Terminal, press the **External Paging Zone** key (PRG 15-07-01 or SC **751**: 19 + zone).
- Announce the zone.

To join a Meet Me External Page:

- At the Multiline Terminal, press **Speaker** key or pick up the handset.
- OR -
At the Single Line Terminal, lift the handset.
- Dial **765**.
- Dial the announced External Paging Zone (1~3).

 You connect to the other party.

Meet Me Internal Page

To make a Meet Me Internal Page:

1. At the Multiline Terminal, press **Speaker** key or pick up the handset.
- **OR** -
At the Single Line Terminal, lift the handset.
2. Dial Paging code [Internal **701**, or Combined (***1**)] and the Paging Zone.
3. Announce the zone.

To join a Meet Me Internal Page:

1. At the Multiline Terminal, press **Speaker** key or pick up the handset.
- **OR** -
At the Single Line Terminal, lift the handset.
2. Dial **763** (if your extension is in the zone called).
- **OR** -
Dial **764** and the zone number (if your extension is not in the zone called).
- **OR** -
Press the **Meet Me Conference/Paging Pickup** key (PRG 15-07-01 or SC **751**: 23) if your extension is in the zone called.

Meet Me Paging Transfer

Description

If a user wants to Transfer a call to a co-worker but they do not know where the co-worker is, they can use Meet Me Paging Transfer. With Meet Me Paging Transfer, the user can Page the co-worker and have the call automatically Transfer when the co-worker answers the Page. Since Meet Me Paging Transfer works with both Internal and External Paging, a call can be quickly extended to a co-worker anywhere in the facility.

Conditions

- An extension user can set up a conference with their current call and up to 31 other inside parties.
- An extension user can Page a co-worker and meet with them on a page zone.
- With External Paging, an extension user can broadcast an announcement over paging equipment connected to external paging zones.
- Internal Paging lets extension users broadcast announcements to other Multiline Terminals.
- Function keys simplify Meet Me Paging Transfer operation.

Default Settings

Enabled

System Availability

Terminals

All Multiline Terminals

Required Component(s)

External zone paging requires a Paging System installed in the system.

Related Features

Meet Me Conference

Meet Me Paging

Paging, External

Paging, Internal

Programmable Function Keys

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-12-21	Service Code Setup (for Service Access) - Meet-Me Answer to Specified Internal Paging Group	0~9, *, # Maximum of 8 digit	764
11-12-22	Service Code Setup (for Service Access) - Meet-Me Answer to External Paging	0~9, *, # Maximum of 8 digit	765
11-12-23	Service Code Setup (for Service Access) - Meet-Me Answer in Same Paging Group	0~9, *, # Maximum of 8 digit	763
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-10-06	Class of Service Options (Answer Service) - Meet-Me Conference and Paging	0 = Off 1 = On	COS 01 ~ 15 = 1
31-02-01	Internal Paging Group Assignment - Internal Paging Group Number	0 ~ 50 (0 = No setting)	All stations = 1
31-02-02	Internal Paging Group Assignment - Internal All Call Paging Receiving	0 = Off 1 = On	1
31-03-01	Internal Paging Group Settings - Internal Paging Group Name	Up to 12 Characters	Refer to the Programming Manual for the default values.



For additional programming information on Paging, refer to the [Paging, External](#) and [Paging, Internal](#) features.

Operation

Meet Me External Paging Transfer

To make a Meet Me External Paging Transfer:

- At the Multiline Terminal, while on a call, press **Hold** key.
- OR -
At the Single Line Terminal, while on a call, hookflash.
- Dial Paging code [External **703** or Combined (***1**)] and the Paging Zone.
- Announce the call.
- From a Multiline Terminal, when the paged party answers, press **Transfer** key or the **Transfer** softkey.
- OR -
From a Single Line Terminal, when the paged party answers, hang up.



The party is transferred.

To join a Meet Me External Paging Transfer:

- At the Multiline Terminal, press **Speaker** key or pick up handset.
- OR -
At Single Line Terminal, lift the handset.

2. Dial **765**.
3. Dial the announced External Paging Zone (1~3).



The Paging party is connected.

4. Stay on the line.



The party is transferred.

Meet Me Internal Paging Transfer

To make a Meet Me Internal Paging Transfer:

1. At Multiline Terminal, while on a call, press **Hold** key.
- **OR** -
At the Single Line Terminal, while on a call, hookflash.
2. Dial Paging code [Internal **701**, External **703**, or Combined (***1**)] and the Paging Zone.
3. Announce the call.
4. From a Multiline Terminal, when the paged party answers, press **Transfer** key.
- **OR** -
From a Single Line Terminal, when the paged party answers, hang up.



The party is transferred.

To join a Meet Me Internal Paging Transfer:

1. At the Multiline Terminal, press **Speaker** key or pick up handset.
- **OR** -
At the Single Line Terminal, lift the handset.
2. Dial **763** (if your extension is in the zone called).
- **OR** -
Dial **764** and the zone number (if your extension is not in the zone called).
- **OR** -
Press the **Meet Me Conference/Paging Pickup** key (PRG 15-07 or SC **751**: 23) if your extension is in the zone called.
3. Stay on the line.



The party is transferred.

Memo Dial

Description

While on an outside call, Memo Dial lets a Multiline Terminal user store an important number for easy redialing later on. The telephone can be like a notepad. For example, a user could dial Directory Assistance and ask for a client's telephone number. When Directory Assistance plays back the requested number, the caller can use Memo Dial to jot the number down in the telephone memory. They can quickly call the Memo Dial number after hanging up.

When a user enters a Memo Dial number, the dialed digits do not output over the trunk. Dialing Memo Dial digits does not interfere with a call in progress.

Conditions

- When Memo Dial calls out, it outdials the entire stored number. Memo Dial does not automatically strip out trunk or PBX access codes if entered as part of the stored number.
- Only one number can be stored at a time.
- If a number is already stored in Memo Dial and you are on an internal or external call and the Dial Memo Key is pressed, the number is erased.
- A user's outgoing dialing options affect how a Memo Dial call is placed.
- Memo Dial is not available at Single Line Terminals.

Default Settings

Disabled

System Availability

Terminals

All Multiline Terminals

Required Component(s)

None

Related Features

Central Office Calls, Placing

Last Number Redial

Save Number Dialed

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.

Operation

To store a number while you are on a call:

1. While on a call, press the **Memo Dial** key (PRG 15-07 or SC **751**: 31).
2. Dial number you want to store.
3. Press the **Memo Dial** key again and continue with conversation.

To call a stored Memo Dial number:

1. Do not lift the handset.
2. Press the **Memo Dial** key (PRG 15-07 or SC **751**: 31).
3. Press **Speaker** key.



The stored number dials out only if you store a trunk access code before the number.

- OR -

Press the line key.



The stored number dials out.

To check to see the stored Memo Dial number:

1. Do not lift the handset.
2. Press the **Memo Dial** key (PRG 15-07 or SC **751**: 31).



The stored number displays.

To cancel (erase) a stored Memo Dial number:

1. Press **Speaker** key.
2. Press the **Memo Dial** key (PRG 15-07 or SC **751**: 31).

Message Waiting

Description

An extension user can leave a Message Waiting indication at a busy or unanswered extension requesting a return call. The indication is a flashing MW lamp at the called extension and a steadily lit MW lamp on the calling extension. Answering the Message Waiting automatically calls the extension which left the indication. Message Waiting ensures that a user does not have to recall an unanswered extension. It also ensures that a user does not miss calls when their extension is busy or unattended. Additionally, Message Waiting lets extension users:

- View and selectively answer messages left at their extension (display Multiline Terminal only)
- Cancel all messages left at their extension
- Cancel messages they left at other extensions

An extension user can leave Messages Waiting at any number of extensions. Also, any number of extensions can leave a Message Waiting at the same extension. A periodic VRS announcement may remind users that they have Messages Waiting.

LED Color Indication

The software allows you to select whether the Message Waiting LED located at the top of the Multiline Terminal flashes green (0) or red (1) when a Message Waiting LED is flashing. By default, this option is set to flash green.

Conditions

- When a user responds to a Message Waiting, the system does not cancel the Message Waiting LED if the called party uses Handsfree Answerback. The system cancels the indication only if the called party lifts the handset or presses **Speaker** key.
- With the Hotel/Motel set up, an employee with a Multiline Terminal can send a Message Waiting to a room telephone if allowed in system programming.
- The Message Waiting key simplifies this feature operation.
- Telephone-to-telephone Message Waiting works when the voice mail is installed.
- The Message Waiting LED may be used to indicate voice mail messages if no extension number is assigned to the voice mail key in system programming.
- If the following programs are changed while the phone is online, a reset of the feature is required before the setting takes effect.
 - PRG 15-02-35 Message Waiting Lamp Cycle for Calling Extension
 - PRG 15-02-36 Message Waiting Lamp Cycle for Called Extension
 - PRG 15-02-37 Voice Mail Message Wait Lamp Color
 - PRG 15-02-38 Voice Mail Message Wait Lamp Cycle



For example, if a message waiting was set before any of these programs were changed, the lamp remains the same until the message waiting is set again.

- If both Voice Mail Message and Message Waiting LED is set, the color set for Message Wait overrides the color used for the Voice Mail Message LED.

Default Settings

Enabled

System Availability

Terminals

All Terminals

Required Component(s)

None

Related Features

Handsfree Answerback/Forced Intercom Ringing

Hotel/Motel

Programmable Function Keys

InMail

Voice Response System (VRS)

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-10-16	Service Code Setup (for System Administrator) - Leaving Message Waiting (Requires CPU to be licensed for Hotel/Motel)	0~9, *, # Maximum of 8 digit	626
11-11-09	Service Code Setup (for Setup/Entry Operation) - Answer Message Waiting	0~9, *, # Maximum of 8 digit	*0
11-11-10	Service Code Setup (for Setup/Entry Operation) - Cancel All Messages Waiting	0~9, *, # Maximum of 8 digit	773
11-11-11	Service Code Setup (for Setup/Entry Operation) - Cancel Message Waiting	0~9, *, # Maximum of 8 digit	771
11-16-07	Single Digit Service Code Setup - Message Waiting	0~9, *, # Maximum of 1 digit	No Setting
15-02-28	Multiline Telephone Basic Data Setup - Message Waiting Lamp Color	0 = Green 1 = Red	0
15-02-35	Multiline Telephone Basic Data Setup - Message Waiting Lamp Cycle for Calling Extension	1 = Cycle 1 2 = Cycle 2 3 = Cycle 3 4 = Cycle 4 5 = Cycle 5 6 = Cycle 6 7 = Cycle 7	3
15-02-36	Multiline Telephone Basic Data Setup - Message Waiting Lamp Cycle for Called Extension	1 = Cycle 1 2 = Cycle 2 3 = Cycle 3 4 = Cycle 4 5 = Cycle 5 6 = Cycle 6 7 = Cycle 7	2
15-02-37	Multiline Telephone Basic Data Setup - Voice Mail Message Wait Lamp Color	0 = Green 1 = Red	1

Program No.	Program Name	Input Data	Default
15-02-38	Multiline Telephone Basic Data Setup - Voice Mail Message Wait Lamp Cycle	1 = Cycle 1 2 = Cycle 2 3 = Cycle 3 4 = Cycle 4 5 = Cycle 5 6 = Cycle 6 7 = Cycle 7	2
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-13-07	Class of Service Options (Supplementary Service) - Message Waiting	0 = Off 1 = On	COS 01 ~ 15 = 0
80-01-01	Service Tone Setup - Tone 16, Lockout	0 ~ 255 (0 = Endless)	0 (endless)
80-01-01 (48)	Service Tone Setup - Repeat Count	0 ~ 255 (0 = Endless)	0 (endless)
80-01-02	Service Tone Setup - Tone 48, Voice Mail Message Indication Tone	0 ~ 33 (0 = No Tone) (33 = Default Time Slot)	0
80-01-02 (48)	Service Tone Setup - Basic Tone Number	0 ~ 33 (0 = No Tone) (33 = Default Time Slot)	0

Operation

To leave a Message Waiting:

1. Call busy or unanswered extension.
2. Press the **Message Waiting** key (PRG 15-07 or SC **751**: 38).
3. Hang up.

 With Multiline Terminal telephones, the Message Waiting LED lights.

To answer a Message Waiting:

 When you have a message, your Message Waiting LED flashes fast for Multiline Terminals.

1. At the Multiline Terminal, press **Speaker** key and dial *0.
- OR -
Press the **Message Waiting** key (PRG 15-07 or SC **751**: 38).
- OR -
At the Single Line Terminal, lift the handset and dial *0.

 If the called extension does not answer, dial 0 or press your Message Waiting key to automatically leave them a message.

 Normally, your Message Waiting LED goes out. If it continues to flash, you have new messages in your Voice Mail mailbox or a new General Message. See "To check your messages" below.

To answer a Message Waiting (When VM Message Exist):



*If there is a VM message and a Message Waiting set on the same extension and the user dials *0, it will call the VM pilot because VM has a higher priority. To call back the message waiting caller before calling VM you must do the following:*

1. Press the **Message Waiting** key (PRG 15-07-01 or SC **751: 38**).

- OR -

1. Press **Help** key + dial *0.
2. Show the current MW status.
3. Change the status by the **Up** or **Down Cursor** key.
4. Press **Speaker** key.

To cancel all your Messages Waiting:



This includes messages you have left for other extensions and messages other extension have left for you.

1. At the Multiline Terminal, press **Speaker** key.
- OR -**
At the Single Line Terminal, lift the handset.
2. Dial **773**.
 3. Hang up.

To cancel the Messages Waiting you have left at a specific extension:

1. At the Multiline Terminal, press **Speaker** key.
- OR -**
At the Single Line Terminal, lift the handset.
2. Dial **771**.
 3. Dial the number of the extension you do not want to have your messages.
 4. Hang up.

To check your messages:

1. Press **Help** key.
2. Dial *0.



You can have any combination of the message types in the following table on your telephone.

If you see. . .	You have. . .
VOICE MESSAGE n MESSAGE	New messages in your Voice Mail mailbox.
CHECK MESSAGE VRS GENERAL MESSAGE	A General message in Voice Mail that has not been heard.
CHECK MESSAGE (name)	Message Waiting requests left at your telephone by your co-workers.

3. Press VOL ▲ or ▼ to scroll through your display.
4. When you find the message you want to answer, press **Speaker** key. You either:
 - Go to your Voice Mail mailbox.
 - Listen to the new General Message.
 - Automatically call the extension that left you a Message Waiting.

Microphone Cutoff

Description

When in 'On Hook' state **Mute** key enables a Multiline Terminal user to turn off their telephone handsfree microphone, or when in 'Off hook' state **Mute** key enables the handset microphone to be turned off. When activated, Microphone Mute prevents the caller from hearing conversations in the user's work area. The user may turn off the microphone while their telephone is idle, busy on a call or ringing.

Conditions

- When using the Handsfree (On Hook) Mute key turns off handsfree microphone.
- When using the Handset (Off Hook) Mute key turns off Handset microphone.
- When using the Headset Mute key turns off Headset microphone.

Default Settings

Enabled (using **Mute** key)

System Availability

Terminals

Any Multiline Terminal

Required Component(s)

None

Related Features

Handsfree Answerback/Forced Intercom Ringing

Handset Mute/Handset Cutoff

Programmable Function Keys

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
15-02-50	Multiline Telephone Basic Data Setup - Mute Lamp Status Change	0 = normal 1 = Lamp Status Change	0

Program No.	Program Name	Input Data	Default
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-02-11	System Options for Multiline Telephones - Handsfree Microphone Control	0 = Off 1 = On	1

Operation

To mute your telephone handset or Handsfree microphone while on a call:

1. Press **Mute** key.

To turn your telephone microphone back on:

1. Press **Mute** key.



*Use **Mute** key only if you pressed it initially to turn off your Handsfree microphone.*

Mobile Extension

Description

A Mobile Extension is an external telephone (preferably a mobile phone) linked to the SL2100 via a Proxy Port to operate as an internal SLT extension. The extension sends DTMF signals to the system allowing access to the system features. Each Mobile Extension Proxy Port utilizes a Station Port in the system, although no physical station port is required. A registered Mobile Extension uses 1 analog port (ports are reserved in groups of 4), however, no PCB support (analog or digital) is required. The Mobile Extension port must be an unequipped extension port on the SL2100 system - no physical keyset is required on the SL2100 system.

A Progress Tone is played to the caller until the call to the Mobile Extension number is set up.

 *A mobile extension cannot be used as a voice mail port.*

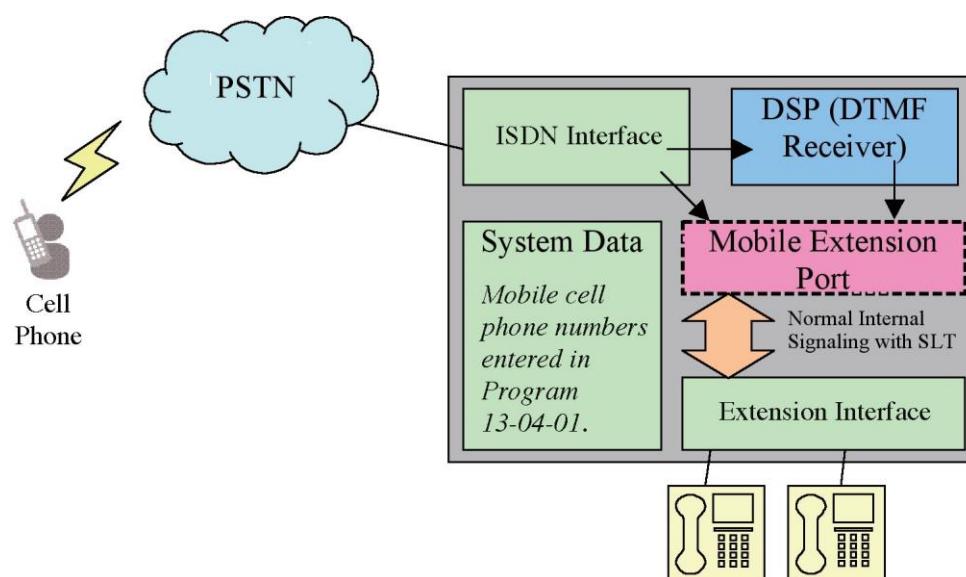


Figure 1-39 Mobile Extension Layout

This feature can currently be used with ISDN PRI trunks or SIP trunks.

 *It is recommended to use this feature with an ISDN PCB (PRI or BRI), however, analog trunks can be used as well.*

 *To provide a proper disconnect, Disconnect Supervision is required for the trunks used for this feature.*

The Mobile extension internal extension number (Proxy Port) is linked to a speed dial bin to provide integration.

 *If all external trunks are busy when a call is made to the mobile extension, ringback tone is presented giving the impression the phone is ringing.*

A DID is directed to the Mobile Extension internal extension number (Proxy Port), and to provide internal dial tone to the Mobile Extension, the incoming CLI of the Mobile Extension must match the number in the Speed Dial bin. Once internal dial tone is presented, the operation is similar to an SLT user lifting the handset.

In the absence of DIDs, the VRS can be used to transfer the Mobile Extension call to the Mobile Extension number. This provides internal dial tone when the CLI is presented and matches the number in the associated Speed Dial bin.

Alternatively, if calling line identification routing is enabled, the relevant Speed Dial bin could be transferred to the Mobile Extension proxy port which would then provide internal dial tone.

Maximum 128 Mobile extensions can be assigned in a system. Initially, 4 user licenses are included, to increase the number of users SL2100 MOBILE EXT-01 LIC is required.

Features

The features available from a Mobile Extension are listed below. As the Mobile Extension is based on an SLT port, the service codes used are as per an SLT port. Any feature not listed should be assumed to be not supported:

- Hold
- Transfer
- Incoming Ring Group member
- Department Group member
- DID
- Toll Restriction
- Class of Service
- DSS Keys

Though DSS keys are available for the Mobile Extension, they cannot provide an exact indication of busy status if, for example, the Mobile Extension is active on a call not linked to the SL2100.

The following service codes are supported:

Table 1-56 Supported Service Codes

Type Incoming Feature	Program	Code	Set By Mobile Extension	Set to Mobile Extension
Night Mode Switching	11-10-01	718	Yes	
Night Mode Switching for Other Group	11-10-12	618	Yes	
Call Forward - All	11-11-01	741	Yes	Yes
Call Forward - Busy	11-11-02	742	Yes	Yes
Call Forward - No Answer	11-11-03	743	Yes	Yes
Call Forward - Busy/No Answer	11-11-04	744	Yes	Yes
Call Forward - Both Ring	11-11-05	745	Yes	Yes
Call Forward - Follow-Me	11-11-07	746	Yes	Yes
Do Not Disturb	11-11-08	747	Yes	
Answer Message Waiting	11-11-09	*0	Yes	
Cancel All Messages Waiting	11-11-10	773	Yes	
Automatic Transfer Setup for Each Extension Group	11-11-25	602	Yes	
Automatic Transfer Cancellation for Each Extension Group	11-11-26	603	Yes	
Delayed Transfer for Every Extension Group	11-11-28	605	Yes	
Delayed Transfer Cancellation for Each Extension Group	11-11-29	606	Yes	
DND Setup for Each Extension Group	11-11-30	607	Yes	
DND Cancellation for Each Extension Group	11-11-31	608	Yes	
Pilot Group Withdrawing	11-11-35	650	Yes	
One Touch Dial Entry	11-11-39	755	Yes	
Call Forward/Do Not Disturb Override	11-12-01	707	Yes	Yes
Conference	11-12-02	#1	Yes	

Type Incoming Feature	Program	Code	Set By Mobile Extension	Set to Mobile Extension
Override (Off-Hook Signalling)	11-12-03	709	Yes	
Set Camp-On	11-12-04	750	Yes	Yes
Cancel Camp-On	11-12-05	770	Yes	Yes
Switching of Voice Call and Signal Call	11-12-06	712	Yes	
Step Call	11-12-07	708	Yes	Yes
Barge-In	11-12-08	710	Yes	Yes
Change to STG (Department Group) All Ring	11-12-09	No Setting	Yes	
Speed Dial Common/Station	11-12-10	#2	Yes	
Group Speed Dialling	11-12-11	#4	Yes	
Trunk Group Access	11-12-14	704	Yes	
Specified Trunk Access	11-12-15	#0	Yes	
Internal Group Paging (Mobile Extension cannot be a member of a paging group)	11-12-19	701	Yes	
External Paging	11-12-20	703	Yes	
Meet-Me Answer to Specified Internal Paging Group	11-12-21	764	Yes	
Meet-Me Answer to External Paging	11-12-22	765	Yes	
Meet-Me Answer in Same Paging Group (although Mobile Extension cannot be paged)	11-12-23	763	Yes	Yes
Combined Paging	11-12-24	*1	Yes	
Direct Call Pickup - Own Group	11-12-25	756	Yes	Yes
Call Pickup for Specified Group	11-12-26	768	Yes	Yes
Call Pickup	11-12-27	*#	Yes	Yes
Call Pickup for Another Group	11-12-28	769	Yes	Yes
Direct Extension Call Pickup	11-12-29	**	Yes	
Park Hold	11-12-31	#6	Yes	
Answer for Park Hold	11-12-32	*6	Yes	
Group Hold	11-12-33	732	Yes	
Answer for Group Hold	11-12-34	762	Yes	
Personal (Extension) Park	11-12-35	757	Yes	
Door Box Access (Door Box can also ring the Mobile Extension. *# operates relay)	11-12-36	702	Yes	
Common Canceling Service Code	11-12-37	620	Yes	
General Purpose Indication	11-12-38	783	Yes	
Station Speed Dialing	11-12-40	#7	Yes	
Voice Over	11-12-41	690	Yes	
Flash on Trunk lines	11-12-42	#3	Yes	
Enabled On Hook when Holding (SLT)	11-12-45	749	Yes	
Answer On Hook when Holding (SLT)	11-12-46	759	Yes	
Call Waiting Answer/Split Answer	11-12-47	794	Yes	
Account Code	11-12-48	##	Yes	
VM Access (InMail and VMS)	11-12-51	*8	Yes	
Live Recording at SLT	11-12-53	654	Yes	
VRS Routing for ANI/DNIS	11-12-54	782	Yes	

Type Incoming Feature	Program	Code	Set By Mobile Extension	Set to Mobile Extension
Tandem Trunking	11-12-57	#8	Yes	
Transfer into Conference	11-12-58	624	Yes	
Set DND for Other Extension	11-14-03	629	Yes	Yes
Cancel DND for Other Extension	11-14-04	630	Yes	Yes
Set Wake Up Call for Own Extension	11-14-05	631	Yes	
Cancel Wake Up Call for Own Extension	11-14-06	632	Yes	
Set Wake Up Call for Other Extension	11-14-07	633	Yes	Yes
Cancel Wake Up Call for Other Extension	11-14-08	634	Yes	Yes
Set Room to Room Call Restriction	11-14-09	635	Yes	Yes
Cancel Room to Room Call Restriction (Hotel)	11-14-10	636	Yes	Yes
Change Toll Restriction Class for Other Extension	11-14-11	637	Yes	Yes
Check-in	11-14-12	638	Yes	Yes
Check-out	11-14-13	639	Yes	Yes
Room Status Change for Own Extension	11-14-14	640	Yes	
Room Status Change for Other Extension	11-14-15	641	Yes	Yes
Room Status Output	11-14-16	642	Yes	
Hotel Room Monitor	11-14-17	675	Yes	Yes

Although some features may be available to the Mobile Extension, it may be advisable to disable them in Class of Service. There are also features that should be disabled in any case.

The features ***to be disabled/not used*** for Mobile Extension include:

- ACD
- TAPI
- Analog Trunks
- Port Swap
- Hotline
- General Message
- Message Waiting
- Headset Mode for SLT
- Flexible Transfer/Virtual Loop Back
- Tandem Ringing
- Virtual extension key as Call Coverage Key for mobile extension
- Automatic Conversation Record for trunks

Caller ID Presented to the Mobile Extension for Type of Call

- Direct Internal Call - CPN of the Calling Phone is presented to the Mobile Extension.
- Direct Trunk Call with CID - Caller ID of incoming call is presented to the Mobile Extension**.
- Direct Trunk Call without CID - CPN of Mobile Extension is presented to the Mobile Extension.
- Transferred Trunk Call with CID -
 - Transferred before inter-digit timeout - Caller ID of incoming call is presented to the Mobile Extension**.
 - Transferred after inter-digit timeout - CPN of the Transferring Phone is presented to the Mobile Extension.

- Transferred Trunk Call without CID -
 - Transferred before inter-digit timeout - CPN of Mobile Extension is presented to the Mobile Extension.
 - Transferred after inter-digit timeout - CPN of the Transferring Phone's CPN is presented to the Mobile Extension.

* Only when the outbound trunks are ISDN or SIP trunks.

** ISDN will need to accept the inbound Caller ID as the Calling Party Number (CPN) presentation for the outbound call.

Table 1-57 Caller ID Sent to Mobile Telephone

Inbound Trunk	Outbound Trunk	Y/N
Analog CID	CFA Analog	N
Analog CID	CFA ISDN PRI/SIP	Y
ISDN PRI	CFA ISDN PRI/SIP	Y
ISDN PRI	CFA Analog	N
Analog CID	CFNA Analog	N
Analog CID	CFNA ISDN PRI/SIP	Y
ISDN PRI	CFNA ISDN PRI/SIP	Y
ISDN PRI	CFNA Analog	N

Conditions

- If the extension has Call Forward-Both Ring set to another extension, it will only continue to forward if the Both ring location is forwarded (B/NA or NA) to VM and no where else.
- Analog, ISDN and SIP trunks are supported for the outbound call to the Mobile Extension.
- It is recommended that this feature uses ISDN platform (as these trunks provide answer supervision).
- The analog line must provide CLI information to allow the Mobile Extension to dial into the system to access features.
- For the **extension** DTMF, the minimum Detect Level for the DTMF Tone (PRG 80-03-03) must be set to allow a minimum detection level of -25dBm. This entry is dependent on the Detect Level selected in PRG 80-03-01.
- The Mobile Extension uses the * to perform a flash, so any service codes which begin with * must be changed (PRG 11-10, PRG 11-11, PRG 11-12, PRG 11-13).
- To provide a proper disconnect, Disconnect Supervision is required for the trunks used for this feature.
- When an entry is made in PRG 15-22-01 for a Mobile Extension, ports are reserved for Mobile Extension usage in groups of 4.
- To keep consecutive port numbering for units, you may wish to consider starting Mobile Extensions at the upper extension port range.
- Calls on Mobile Extension can be easily picked up from a telephone in the system. This is done via a Barge-In key (34+Mobile Ext # or 34+ *) * will Barge-In to the Extension that Call Forward Both Ring is set to. If no Forward Both Ring is set, the key will act as a basic Barge-In key.
- If the main terminal has call forward both ring set to the Mobile Extension and the Ecology-Power Cutting feature removes power to the terminal any calls sent to the terminal will not go to the Mobile Extension.

Default Settings

No Mobile Extensions are configured.

System Availability

Terminals

Any Multiline Terminal

Required Component(s)

SL2100 MOBILE EXT-01 LIC

Related Features

Abbreviated Dialing/Speed Dial

Caller ID

Direct Inward Dialing (DID)

Direct Inward Line (DIL)

Station Message Detail Recording

Guide to Feature Programming

The programs listed below indicate the most commonly used programs required for this feature. The programs are listed in the order that the installer should follow. Refer to the PCPro wizards for further detailed programming.

- When a * is listed next to the Program Number it indicates a program that **MUST** be set (from a default state) for this feature to be enabled.

Program No.	Program Name	Input Data	Default
11-02-01 *	Extension Numbering - Extension Number	Dial (Up to 8 digits)	Extension Port Number : Extension Number 001 ~ 064 : 101 ~ 164 065 ~ 128 : No Setting
11-13	Service Code Setup (for ACD)	-	Refer to Programming Manual.
14-01-24	Trunk-to-Trunk Outgoing Caller ID through Mode	0 = Disable (No) 1 = Enable (Yes)	0
15-22-01 *	Mobile Extension Setup - Mobile Extension Target Setup	0 = No Setting 1 ~ 999 = Speed Dial Bin 1 ~ 999 (PRG 13-04)	0
15-22-02	Mobile Extension Setup - Connect Confirmation	0 = Always (User must dial * when answered for the call to cut through on ALL line types.) 1 = On Analog Line (User must dial * when answered for the call to cut through on Analog lines only.) 2 = Never (When the call is answered the call is immediately cuts through.)	0

Program No.	Program Name	Input Data	Default
15-22-03	Mobile Extension Setup - Trunk Access Code	0 = Normal Trunk Access (PRG 11-09-01) 1 = Individual Trunk Access (PRG 11-09-02)	0
13-04-01 *	Speed Dialing Number and Name - Number	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
24-09-01 *	Call Forward Split Settings - Call Forwarding Type	0 = Call Forwarding Off 1 = Call Forwarding with Both Ringing 2 = Call Forward when No Answer 3 = Call Forwarding All Calls 4 = Call Forwarding when Busy or Not Answered 5 = Call Forwarding when Busy	0
24-09-02 *	Call Forward Split Settings - CO Call Forwarding Destination for Both Ring, All Call, No Answer	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
24-09-03 *	Call Forward Split Settings - Intercom Call Forwarding Destination for Both ring, All Call, No Answer	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
24-09-04 *	Call Forward Split Settings - CO Call Forwarding Busy Destination	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
24-09-05 *	Call Forward Split Settings - Intercom Call Forwarding Busy Destination	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
24-09-06	Call Forward Split Settings - Call Forwarding Destination for CTX/PBX for All Call, No Answer	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
24-09-07	Call Forward Split Settings - Call Forwarding Destination for CTX/PBX for Busy	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
20-01-20	System Options - ProgressTone for Mobile Extension Setting	0 = Disable 1 = Enable	1

Program No.	Program Name	Input Data	Default
20-03-04	System Options for Single Line Telephones - Dial Sending Start Time for SLT or ARS	0 ~ 64800 seconds	1
80-03-01	DTMF Tone Receiver Setup - Detect Level	0 = 0 dBm ~ - 25 dBm 1 = - 5 dBm ~ - 30 dBm 2 = - 10 dBm ~ - 35 dBm 3 = - 15 dBm ~ - 40 dBm 4 = - 20 dBm ~ - 45 dBm 5 = - 25 dBm ~ - 50 dBm 6 = - 30 dBm ~ - 55 dBm	Refer to the Programming Manual for the default values.
14-01-24	Basic Trunk Data Setup - Trunk-to-Trunk Outgoing Caller ID through Mode	0 = Disable (Caller ID not forwarded out.) 1 = Enable (Caller ID is forwarded out.)	0
21-12-01	ISDN Calling Party Number Setup for Trunks - Calling Party Number Data	Maximum of 16 digits (0 ~ 9, *, #) Most Telco's will only accept 10 digits.	No Setting
21-13-01	ISDN Calling Party Number Setup for Extensions - Calling Party Number Data	Maximum of 16 digits (0 ~ 9, *, #) Most Telco's will only accept 10 digits.	No Setting
80-01-01	Service Tone Setup - Tone 54, Progress Tone		Refer to the Programming Manual for the default values.
80-01-01	Service Tone Setup - Repeat Count	0 ~ 255 (0 = Endless)	Refer to the Programming Manual for the default values.
80-03-03	DTMF Tone Receiver Setup - Min. Detect Level	0 ~ 15 DTMF Tone 0 = - 10 dBm (0) to - 25 dBm (15) DTMF Tone 1 = - 15 dBm (0) to - 30 dBm (15) DTMF Tone 2 = - 20 dBm (0) to - 35 dBm (15) DTMF Tone 3 = - 25 dBm (0) to - 40 dBm (15) DTMF Tone 4 = - 30 dBm (0) to - 45 dBm (15) DTMF Tone 5 = - 35 dBm (0) to - 50 dBm (15) DTMF Tone 6 = - 40 dBm (0) to - 55 dBm (15)	Refer to the Programming Manual for the default values.
11-10	Service Code Setup (for System Administrator)	-	Refer to Programming Manual.
11-11	Service Code Setup (for Setup/Entry Operation)	-	Refer to Programming Manual.
11-12	Service Code Setup (for Service Access)	-	Refer to Programming Manual.
15-07-01	Programmable Function Keys	Code 34 = Barge-In	Refer to the programming manual for the default values and for all other available options in this command.
20-09-02	Class of Service Options (Incoming Call Service) - Caller ID Display	0 = Off 1 = On	COS 01 ~ 15 = 1
22-11-01	DID Translation Table - Received Number	Maximum eight digits (0 ~ 9, *, #, @)	Refer to Programming Manual.
22-11-02	DID Translation Table - Target Number	Maximum 36 digits (0 ~ 9, *, #, @)	Refer to Programming Manual.

Operation

With any feature, if the Mobile Extension user presses *, an existing call is placed in hold. Pressing * a second time or the timeout of the inter-digit timer returns the call to conversation mode.

Using Analog Lines with the Mobile Extension

Analog lines can be used for integration with the Mobile Extension using either DILs or VRS Auto Attendant to access the Mobile Extension Proxy Port. However, it must be noted that the *0 Hang Up code must be used prior to terminating any call (e.g., transfer, hang up etc.) as analog trunks do not provide Disconnect Supervision.

Placing an Intercom Call to a Mobile Extension:

1. Lift the handset or press **SPK**.
2. Dial the extension number assigned to the Mobile Extension.
If the Mobile Extension is turned off, incoming calls hear a message indicating the user is not available. The setting in the DTMF Confirmation programming (PRG 15-22-02) determines how the call is handled.

PRG 15-22-02 set to 0 or 1 (DTMF Confirmation Required):

The caller is retrieved by the SL2100 and follows the no-answer programming (ring another extensions, forward to SL2100 voice mail, etc.)

PRG 15-22-02 set to 2 (No DTMF Confirmation Required):

The caller is forwarded to the external extension voice mail, if available.

Outside Party Dialing the Mobile Extension:

1. Dial the DID or DIL telephone number for the Mobile Extension.
2. System programming (DID=22-11-01 or DIL=22-07-01) must be defined.
If the Mobile Extension is turned off, incoming callers hear a message indicating the user is not available. The setting in the DTMF Confirmation programming (PRG 15-22-02) determines how the call is handled.

PRG 15-22-02 set to 0 or 1 (DTMF Confirmation Required):

The caller is retrieved by the SL2100 and follows the no-answer programming (ring another extension, forward to SL2100 voice mail, etc.)

PRG 15-22-02 set to 2 (No DTMF Confirmation Required):

The caller is forwarded to the external extension voice mail, if available.

Placing a Call from the Mobile Extension:

1. Dial the DID or DIL telephone number for the Mobile Extension.
If the Caller ID of the Mobile Extension matches the Speed Dial bin entry (PRG 13-04 and PRG 15-22), internal dial tone is heard by the Mobile Extension user.
2. Dial the desired Intercom number or dial the trunk access code to place an outgoing call.

Answering a Call on the Mobile Extension:

1. Answer the ringing call.
2. If PRG 15-22-02 is set to 0 or 1, the Mobile Extension user hears Music on Hold/ring tone. Press * (within 10 seconds) to answer the call.
This step is required when using analog trunks for the Mobile Extension feature.

Sending a Flash from the Mobile Extension:

1. While on a conversation, a hook flash is returned by dialing * # from the Mobile Extension.

Internal Dial Tone After Hang Up:

1. When a call is finished, disconnect the call and receive internal dial tone by dialing *0.

Placing/Retrieving a Call on Hold from the Mobile Extension:

1. While on a call, dial * #.
2. To retrieve the held call, with system dial tone, dial * #.

Swapping Between Two Held Calls from the Mobile Extension:

1. While on a call, dial * #.
The first call is placed on Hold.
2. Place second call, then place on Hold by dialing * #.
The second call is placed on Hold and the first call is picked up.
3. The Mobile Extension can connect the two held calls with Automatic On-Hook Transfer if PRG 20-11-11 is enabled by dialing * 0.

Transferring a call from the Mobile Extension:

1. With an active call, dial * #.
2. Dial the extension number to which the call is to be transferred.
3. Dial * 0.
4. Hang up.

Call Forwarding

When setting Call Forwarding from the Mobile Extension, the service code(s) must be redefined in PRG 11-10-18, PRG 11-11-06 and PRG 11-11-40 and also must be defined in PRG 11-11-01 ~ PRG 11-11-05 and PRG 11-11-07.

To activate or cancel Call Forwarding to/from the Mobile Extension:**1. When activating Call Forwarding From the Mobile Extension:**

Dial the DID or DIL telephone number for the Mobile Extension.

If the Caller ID of the Mobile Extension matches the Speed Dial bin entry (PRG 13-04 and PRG 15-22), internal dial tone is heard by the Mobile Extension user.

- OR -

When activating Call Forwarding to the Mobile Extension:

Press the **CALL** key or lift the handset.

2. Dial the service code defined in PRG 11-11-01 ~ PRG 11-11-05 and PRG 11-11-07.
3. Dial Call Forwarding condition:
1 = Set
0 = Cancel
4. Dial destination extension or Off-Premise number.
5. Dial *0 (from Mobile Extension only):
Change to Step.

To activate Call Forward Follow Me:**1. When activating Call Forwarding From the Mobile Extension:**

Dial the DID or DIL telephone number for the Mobile Extension.

If the Caller ID of the Mobile Extension matches the Speed Dial bin entry (PRG 13-04 and PRG 15-22), internal dial tone is heard by the Mobile Extension user.

- OR -

When activating Call Forwarding to the Mobile Extension:

Press the **SPK** key or lift the handset.

2. Dial **746**.
3. Dial Call Forwarding Condition:
1 = Set
0 = Cancel
4. Dial the destination extension.
5. Dial ***0** (from Mobil Extension only).
6. Hang up.

To cancel Call Forward Follow Me:**1. When activating Call Forwarding From the Mobile Extension:**

Dial the DID or DIL telephone number for the Mobile Extension.

If the Caller ID of the Mobile Extension matches the Speed Dial bin entry (PRG 13-04 and PRG 15-22), internal dial tone is heard by the Mobile Extension user.

- OR -

When activating Call Forwarding to the Mobile Extension:

Press the **SPK** key or lift the handset.

2. Dial **746**.
3. Dial **0**.
4. Dial destination Station to Cancel Forward Follow Me extension or dial **0** to cancel all.
5. Dial ***0** (from Mobile Extension only).
6. Hang up.

Mobile Extension - Callback to Mobile Phone

Description

Callback to Mobile Phone allows the user to make an incoming call to a system then hang up before the system answers (like a one ring call), then the system calls back to the calling Mobile Phone using a pre-programmed number. The advantage is to reduce Mobile Phone charges for calls on a mobile extension system.

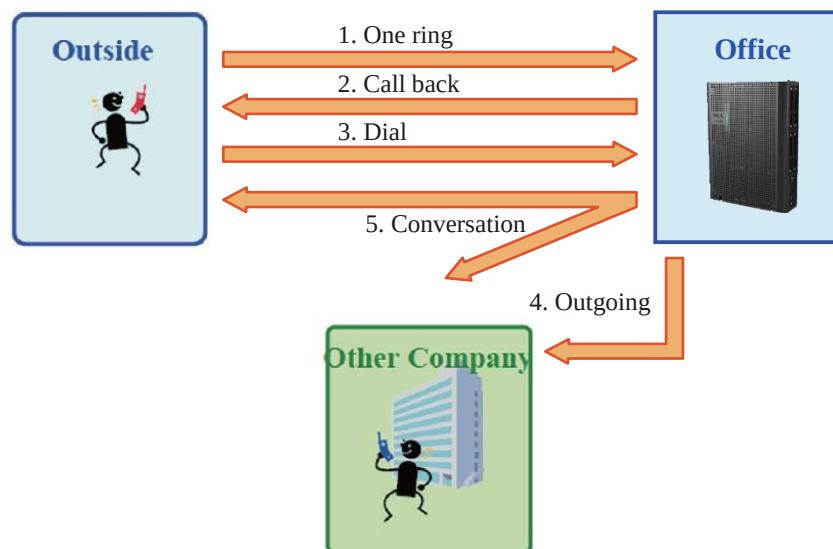


Figure 1-40 Example - Callback to Mobile Phone

After receiving a call back on a Mobile Phone, the user can call another extension or make an outgoing call via the system using the mobile extension function.

Conditions

- Mobile Extension must be programmed for this feature to work.
- In the Callback to Mobile Phone feature set PRG 15-22-04 to 1. If the Mobile Phone user continues to ring over the time set in PRG 22-01-12, the system answers the call as a normal Mobile Extension call.
- Callback to Mobile Phone will not proceed and no retry is made if all trunks are busy when trying to callback.
- Callback trunk routing follows PRG 15-22-03 setting. When set 0 (Normal trunk access code), ARS also can be used.
- If Mobile Extension does not answer the Callback within time set in PRG 20-01-16, Callback will stop. If answered the within the Callback time, the user hears an extension dial tone. A splash tone is not heard.
- If the system receives a "Disconnect" from the far end after a Callback is made, Callback will stop.
- When Calling party number is used, Callback follows the PRG 21-19-01 outgoing call setting of the Mobile Extension which made the outgoing call.
- The Callback to Mobile Phone feature is not supported when using an analog trunk.
- If Flexible ringing is set, the Callback to Mobile Phone feature works in any type of PRG 22-02-01 trunk setting. If Flexible ringing is not set, the Callback to Mobile Phone feature does not work if the incoming call type is "DID/DISA".

- After answering Callback, if the system does not receive a DTMF signal from the Mobile Extension using PRG 20-18-01 (Default; 30 seconds), the system disconnects the call.
- The trunk user for SMDR for Callback is tied to the extension number of Mobile Extension.
- If the user calls a Mobile Extension port during while using the Callback to Mobile Phone feature, the caller hears a busy tone.

Default Setting

No Mobile Extensions are configured.

System Availability

Terminals

All Multiline Terminals

Required Component(s)

None

Related Features

Abbreviated Dialing/Speed Dial

Caller ID

Call Forwarding

Direct Inward Dialing (DID)

Direct Inward Line (DIL)

Station Message Detail Recording

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
13-04-01	Speed Dialing Number and Name - Number	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting

Program No.	Program Name	Input Data	Default
13-04-03	Speed Dialing Number and Name - Transfer Mode	0 = Not Used (Calls will not be routed based off a users caller ID.) 1 = Internal Dial (Calls will be routed to an internal number specified in PRG 13-04-04.) 2 = Incoming Ring Group (Calls will be routed to a ring group specified in PRG 13-04-04.) 3 = Remote Monitor (Used for the security feature and not Flexible Caller ID routing.)	0
13-04-04	Speed Dialing Number and Name - Transfer Destination Number	If Transfer mode is (Refer to 13-04-03) : 1 = Internal Dial Mode 1 ~ 9, 0, *, #, P, R, @ (Maximum 36 Characters) 2 = Incoming Ring Group 0 ~ 25 (IRG Number) P = Pause R = Recall @ = Additional Digits when using ISDN functionality 3 = Remote Monitor Dial (Up to 8 digits)	No Setting
14-01-24	Trunk-to-Trunk Outgoing Caller ID through Mode	0 = Disable (No) 1 = Enable (Yes)	0
14-01-30	Basic Trunk Data Setup - Flexible Ringing by Caller ID	0 = Disable (No) 1 = Enable (Yes)	1
15-22-01	Mobile Extension Setup - Mobile Extension Target Setup	0 = No Setting 1 ~ 999 = Speed Dial Bin 1 ~ 999 (PRG 13-04)	0
15-22-03	Mobile Extension Setup - Trunk Access Code	0 = Normal Trunk Access (PRG 11-09-01) 1 = Individual Trunk Access (PRG 11-09-02)	0
15-22-04	Mobile Extension Setup - Call Back	0 = Disable 1 = Enable	0
20-01-16	System Options - Mobile Extension Callback time	1 ~ 64800 seconds	15
20-01-20	System Options - ProgressTone for Mobile Extension Setting	0 = Disable 1 = Enable	1
20-31-24	Timer Class Timer Assignment - Mobile Extension answer time	1 ~ 64800 seconds	3
20-31-25	Timer Class Timer Assignment - Mobile Extension callback time	1 ~ 64800 seconds	15
22-01-12	System Options for Incoming Calls - Mobile Extension answer time	0~ 64800 seconds	3
80-01-01	Service Tone Setup - Tone 54, Progress Tone		Refer to the Programming Manual for the default values.

Operation

Receive Callback

Receive call from Mobile Extension and Callback:

Mobile Phone number: 09012345678

Incoming trunk set up: PRG 22-02: Trk1, DIL

Mobile Extension set up: Ext150

PRG 15-22-01: Speed Dial bin No, 50

PRG 15-22-03: Trunk access code, 0: Use normal trunk access code

PRG 15-22-04: Callback, (1) Enable

Speed Dial bin set up: No.50

PRG 13-04-01: 09012345678

PRG 13-04-03: Transfer mode, (1) Extension

PRG 13-04-04: Destination, 150

Callback timer set up

PRG 22-01-12: Answer time from Mobile Extension, 3 seconds

PRG 20-01-16: Mobile Extension Callback Duration time, 15 seconds

PRG 20-18-01: Extension Dial Tone Time, 30 seconds

1. Call the system Trk1 from the cell phone setting as a mobile extension (Ex 150).
2. The Mobile Phone user hangs up within 3 seconds, before system answers.
3. System makes the Callback to the cell phone.
4. Answer the Mobile Phone within 15 seconds.
5. Mobile Phone hears a dial tone and dials * before 30 seconds.

Receive call from Mobile Extension, but system answered:

1. Call the system Trk1 from the cell phone setting as a mobile extension (Ex 150).
2. Mobile Phone user continues ring for longer than 3 seconds, then system answers.
3. Mobile Phone user hears a dial tone.

Mobile Phone does not answer to Callback:

1. Call the system Trk1 from the Mobile Phone setting as a mobile extension (Ex 150).
2. The Mobile Phone user hangs up within 3 seconds, before system answers.
3. System makes the Callback to the Mobile Phone.
4. The Mobile Phone does not answer the call within 15 seconds.
5. System disconnects the call.

After Callback answered, but does not send any DTMF:

1. Call the system Trk1 from the Mobile Phone setting as a mobile extension (Ex 150).
2. The Mobile Phone user hangs up within 3 seconds, before system answers.
3. System makes the Callback to the Mobile Phone.
4. The Mobile Phone answers within 15 seconds.
5. The Mobile Phone hears a dial tone but does not send any DTMF within 30 seconds.
6. System disconnects the call.

Multiple Trunk Types

Description

The SL2100 supports many different Trunks in the system (DID, Loop Start, ISDN BRI, ISDN PRI). The system supports up to 128 trunks using expanded Chassis.

DID

Refer to the [Direct Inward Dialing \(DID\)](#) feature for related information.

Loop Start Trunks

Loop Start Trunks can be connected to the SL2100 system. Loop Start is assigned per trunk at the associated board.

ISDN BRI

Refer to the [ISDN Compatibility](#) feature for related information.

ISDN PRI

Refer to the [ISDN Compatibility](#) feature for related information.

T1-E1 Trunks

The 1PRIDB-C1 daughter board gives the system T1/E1 trunking ability. This board provides up to 24/30 trunk circuits. In addition to providing digital-quality trunking, the 1PRIDB-C1 daughter board allows you to have maximum trunking ability with fewer boards. This in turn makes more universal slots available for other functions.

Conditions

- When adding or removing padding for trunks, use PRG 14-01 for all trunks.
- No Ground Start Trunk Support.

Default Settings

None

System Availability

Terminals

All Terminals

Required Component(s)

Any Trunk Board

Related Features

Automatic Route Selection

Caller ID

Direct Inward Dialing (DID)

ISDN Compatibility

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-51-01	PRI Selection of PRI - PRI Selection	0 = PRI	0: PRI
14-01-01	Basic Trunk Data Setup - Trunk Name	Up to 12 characters	Trunk Port Number 1 = Name Line 001 Trunk Port Number 2 = Name Line 002 : Trunk Port Number 128 = Name Line 128
25-07-01	System Timers for VRS/DISA - VRS/DISA Dial Tone Time	0 ~ 64800 seconds	10 seconds
34-01-02	E&M Tie Line Basic Setup - Receive Dial Type for E&M Tie Line	0 = DP 1 = DTMF	1

Loop Start Trunks

Program No.	Program Name	Input Data	Default
14-04-01	Behind PBX Setup - Type of Connection	0 = Stand Alone (Trunk) 1 = Behind PBX (PBX) 3 = CTX assume 9	0
14-05-01	Trunk Group - Trunk Group Number	Trunk Group Number = 0~50 Trunk Port 1~128 = Priority 1~128	Refer to Programming Manual.
22-02-01	Incoming Call Trunk Setup - Trunk Service Type	0 = Normal 1 = VRS (second dial tone if no VRS installed) 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delayed VRS 7 = ANI/DNIS 8 = DID (DDI) Mode Switching	0

Operation

None

Multi-Device Support

Description

Multi-Device Support splits an incoming call to multiple termination points. This is accomplished by creating a multi-device call group and assigning the group to a pilot extension number. When the pilot extension number receives a call, all of the devices in the group ring simultaneously. Any extension in the call group can answer the incoming call. When the call is answered, all of the extensions in the multi-device call group stop ringing.

If members of the pilot group are talking with one another and an external call is received, the calling party hears a busy tone. The pilot number is displayed on the calling parties caller ID for all members of the group; individual group extension numbers are not sent. It is as if there is only one extension number.

For an example, if you make a Multi-Device Group including the pilot extension "100", the member extensions "101" and "102", when there is an incoming call for the pilot extension "100", all terminals of the group will ring at the same time. Any of the three extensions can be used to answer the incoming call. When the call is answered, all three extensions stop ringing.

A Multi-Device Group key (#14) can be programmed on the pilot and member stations to enable or disable the Group. When enabled, the key is lit and the Multi-Device Group functions. When disabled, the key is not lit and the pilot and members function independently as if they were not in a Multi-Device Group.

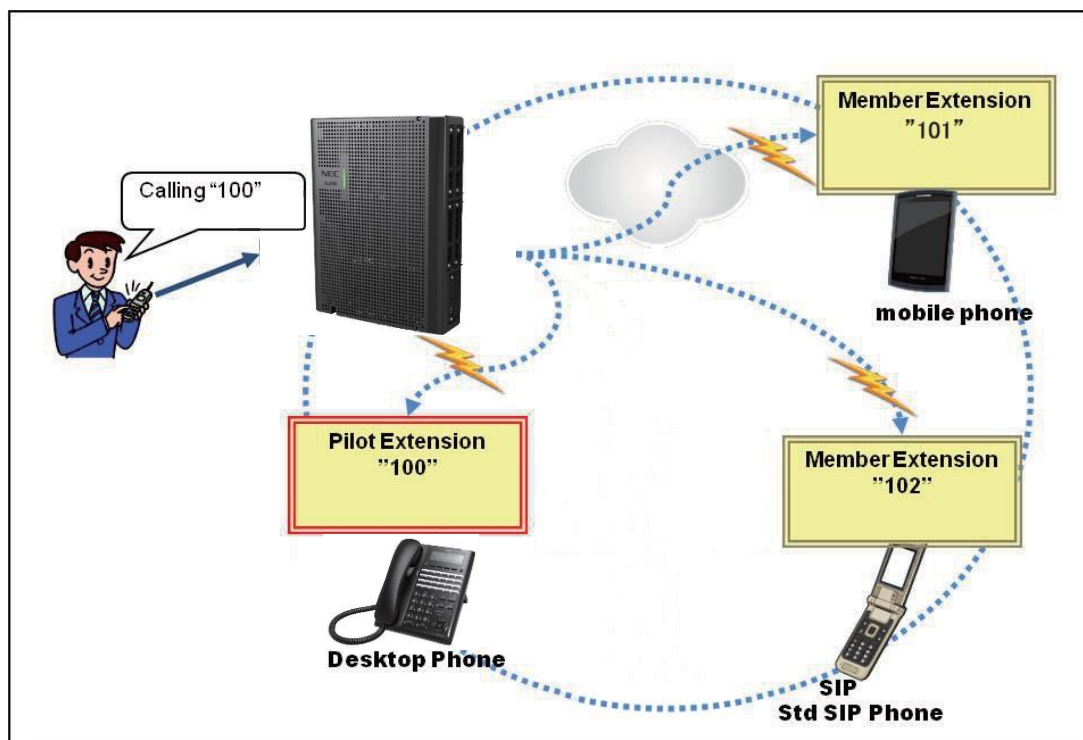


Figure 1-41 Multi-Device Group Extension Example

Multi-Device Group and E911

E-911 Compatibility ensures that emergency calls always get through. If an emergency occurs, a user goes to any telephone, lifts the handset and dials 911.

- **Attendant Notification** – The attendant receives a notification each time a co-worker dials an emergency 911 call. This notification is the co-worker's name and number display optionally accompanied by an audible alarm. Notification occurs regardless of whether the attendant is idle or busy on a call. You can optionally extend this ability to other supervisory extensions as well. Each member of the Multi-Device group will send it's own name and number display to attendant and not the name and number of Pilot extension. (Refer to E-911 Compatibility on page 2-488 for additional programming.)
- **Emergency Routing** – When an Multi-Device Group member dials 911, the system can automatically find a trunk for the call. If another member terminal in the group is in use the other terminals in the group will still be able to dial 911. The system can choose a route to which the user normally does not have access. If all normal routes are busy, the system can even disconnect an active call and place the emergency call. E-911 Compatibility uses the flexibility of the Automatic Route Selection (ARS) Call Route Options to route 911 emergency calls (even in systems in which ARS is not enabled).
- **E911 Outgoing Dialing** – The E911 call follows the trunk group route programming. It is possible to use the flexibility of the Automatic Route Selection (ARS) Call Route Options for additional routing options.
- **Forced Disconnect Follows Timer to Disconnect Call** – When all lines in the programmed route are busy and the system must drop a call to place a 911 call, the system waits the time set in Program 81-01 before disconnecting the call.
- **Calling Party Identification** – With ISDN or SIP Trunks installed, the system can provide the Calling Party Number (CPN) Presentation from Station. No additional customer-provided 911 equipment is required. Each member of the Multi-Device Group will send it's own Calling Party Number Programmed in 21-13 for ISDN and 21-19 for SIP Trunks.

Conditions

- When a Member or Pilot Extension of the Multi-Device Group is busy, all members of the group will be in a busy state and cannot make or receive calls except for Emergency calls to 911.
- When a member of the Multi-Device Group makes a 911 call, the Multi-Device key is disabled and they will be removed from the group until the Multi-Device Key (#14) is enabled again or the Multi- Device Support (On) service code is used (PRG 11-11-75: No Setting (default)).
- The Multi-Device Group key can be programmed, enabled and disabled on Pilot or Member stations.
- The Multi-Device Support (On)/(Off) service codes (PRG 11-11-75 and PRG 11-11-76) can be used from Pilot or Member stations.
- When a Multi Device Group is enabled, the Multi-Device Group key is lit solid red.
- When a Multi Device Group is disabled, the Multi-Device Group key is not lit.
- Receiving Internal Pages is not supported on the Pilot or Member Extension of the Multi-Device Group.
- Each Pilot and Member of the Multi-Device Group controls it's own SMDR.
- BLF of Pilot Extension number replaces the BLF of each Multi-Device Group Member.
- When a Member Extension is assigned to Multi-Device Group all Call Forwarding settings are canceled.
- Call Forwarding is not supported on Multi-Device Group members, but is supported on the Pilot extension.
- Second Call, Call Waiting, and Call Queuing is not supported on Multi-Device Group Member or Pilot extension.
- Call Forward Follow Me is not supported on Multi-Device Group Member or Pilot extension.
- Call Forward Both Ring is not supported on Multi-Device Group Member or Pilot extension.
- Calling between Members and Pilot extension is not supported.
- Pilot or Member extension cannot be a Contact Center Agent or a member of Department Group.
- Message Waiting Indication is not supported on Multi-Device Group Member.
- Peer to Peer calls of SIP Terminals (IP Multiline Terminal, Standard SIP) is not supported.
- Ring Group calls will only flash line key and not audibly ring, line key must be pressed to answer.

- When using the Conversation Record feature, recordings are sent to the Pilot extensions Voice Mail box.
- Voice Over and Reverse Voice Over is not supported.
- In order for a mobile phone to ring you must program a Mobile Extension Port and assign a speed dial bin to that port which has the mobile phone number in it. (Refer to Mobile Extension on page 2-1067 for additional programming.)
- The Pilot extension and Member extension can both be assigned to a Multi-Device Group using the User Admin mode (UA Mode).
- When logging as User Mode (UB Mode), only the Member extension can be assigned to a Multi-Device Group.
- When Logging as User Mode (UB Mode), if the Pilot extension is not assigned in Program 20-63-01 an error is displayed when the user clicks on Multi-Device Group setup.
- When logging as User Mode (UB mode), an error is displayed on the Multi-Device Group setup screen if the user tries to save the Member extension number by clicking on "Apply" button after deleting Program 20-63-01.
- When logging as User Mode (UB mode), an error is displayed on the Multi-Device Group setup screen if user clicks on "Refresh" button after deleting Program 20-63-01.
- Duplicate extensions cannot be assigned within the same or different Multi-Device Group. An error is displayed if the user tries to assign the duplicate extension.
- If internal extensions or mobile extensions are added to the Multi-Device Group via system programming using Program 20-63, the UC Client must be restarted to apply these changes.
- The number of external numbers available in the Multi-Device Group is directly related to the number of Mobile Extensions defined in the group (Program 20-63). If the user requires additional external numbers, more mobile extensions need to also be added to the group using Program 20-63. UC Suite must be restarted for these changes to take effect.
- When a UC Client is configured with the Softphone+Deskset license level in Program 20-59-14, the UC Client will always use the Deskset extension to search for a matching Multi-Device Pilot.
- If DND or CFA is set for the Pilot or any member of the Multi-Device Group, only the station that is set will show DND or CFA in the UC Suite BLF view, not each member in the group.
- The maximum number of Multi-Device Groups is 50.
- Each Multi-Device Group can consist of one pilot and a maximum of seven additional devices.
- When the Pilot Extension number of the Multi Device Group is called from the ISDN S point terminal, only the Pilot Extension terminal of the Multi Device Group rings.

Table 1-58 Supported System Feature List

Feature	Pilot	Member	Comment
Abbreviated Dialing/Speed Dial	Yes	Yes	
Account Code Entry	Yes	Yes	
Account Code - Forced/Verified/Unverified	Yes	Yes	
Alarm	No	No	
Alarm Reports	No	No	
Alphanumeric Display	Yes	Yes	
Analog Communications Interface (ACI)	No	No	
Ancillary Device Connection	No	No	
Answer Hold	No	No	
Answer Key	Yes	Yes	
Applications	No	No	
AspireNet	Yes	Yes	
Attendant Call Queuing	No	No	
Automatic Release	Yes	Yes	
Automatic Route Selection (ARS)	Yes	Yes	
Background Music	Yes	Yes	

Feature	Pilot	Member	Comment
Barge-In	No	No	
Call Duration Timer	Yes	Yes	
Call Forwarding	Yes	No	Call Forwarding All, Busy No Answer, Busy, and No Answer can be assigned to Pilot Number. If any Forwarding is assigned to a member it is canceled and not followed.
Call Forwarding with Follow Me	No	No	
Call Forwarding, Off-Premise	Yes	No	
Call Forwarding/Do Not Disturb Override	Yes	No	
Call Monitoring	No	No	
Call Redirect	Yes	Yes	
Callback	No	No	
Caller ID Caller Return	Yes	Yes	
Caller ID	Yes	Yes	
Call Waiting/Camp-On	No	No	
Central Office Calls, Answering	Yes	Yes	
Central Office Calls, Placing	Yes	Yes	
Class of Service	Yes	Yes	
Clock/Calendar Display	Yes	Yes	
Code Restriction	Yes	Yes	
Code Restriction Override	Yes	Yes	
Code Restriction, Dial Block	Yes	Yes	
Computer Telephony Integration (CTI) Applications	No	No	
Conference Calls	Yes	Yes	Only one terminal from Multi-Device Group can be in conference.
Conference, Voice Call/Privacy Release	Yes	No	
Contact Center	No	No	
Cordless Telephone Connection	Yes	Yes	
Data Line Security	No	No	
Delayed Ringing	Yes	Yes	Regardless of setting in Program 15-09, VE will only flash and not audibly ring. VE key must be pressed in order to answer.
Department Calling	No	No	
Department Step Calling	No	No	
Dialing Number Preview	Yes	Yes	
Dial Pad Confirmation Tone	Yes	Yes	
Dial Tone Detection	Yes	Yes	
Directed Call Pickup	Yes	Yes	
Directory Dialing	Yes	Yes	
Direct Inward Dialing (DID)	Yes	Yes	
Direct Inward Line (DIL)	Yes	Yes	
Direct Inward System Access (DISA)	Yes	Yes	
Direct Station Selection (DSS) Console	No	No	
Distinctive Ringing, Tones and Flash Patterns	Yes	Yes	
Door Box	No	No	

Feature	Pilot	Member	Comment
Do Not Disturb	Yes	Yes	When DND is activated on the Multi-Device Group Pilot the entire Multi-Device Group group is put in DND when Pilot number is dialed.
Drop Key	Yes	Yes	
E911/911	Yes	Yes	On 911 calls the Calling Party Number assigned in Program 21-13 and 21-19 is sent for each member of Multi-Device Group. Attendant Notification name and number is sent from each Multi-Device Group Member.
Flash	Yes	Yes	
Flexible System Numbering	Yes	Yes	
Flexible Timeouts	Yes	Yes	
Forced Trunk Disconnect	Yes	Yes	
Group Call Pickup	Yes	Yes	Cannot perform call Pickup for specific group. Only system wide or extension specific Call Pickup is supported.
Group Listen	Yes	Yes	
Hands Free	Yes	Yes	
Handset Mute	Yes	Yes	
Handset Name	Yes	Yes	
Handsfree Answerback/Forced Intercom	No	No	
Headset Operation	Yes	Yes	
Hold	Yes	Yes	
Hotel/Motel	No	No	
Hotline	Yes	Yes	
Howler Tone Service	Yes	Yes	
Intercom	Yes	Yes	
IP Multiline Station (SIP)	Yes	Yes	
IP Multiline Station (SIP) – ML440 Cordless	Yes	Yes	
IP Multiline Telephone	Yes	Yes	
IP Single Line Telephone (SIP)	Yes	Yes	
IP Single Line Telephone (SIP) – NAT Mode	Yes	Yes	
IP Trunk – H.323	Yes	Yes	
IP Trunk – (SIP) Session Initiation Protocol	Yes	Yes	Calling Party Number assigned in Program 21-19 for the Multi-Device Group Pilot is sent for each member of Multi-Device Group. On 911 calls the Calling Party Number assigned in Program 21-19 is sent for each member of Multi-Device Group.
ISDN Compatibility	Yes	Yes	Calling Party Number assigned in Program 21-13 for the Multi-Device Group Pilot is sent for each member of Multi-Device Group. On 911 calls the Calling Party Number assigned in Program 21-13 is sent for each member of Multi-Device Group.
Last Number Redial	Yes	Yes	
Line Preference	Yes	Yes	
Long Conversation Cutoff	Yes	Yes	

Feature	Pilot	Member	Comment
Meet Me Conference	Yes	Yes	Multi-Device Group members and Pilot can initiate and may join Meet Me Conference by dialing internal page zone, but will not receive the page.
Meet Me Paging	Yes	Yes	Multi-Device Group members and Pilot can initiate and may join Meet Me Page by dialing internal page zone, but will not receive the internal page.
Meet Me Paging Transfer	Yes	Yes	Multi-Device Group members and Pilot can initiate and may receive the transfer by dialing internal page zone, but will not receive the internal page.
Memo Dial	Yes	Yes	
Message Waiting Indication (MWI)	Yes	No	
Microphone Cutoff	Yes	Yes	
Mobile Extension	Yes	Yes	
Multiple Trunk Types	Yes	Yes	
Music on Hold	Yes	Yes	
Name Storing	Yes	No	
NetLink	Yes	Yes	
Night Service	Yes	Yes	
Off-Hook Signaling	No	No	
Off-Premise Extension	No	No	
One-Touch Calling	Yes	Yes	
Operator	No	No	
Paging, External	Yes	Yes	A Multi-Device Group Pilot and Member can only initiate an External or All Call Page. It cannot receive either Internal or All Call pages or display page information.
Paging, Internal	Yes	Yes	A Multi-Device Group Pilot and Member can only initiate an Internal or All Call Page. It cannot receive either Internal or All Call pages or display page information.
Park	Yes	Yes	
PBX Compatibility	Yes	Yes	
PC Programming	Yes	Yes	
Prime Line Selection	Yes	Yes	
Private Line	Yes	Yes	
Programmable Function Keys	Yes	Yes	
Programming from a Multiline Terminal	Yes	Yes	
Pulse to Tone Conversion	No	No	
Repeat Redial	Yes	Yes	
Reverse Voice Over	No	No	
Ringdown Extension, Internal/External	Yes	Yes	
Ring Groups	No	No	All Terminals of the Multi-Device group can answer incoming Ring Group calls by pressing Line Key, but will not audibly ring.
Room Monitor	No	No	
Save Number Dialed	Yes	Yes	

Feature	Pilot	Member	Comment
Secondary Incoming Extension	Yes	Yes	Regardless of setting in Program 15-09, VE will only flash and not audibly ring. VE key must be pressed in order to answer.
Secretary Call Pickup	No	No	
Secretary Call (Buzzer)	No	No	
Secretary Call (Buzzer)	Yes	Yes	
Selectable Ring Tones	Yes	Yes	
Serial Call	No	No	
Single Line Telephones	Yes	Yes	
Softkeys	No	No	
Station Hunt	No	No	Station Message Detail Recording Yes Yes Each Member of Group controls it's own SMDR.
Station Name Assignment – User Programmable	Yes	Yes	
Station Relocation	No	No	
Synchronous Ringing	No	No	
T1 Trunking (with ANI/DNIS Compatibility)	Yes	Yes	
Tandem Ringing	No	No	
Tandem Trunking (Unsupervised Conference)	Yes	Yes	A member of MDG can initiate an unsupervised conference. Multiple members of MDG can not be in conference.
TAPI Compatibility	No	No	
Tone Override	No	No	Transfer Yes Yes Unsupervised Transfer to Multi Device Group Members is not supported.
Trunk Groups	Yes	Yes	
Trunk Group Routing	Yes	Yes	
Trunk Queuing/Camp-On	No	No	
UC Suite	Yes	Yes	
Uniform Call Distribution (UCD)	No	No	
User Programming Ability	Yes	Yes	
Video Call	No	No	
Virtual Extensions	Yes	Yes	Regardless of setting in Program 15-09, VE will only flash and not audibly ring. VE key must be pressed in order to answer.
Voice Mail Integration (Analog)	Yes	Yes	
Voice Over	No	No	
Voice Over Internet Protocol (VoIP)	Yes	Yes	
Voice Response System (VRS)	Yes	Yes	
Voice Response System (VRS) – Call Forwarding – Park and Page	No	No	
Volume Controls	Yes	Yes	

Default Settings

Disabled

System Availability

Terminals

All Multiline Terminals

Required Component(s)

- CPU-C1
- SL2100 MOBILE EXT-01 LIC (5201)



Only needed if a Mobile Extension Port is required to ring a mobile phone.

Related Features

Central Office Calls, Answering

Central Office Calls, Placing

E-911 Compatibility

Intercom

Mobile Extension

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-11-75	Service Code Setup (for Setup/Entry Operation) – Multi-Device Support (On)	SLT, MLT	No Setting
11-11-76	Service Code Setup (for Setup/Entry Operation) – Multi-Device Support (Off)	SLT, MLT	No Setting
20-63-01	Multi-Device Group Setup – Pilot Extension Number	Maximum of eight digits (Group 1 ~ 50)	No Setting
20-63-02	Multi-Device Group Setup – Member Extension Number 1	Maximum of eight digits (Group 1 ~ 50)	No Setting
20-63-03	Multi-Device Group Setup – Member Extension Number 2	Maximum of eight digits (Group 1 ~ 50)	No Setting
20-63-04	Multi-Device Group Setup – Member Extension Number 3	Maximum of eight digits (Group 1 ~ 50)	No Setting
20-63-05	Multi-Device Group Setup – Member Extension Number 4	Maximum of eight digits (Group 1 ~ 50)	No Setting
20-63-06	Multi-Device Group Setup – Member Extension Number 5	Maximum of eight digits (Group 1 ~ 50)	No Setting
20-63-07	Multi-Device Group Setup – Member Extension Number 6	Maximum of eight digits (Group 1 ~ 50)	No Setting

Program No.	Program Name	Input Data	Default
20-63-08	Multi-Device Group Setup – Member Extension Number 7	Maximum of eight digits (Group 1 ~ 50)	No Setting

Operation

To Enable Multi-Device Group:

1. Press the **Multi-Device Group** key (751:#14).
 - The **Multi-Device Group** key will light solid red.

- OR -

Press the **Speaker** Key or lift the Hand Set and dial the Multi-Device Support (ON) service code, PRG11-11-75: No Setting (default).

 - The **Multi-Device Group** key will light red and the display will show MDG >> Pilot or MDG >> Member.

To Disable Multi-Device Group:

1. Press the **Multi-Device Group** key (751:#14).
 - The **Multi-Device Group** key will go out.

- OR -

Press the **Speaker** Key or lift the Hand Set and dial the Multi-Device Support (Off service code, PRG11-11-76: No Setting (default).

 - The **Multi-Device Group** key go out and the display will look like a non-MDG member terminal.

Music on Hold

Description

Music on Hold (MOH) sends music to calls on Hold and parked calls. The music lets the caller know that the call is waiting, not forgotten. Without Music on Hold, the system provides silence to these types of calls. The Music on Hold source can be Internal (Tone), Service Tone, VRS or from an external customer-provided music source (i.e., tape deck, receiver, etc.). The customer-provided source can connect to an Audio Input connector (RL/Audio) on the 082U-B1.

Option Available for Using System Tone

The Music on Hold feature has been enhanced to allow callers to hear a system tone instead of playing the internal or external music.



In accordance with copyright law, a license may be required if radio, television broadcasts or music other than material not in the public domain are transmitted through the Music on Hold feature of telecommunications systems. NEC hereby disclaim any liability arising out of the failure to obtain such a license.

Music on Hold Source

There are 4 options available: (PRG 10-04-01 & PRG 10-04-02)

- Internal Music Tune - The tune is fixed by one music tune.
- External Source - ACI Input via Audio Input connector (RL/Audio) on the 082U-B1 board (PRG 10-60-02).
- Service Tone - Callers on hold hear Service Tone.
- Hold Message - VRS (Program 10-04-01)

Music on Hold per DID (DDI) Number

The music on hold source can be selected for individual DID (DDI) numbers by PRG 22-11-09. There are two options available:

- 0 - Use the music source set by PRG 10-04-01.
- 1 - Back Ground Music input.

The music source will be used for incoming DID (DDI) calls only.

Music on Hold for Internal calls

The music source is set by PRG 10-04-01.

Music on Hold for non-DID (DDI) Trunk calls

The music on hold source is set per trunk port by PRG 14-08.

There are two options available:

- 0 - Use the music source set by PRG 10-04-01.
- 1 - Back Ground Music input.

The music source will be used for outgoing trunk calls or incoming non-DDI calls only.

Hold Message

The Hold Message is set by Program 10-04-01.

To record VRS Hold Message, go off-hook and dial **616 + 7 + 001**.

To listen to VRS Hold Message dial **616 + 5 + 001**.

Conditions

- Without SDVM() Card, approximately two hours message storage can be recorded for VRS/VM (InMail) in a flash memory on CPU board. This VRS prompt message can be used for HOLD message.

Default Settings

Disabled

System Availability

Terminals

None

Required Component(s)

None

Related Features

Analog Communications Interface (ACI)

Guide to Feature Programming

The programs listed below indicate the most commonly used programs required for this feature. The programs are listed in the order that the installer should follow. Refer to the PCPro wizards for further detailed programming.

- When a * is listed next to the Program Number it indicates a program that **MUST** be set (from a default state) for this feature to be enabled.

Program No.	Program Name	Input Data	Default
10-04-01 *	Music On Hold Setup - Music on Hold Source Selection	0 = Internal MOH (Tone is fixed by one music tone.) 1 = External MOH (Tone set by PRG 10-60-01: Audio Port No.2) 2 = Service Tone (Tone set by PRG 80-01, tone 64) 3 = VRS (Tone set by PRG 10-04-02)	0
10-04-02	Music On Hold Setup - Music on Hold Tone Selection	[In case Item 1 is 3.] 1 ~ 100 = VRS Message Number	1
10-04-03	Music On Hold Setup - Audio Gain Setup	1 ~ 63 (- 15.5 ~ + 15.5 dB)	32 (0 dB)
14-08-01	Music on Hold Source for Trunks - MOH Type	0 = Internal/External MOH 1 = BGM Source	0
10-60-02	Audio Port Setup - Slot No.	Slot Number = 0 ~ 12	0
22-11-09	DID Translation Table - Music on Hold Source	0 = MOH Tone 1 = BGM Source	0

Program No.	Program Name	Input Data	Default
80-01-01	Service Tone Setup - Repeat Count	0 ~ 255 (0 = Endless)	Refer to the Programming Manual for the default values.
80-01-02	Service Tone Setup - Basic Tone Number	0 ~ 33 (0 = No Tone) (33 = Default Time Slot)	Refer to the Programming Manual for the default values.
80-01-03	Service Tone Setup - Duration Count	0 ~ 255 (0, 50 ~ 12750 ms)	Refer to the Programming Manual for the default values.
80-01-04	Service Tone Setup - Gain Level (dB)	0 ~ 57 (0, -15.5 ~ +12.5)	Refer to the Programming Manual for the default values.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-07-02	Class of Service Options (Administrator Level) - Changing the Music on Hold Tone	0 = Off 1 = On	COS 1 ~ 15 = 1

Operation

None

Name Storing

Description

Extensions and trunks can have names instead of just circuit numbers. These names show on a Multiline Terminal display when the user places or answers calls. Extension and trunk names make it easier to identify callers. The user does not have to refer to a directory when processing calls. A name can have up to 12 digits, consisting of alphanumeric characters, punctuation marks and spaces.

Additional Characters Available

When using the Name Storing feature, the system now provides additional characters which can be used. These characters are available with any option which allows Name Storing-Speed Dial - System/Group/Station, One-Touch Keys, Extension Name, Trunk Naming.

Conditions

- Display telephones use extension names for Directory Dialing.
- Single line extensions cannot program names.
- If a name is not assigned to the Extension/Virtual Extension, it does not show in the Extension Directory.
- Extension Directory only shows telephones/virtual extensions that have a name assigned in PRG 15-01-01.
- If the Name display configures a Traditional Chinese, it is only apply for the IP Multiline Terminal. The programming procedure must be followed as;
 1. Set the PRG 20-01-14 to 3:Traditional Chinese first.
 2. Set the PRG 15-01-01/PRG 14-01-01 to Extension/Virtual extension name.
 3. Set the PRG 15-02-01 to 18:Traditional Chinese.

Default Settings

Enabled

System Availability

Terminals

All Multiline Terminals with Display

Required Component(s)

None

Related Features

Abbreviated Dialing/Speed Dial

Directory Dialing

Single Line Terminals

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-11-22	Service Code Setup (for Setup/Entry Operation) - Extension Name Programming	0~9, *, # Maximum of 8 digit	700
14-01-01	Basic Trunk Data Setup - Trunk Name	Up to 12 characters	Trunk Port Number 1 = Name Line 001 Trunk Port Number 2 = Name Line 002 : Trunk Port Number 128 = Name Line 128
15-01-01	Basic Extension Data Setup - Extension Name	Up to 12 Characters	No Setting
15-02-01	Multiline Telephone Basic Data Setup - Display Language Selection	1 = English 2 = German 3 = French 4 = Italian 5 = Spanish 6 = Dutch 7 = Portuguese 8 = Norwegian 9 = Danish 10 = Swedish 11 = Turkish 12 = Latin American Spanish 13 = Romanian 14 = Polish 16 = Russian 17 = Simplified Chinese 18 = Traditional Chinese	1
20-01-14	System Options - Special Character Input Mode	0 = Latin 1 = Cyrillic 2 = Simplified Chinese 3 = Traditional Chinese	0
20-09-02	Class of Service Options (Incoming Call Service) - Caller ID Display	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-21	Class of Service Options (Supplementary Service) - Extension Name	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-47	Class of Service Options (Supplementary Service) - Station Number Display	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-48	Class of Service Options (Supplementary Service) - Station Name Display	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-51	Class of Service Options (Supplementary Service) - Number and Name appear in the Directory	0 = Off 1 = On	COS 01 ~ 15 = 1

Operation

Refer to [Table 1-59 Keys for Entering Names](#) for and explanation for using the keypad to enter names.

Table 1-59 Keys for Entering Names

Use this keypad digit . . .	When you want to. . .
1	Enter characters: 1 @ [¥] ^ _ ` { } → ← Á Â Ã Ä Å Æ Ç È É Ê Ë Ì Í Î Ï
2	Enter characters: A-C, a-c, 2.
3	Enter characters: D-F, d-f, 3.
4	Enter characters: G-I, g-i, 4.
5	Enter characters: J-L, j-l, 5.
6	Enter characters: M-O, m-o, 6.
7	Enter characters: P-S, p-s, 7.
8	Enter characters: T-V, t-v, 8.
9	Enter characters: W-Z, w-z, 9.
0	Enter characters: 0 ! “ # \$ % & ' () ð ò ó ô õ ö ù æ ø ù α ε θ Β
*	Enter characters: * + , - . / : ; < = > ? π Σ σ Ω ∞ ¢ £
#	# = Accepts an entry (only required if two letters on the same key are needed - ex: TOM). Pressing # again = Space. (In system programming mode, use the right arrow Softkey instead to accept and/or add a space.)
Clear/Back or DND (2W Digital/IP Multi-line Terminal)	Clear the character entry one character at a time.
Flash	Clear all the entries from the point of the flashing cursor and to the right.

Navigation Key

Description

System provides following improved operation mode or features for Multiline Terminal user. Each mode is selectable by PRG 15-02-60 and can be entered by depressing Cursor key or Center key when the terminal is idle.

Navigation mode:

End user can easily search call history, edit speed dial or change terminal LCD settings.

Directory dialing (DSX):

Directory dialing searches outside caller from the name list rather than dialing the telephone number.

Soft Key mode (DSX): (2W Digital/IP Multiline Terminal)

DSX base Soft Key menu is supported. (2W Digital/IP Multiline Terminal)

Conditions

- In PRG 15-02-60 the following 3 types of operations can be selected for each Multiline Terminal.

PRG 15-02-60	↑ (Up)	↓ (Down)	← (Left)	→ (Right)	Center	Note
0: Standard mode	LCD Contrast	LCD Contrast	Outgoing/ Incoming call History	Directory Dialing (SV8100/ SV9100)	None	
1: Advanced mode 1	None	Directory Dialing (DSX)	Incoming call History	Outgoing call History	Navigation mode	
2: Advanced mode 2	None	Directory Dialing (DSX)	Incoming call History	Outgoing call History	Soft Key mode (DSX)	(2W Digital/IP Multiline Terminal)



During entering one of above features if PRG 15-02-60 is changed to other mode, it is necessary to make the terminal back to idle state before using new feature.

- Warning Tone and Confirming Tone can be heard by setup of PRG 15-02-48.

Navigation mode

Navigation mode provides an easy handling method of Call logs, such as search Missed call log and save to preferred speed dial bin with number and name if received.

Call History

- Missed Call: New incoming non answered call log
- Received Call: Answered call and checked missed call
- Dialed Number: Outgoing call log



Against each Call History logs, following 5 type of operations are available.

- *Calling: Place Outgoing call*
- *Save Private Phonebook: Save to Private Speed dial bin (maximum of 20)*
- *Save Common Phonebook: Save to Common Speed dial bin (default 900)*
- *Save Group Phonebook: Save to Group Speed dial bin (default none)*
- *Delete: Delete from call log*

Contacts

- Search Contact: Name searches from all Speed dial bin and extension name
- New Contact: Saves new contact to Common/Group/Private Speed dial bin
- Edit Contact: Edits existing contact of Common/Group/Private Speed dial bin

User Feature

- Call Voice Mail
- Call Forward
- Paging: Internal Zone, External Zone
- Department Group Log-In/Out: Join, Withdraw

Phone Setting

- Display: Contrast, Minimum Brightness, Maximum brightness, Backlight Threshold, Auto Backlight
- Ring Option: Ringing/Voice Call, Ringing Volume, Ring Tones
- Key Touch Tone
- Headset: Headset Ringing Volume
- Key Assignment

System Setting

- System Time
- System Date
- Manage Messages
- Answer Machine

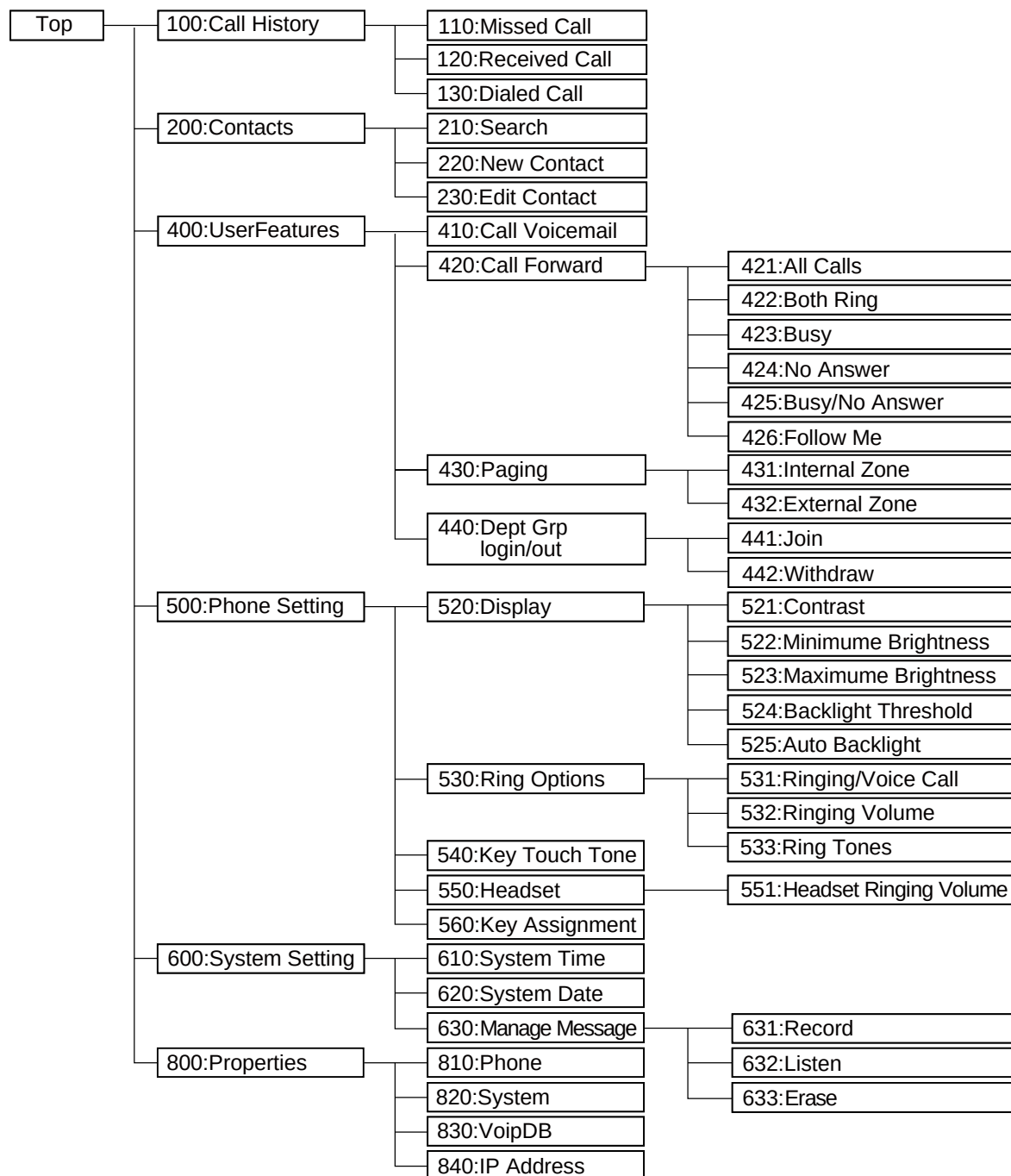
Properties

- Phone
- System
- VoIPDB
- IP Address



If multiple persons save the data at the same time, same vacant bin number is used, so last saved data will be valid.

- Pressing the Center Cursor key during terminal is idle, user can enter Navigation mode. If the terminal has incoming call or ICM Hold it can not enter the mode.
- When set in Advanced mode 1 or 2, even terminal idle BGM volume will not change by up/down cursor key. To change BGM volume it needs to press **Speaker** key first and change the BGM volume as Speaker volume level.
- CO incoming call during in Navigation mode does not affect LCD status or Cursor key operation. It continues Navigation mode.
- In Navigation mode 100 Private Speed Dial bins can be used (set at PRG 13-01-02:1) beside 1000 Common Speed Dial bins, so a maximum of 1100 Speed Dial bins can be used.
- The diagram below shows supported feature and short cut number in Navigation mode.



Short Cut Code Table

Top Level		Level 2		Level 3		Note
100	Call History	110	Missed Call	111	Missed call data	
				~		
				11*		
		120	Received Call	121	Received call data	
				~		
				12*		
		130	Dialed Number	131	Dialed call data	
				~		
				13*		
200	Contacts	210	Search Contacts	211	Name started from A	
				212	Name started from B	
				~		
				21*	Name started from J	
		220	New Contact	221	Save Private Phonebook	
				222	Save Common Phonbook	
				223	Save Group Phonbook	
		230	Edit Contact	231	Name started from A	
				232	Name started from B	
				~		
				23*	Name started from J	
400	User Features	410	Call Voice Mail			
		420	Call Forward	421	All Calls	
				422	Both Ring	
				423	Busy	
				424	No Answer	
				425	Busy/No Answer	
				426	Follow Me	
		430	Paging	431	Internal Zone	
				432	External Zone	
		440	Dept Grp login/out	441	Join	
				442	Withdraw	
500	Phone Setting	520	Display	521	Contrast	
				522	Minimum Brightness	
				523	Maximum Brightness	
				524	Backlight Threshold	
				525	Auto Backlight	

Top Level		Level 2		Level 3		Note
500	Phone Setting	530	Ring Options	531	Ring/Voice Call	
				532	Ring Volume	
				533	Ring Tones	
		540	Key Touch Tone			
		550	Headset	551	Headset Ringing Volume	
		560	Key Assignment	561	Key01	
				~		
				56*	Key24	
600	System Set-ting	610	System Time	611	Edit	
				612	Save	
				613	Cancel	
		620	System Date	621	Edit	
				622	Save	
				623	Cancel	
		630	Manage Messages	631	Record	
				632	Listen	
				633	Erase	
800	Properties	810	Phone			
		820	System			
		830	VoIPDB			
		840	IP Address			

Directory dialing (DSX)

- Directory dialing (DSX) searches the Common/Group/Station Speed dial and Extension name list, the same as DSX. SL2100 Directory dialing searches Common and Group Speed dial only.
- 1st name and 2nd name are searched separately, if both are detected the 1st name data is displayed.
- Pause between 1st and 2nd name is determined by “ ” (space), “.” (period) or “-” (hyphen).
- When press “Short cut number 211 - 219”, 21*, according to the number “A” to “J” will be indicated on LCD automatically as first search character.
- Below shows Directory dialing (DSX) mode indication.

211:Search	1/122
_ADAM SMITH	

1st line, left corner:	Shortcut code
1st line, right corner:	Position and total size of searched result
2nd line:	Cursor
3rd line:	Name

Soft Key mode (DSX)

- Standard mode or Advanced mode can be selected by setting PRG 15-02-60. When PRG 15-02-60 is set to Standard mode.
- Soft Key mode (DSX) is set at PRG 15-02-60: Mode2 and can be entered by depressing Center key when the terminal is idle.

- At Soft Key (DSX) mode, after pressing “menu” Soft Key then by dialing number of specific feature directly, menu screen can move to required feature. See the table shown below for dial number of each feature.

Table 1-60 Movement on screen from Menu

Dial pad	Changing Menu screen
Dial 1 0	Volume Preference
Dial 1 1	Volume: Ring
Dial 1 2	Volume: Off Hook Ring
Dial 2 0	Display Preferences
Dial 2 1	Display: Contrast
Dial 2 2	Display: Minimum Brightness
Dial 2 3	Display: Maximum Brightness
Dial 3 0	Feature Preferences
Dial 3 1	Feature: Voice Announce
Dial 3 2	Feature: Handsfree Reply
Dial 3 3	Feature: Automatic Call Timer
Dial 3 4	Feature: Hot Dialpad
Dial 3 5	Feature: Illuminated Dialpad
Dial 3 6	Feature: Auto Call screening
Dial 3 7	Feature: Incoming Page
Dial 3 8	Feature: Ringing Line Pref
Dial 3 9	Feature: Auto Backlight
Dial 4 0	Ring Preferences
Dial 4 1	Ring Tone Config: Intercom
Dial 4 2	Ring Tone Config: Line Keys
Dial 4 3	Ring Tone Config: Each Line Keys
Dial 5 0	Key Assignments
Dial 5 1	Feature Keys
Dial 5 2	Primeline Keys
Dial 6 0	Call Forwarding
Dial 6 1	Call Forward Type: Immediate
Dial 6 2	Call Forward Type: Ring No Ans
Dial 6 3	Call Forward Type: Busy No Ans
Dial 6 4	Call Forward Type: AME
Dial 6 5	Call Forward Type: Display Message
Dial 6 6	Call Forward Type: Follow Me
Dial 6 7	Call Forward Type: Both Ring
Dial 7 0	Speed Dial
Dial 7 1	Personal Speed Dial
	Speed Dial: Number
	Speed Dial: Name
Dial 7 2	Company Speed Dial
	Speed Dial: Number
	Speed Dial: Name

Dial pad	Changing Menu screen
Dial 8 0	Name and Language
Dial 8 1	Extension Name
Dial 8 2	Display Language
Dial 9 0	Option Preferences
Dial 9 1	Option Preferences: Headset Mode
Dial 9 2	Option Preferences: Headset V. Announce
Dial 9 3	Option Preferences: System Information
Dial 9 4	Option Preferences: VoIPDB Information
Dial 9 5	Option Preferences: Backlight Threshold
Dial 9 6	IP Address Information
Dial 9 7	IP Phone log off
Dial 9 8	Change login password
Dial 0 0	Admin
Dial 0 1	Time
Dial 0 2	Date
Dial 0 3	Extension Name
Dial 0 4	Clear All Call Fwd
Dial 0 5	System Night Key Mode

Default Settings

None

System Availability

Terminals

All Multiline Terminals

Required Component(s)

082U-B1, 008U-[]

Related Features

Abbreviated Dialing/Speed Dial

Directory Dialing

Softkeys

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
15-02-60	Multiline Telephone Basic Data Setup - Soft Key/Navigation key Mode	0 = Standard Mode 1 = Advanced Mode1 2 = Advanced Mode2	2
13-01-01	Speed Dialing Function Setup - Speed Dialing Auto Outgoing Call Mode	0 = Trunk Outgoing Mode (Use trunk group assigned in PRG 13-05.) 1 = Intercom Outgoing Mode (Follow the system routing for the trunk access code entered.)	0
13-01-02	Speed Dialing Function Setup - Station Speed Dial	0 = Do not use 1 = Use	1
13-01-03	Speed Dialing Function Setup - Common Speed Dial Table Size	0 ~ 1000 0 = No Common Speed Dialing (No System Speed Dial)	900
13-02	Group Speed Dialing Bins	-	0
13-03	Speed Dialing Group Assignment for Extensions	-	1
13-04-01	Speed Dialing Number and Name - Number	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
13-04-02	Speed Dialing Number and Name - Name	Maximum 12 Characters (Use dial pad to enter name)	No Setting
13-06-01	Station Speed Dial Number and Name - Speed Dialing Data	-	No Setting
15-01-01	Basic Extension Data Setup - Extension Name		No Setting
15-02-13	Multiline Telephone Basic Data Setup - Redial List Mode	0 = ICM/Trunk (Extension/Trunk Mode) 1 = Trunk Mode	0
15-02-48	Multiline Telephone Basic Data Setup - Short Ring Setup	0 = Disable 1 = Enable	0
20-07-04	Class of Service Options (Administrator Level) - Storing Speed Dialing Entries	0 = Off (Deny) 1 = On	COS 1 ~ 15 = 1
20-08-03	Class of Service Options (Outgoing Call Service) - System Speed Dialing	0 = Off (Deny) 1 = On	COS 01 ~ 15 = 1
20-08-04	Class of Service Options (Outgoing Call Service) - Group Speed Dialing	0 = Off (Deny) 1 = On	COS 01 ~ 15 = 1

Operation

Following operation procedures are just for Example.

Navigation mode

Enter Navigation mode and save missed call to private phonebook.

<Program>

PRG 15-02-60: Advanced Mode1

1. With a Multiline Terminal in an idle condition the display shows:

```

1-17 TUE 10:52AM
Check List
Menu Dir VM:xx CL:xx

```

(2W Digital/IP Multiline Terminal)

2. Press **Enter Cursor** key to enter Navigation mode. The display shows:

```

100:Operation List 1/6
>Call History:xx
Contacts

```

(2W Digital/IP Multiline Terminal)

xx = List Number

3. Press the **Enter Cursor** key. The display shows Call history mode.

```

110:Call History 1/3
>Missed Call:xx
Received Call

```

(2W Digital/IP Multiline Terminal)

4. Press **Enter Cursor** key to show Missed Call list.

Top Left = Caller Name (Number)
 Top Right = Number of Missed Call
 Bottom Left = Navigation Number
 Bottom Center = Month/Date/Time

```

111:Missed Call xx/xx
nnnnnnnn
APR MON 02 06:55AM

```

(2W Digital/IP Multiline Terminal)

1st Line = Navigation Number and Name
 2nd Line = Caller Number (Name)
 3rd Line = Month/Date/Time

5. Press **Up/Down Cursor** key to select the destination.

```

11x:Missed Call xx/xx
nnnnnnnn
APR MON 02 06:55AM

```

(2W Digital/IP Multiline Terminal)

6. Press **Enter Cursor** key to decide the destination.
Top Left = Caller Name (Number)
Top Right = Number of Missed Call
Bottom = Mode Name

```
nnnnnnnn      x/x
>Calling
  Save Private Phonebook
```

(2W Digital/IP Multiline Terminal)

1st Line = Caller Name (Number) and Number of Missed Call
2nd Line = Mode Name
3rd Line = Next Mode Name

7. Press **Down Cursor** key to select the "Save Private Phonebook".

```
nnnnnnnn      x/x
>Save Private Phonebook
  Save Common Phonebook
```

(2W Digital/IP Multiline Terminal)

8. Press **Enter Cursor** key to check the number.

```
Private Phonebook      x/x
>Dial:nnnnnnnn
  Name:zzzzzzzz
```

(2W Digital/IP Multiline Terminal)

9. Press **Enter Cursor** key to enter the name to be associated with the stored number.

```
Private Phonebook      x/x
>Name:zzzzzzzz
  Bin:XXX
```

(2W Digital/IP Multiline Terminal)

10. Press **Enter Cursor** key to show next available Bin number automatically.

```
Private Phonebook      x/x
>Bin:XXX
  Dial:nnnnnnnn
```

(2W Digital/IP Multiline Terminal)

11. Press **Enter Cursor** key to save the number.

```
Save Complete!
```

(2W Digital/IP Multiline Terminal)

12. Press **Exit** key to return to idle.

Enter Navigation mode and search name from private phonebook.

<Program>

PRG 15-02-60: Advanced Mode1

1. With a Multiline Terminal in an idle condition the display shows:

```
1-17 TUE 10:52AM
201
Menu Dir VM:xx CL:xx
```

(2W Digital/IP Multiline Terminal)

2. Press **Enter Cursor** key to enter Navigation mode. The display shows:

```
100:Operation List 1/6
>Call History:xx
Contacts
```

(2W Digital/IP Multiline Terminal)

xx = List Number

3. Press the **Down Cursor** key to select "Contacts". The display shows:

```
200:Operation List 2/6
>Contacts
User Features
```

(2W Digital/IP Multiline Terminal)

4. Press **Enter Cursor** key to select "Search Contact".

```
210:Contcts 1/3
>Search Contact
New Contact
```

(2W Digital/IP Multiline Terminal)

5. Press **Enter Cursor** key to show the search mode.

```
211:Search 1/x
ABC Limited
```

(2W Digital/IP Multiline Terminal)

Top Left = Navigation Number

Top Right = Number of Contacts Registered

Bottom = Name of Contact

6. Press "D" to search "Dave".

```
211:Search 1/x
D
Dave
```

(2W Digital/IP Multiline Terminal)

Top Right = Shows Number of Search that has a "D"

Bottom = Shows the Contacts

7. Press the **Enter Cursor** key to indicate Number.

```
Dave 1/x
>Dial/PVT:203
```

(2W Digital/IP Multiline Terminal)

8. Press **Speaker** key or Off-Hook to make outgoing call.

Enter Navigation mode and change phone setting - adjust LCD contrast.

<Program>

PRG 15-02-60: Advanced Mode1

1. With a Multiline Terminal in an idle condition the display shows:

```
1-17 TUE 10:52AM
201
Menu Dir VM:xx CL:xx
```

(2W Digital/IP Multiline Terminal)

2. Press **Enter Cursor** key to enter Navigation mode. The display shows:

```
100:Operation List 1/6
>Call History:xx
Contacts
```

(2W Digital/IP Multiline Terminal)

xx = List Number

3. Press the **Down Cursor** key to select "Phone setting". The display shows:

```
500:Operation List 4/6
>Phone Setting
System Setting
```

(2W Digital/IP Multiline Terminal)

4. Press **Enter Cursor** key to show Phone Setting mode.

```
510:Phone Setting    1/8
>Not Used
Display
```

(2W Digital/IP Multiline Terminal)

5. Press **Up/Down Cursor** key to select "Display".

```
520:Phone Setting    2/8
>Display
Ring Option
```

(2W Digital/IP Multiline Terminal)

6. Press **Enter Cursor** key to select "Contrast".

```
521:Display          1/5
>Contrast
Minimum Brightness
```

(2W Digital/IP Multiline Terminal)

7. Press **Enter Cursor** key to show the LCD Contrast Adjustment mode.

```
Contrast              1/x
Down<                ->Up
Contrast              ||||| 5
```

(2W Digital/IP Multiline Terminal)

8. Press **Left/Right Cursor** key to adjust the contrast level.
 9. Press **Enter Cursor** key to save the change that been made.
 10. Press **Exit** key to exit the Navigation Mode.

Directory dialing (DSX)

Enter Directory dialing (DSX) mode and search name from Common/Group/Station Speed dial and Extension name list.

<Program>

PRG 15-02-60: Advanced Mode1

1. With a Multiline Terminal in an idle condition, the display shows:

```
1-17 TUE 10:52AM
201
Menu Dir VM:xx CL:xx
```

(2W Digital/IP Multiline Terminal)

2. Press **Down Cursor** key to enter Directory dialing (DSX) mode:

Search	1/xx
ADAM	

(2W Digital/IP Multiline Terminal)

xx = List Number

3. Enter the letter "D" to search the First or Last name start from "D".

Search	1/3
D	
DAN	

(2W Digital/IP Multiline Terminal)

4. Enter the letter "O" to narrow the list.

Search	1/2
DO	
DOLLY	

(2W Digital/IP Multiline Terminal)

5. Search 2/2 matching name by **Up/Down Cursor** key.

Search	2/2
DO	
DON	

(2W Digital/IP Multiline Terminal)

6. Press **Speaker** key or Off-Hook to make outgoing call.

Night Service

Description

Night Service lets system users activate one of the Night Service modes. Night Service redirects calls to their night mode destination, as determined by Assigned and Universal Night Answer programming. A user typically activates Night Service after normal working hours, when most employees are unavailable to answer calls.

- There are eight Service Modes. At default, the mode names are assigned as follows:
 - Mode 1 = No setting
 - Mode 2 = Night
 - Mode 3 = Midnight
 - Mode 4 = Rest
 - Mode 5 = Day2
 - Mode 6 = Night2
 - Mode 7 = Midnight2
 - Mode 8 = Rest2

There are 4 Service Patterns/Groups available.

- The LED flash patterns on the toggle key is as follows:
2W Digital/IP Multiline terminal
 - Mode 1 or Mode 5 ~ 8: Off
 - Mode 2: On (Red)
 - Mode 3: Slow Flash (Red: 250ms On/Off)
 - Mode 4: Fast Flash (Red: 125ms On/125ms Off/125ms On/625ms Off)

Assigned Night Answer (ANA)

With Assigned Night Answer (ANA), Night Service has calls ring extensions directly. Assigned Night Answer provides an answering point for Night Service calls. For certain applications, this may be more appropriate than Universal Night Answer. For example, you could program trunks to ring the security station telephone during off hours.

For more information on assigning trunks to ring extensions, refer to [Direct Inward Line \(DIL\)](#).

Universal Night Answer (UNA)

Universal Night Answer makes incoming calls ring over the External Paging speakers. With UNA, an employee can go to a telephone and press the flashing line key or use "Universal Answer" to pick up the call. Only ring groups calls can be used with Universal Night Answer. For more on setting up Universal Answer, refer to [Central Office Calls, Answering](#).

You may also be able to use Transfer to UNA. An extension user can transfer their call to UNA (i.e., External Paging at night). Once transferred, the call rings the External Paging speakers like any other UNA call and can be picked up at any extension. You can also set up Transfer to UNA through the Voice Response System (VRS). This lets outside callers, answered by the VRS, dial a code to have their call ring External Paging.

Automatic Night Service

The system allows or denies Automatic Night Service. If allowed, the calls route according to the service patterns programmed. The Night Service programming is stored in the RAM memory. This means that if the system is not using the Automatic Night Service, for a power failure in night mode, when the power is restored, the system continues to be in night mode.

Programmable Function Key Can Toggle Night Modes

The software allows a Night Service Programmable Function Key (PRG 15-07-01 or SC 751: 09 + 0) to toggle night modes. You can determine in programming (PRG 12-08-01) how many modes through which the user toggles. Note that the additional data for the Programmable Function Key must be set to 0 for the toggle function to work. The toggle key will only act as a toggle key if command PRG 20-01-17 is set to toggle (by default) .PRG 20-01-17 is set to Skip and the key will act as a Night Mode skip for own group key.

Night-mode skip for own Group

The software allows own group operation mode to skip next mode manually. Order of skip follows setting of PRG 12-02, Automatic Night Service Patterns, if current mode is Day and next mode is scheduled to Rest, Skip key operation changes current mode to Rest manually. There are two method provided for Skip operation.

1. Use Service Code **787** (default)
2. Use Night Service Programmable Function Key (PRG 15-07-01: 09+0) under the condition of PRG 20-01-17, Day/Night change key mode set 1 (skip).

Conditions

- Almost all features are affected by Night Mode except for the following:
 - Dial Tone Detection
 - External Alarm Sensors
 - Flexible System Numbering
 - Pulse to Tone conversion
 - SMDR
 - Volume Control
- Call Arrival (CAR) keys and Virtual Extension keys do not support Day/Night Mode (09) Programmable Function keys.
- Universal Night Answer will only work when call is sent to a ring group.
- There are separate Access Map and Ring Group programming entries for each Night Service mode (modes 1~8). Also, Universal Answer allows an extension user to pick up a Universal Night Answer (UNA) call.
- Mode Keys can be assigned as required for DSS Consoles.
- With Universal Night Answer, outside calls can ring External Paging Zones.
- Programmable Function Keys simplify activating Night Service.
- When programming Night Service function keys, multiple keys must be used for switching between each Night Service Mode.

Default Settings

System is always in the Mode 1

System Availability

Terminals

Not Applicable

Required Component(s)

None

Related Features

Central Office Calls, Answering

Central Office Calls, Placing

Direct Station Selection (DSS) Console

Paging, External

Programmable Function Keys

Ring Groups

Ecology

Guide to Feature Programming

The programs listed below indicate the most commonly used programs required for this feature. The programs are listed in the order that the installer should follow. Refer to the PCPro wizards for further detailed programming.

- When a * is listed next to the Program Number it indicates a program that **MUST** be set (from a default state) for this feature to be enabled.

Manual Night Mode

Program No.	Program Name	Input Data	Default
12-01-01	Night Mode Function Setup - Manual Night Mode Switching	0 = Off (Manual Night Mode changes are not allowed.) 1 = On (Manual Night Mode changes are allowed.)	1
12-05-01	Night Mode Group Assignment for Extensions - Night Mode Service Group Number	1 = Night Mode Group 1 2 = Night Mode Group 2 3 = Night Mode Group 3 4 = Night Mode Group 4	1
12-06-01	Night Mode Group Assignment for Trunks - Night Mode Service Group Number	1 = Night Mode Group 1 2 = Night Mode Group 2 3 = Night Mode Group 3 4 = Night Mode Group 4	1
12-07-01	Text Data for Night Mode - Text Message	Maximum 12 Characters (alpha- betic or numeric)	Mode 1 = No Setting Mode 2 = <Night> Mode 3 = <Mid-night> Mode 4 = <Rest> Mode 5 = <Day2> Mode 6 = <Night2> Mode 7 = <Midnight2> Mode 8 = <Rest2>
12-08-01	Night Mode Service Range - Range	2 ~ 8	2
12-08-02	Night Mode Service Range - Lamp setting of toggle key	0 = Off 1 = On	0
20-01-17	System Options - Day/Night Change Key Mode	0 = Toggle (Will follow PRG 12-08-01.) 1 = Skip (When pressed the system will step to the next night mode time period in PRG 12-02.)	0

Program No.	Program Name	Input Data	Default
15-07-01	Programmable Function Keys - Programmable Function Keys	09 = Night Mode Service key Mode No. (1 ~ 8) or 0: toggle	Refer to the programming manual for the default values and for all other available options in this command.
11-10-01	Service Code Setup (for System Administrator) - Night Mode Switching	0~9, *, # Maximum of 8 digit	718
11-10-50	Service Code Setup (for System Administrator) - Night-mode Skip (Own Group)	0~9, *, # Maximum of 8 digit	787
20-07-01	Class of Service Options (Administrator Level) - Manual Night Service Enabled	0 = OFF (User cannot control manual night mode.) 1 = ON (User can control manual night mode.)	COS 1 ~ 15 = 1
30-03-01	DSS Console Key Assignment - DSS Console Key Assignment	09 = Night Mode Service key Mode No. 1 ~ 8 or 0: toggle	The DSS keys 001 ~ 060 of all DSS consoles = DSS/One-Touch key 101 ~ 160 The DSS keys 061 ~ 114 of all DSS consoles = No Setting

Automatic Night Mode

Program No.	Program Name	Input Data	Default
12-01-02 *	Night Mode Function Setup - Automatic Night Mode Switching	0 = Off (Automatic Night Mode disabled) 1 = On (Automatic Night Mode enabled)	0
12-05-01	Night Mode Group Assignment for Extensions - Night Mode Service Group Number	1 = Night Mode Group 1 2 = Night Mode Group 2 3 = Night Mode Group 3 4 = Night Mode Group 4	1
12-06-01	Night Mode Group Assignment for Trunks - Night Mode Service Group Number	1 = Night Mode Group 1 2 = Night Mode Group 2 3 = Night Mode Group 3 4 = Night Mode Group 4	1
12-03-01 *	Weekly Night Service Switching	0 = No Time Pattern 1 ~ 10 = Time patterns 1 ~ 10 (defined in PRG 12-02.)	Refer to the programming manual for the default values.
12-02-01 *	Night Mode Group Assignment for Trunks - Start Time	0000 ~ 2359	Refer to the Programming Manual for the default values.
12-02-02 *	Night Mode Group Assignment for Trunks - End Time	0000 ~ 2359	Refer to the Programming Manual for the default values.
12-02-03 *	Night Mode Group Assignment for Trunks - Operation Mode	1 ~ 8 = Night Modes 1 ~ 8	Refer to the Programming Manual for the default values.
12-04-01	Holiday Night Service Switching	0 = No Time Pattern (not used) 1 ~ 10 = Time patterns 1 ~ 10 (defined in PRG 12-02.)	0

Program No.	Program Name	Input Data	Default
12-07-01	Text Data for Night Mode - Text Message	Maximum 12 Characters (alpha- betic or numeric)	Mode 1 = No Setting Mode 2 = <Night> Mode 3 = <Mid-night> Mode 4 = <Rest> Mode 5 = <Day2> Mode 6 = <Night2> Mode 7 = <Midnight2> Mode 8 = <Rest2>
12-08-01	Night Mode Service Range - Range	2 ~ 8	2
12-08-02	Night Mode Service Range - Lamp setting of toggle key	0 = Off 1 = On	0
20-01-17	System Options - Day/Night Change Key Mode	0 = Toggle (Will follow PRG 12-08-01.) 1 = Skip (When pressed the sys- tem will step to the next night mode time period in PRG 12-02.)	0
15-07-01	Programmable Function Keys - Programmable Function Keys	09 = Night Mode Service key	Refer to the program- ming manual for the default values and for all other available op- tions in this command.
11-10-01	Service Code Setup (for System Administrator) - Night Mode Switching	0~9, *, # Maximum of 8 digit	718
11-10-50	Service Code Setup (for System Administrator) - Night-mode Skip (Own Group)	0~9, *, # Maximum of 8 digit	787
20-07-01	Class of Service Options (Administrator Level) - Manual Night Service Enabled	0 = OFF (User cannot control manual night mode.) 1 = ON (User can control manual night mode.)	COS 1 ~ 15 = 1
11-12-43	Service Code Setup (for Service Access) - Answer No-Ring Line (Universal Answer)	0~9, *, # Maximum of 8 digit	#9
15-06-01	Trunk Access Map for Extensions - Trunk Access Map Number	001 ~ 128	1
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-10-07	Class of Service Options (Answer Service) - Automatic Off-Hook Answer	0 = Off 1 = On	COS 01 ~ 15 = 0
22-04-01	Incoming Extension Ring Group Assignment - Extension Number	Maximum eight Digits	Group01 has 101, 102, 103, 104, 105, 106, 107, and 108 (First 8 ports ringing)
31-05-01	Universal Night Answer/Ring Over Page - Universal Night Answer/Ring	0 = No Ringing (No) 1 = Ringing (Yes)	0
11-10-12	Service Code Setup (for System Administrator) - Night Mode Switching for Other Group	0~9, *, # Maximum of 8 digit	618
14-07-01	Trunk Access Map Setup - Access Map	0 = No access 1 = Outgoing access only 2 = Incoming access only 3 = Access only when trunk on Hold 4 = Outgoing access and access when trunk on Hold 5 = Incoming and access when trunk on Hold 6 = Incoming and outgoing ac- cess 7 = Full access	Access Map 1~128 = Trunk Ports 1~128 as- signed with option 7 access (incoming and outgoing access and access when trunk is on Hold).

Program No.	Program Name	Input Data	Default
22-02-01	Incoming Call Trunk Setup - Trunk Service Type	0 = Normal 1 = VRS (second dial tone if no VRS installed) 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delayed VRS 7 = ANI/DNIS 8 = DID (DDI) Mode Switching	0
22-05-01	Incoming Trunk Ring Group Assignment - Incoming Group Number	0 = No Setting 01 ~ 50 = Incoming Group 102 = VMI 103 = Centralized VM	1
22-08-01	DIL/IRG No Answer Destination - Incoming Ring Group Number	0 = No Setting 01 ~ 50 = Incoming Group 102 = VMI 103 = Centralized VM	Group01 has 101, 102, 103, 104, 105, 106, 107, and 108 (First 8 ports ringing)
30-03-01	DSS Console Key Assignment - DSS Console Key Assignment	09 = Night Mode Service key Mode No. 1 ~ 8 or 0: toggle	The DSS keys 001 ~ 060 of all DSS consoles = DSS/One-Touch key 101 ~ 160 The DSS keys 061 ~ 114 of all DSS consoles = No Setting

Operation

To activate Night Service by dialing codes:

- At a Multiline Terminal, press **Speaker** key.
- OR -
At the Single Line Terminal, lift the handset.
- Dial **718**. To change a different group's mode, dial **718** + the group number (01~04).
- Dial the Night Service Code:
1 = Day 1 Mode
2 = Night 1 Mode
3 = Midnight 1 Mode
4 = Rest 1 Mode
5 = Day 2 Mode
6 = Night 2 Mode
7 = Midnight 2 Mode
8 = Rest 2 Mode
- Press **Speaker** key or hang up.

To activate Night Service by using programmable keys:

- Press the **Night Service** key (PRG 15-07-01 or SC **751**: 09 + Mode code number below).
1 = Day 1 Mode
2 = Night 1 Mode
3 = Midnight 1 Mode
4 = Rest 1 Mode
5 = Day 2 Mode
6 = Night 2 Mode
7 = Midnight 2 Mode
8 = Rest 2 Mode

To transfer a call to the Universal Answer External Page zones:

1. Place the CO call on hold and dial the Transfer to Trunk Ring Group code (assigned in PRG 11-15-09).



You hear a confirmation tone.

2. Hang up.



The call rings over the External Paging, enabling anyone to answer the call.

To skip own group current mode:

Program;

PRG 11-10-50: 787

PRG 15-07-01: LK07; 09 + 0

PRG 20-01-17: 1 (skip)

PRG 12-01-01: 1 (On)

PRG 12-02:

01 = 00: 00 - 09: 00 Mode 3 [M-Night]

02 = 09: 00 - 12: 00 Mode 1 [Day]

03 = 12: 00 - 13: 00 Mode 4 [Rest]

04 = 13: 00 - 17: 00 Mode 1 [Day]

05 = 17: 00 - 18: 00 Mode 4 [Rest]

06 = 18: 00 - 22: 00 Mode 2 [Night]

07 = 22: 00 - 00: 00 Mode 3 [M-Night]

PRG 12-05-01 TEL100: Group 1

PRG 12-07-01 Mode Group 1:

Mode 1 = none

Mode 2 = [Night]

Mode 3 = [M-Night]

Mode 4 = [Rest]

PRG 20-07-01: 1 (On)

1. Current time is 17:30 and mode is Mode 4 [Rest].
2. At Multiline Terminal, press **Speaker** key or Off Hook.
3. Dial **787**, mode skip to Mode 2 [Night].
4. Press **Speaker** key or On Hook.

- OR -

1. Current time is 17:30 and mode is Mode 4 [Rest].
2. Press LK07, mode skip to Mode 2 [Night].

Off-Hook Signaling

Description

Off-Hook ringing alerts a Multiline Terminal user that an incoming outside call is ringing to that station during another call. Off-Hook Signaling helps important callers get through, without waiting in line for the called extension to become free. The system provides the following Off-Hook Signaling options:

- **Called Extension Block**
The called extension Class of Service may block incoming Off-Hook Signaling attempts. This is beneficial to users that do not want interruptions while on a call.
- **Automatic Signaling**
Calling a busy extension automatically initiates Off-Hook Signaling. This option is useful to receptionists, operators and others that must quickly process calls. This is set in the called extension Class of Service.
- **Manual Signaling**
After reaching a busy extension, manual signaling gives the caller the choice of using Off-Hook Signaling or activating other features. Extensions without automatic signaling have manual signaling. The users can dial a service code or press a **Programmable Function** key to send Off-Hook Signaling to the called telephone.
- **Selectable Off-Hook Signaling Mode**
The Off-Hook Signal can be muted ringing, no off-hook ringing or a beep in the handset-based on the caller's programming.
- **Off-Hook Ringing**
Use this option to enable or disable an extension Off-Hook Signaling for incoming calls. If enabled, Off-Hook Signaling occurs normally. If disabled, calls queue behind the extension busy line appearance and the user gets no Off-Hook Signaling indication. The second line appearance stays idle. The caller hears ringback tone while their call waits. This is set in the called extension Class of Service.
- **DID Call Waiting**
An extension can optionally have DID calls camp-on with Off-Hook/Call Wait signaling, without Off-Hook/Call Wait signaling or no signaling. This is set in the called extension Class of Service.
- **Block Manual Off-Hook Signals**
This Class of Service option enables/disables a busy extension ability to block off-hook signals manually sent from a co-worker. If disabled (not blocked), callers can dial * at busy or busy/ring to signal the extension. If enabled (blocked), nothing happens when the caller dials * to off-hook signal.
- **Block Camp-On**
If an extension has Block Camp-On enabled, callers to the extension cannot dial 2 to Camp-On after hearing busy or busy/ring. If the extension has Block Camp-On disabled, callers are not prevented from dialing 2 to Camp-On after hearing busy or busy/ring. This is set in the called extension Class of Service.

Conditions

- An extension user cannot Camp-On to a busy extension or leave a callback if Off-Hook Signaling has already gone through. Off-Hook Signaling allows an extension to block a caller's ability to dial # to camp-on.
- You cannot send off-hook signals to an extension busy on a Handsfree (Speakerphone) call. The called extension large LED flashes fast, with no ringing.
- The setting of PRG 20-13-06 affects the BLF display for Hotline and Reverse Voice Over. Refer to [Hotline](#) and [Reverse Voice Over](#) features for additional information.
- You cannot send off-hook signals to an extension that is already receiving a voice announcement.

- An extension user can store the Off-Hook Signaling Service Code (709) under a One-Touch Key to provide quick Off-Hook Signaling access.
- An extension set as Operator in PRG 20-17-01 does not follow settings in PRG 20-13-05, PRG 20-13-06 or PRG 20-09-07 and always receives Off-Hook Signaling.
- PRG 20-09-07 and PRG 20-13-06 must be set to 1 in Class of Service for a normal extension to receive automatic Off-Hook Signaling.

Default Settings

Enabled

System Availability

Terminals

All Multiline and Single Line Terminals

Required Component(s)

None

Related Features

Callback

Call Waiting/Camp-On

Direct Inward Dialing (DID)

Handsfree and Monitor

Hotline

Intercom

One-Touch Calling

Programmable Function Keys

Reverse Voice Over

Single Line Terminals

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-12-03	Service Code Setup (for Service Access) - Override (Off-Hook Signaling)	0~9, *, # Maximum of 8 digit	709
11-16-04	Single Digit Service Code Setup - Intercom Off-Hook Signaling	0~9, *, # Maximum of 1 digit	*

Program No.	Program Name	Input Data	Default
15-02-12	Multiline Telephone Basic Data Setup - Off-Hook Ringing	0 = Muted Off-Hook Ringing 1 = No Off-Hook Ringing 3 = Beep in Speaker (SP) 4 = Beep in Handset (HS) 5 = Speaker and Handset Beep	5
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-09-07	Class of Service Options (Incoming Call Service) - Call Queuing	0 = Off (Calls are not queued.) 1 = On (Calls are queued.)	COS 01 ~ 15 = 0
20-13-05	Class of Service Options (Supplementary Service) - Intercom Off-Hook Signaling	0 = Off (ICM off hook signaling disabled.) 1 = On (ICM off hook signaling enabled.)	COS 01 ~ 15 = 1
20-13-06	Class of Service Options (Supplementary Service) - Automatic Off-Hook Signaling (Automatic Override)	0 = Off (manually) 1 = On (automatically)	COS 01 ~ 15 = 1
20-13-34	Class of Service Options (Supplementary Service) - Block Manual Off-Hook Signaling	0 = Off 1 = On	COS 01 ~ 15 = 0
20-18-06	Service Tone Timers - Interval of Call Waiting Tone	1 ~ 64800 seconds	10
80-01-01	Service Tone Setup - Tone 39, Special Audible Ring Busy Tone	0 ~ 255 (0 = Endless)	Refer to Programming Manual.
80-01-02	Service Tone Setup - Tone 39, Special Audible Ring Busy Tone	0 ~ 33 (0 = No Tone) (33 = Default Time Slot)	Refer to Programming Manual.

Operation

To send Off-Hook signals to an extension busy on a call:

 Your extension may send off-hook signals automatically.

1. Dial service code.

- OR -

Press the **Off-Hook Signaling** key (PRG 15-07 or SC751: 33).

 You hear ringback.

 To have your call voice-announce, dial 1.

Receiving Off-Hook Signaling on a Single Line Terminal while engaged on an internal or external call:

1. When Off-Hook Signaling is heard in the receiver, press **Flash** key to answer the call. The first call is placed on hold.

2. Press **Flash** key again to toggle between the two calls.



If the Single Line Terminal hangs up with the active call, the other call on hold rings back to the single line.

One-Touch Calling

Description

One-Touch Calling gives a Multiline Terminal user one-button access to extensions, trunks, speed dial bins and selected system features. This saves users time when accessing co-workers, clients and features they use most often. Instead of dialing a series of codes, the user need only press the One-Touch key. An extension user can have One-Touch keys programmed for:

- Direct Station Selection - one-button access to extensions
- Station Speed Dial - one-button access to stored numbers (maximum of 36 digits in length)
- Speed Dial - System/Group/Station - one-button access to stored speed dialing numbers
- Trunk Calling - one-button access to trunks or trunk groups
- Service Codes - one-button access to specific Service Codes

An extension user can chain dial with One-Touch keys. For example, a user can store the number for a company Automated Attendant in key 1 and employee extension numbers in keys 2 ~ 5. The user presses key 1 to call the company, then one of keys 2 ~ 5 to ring the employee to which they want to speak.

An extension user or system administrator can optionally store a Flash command under a One-Touch key. This is helpful for One-Touch keys used as Station Speed Dial bins. The stored Flash may be helpful to access features of the connected Telco, PBX or Centrex.

Conditions

- One-Touch keys provide a Busy Lamp Field (BLF).
- When a Multiline Terminal user is on a call, they can transfer to another station by pressing a DSS key for that station. It is not necessary to press **Transfer** key to transfer to another station using a DSS key.
-  *When a Multiline Terminal user is on a call, they must press **Transfer** key to transfer a call off site with a DSS key.*
-  *When a Multiline Terminal user is on a call, they must press **Transfer** key to transfer a call to a destination that is not a station (ACD/Voice Mail/Department group pilot, etc.).*
- Pauses can be entered in the dial string of a DSS/One Touch key. The pause is entered as P in the dial string and causes the system to wait three seconds before sending the rest of the digits that follow the P (pause). Multiple pauses can be entered.
- The @ can be entered in the dial string of a DSS/One Touch key. The @ only applies to ISDN and Intercom calls. When using the @, the system waits for the destination to answer (answer supervision), and then sends the rest of the digits.
- Entering a P (pause) in a DSS/One Touch dial string can be used for CO calls, Intercom calls, or after the @ for ISDN calls.
- ARS with Max Digits is not supported when entering the @ or a P (pause) in the dial string of a DSS/One Touch key.

Default Settings

None

System Availability

Terminals

All Multiline Terminals and DSS Consoles

Required Component(s)

None

Related Features

Programmable Function Keys

Transfer

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
11-11-17	Service Code Setup (for Setup/Entry Operation) - Programmable Function Key Programming (3-Digit Service Codes)	0~9, *, # Maximum of 8 digit	751
20-13-18	Class of Service Options (Supplementary Service) - Programmable Function Key Programming (General Level)	0 = Off 1 = On	COS 01 ~ 15 = 1
30-03-01	DSS Console Key Assignment		The DSS keys 001 ~ 060 of all DSS consoles = DSS/One-Touch key 101 ~ 160. The DSS keys 061 ~ 114 of all DSS consoles = No Setting.

Operation

Programmable Function Keys

To define a Programmable Function Key as a One-Touch Key:

1. Dial the service code for Function Key Programming (PRG 11-11-17, **751** by default).
2. Press the key to be defined.
3. Dial **01** (DSS/One-Touch Key Operation).
4. For Direct Station Selection (Extension):
 - a. Dial extension number you want assigned to that key.
 - b. Press **Hold** key.
 - c. Press **Speaker** key.

For Personal Speed Dial:

- a. Dial the general trunk access code (**0**).

- **OR** -

Dial the Specific Trunk Service Code (**#0**) plus the trunk number (e.g., 005).

- **OR** -

Dial the Trunk Group Service Code (**704**) plus the trunk group number (e.g., 1).



If there are no trunks assigned in trunk group 10 or higher than this is correct. If there is a trunk assigned in trunk group 10 or higher then the operation is below:

Dial the Trunk Group Service Code (704) plus the two digit trunk group number (e.g., 01).

- b. Dial the number you want to store.



The total of the digits stored in steps 3 and 4 cannot exceed 24.



*Valid entries are 0~9, # and *. To enter a pause, press **Transfer** key. To store a Flash, press **Flash** key. To enter a @ press **Mute** key.*

- c. Press **Hold** key.
- d. Press **Speaker** key.

For Speed Dial - System/Group:

- a. Dial **#2** to store a Speed Dial - System dialing number.

- **OR** -

Dial **#4** to store a Speed Dial - Group dialing number.

- b. Dial Speed Dial number storage code (e.g., 001).
- c. Press **Hold** key.
- d. Press **Speaker** key.

For Central Office Calls, Placing (Trunk Calling):

- a. Dial the general trunk access code (**0**).

- **OR** -

Dial the specific Trunk Service Code (**#0**) plus the trunk number (e.g., 005).

- **OR** -

Dial the Trunk Group Service Code (**704**) plus the trunk group number (e.g., 1).

- b. Dial the telephone number to be stored.
- c. Press **Hold** key.
- d. Press **Speaker** key.

For Service Codes:

- a. Dial the Service Code you want stored.



For example, if you want a One-Touch Key to automatically clear your Last Number Redial, enter 776.

- b. Press **Hold** key.
- c. Press **Speaker** key.

Checking the One-Touch Keys

To check the function of a One-Touch key:

1. Press **Help** key.
2. Press the **One-Touch** key.



The stored function displays.



Repeat this step to check additional keys.

3. Press **Exit** key.

Operator

Description

When an extension user dials **9**, calls are routed to a main system operator. The operator can answer and route outside calls or locate employees using the Page feature.

A maximum of eight operators is available.

Conditions

- Attendant extensions can have up to 32 incoming calls queued before additional callers hear busy tone.
- The operator extension cannot be a virtual extension.
- Extensions and trunks can be assigned to an operator group. A call to an operator that is busy rolls to the next operator in the operator group.

Default Settings

Extension 101 is an operator.

System Availability

Terminals

All Stations

Required Component(s)

None

Related Features

Attendant Call Queuing

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
20-01-01	System Options - Operator Access Mode	0 = Step Call 1 = Circular	0
20-17-01	Operator Extension - Operator's Extension Number	Up to eight digits	101
20-17-02	Operator Extension - Operator Console Determines an operator console type when any extension user dials "9", the assigned extensions shall ring.	0 = Normal Key Set 1 = Special Operator Console	0

Program No.	Program Name	Input Data	Default
20-35-01	Extension's Operator Setting - Extension's Operator Setting	0 ~ 15 (0 = Not Set)	0
20-36-01	Trunk's Operator Setting - Trunk's Operator Setting	0 ~ 15 (0 = No Setting)	0
20-37-01	Operator Extension Group Setup - Operator Extension Group Setup	Up to eight digits	No Setting
20-38-01	Operator Group Setting - Operator Access Mode	0 = Step 1 = Circular	0

Operation

Refer to the individual features for operation.

Paging, External

Description

With External Paging, a user can broadcast announcements over paging equipment connected to External Paging zones. When a user pages one of these external zones, the system broadcasts the announcement over the speakers. Like Internal Paging, External Paging allows a user to locate another employee or make an announcement without calling each extension individually.

The SL2100 system allows to program up to three External Paging zones. All speakers (1-3) require a port on each 082U board. In addition, each external zone has an associated relay contact. When a user pages to a zone, the corresponding contact activates (closes). This provides for Paging amplifier control.

In PRG10-60-03 (External Speaker1), PRG10-60-04 (External Speaker2) and PRG10-60-05 (External Speaker3), set the corresponding slot number of 082U board. Then an Audio Out port on the 082U works as External Speaker1-3.

When configuring a 3 082U board, a maximum of 3 external Paging can be used by using Audio out port.

Combined Paging

Use Combined Paging when you want to simultaneously Page into an internal and corresponding external zone. For example, you can Page your company warehouse and outside loading dock at the same time. Combined Paging is available for zones 1 ~ 3 and All Call. Refer to [Paging, Internal](#) for more on setting up Combined Paging. In addition, you can program a Function Key as a Combined Paging key. Using the External Page Function Key, when an All Call External Page Function Key is programmed, it includes both the external zones and the assigned internal zone(s). If the internal page zone is busy or there are no extensions in a page group, the announcement is made on the external zones only.

Relay Control

Relays can be used for External MOH, BGM resource, External Speaker, or Door Box control in accordance with PRG 10-61-01 to PRG 10-61-04 settings

In PRG 10-61-01/PRG10-61-03 assign the Relay Port 1/2 to the device to be paired with. (0: No setting, 1: External MOH, 2: BGM, 3: External Speaker, 4: Door Box)

In case of External Speaker or Door Box, select Speaker or Box number to be used in PRG 10-61-02/PRG 10-61-04.

Conditions

- A Class of Service option is available in system programming to prevent display telephones from showing incoming paging information. This allows the system to save processor time and speeds up system operation.
- DID and DIL trunks do not ring external page speakers. Only trunks defined as normal in PRG 22-02-01 ring external page speakers.
- Paging keys can be assign on Programmable Function Keys and Direct Station Selection (DSS) Consoles to simplify External Paging operation.
- To have outside calls ring External Paging Zones at night, refer to the Night Service feature and PRG 31-05.

Default Settings

No External Paging defined.

System Availability

Terminals

All Stations

Required Component(s)

082U-B1

1- or 2-way amplifier and speakers (locally provided)

Related Features

Analog Communications Interface (ACI)

Central Office Calls, Placing

Direct Inward Dialing (DID)

Direct Inward Line (DIL)

Direct Station Selection (DSS) Console

Door Box

Night Service

Paging, Internal

Programmable Function Keys

Transfer

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-60-03	Audio Port Setup - External Speaker Channel 1	0 ~ 3 5 ~ 7 9 ~ 11 Each chassis can be set except 4th Slot (Slot No. 4,8,12).	0
10-60-04	Audio Port Setup - External Speaker Channel 2	0 ~ 3 5 ~ 7 9 ~ 11 Each chassis can be set except 4th Slot (Slot No. 4,8,12).	0

Program No.	Program Name	Input Data	Default
10-60-05	Audio Port Setup - External Speaker Channel 3	0 ~ 3 5 ~ 7 9 ~ 11 Each chassis can be set except 4th Slot (Slot No. 4,8,12).	0
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-13-29	Class of Service Options (Supplementary Service) - Paging Display	0 = Off 1 = On	COS 01 ~ 15 = 1
31-01-02	System Options for Internal/External Paging - Page Announcement Duration	0 ~ 64800 seconds	1200 seconds
31-03-01	Internal Paging Group Settings - Internal Paging Group Name	Up to 12 Characters	Refer to the Programming Manual for the default values.
31-04-01 *	External Paging Zone Group - Paging Group Number	0 ~ 3 (0 = No setting, 1 ~ 3 = Group number)	Speaker 1 = 1 (Group 1) Speaker 2 = 2 (Group 2) Speaker 3 = 3 (Group 3)
31-05-01	Universal Night Answer/Ring Over Page - Universal Night Answer/Ring	0 = No Ringing (No) 1 = Ringing (Yes)	0
31-06-01	External Speaker Control - Broadcast Splash Tone Before Paging (Paging Start Tone)	0 = No Tone (None) 1 = Splash Tone 2 = Chime Tone	2
31-06-02	External Speaker Control - Broadcast Splash Tone After Paging (Paging End Time)	0 = No Tone (None) 1 = Splash Tone 2 = Chime Tone	2
31-06-04	External Speaker Control - CODEC Transmit Gain Setup	1 ~ 57 (- 15.5 ~ + 12.5 dB)	32
31-07-01	Combined Paging Assignments - Internal Paging Group Number	0 ~ 50 (0 = All Internal Paging)	1
31-08-01	Back Ground Music on External Paging - BGM	0 = BGM Prevented (No) 1 = BGM allowed (Yes)	0

Operation

To Page into an external zone:

1. Press the **External Paging** key (PRG 15-07 or SC **751**: 19 for External Paging zones or 20 for External All Call Paging).

2. Make announcement.

- OR -

1. At the Multiline Terminal, press **Speaker** key or pick up the handset.

- OR -

At Single Line Terminal, lift the handset.

2. Dial **703** and the External Paging Zone code (1 ~ 3 or 0 for All Call).

- OR -

Dial ***1** and the Combined Paging Group code (1~3 or 0 for Internal/External All Call).



Display indicates the Combined Paging as an External Page.



If the Internal Page Zone is busy or if there are no extensions in a page group, the page may be announced as an External Page only.

3. Make an announcement.

4. Dial **703** and the External Paging Zone code (1 ~ 3 or 0 for All Call).

- OR -

Dial ***1** and the Combined Paging Group code (1~3 or 0 for Internal/External All Call).



Display indicates the Combined Paging as an External Page.



If the Internal Page Zone is busy or if there are no extensions in a page group, the page may be announced as an External Page only.

5. Make an announcement.

Paging, External (VRS)

Description

Paging, External (VRS) enables the use of prerecorded VRS messages for External Paging. The advantage of this feature is saving time for the users who regularly use External Paging with the same announcements.

Conditions

- If VRS External Paging is answered using the meet me paging service code and both parties are connected, VRS stops the announcement.
- Paging, External (VRS) does not support Internal Paging. Also, combined paging is not supported.
- The paging telephone must remain off-hook during paging. If the paging telephone hangs up during paging, VRS External paging stops.
- If an invalid VRS number is dialed or, there is no recorded VRS greeting, the caller hears an error tone.
- Paging, External (VRS) will not play the starting and ending tone if enabled. If the starting and ending tones are needed, they must be recorded in the VRS message itself.
- After the recorded VRS message is finished, the paging telephone hears a busy tone.
- When using the speaker mode on a paging telephone, the telephone becomes idle after the recorded VRS message finishes.
- The Paging, External (VRS) feature is supported with Embedded VRS.

Default Settings

Disabled

System Availability

Terminals

All Terminals

Required Component(s)

1- or 2-way amplifier and speakers (locally provided)

Related Features

Paging, External

Voice Response System (VRS)

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-10-20	Service Code Setup (for System Administrator) - VRS - Record/Erase Message	0~9, *, # Maximum of 8 digit	616
11-12-20	Service Code Setup (for Service Access) - External Paging	0~9, *, # Maximum of 8 digit	703
20-07-13	Class of Service Options (Administrator Level) - VRS Record (VRS Msg Operation)	0 = Off 1 = On	COS1 ~ 14/COS15 = 0/1

Operation

External VRS Messaging

To page into an external zone with VRS message:

1. Pick up the handset or press **Speaker** key at Multiline Terminal.
 2. Dial **703** and * then the External Paging Zone code (1~3, 0 for all call).
 3. Dial VRS message Number (001-100).
 4. Make announcement.
 5. Press **Speaker** key at Multiline Terminal or on-hook.
- OR -
- Press the **DSS/One Touch** key programmed for External Paging.

To Program One Touch Key:

The following example shows how to program a **One Touch** key for External Paging zone 2 to play VRS greeting number 099.

1. Press **Speaker** key.
2. Dial **751**.
3. Press the **Function** key to be programmed.
4. Dial 0, 1 (Function Code for the **DSS/One Touch** key).
5. Dial **703, *, 2, 0, 9, 9**.
6. Press **Hold** key.
7. Press **Speaker** key.



When using the Paging, External (VRS) feature, FC 20 (External All Call Paging code) cannot be used as a programmable function key.

Paging, Internal

Description

Internal Paging lets extension users broadcast announcements to other Multiline Terminal users. When a user makes a Zone Paging announcement, the announcement broadcasts to all idle extensions in the zone dialed. With All Call Paging, the announcement broadcasts to all idle extensions programmed to receive All Call Paging. An extension can be a member of only one Internal Paging Zone. Like External Paging, Internal Paging allows a user to locate another employee or make an announcement without calling each extension individually.

Combined Paging

Use Combined Paging when you want to simultaneously Page into an internal and corresponding external zone. For example, you can Page your company warehouse and outside loading dock at the same time. Combined Paging is available for Paging zones 1~3 and All Call. Optionally, you can change the Combined Paging assignments. For example, you can associate External Paging Zone 1 with Internal Paging Zone 4. You can program a **Function** key as a **Combined Paging** key. When an **All Call External Page Function** key is programmed, it includes both the external zones and the assigned internal zone(s). If the internal page zone is busy or there are no extensions in a page group, the announcement is made on the external zones only.

Conditions

- Internal Paging does not require an unused analog trunk port and external paging system.
- You can assign up to 50 TDM extensions to an Internal or All Call Paging Group.
- You can assign up to 16 IP extensions to an Internal or All Call Paging Group.
- A system must have at least one extension port idle to make an Internal Page. If no extension port is idle, the extension performing the Page hears a busy signal.
- There are 50 available Internal Paging Groups (Zones).
- A Class of Service option is available in system programming to prevent display telephones from showing incoming internal paging information. This allows the system to save processor time and speed up system operation.
- An extension user can broadcast an announcement over an External Paging Zone.
- Function keys simplify Internal Paging operation.
- You must assign an extension to be in a two-digit zone in PRG 31-02-01 before you can assign a function key using the **751** service code as a two-digit Internal Group Paging Zone key.
- If Auto Hold in PRG 15-02-07 is set to Cut (1), when a user presses the page key while on a trunk call, the trunk call is put on hold.
- A Single Line Terminal can initiate an Internal Zone page, but cannot receive an Internal Zone Page.
- If an internal paging group has only IP Multiline Stations, multicast is used for the page. IP Multiline Terminals must have a gateway programmed to accomplish a multicast transmission. When an actual gateway device does not exist on the network, a dummy gateway address on the same subnet must be defined.
- When a paging group contains all IP Terminals, the page is sent via a multicast message from the initiating IP Terminal. If a paging group has IP and TDM phones, when an IP Terminal initiates the page, a message is sent to the CPU and the CPU sends the multicast message for the IP Terminals.

Default Settings

Enabled

System Availability

Terminals

All Multiline Terminals

Single Line Terminals

Required Component(s)

None

Related Features

Meet Me Paging

Meet Me Paging Transfer

Paging, External

Programmable Function Keys

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-12-19	Service Code Setup (for Service Access) - Internal Group Paging	0~9, *, # Maximum of 8 digit	701
11-12-24	Service Code Setup (for Service Access) - Combined Paging	0~9, *, # Maximum of 8 digit	*1
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-13-29	Class of Service Options (Supplementary Service) - Paging Display	0 = Off 1 = On	COS 01 ~ 15 = 1
31-01-01	System Options for Internal/External Paging - All Call Paging Zone Name	Up to 12 Characters	Group all
31-01-02	System Options for Internal/External Paging - Page Announcement Duration	0 ~ 64800 seconds	1200 seconds
31-02-01	Internal Paging Group Assignment - Internal Paging Group Number	0 ~ 50 (0 = No setting)	All stations = 1
31-02-02	Internal Paging Group Assignment - Internal All Call Paging Receiving	0 = Off 1 = On	1
31-03-01	Internal Paging Group Settings - Internal Paging Group Name	Up to 12 Characters	Refer to the Programming Manual for the default values.
31-07-01	Combined Paging Assignments - Internal Paging Group Number	0 ~ 50 (0 = All Internal Paging)	1

Operation

To make an Internal Page announcement:

Multiline Terminal

1. Press the **Zone Internal Paging** key (PRG 15-07 or SC **751**: 21 + 01 ~ 50 for zones).
- OR -
Press **Speaker** key or lift the handset.
2. Dial **701** and the Paging Zone number (0 ~ 9 or 00 ~ 50).
 *Dialing 0 or 00 calls All Call Internal Paging.*
- OR -
Dial ***1** and the Combined Paging Group code 1~3 or 0 (for Internal/External All Call).
 *Display indicates the Combined Paging as an External Page.*
 *If the Internal Page Zone is busy or if there are no extensions in a page group, the page is announced as an External Page only.*
3. Make an announcement.
4. Press **Speaker** key to hang up.

Single Line Terminal

1. Lift the handset.
2. Dial **701** and the Paging Zone number (0 ~ 9).
 *Dialing 0 or 00 calls All Call Internal Paging.*
 *Dial *1 and the Combined Paging Group code 1 ~ 3 or 0 (for Internal/External All Call).*
3. Make an announcement.
4. Hang up.

Park

Description

Park places a call in a waiting state (called a Park Orbit) so that an extension user may pick it up. There are two types of Park: System and Personal. Use System Park when you want to have the call wait in a system orbit. Personal Park allows a user to Park a call at their extension so a co-worker can pick it up. After parking a call in orbit, a user can Page the person receiving the call and hang up. The paged party dials a code or presses a programmed Park key to pick up the call. With Park, it is not necessary to locate a person to handle their calls. A call parked for too long recalls the extension that initially parked it, however the call remains in the park orbit until it is answered. There are 50 Park Orbits (1~50) available for use.

Extended Park

An extension Class of Service determines whether it uses the normal Park Orbit Recall time or the Extended Park Orbit Recall time. The timers are set in system programming. When an extension with Extended Park Recall Class of Service option parks a call, it recalls after the Extended Park Orbit Recall time. When an extension with the Normal Park Orbit Recall Class of Service option parks a call, it recalls after the normal Park Orbit Recall time, however the call remains in the park orbit until it is answered.

Programmable Function Key and Service Code Available for Personal Park

The Personal Park feature is enhanced by using a Programmable Function Key or service code (3-digit or 1-digit) to place a call in Personal Park. This option is available for Multiline Terminals and single line sets and can be used for analog or ISDN trunks.

Conditions

- An extension user can park a call in any Park Orbit. However, an extension user can pick up only a call Parked by a member of their own Park group (see PRG 24-03).
- An extension can have only one Personal Park key.
- When the terminal that has a call in Personal Park is unplugged, the Personal Park is released and the held caller is placed on Non-Exclusive Hold.
- The following table indicates what condition the service codes and Programmable Function key can be used.

Status	Using 3-Digit Service Code	Using 1-Digit Service Code	Using Personal Park Key
Speaking	Not Available	Not Available	Available
ICM Dial Tone or Busy Tone	Available	Not Available	Available
Calling Another Extension	Not Available	Available (with outside call on hold and when called extension does not answer)	Available
Receiving a Personal Park Recall	Not Available	Not Available	Available

- A user can display the Caller ID of a call in Park if Caller ID is enabled (1) in PRG 20-09-02.
- Park keys can be assigned on DSS consoles.
- Calls on virtual extension keys can be put in Personal Park if PRG 15-18-01 is set to Land on the key (1).
- Function keys simplify Park operation.

- One Touch keys programmed for Park Hold Service Code cannot be used to park calls without using Hold or Transfer.
- Call Park - Step Call is supported in the local system only.
- A parked call cannot be retrieved from Hold Dial Tone (Second dial tone).
- When a call is parked from a virtual extension, the virtual extension is released.
- When parking a call from a virtual extension, PRG 15-02-21 and PRG 15-18-01 must be set to 1.
- Park Group assignment is by the terminal extension, not the virtual extension.
- When a call parked from a virtual extension recalls, it will ring the terminal the virtual extension is programmed on, not the virtual extension key.
- Park Retrieve is not supported using DISA.
- Mobile Extension can answer a park call by automatically dialing or by manually dialing the answer park hold service code through a DID Trunk.

Default Settings

Enabled

System Availability

Terminals

All Terminals

Required Component(s)

None

Related Features

Call Arrival (CAR) Keys

Caller ID

Direct Station Selection (DSS) Console

Hold

Programmable Function Keys

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-12-31	Service Code Setup (for Service Access) - Park Hold	0~9, *, # Maximum of 8 digit	#6
11-12-32	Service Code Setup (for Service Access) - Answer for Park Hold	0~9, *, # Maximum of 8 digit	*6
11-12-35	Service Code Setup (for Service Access) - Station Park Hold	0~9, *, # Maximum of 8 digit	757

Program No.	Program Name	Input Data	Default
11-16-11	Single Digit Service Code Setup - Station Park Hold	0~9, *, # Maximum of 1 digit	No Setting
15-02-08	Multiline Telephone Basic Data Setup - Automatic Handsfree	0 = Preselect 1 = One-Touch (Automatic Handsfree)	1
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
15-18-01	Virtual Extension Key Enhanced Options - Virtual Extension Key Operation Mode	0 = Release 1 = Land on the key	0
15-18-02	Virtual Extension Key Enhanced Options - Display mode when placing a call on Virtual Extension Key	0 = Secondary Extension Name 1 = Actual Station Name	0
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-11-19	Class of Service Options (Hold/Transfer Service) - Hold/Extended Park	0 = Off 1 = On	COS 01 ~ 15 = 0
20-11-24	Class of Service Options (Hold/Transfer Service) - Trunk Park Hold Mode	0 = Non Exclusive Hold (Off) 1 = Exclusive Hold (On)	COS 01 ~ 15 = 1
20-11-25	Class of Service Options (Hold/Transfer Service) - Transfer Park Call	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-26	Class of Service Options (Hold/Transfer Service) - Station Park Hold mode	0 = Off 1 = On	COS 01 ~ 15 = 0
20-11-27	Class of Service Options (Hold/Transfer Service) - Call Park Search	0 = Off 1 = On	COS 01 ~ 15 = 1
24-01-02	System Options for Hold - Hold Recall Callback Time	0 ~ 64800 seconds	0
24-01-06	System Options for Hold - Park Hold Time - Normal	0 ~ 64800 seconds	90
24-01-07	System Options for Hold - Park Hold Time - Extended (Recall)	0 ~ 64800 seconds	300
24-03-01	Park Group - Park Group Number	1 ~ 50	1

Operation

To Park a call in a system orbit:

 You can Park Intercom or trunk calls.

1. Press the Park key (PRG 15-07 or SC **752**: *04 +orbit).

 The **Park** key LED lights.

 If you hear busy tone, the orbit is busy. Try another orbit.

2. Use Paging to announce call.

3. Press **Speaker** key to hang up.

 *If not picked up, the call recalls to you.*

- OR -

1. At the Multiline Terminal, press **Hold** key.

- OR -

At a Single Line Terminal, hookflash.

2. Dial **#6** and the Park orbit (01~50).

 *If you hear busy tone, the orbit is busy. Try another orbit.*

 *If you hear a busy tone, the orbit is busy. Dial #6* if enabled in PRG 20-11-27 (Call Park AutoSearching) to search for an idle park location in ascending order.*

3. Use Paging to announce the call.

4. Press **Speaker** key to hang up.

 *If not picked up, the call recalls to you.*

 *The parked call recalls after the Park Hold Time (PRG 24-01-06). The call rings the extension to which it recalled for the Hold Recall Callback Time (PRG 24-01-02). The call then goes on Hold for the Park Hold Time, then recalls again for the Hold Recall Callback Time. The call continues to cycle between Hold and recall until the extension user answers the call or the outside party hangs up.*

To pick up a parked call:

1. Lift the handset.
2. Press the **Park** key (PRG 15-07 or SC **752**: *04 +orbit).

- OR -

1. At the Multiline Terminal, press **Speaker** key.

- OR -

At Single Line Terminal, lift the handset.

2. Dial ***6** and the Park orbit (01 ~ 50).

To Park a call at your extension:

1. Do not hang up.
2. Press the **Personal Park** key (PRG 15-07 or SC **752**: *07).

- OR -

Press **Hold** key and dial **757**.

- OR -

Press **Hold** key and the **Personal Park** key (PRG 15-07 or SC **752**: *07).

 *At a Single Line Terminal, hookflash instead of pressing **Hold** key.*

 *A confirmation tone is heard and the call is parked at your extension. If the extension has a Personal Park key, the key flashes.*

 *The Personal Park single-digit service code (PRG 11-16-11) cannot be used in this operation.*

3. Page your co-worker to pick up the call.
4. Press **Speaker** key to hang up (or hang up at the Single Line Terminal).

 *If not picked up, the call recalls to you.*

To Park an outside call at your extension after trying to call a co-worker:

1. While on a call, press **Hold** key.
2. Dial a co-worker's extension number.
 -  *The co-worker does not answer.*
3. Press the **Personal Park** key (PRG 15-07 or SC **752**: *07).
 - OR -
 - Dial the Personal Park single digit code (PRG 11-16-11).
 -  *The Intercom call to the co-worker is dropped. A confirmation tone is heard and the outside call is parked at your extension.*
 -  *If the co-worker answers the call, the outside call rings back after the intercom call is completed. The call can then be placed in Personal park if desired.*

To pick up a call parked at your extension:

1. Press the **Personal Park** key (PRG 15-07 or SC **752**: *07).
 - OR -
 - Press **Speaker** key and dial **757**.
 -  *At a Single Line Terminal, skip pressing **Speaker** key.*
 -  *The Personal Park single-digit service code (PRG 11-16-11) cannot be used in this operation.*
 -  *If it recalls the extension, pressing the Personal Park key or flashing **Speaker** key answers the call.*

To answer a call parked at a co-worker's extension:

1. Press **Speaker** key, dial * * plus the co-worker's extension number.
 -  *At a Single Line Terminal, skip pressing **Speaker** key.*

To display Caller ID for a call in Park:

-  *With PRG 15-02-08 set to 0 (preselect) for this feature.*
1. With PRG 15-02-08 set to 0 (preselect) and a call in Park, press the **Park** key. (PRG 15-07 or SC **752**: *04).

Call Park-Step Call:

To Park a call in the first available system orbit:

-  *You can Park Intercom or trunk calls.*
1. Press **Hold** or **Transfer** key.
 2. Dial **#6**.
 -  *If you hear a busy tone, the orbit is busy. Proceed to step 3.*
 3. Dial *.
-  *PRG 20-11-27 must be enabled in the Multiline Terminals Class of Service.*

4. Press **Speaker** key to hang up.



If not picked up, the call will recall to you.

- OR -

1. Press **Hold** or **Transfer** key.
2. Press the **DSS/BLF** key programmed as **#6 *** (The Park location will be displayed in the LCD).
3. Press **Speaker** key to hang up.

PBX Compatibility/Behind PBX

Description

You can connect your telephone system trunks to Centrex/PBX lines, rather than to Telco trunk circuits. This makes the trunk inputs to the system Single Line type compatible Centrex/PBX extensions, rather than Telco circuits. PBX Compatibility lets the system be a node (i.e., satellite) in a larger private telephone network. To place outside calls when the system is behind a PBX, telephone system users must first dial the PBX trunk access code (usually 0).

The system provides the following PBX Compatibility options:

- **PBX Trunk Access Code Screening**
The system can monitor the numbers users dial and screen for PBX trunk access codes. The system can screen up to four groups of trunk access codes. The codes can have one or two digits, consisting of the digits 0 ~ 9, # and *. (You use Line Key 1 as a wild card entry.)
- **PBX Trunk Toll Restriction**
The system can provide the Toll Restriction for the PBX trunk, or restriction can be handled solely by the connected PBX. If the telephone system provides the restriction, it restricts the digits dialed after the PBX access code.
- **PBX Call Restriction**
When the telephone system does the Toll Restriction, it can further restrict users from dialing PBX extensions. In this case, the only valid numbers are those dialed after the PBX trunk access code. The only PBX facility telephone system users can access are the PBX outside trunks.
- **Automatic Pause**
The system automatically pauses when it sees a PBX trunk access code during manual dialing, Speed Dialing, Last Number Redial, Repeat Redial and Save Number Dialed. This gives the connected PBX time to set up its trunk circuits.

Conditions

- When using Account Codes, do not use * in a PBX access code. Otherwise, after the *, the trunk stops sending digits to the central office.
- The system automatically pauses after it finds a PBX access code in a Speed Dialing bin.
- If Speed Dialing routes a call to a PBX trunk, it does not automatically insert a PBX access code. It outdials the digits just as they are stored.
- Users answer incoming calls on PBX trunks just like other trunks. All relevant access and Ring Group programming applies. Except for dialing the PBX access code, users place calls on PBX trunks just like other trunks. All relevant access programming applies. Refer to the [Central Office Calls, Placing](#) feature for more details.
- You can have DILs route from the connected PBX. Users can access these trunks for outgoing PBX calls. All PBX Compatibility restrictions and programming apply.
- Flash may allow access to certain PBX features - like Transfer. Make sure you program Flash for compatibility with the connected PBX.
- The system does not provide automatic Pulse to Tone Conversion after outdialing the PBX trunk access code.
- You can program incoming DISA trunks to be outgoing PBX trunks. All PBX Compatibility restrictions and programming apply.
- PBX trunks can follow normal system Toll Restriction.
- Users can get outbound access to PBX trunks through Trunk Groups and/or Trunk Group Routing. All PBX Compatibility restrictions and programming apply.
- If the system routes a call to a PBX trunk, it does not automatically insert the PBX access code. It outdials the call just as the user dialed it.

Default Settings

Disabled

System Availability**Terminals**

All Terminals

Required Component(s)

None

Related Features

Abbreviated Dialing/Speed Dial

Account Code Entry

Central Office Calls, Answering

Central Office Calls, Placing

Code Restriction/Toll Restriction

Direct Inward Line (DIL)

Direct Inward System Access (DISA)

Flash

Pulse to Tone Conversion

Ring Groups

Abbreviated Dialing/Speed Dial

Trunk Group Routing

Trunk Groups

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
14-01-01	Basic Trunk Data Setup - Trunk Name	Up to 12 characters	Trunk Port Number 1 = Name Line 001 Trunk Port Number 2 = Name Line 002 : Trunk Port Number 128 = Name Line 128

Program No.	Program Name	Input Data	Default
14-01-02	Basic Trunk Data Setup - Transmit Level	1 ~ 57 (-15.5 dB ~ +12.5 dB in 0.5 dB intervals)	32 (0 dB)
14-01-08	Basic Trunk Data Setup - Toll Restriction	0 = Restriction Disabled (Toll restriction will not be applied to calls on this trunk.) 1 = Restriction Enabled (Toll restriction will be applied to calls on this trunk.)	1
14-02-01	Analog Trunk Data Setup - Signaling Type (DP/DTMF)	0 = Dial Pulse (10 PPS) 2 = DTMF	2
14-02-02	Analog Trunk Data Setup - Ring Detect Type	0 = Normal/delayed 1 = Immediate Ringing	1
14-04-01	Behind PBX Setup - Type of Connection	0 = Stand Alone (Trunk) 1 = Behind PBX (PBX) 3 = CTX assume 9	0
21-04-01	Toll Restriction Class for Extensions - Restriction Class	1 ~ 15 = Toll Class 1 ~ 15	2
21-05-12	Toll Restriction Class - PBX Call Restriction	0 = Disable (PBX/CTX call not restricted.) 1 = Enable (PBX/CTX call restricted.)	Class 1 ~ 6 = 0 Class 7 = 1 Class 8 ~ 15 = 0
21-06-08	Toll Restriction Table Data Setup - PBX Access Code		Table 1 ~ 4 = No Setting

Operation

To place a call over a PBX trunk:

- At Multiline Terminal, press **Speaker** key and dial **704**.
- OR -
At Single Line Terminal, lift the handset and dial **704**.
- Dial PBX trunk group number (**01 ~ 50**).
- Dial PBX access code and number.
- OR -
 - At the Multiline Terminal only, press the **PBX trunk group** key (PRG 15-07 or SC **752**: *02 + group).
 - Dial PBX access code and number.
- OR -
 - At the Multiline Terminal, press **Speaker** key and dial **0**.
- OR -
At the Single Line Terminal, lift the handset and dial **0**.
 - Dial the PBX access code and number.
- OR -
 - At the Multiline Terminal, press **Speaker** key.
- OR -
At the Single Line Terminal, lift the handset.
 - Dial **#0**.
 - Dial the PBX trunk number (e.g., 05 for line 5).
 - Dial the PBX access code and number.

- OR -

1. Press the **PBX trunk key** (PRG 15-07-01 or SC **752**: *01 + trunk#).
2. Dial the PBX access code and number.



In all cases above, Toll Restriction may prevent your call.

PC Programming

Description

The SL2100 has three different methods for programming. The first is via the Telephone, the second is by PCPro and third by WebPro.

PCPro is a Microsoft Windows based application. It allows the technician/system administrator to download a database from the system, make changes, and then upload.

The WebPro application is a browser base. It allows the technician/end user to make a change to the system/terminal. No special installation program is required.

The following browsers are supported:

- Internet Explorer 11 or higher
- Chrome 52 or higher
- Mozilla Firefox 42 or later

An overview of the three programming applications is shown below.



Figure 1-42 PC Programming Overview

Connecting

As can be seen in [Figure 1-42 PC Programming Overview](#), three connection types are available to PCPro/WebPro.

PCPro, user can connect directly or remotely using a modem/LAN. A connection with the system is made via the Connection Dialog in the application. (Refer to [Figure 1-43 PCPro Connection Dialog.](#))

- *Modem (remote) connections are established via the internal EXIFB modem. To access the modem, dial a trunk that is directed to the modem access service code (DIL or DID) or dial an extension that is redirected to the modem access service code. When connecting with a Modem, a Dial Up Connection (PPP) must be set up in Windows Network Connections.*

 When uploading via a Dial Up connection, uploading board configuration (Hardware Upload) is not supported.

 If the phone number access restriction is required, see *Caller ID Authentication for Modem Access (Caller ID feature section)*. The modem access will be possible only if the programmed telephone number and Caller ID match.

- IP (LAN) connections are established by connecting the LAN cable to CPU Board.

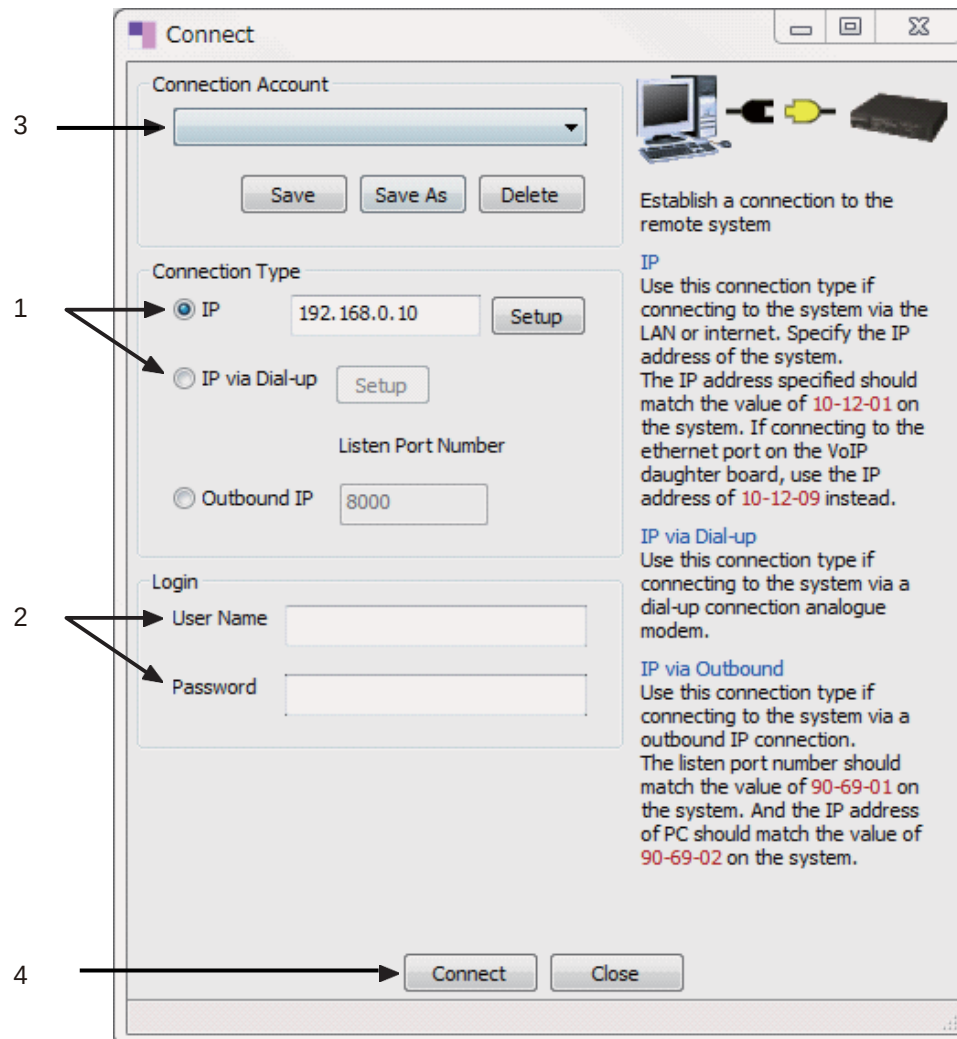


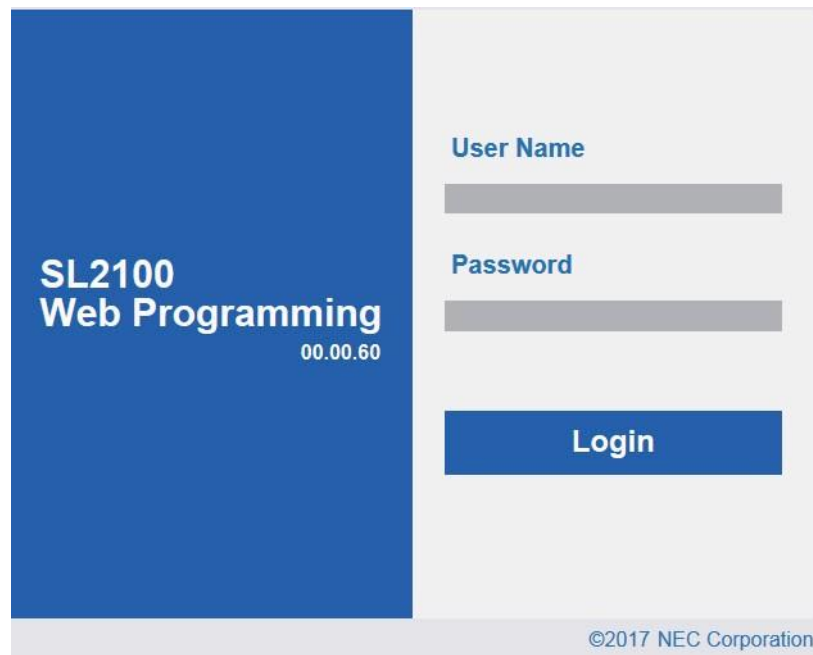
Figure 1-43 PCPro Connection Dialog

1. Select Connection Type.
You can connect by entering IP Address in IP or you can enter the NetBIOS Name which you set at PRG 10-62-02 (Default is: SL2100)
2. To login, specify User Name and Password.
3. (Optional) Load a defined Connection Account (can skip steps 1~3 by using this option.)
4. To make the connection to the system, click Connect.

If using WebPro, a user can connect only via IP. To connect, launch a web browser (i.e., IE or Mozilla®) and enter the IP address of the system (default 192.168.0.10).

SL2100 also supports a NetBIOS so that user can access by <https://SL2100>.

 With Version 3.00 or higher, HTTP protocol(http://) is initially disabled in Program 90-54-01.



WebPro Login Screen

WebPro System Programming

WebPro can be used to edit system programming from a Web browser. System Data, License Information, and Modification History are among the items that can be viewed in WebPro (refer to [Figure 1-44 WebPro Home Page](#)).

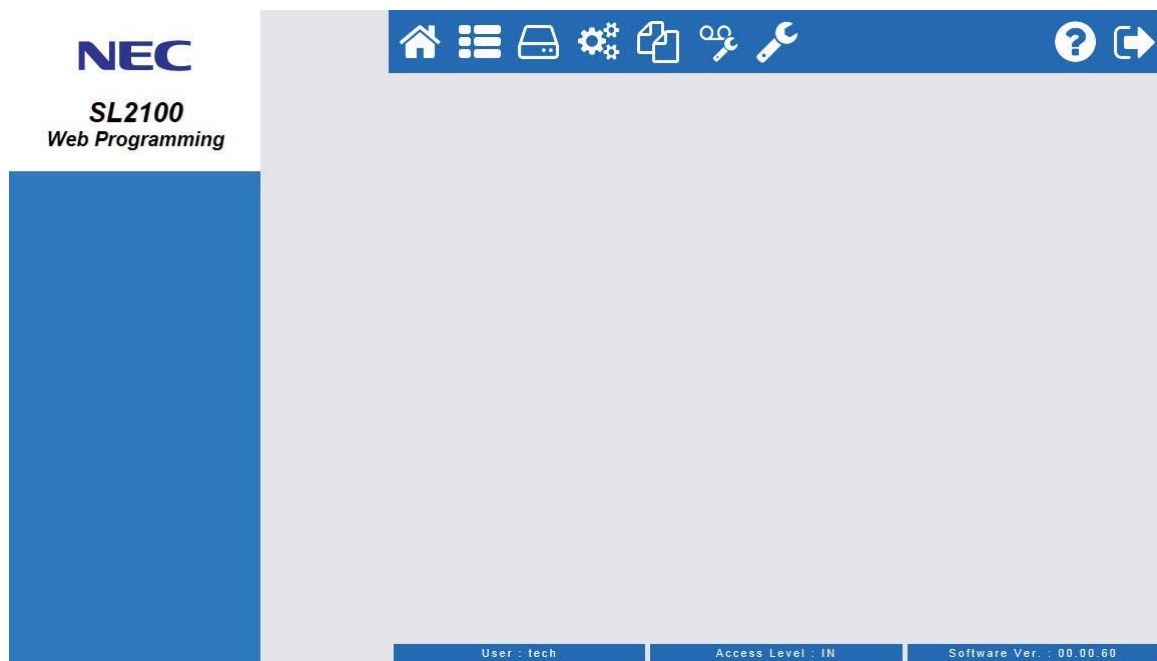


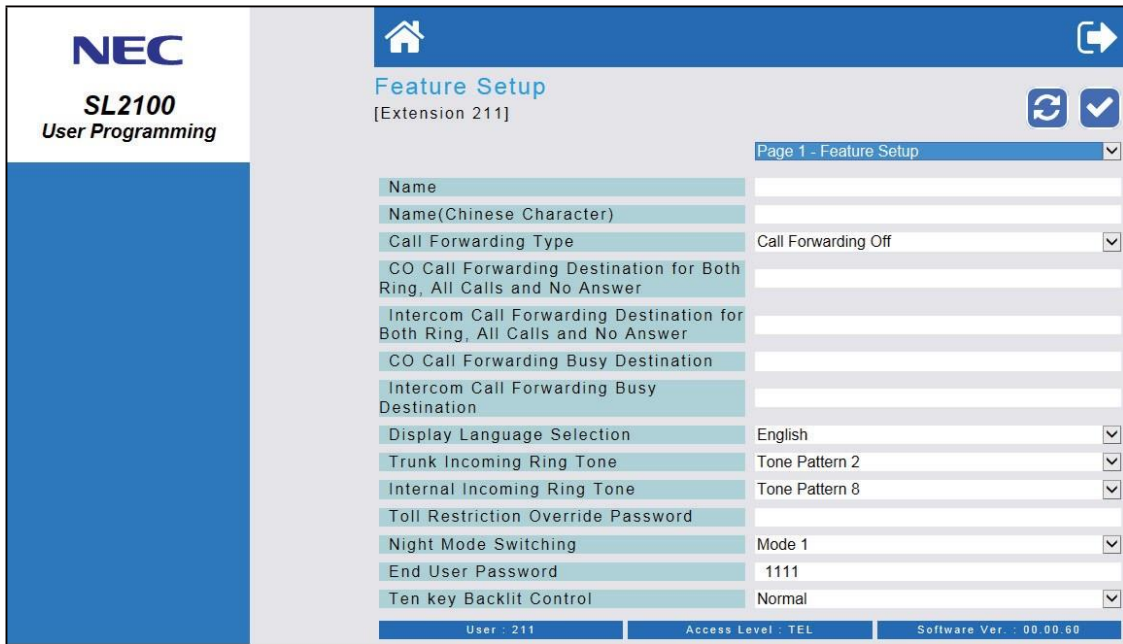
Figure 1-44 WebPro Home Page

WebPro End User Programming

WebPro has an End User Login for which extensions can program functions for their own extension. They can program Function keys, Virtual Extension ringing assignment, Station Speed Dial, InMail features, Station Name, Call Forwarding, Display Language, Ring Tone and End User Password.

To login to the WebPro End User Programming, input the system IP (default: 192.168.0.10) or NetBIOS Address (default: <https://SL2100>) like you would logging into WebPro. Use the extension number as User Name and Password is assigned in PRG 90-28-01 (default: 1111).

 With Version 3.00 or higher, HTTP protocol(<http://>) is initially disabled in Program 90-54-01.



The screenshot displays the 'Feature Setup' interface for extension 211. The left sidebar shows the 'NEC SL2100 User Programming' logo. The main area is titled 'Feature Setup [Extension 211]' and includes a 'Page 1 - Feature Setup' dropdown. The configuration options are as follows:

Field	Value
Name	
Name(Chinese Character)	
Call Forwarding Type	Call Forwarding Off
CO Call Forwarding Destination for Both Ring, All Calls and No Answer	
Intercom Call Forwarding Destination for Both Ring, All Calls and No Answer	
CO Call Forwarding Busy Destination	
Intercom Call Forwarding Busy Destination	
Display Language Selection	English
Trunk Incoming Ring Tone	Tone Pattern 2
Internal Incoming Ring Tone	Tone Pattern 8
Toll Restriction Override Password	
Night Mode Switching	Mode 1
End User Password	1111
Ten key Backlit Control	Normal

At the bottom, the status bar shows 'User : 211', 'Access Level : TEL', and 'Software Ver. : 00.00.60'.

Figure 1-45 WebPro End User Screen

Conditions

- When connecting via a dial up connection, a Dial Up Connection (PPP) must be configured in Windows Network Connections.
- When uploading via a Dial Up connection, uploading board configuration (Hardware Upload) is not supported.

- The hardware/software requirements to run PCPro :

Item	Requirement
CPU	Depending on Microsoft Operation System environment
Memory	Depending on Microsoft Operation System environment
Operating System (OS)	Windows 7 (32- and 64-bit) Windows 8 /8.1 (32 - and 64 -bit) Windows 10 (32 - and 64 -bit)
Other	Microsoft Internet Explorer 7.0 or higher
Communication Port	LAN or Modem
Disk Space	1 GByte for PCPro (minimum)
TCP Port	TCP port 8000 must be open between the terminal and the host PC for uploading/ downloading via LAN. PCPro/WebPro TCP port is set for 8000 at default, but can be changed via WebPro using PRG 90-38-02. PRG 90-38-02 is not accessible from Telephone Programming or PCPro. TCP port 5963 is required to be open if the Debug Terminal is going to be used.
Screen Resolution	800 x 600 (minimum) 1024 x 760 (recommended)

- The hardware/software requirements to run WebPro :

Item	Requirement
Browser	Microsoft Internet Explorer 11 (or higher) Google Chrome 52 or higher Firefox 42 or higher Microsoft Edge
Network	IP connection to the KTS
Screen Resolution	800 x 600 (minimum) 1024 x 760 (recommended)

- You can have a maximum of four users logged into WebPro same time.
- You can have up to two phones in programming mode same time.
- You can have total of four users in programming mode at same time. This can be a any mix of Telephone programming user and Webpro user as long as it won't exceed four users.
- Only One user can be logged into PC PRO. While user is logged into PC PRO Webpro, Telephone programming couldn't be used.
- When programming via WebPro/PCPro, it requires you to logout before the system fully applies the changes.
- In the System Data configuration window, you can open/close the system data by clicking the system data you want to open/close.
- Some programs may need the system to reset/reboot order for the system to effect the change that been made. These Programs are: 80-01, 80-02-01, 80-02-02, 80-02-03, 80-02-04, 80-03, 80-04.
- When using a Board Configuration to update your system. Please disconnect after upload is done. Then please re-start the system order for system to function properly. Until System re-start phone will not work.
- PCPro Login account can be set up to 20 accounts.
- PCPro Connection account can be set up to 200 accounts.
- PCPro and WebPro have been enhanced allowing T1/ISDN layer 1 status, System Alarms and SRAM information to be viewed. The SRAM displays Day/Night Mode information, Trunk information (Trunk to Trunk Transfer Set/Not Set, Trunk disabled), Read List, Department Group information (DND, Transfer settings) and Extension information (Forwarding settings, Alarm settings, DND, BGM and more).
- WebPro supports remote upgrade and is only available in the Manufacture (MF) and Installer (IN) level logins.

- PCPro uses system data to calculate the Power Factor and does not consider if hardware is installed. If system data shows a hardware, the power factor is calculated even if the hardware is not actually installed.

Default Settings

None

System Availability

Terminals

None

Required Component(s)

PCPro application to use PCPro.

Web Browser to use WebPro.



For requirement check "Condition".

Related Features

None

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-12-01	CPU Network Setup - IP Address	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	192.168.0.10
10-12-02	CPU Network Setup - Subnet Mask	128.0.0.0 192.0.0.0 224.0.0.0 240.0.0.0 248.0.0.0 252.0.0.0 254.0.0.0 255.0.0.0 255.128.0.0 255.192.0.0 255.224.0.0 255.240.0.0 255.248.0.0 255.252.0.0 255.254.0.0 255.255.0.0 255.255.128.0 255.255.192.0 255.255.224.0 255.255.240.0 255.255.248.0 255.255.252.0 255.255.254.0 255.255.255.0 255.255.255.128 255.255.255.192 255.255.255.224 255.255.255.240 255.255.255.248 255.255.255.252 255.255.255.254 255.255.255.255	255.255.255.0
10-12-03	CPU Network Setup - Default Gateway	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0

Program No.	Program Name	Input Data	Default
11-15-14	Service Code Setup, Administrative (for Special Access) - Modem Access	0~9, *, # Maximum of 8 digit	740
22-02-01	Incoming Call Trunk Setup - Trunk Service Type	0 = Normal 1 = VRS (second dial tone if no VRS installed) 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delayed VRS 7 = ANI/DNIS 8 = DID (DDI) Mode Switching	0
22-07-01	DIL Assignment - Number of Transferring Destination	Maximum of 8 digits (0 ~ 9, *, #)	No Setting
90-02-01	Programming Password Setup - User Name	Maximum 10 characters	Refer to the Programming Manual for the default values.
90-02-02	Programming Password Setup - Password	Up to eight digits	Refer to the Programming Manual for the default values.
90-02-03	Programming Password Setup - User Level	0 = Prohibited User 2 = IN (Installer Level) 3 = SA (System Administrator Level 1) 4 = SB (System Administrator Level 2) 5 = UA (User Programming Administer Mode Level 1)	Refer to the Programming Manual for the default values.
90-26-01	Program Access Level Setup - Maintenance Level	Level 1 = MF Level Level 2 = IN Level Level 3 = SA Level Level 4 = SB Level	Refer to the Programming Manual for the default values.
90-28-01	User Programming Password Setup - Password	Fixed four digits	1111
10-62-01	NetBIOS Setting - NetBIOS Mode	0 = Disabled 1 = Enabled	1
10-62-02	NetBIOS Setting - NetBIOS Name	Maximum 15 characters	SL2100

Operation

None

PCPro and WebPro Comparison

The table below gives a quick feature comparison of PCPro and WebPro.

Feature	Feature Application		Comments
	PCPro	WebPro	
Installation Program	Y	-	

Feature			Feature Application		Comments
			PCPro	WebPro	
File Handling	File New / Open / Save / Save As		Y	-	
	Send Mail (Database File)		Y	-	PCPro can send the data base file(*.slb) by E-mail.
	File Properties		Y	-	PCPro supports save/view/modify System Site Information, password protect files, add notes, connection settings.
	Version Conversion		Y	-	PCPro can convert databases between different System versions.
Programming Modes	Offline		Y	-	Ability to program offline and upload to the System at a later date.
	Live Update		Y	Y	Changes made in WebPro apply immediately. No upload is required. PCPro has Interactive Mode to make live changes.
Remote Connection	Upload		Y	-	PCPro can download the database from the System to allow backups.
	Download		Y	-	
	Connection Accounts		Y	-	PCPro supports Modem and IP connections. WebPro supports only IP.
Accounts			Y	Y	WebPro: Refer to PRG 90-02 in the Programming Manual.
Programming	Screen Help Text :	System Data Help Text	Y	Y	Help in WebPro is more simplified than in PCPro.
	Control Hint Text		Y	Y	
	Smart Links		Y	-	
	Smart Labels		Y	Y	
	Smart Controls		Y	-	
	Validation		Y	Y	
	Multi-Assignments :	Extension Numbers	Y	-	PCPro provides special screens that allow multiple values to be set easily. This applies mainly to table data. These screens shorten the programming time.
	Line Keys (General)		Y	-	
	Account Codes		Y	-	
	Defaults :	View	Y	-	
	Copy :	System Data Level	Y	Y	Copy items in an individual program.
	Group Level		Y	Y	Copy data for ports (telephone/trunk).
	Modification Tracking (See also Modification History.)		Y	-	PCPro keeps track of changes made to a database. This includes : 1. Changes made to a database that are not yet saved. 2. Changes made to database that are not yet uploaded.
Wizards			Y	-	

Feature		Feature Application		Comments
		PCPro	WebPro	
Configuration Screens	Board Configuration	Y	-	PCPro provides special screens that shorten the programming time to setup core System features.
	Class of Service	Y	-	
	Night Mode Switching	Y	-	
	Trunk Access Maps	Y	-	
	Trunk Groups	Y	-	
	Department Groups	Y	-	
	Direct Inward Dialing	Y	-	
	Ring Groups	Y	-	
	Timers (Trunk / Telephone)	Y	-	
QuickSearch		Y	-	PCPro provides extensive searching on Programs and Wizards.
Reports	System Data	Y	-	PCPro can generate various reports based on values in the database.
	Verify	Y	-	
	Maintenance	Y	-	
	Numbering Plan	Y	-	
	Class of Service	Y	-	
	Modification History	Y	-	
Import / Export	Speed Dials/DID Table	Y	-	PCPro allows import/export of speed dials and DID Table (csv file).
Program Help	Help Pages	Y	Y	WebPro has more simplified help than PCPro.
Security	Application Login	Y	Y	User name/password protection to login to PCPro/WebPro.
	KTS Connection Login	Y	-	PCPro connections to a System are user name/password protected.
	File Open	Y	-	You can password protect a PCPro saved database.
Debug / Capture	CPU Unit Debug Capture	Y	-	PCPro provides a tool for capturing debug information from the CPU Board.
Modification History		Y	Y	PCPro keeps a running list of all the modifications made to a system databases. It also tracks uploads/ downloads.
System Initialize		Y	Y	This is the ability to initialize the System.
System Time Setting		Y	Y	This sets the time on the System.
Software Updates	Firmware Upload	Y	Y	The System software and firmware can be upgraded via PCPro.
Licensing / Feature Activation	KTS Feature Activation	Y	Y	Licensed System features can be activated via PCPro/WebPro. You can also see what is licensed.

Prime Line Selection

Description

Prime Line Selection allows a Multiline Terminal user to place or answer a call over a specific trunk by just lifting the handset. The user does not have to first press keys or dial codes. This simplifies handling calls on a frequently used trunk.

Prime Line Selection has the following two modes of operation:

- **Outgoing Prime Line Preference**
Lifting the handset seizes the Prime Line. Outgoing Prime Line Preference would help a telemarketer who always needs a free line to call prospective clients. The telemarketer just lifts the handset and the Prime Line is always available. (Outgoing Prime Line Preference may be affected by Incoming Prime Line Preference - refer to the Programming section of this feature.)
- **Incoming Prime Line Preference**
When the Prime Line rings the extension, lifting the handset answers the call. Incoming Prime Line Preference could benefit the Service Department dispatcher who must quickly answer customer's service calls and then dispatch repair technicians. When a customer calls in, the dispatcher lifts the handset to get their call. (Incoming Prime Line Preference can optionally seize an idle line appearance - refer to the Programming section of this feature.)

Conditions

- Prime Line Selection can be assigned for Single Line Terminals, however, the telephones cannot access ICM dial tone.
- Prime Line Selection directly interacts with line preference.

Default Settings

Disabled

System Availability

Terminals

Any Station

Required Component(s)

None

Related Features

Central Office Calls, Placing

Direct Inward Dialing (DID)

Direct Inward Line (DIL)

Direct Inward System Access (DISA)

Line Preference

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
14-05-01	Trunk Group - Trunk Group Number	Trunk Port 1 ~ 128 = Priority 1 ~ 128	Refer to Programming Manual.
14-06-01	Trunk Group Routing - Trunk Group	0 = Not Set 001 ~ 050 = Trunk group No. 101 ~ 150 = 100 + Networking System No. 1001 ~ 1050 = 1000 + Route Table No.	Refer to Programming Manual.
14-07-01	Trunk Access Map Setup - Trunk Port Number	0 = No access 1 = Outgoing access only 2 = Incoming access only 3 = Access only when trunk on Hold 4 = Outgoing access and access when trunk on Hold 5 = Incoming and access when trunk on Hold 6 = Incoming and outgoing access 7 = Full access	Access Map 1 ~ 128 = Trunk Ports 1 ~ 128 assigned with option 7 access (incoming and outgoing access and access when trunk is on Hold).
15-01-02	Basic Extension Data Setup - Outgoing Trunk Line Preference	0 = Off 1 = On	0
15-02-10	Multiline Telephone Basic Data Setup - Ringing Line Preference for Trunk Calls	0 = Idle (Off) 1 = Ringing (On)	1
15-06-01	Trunk Access Map for Extensions - Trunk Access Map Number	001 ~ 128	1
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-08-21	Class of Service Options (Outgoing Call Service) - Automatic Trunk Seizing by Pressing SPK Key	0 = Off 1 = On	COS 01 ~ 15 = 0
21-02-01	Trunk Group Routing for Extensions - Route Table Number	0 ~ 50 0 = No Setting (Calls will not route.)	1
22-01-01	System Options for Incoming Calls - Incoming Call Priority	0 = Intercom Call Priority 1 = Trunk Call Priority	1
22-04-01	Incoming Extension Ring Group Assignment - Extension Number	Maximum eight Digits	Group01 has 101, 102, 103, 104, 105, 106, 107, and 108 (First 8 ports ringing)
22-05-01	Incoming Trunk Ring Group Assignment - Incoming Group Number	0 = No Setting 01 ~ 50 = Incoming Group 102 = VMI 103 = Centralized VM	1

Operation

To place a call on your Prime Line:

1. Lift the handset.
 *You hear dial tone on your Prime Line.*
- OR -
2. Press **Speaker** key if PRG 20-08-21 is enabled.
 *You hear dial tone on your Prime Line.*

To answer a call on your Prime Line:

1. Lift the handset.
 *Depending on your Line Preference programming, you either answer the Prime Line or get dial tone on the idle line appearance.*

Private Line

Description

A Private Line is a trunk reserved for a Multiline Terminal for placing and answering calls. A user with a Private Line always knows when important calls are for them. Additionally, the user has their own trunk for placing calls that is not available to others in the system.

Conditions

- Incoming Only - The Multiline Terminal has a Private Line only for incoming calls. The user cannot place calls on the Private Line.
- Outgoing Only - The Multiline Terminal has a Private Line only for outgoing calls. The Private Line does not ring for incoming calls.
- Both Ways - The Multiline Terminal has a Private Line for both incoming and outgoing calls.
- Private Lines do not follow Call Forwarding if not Direct Inward Line (DIL).
- Other programmed options for outgoing calls also affect a Private Line.
- Calls to extensions with DND active do not follow Call Forwarding programming. Direct Inward Line (DIL) calls ring an idle Department Group member, then follow PRG 22-08 then PRG 22-05.
- An extension user can have Line Preference options applied to their Private Line.
- A Private Line can also be a Prime Line.
- You should always program a line key for each Private Line.
- Private Lines are available on Single Line Terminals.
- Private Lines follow normal Toll Restriction.
- An extension user can transfer their Private Line. If other users have hold access, the destination can answer the transferred Private Line and place it on Hold.
- NEC does not recommend assigning ringdown to a private line.

Default Settings

Disabled

System Availability

Terminals

All Stations

Required Component(s)

None

Related Features

Call Forwarding

Central Office Calls, Placing

Do Not Disturb (DND)

Line Preference

Prime Line Selection

Programmable Function Keys

Single Line Terminals

Toll Restriction

Transfer

InMail

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
14-01-09	Basic Trunk Data Setup - Private Line	0 = Disable Private Line (Normal) 1 = Enable Private Line (Private Line)	0
14-07-01	Trunk Access Map Setup - Trunk Port Number	0 = No access 1 = Outgoing access only 2 = Incoming access only 3 = Access only when trunk on Hold 4 = Outgoing access and access when trunk on Hold 5 = Incoming and access when trunk on Hold 6 = Incoming and outgoing access 7 = Full access	Access Map 1 ~ 128 = Trunk Ports 1 ~ 128 assigned with option 7 access (incoming and outgoing access and access when trunk is on Hold).
15-06-01	Trunk Access Map for Extensions - Trunk Access Map Number	001 ~ 128	1
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
21-02-01	Trunk Group Routing for Extensions - Route Table Number	0 ~ 50 0 = No Setting (Calls will not route.)	1
22-02-01	Incoming Call Trunk Setup - Trunk Service Type	0 = Normal 1 = VRS (second dial tone if no VRS installed) 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delayed VRS 7 = ANI/DNIS 8 = DID (DDI) Mode Switching	0
22-04-01	Incoming Extension Ring Group Assignment - Extension Number	Maximum eight Digits	Group01 has 101, 102, 103, 104, 105, 106, 107, and 108 (First 8 ports ringing)

Program No.	Program Name	Input Data	Default
22-05-01	Incoming Trunk Ring Group Assignment - Incoming Group Number	0 = No Setting 01 ~ 50 = Incoming Group 102 = VMI 103 = Centralized VM	1
22-07-01	DIL Assignment - Number of Transferring Destination	Maximum of 8 digits (0 ~ 9, *, #)	No Setting

Operation

To place a call on your Private Line:

1. Press the **Private Line** key and then press **Speaker** key or lift the handset.
2. Dial the number.

To answer a call on your Private Line:

1. Press the **Private Line** key and then press **Speaker** key or lift handset.

To place a call from your Multiline Terminal on you Private Line:

1. Press the **Private Line** key, then press **Speaker** key or lift the handset.
2. Dial the number.

To answer a call from your Multiline Terminal on your Private Line:

1. Press the **Private Line** key or press **Speaker** key or lift handset.

To place a call on your Private line from a Single Line Terminal:

1. Pick up handset.
 *Private Line dial tone is heard.*
2. Dial the number.

To answer a call on you Private Line from a Single Line Terminal:

1. Lift the handset.

Programmable Function Keys

Description

Each Multiline Terminal has Programmable Function Keys. Programmable Function Keys simplify placing calls, answering calls and using certain features. You can customize the function of a Multiline Terminal programmable keys from each Multiline Terminal.

Conditions

- When a key is programmed using service code **752**, that key cannot be programmed with a function using the **751** code until the key is undefined (000). For example with a Park Key programmed by dialing **752 + *04** must be undefined by dialing 000 before it can be programmed as a Voice Over key by dialing **751 + 48**.
- Using PRG 92-01 to copy a Multiline Terminal Programmable Function Keys, copies all the keys whether or not they exist on the telephone to which the programming is being copied. This may cause confusion when trying to define a key which is already defined but which does not exist on the telephone (displays as DUPLICATE DATA). It is recommended to either clear these non-existent keys or to copy only from an extension which has the same or fewer number of keys than the extension to which the programming is being copied.
- Speed Dialing and One-Touch Calling also offer quick access to calls and features.
- Programming a 60-button console requires separate programming.
- Below shows example of function key and LCD display indication (PRG 15-07-01 Function Key Assignment).

Function Number	Function	Display
00	None	Not Define
01	DSS/One-Touch	DSS/ONE (2W Digital/IP Multiline Terminal)
02	Microphone Key (ON/OFF)	Mic Key
03	DND Key	DND Key
04	BGM (ON/OFF)	BGM
05	Headset	Headset
07	Conference Key	Conference
10	Call Forward - Immediate	Call Fwd Immediate (2W Digital/IP Multiline Terminal)
11	Call Forward - Busy	Call Forward Busy (2W Digital/IP Multiline Terminal)
12	Call Forward - No Answer	Call Fwd No Answer (2W Digital/IP Multiline Terminal)
13	Call Forward - Busy/No Answer	Call Fwd Busy No Ans (2W Digital/IP Multiline Terminal)
14	Call Forward - Both Ring	Call Fwd Both Ring (2W Digital/IP Multiline Terminal)
15	Follow Me	Follow Me



If a key is programmed as a DSS/One-Touch key for a station that is set for Call Forward All Calls or Do Not Disturb, the DSS/One-Touch key flashes.



Refer to the SL2100 Programming Manual for a complete list of Function Numbers.

- One-Touch keys programmed for Park Hold Service Code cannot be used to park calls without using Hold or Transfer.

- Pauses can be entered in the dial string of a DSS/One Touch key. The pause is entered as P in the dial string and causes the system to wait three seconds before sending the rest of the digits that follow the P (pause). Multiple pauses can be entered.
- The @ can be entered in the dial string of a DSS/One Touch key. The @ only applies to ISDN and Intercom calls. When using the @, the system waits for the destination to answer (answer supervision), and then sends the rest of the digits.
- Entering a P (pause) in a DSS/One Touch dial string can be used for CO calls, Intercom calls, or after the @ for ISDN calls.
- DSS/One Touch keys can be used for one-touch transfer.
- DSS keys can distinguish whether the telephone is set for DND/Call Forward All Calls or if the telephone is off-hook.
- When a Ring Group call rings a station, a BLF Indication for this station shows idle or busy based on Class of Service option (20-13-49).
- All features programmed under one touch keys are still subject to class of service restrictions.
- If you change the extension assigned to a port in PRG 11-02, the line key programming does not follow. However, if you move the extension using the Station Relocation Feature, the line key programming does follow.
- In order for a station to retrieve a held ICM call, the station must have an ICM key assigned in 15-07 (*00).

Default Settings

The first 12 keys on a telephone are Line keys (e.g., key 01 = line 001). The remaining keys are unassigned.

System Availability

Terminals

All Multiline Terminals

Required Component(s)

None

Related Features

Abbreviated Dialing/Speed Dial

Direct Station Selection (DSS) Console

One-Touch Calling

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-07-10	Class of Service Options (Administrator Level) - Programmable Function Key Programming (Appearance Level)	0 = Off 1 = On	COS 1 ~ 15 = 1
20-13-18	Class of Service Options (Supplementary Service) - Programmable Function Key Programming (General Level)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-49	Class of Service Options (Supplementary Service) - BLF Indication on CO Incoming State	0 = Off (Disabled) 1 = On (Enabled)	COS 01 ~ 15 = 0

Operation

To change a 2-digit programmable key:

1. Press **Speaker** key.
2. Dial **751** for 2-digit codes.
3. Press the key you want to program.
4. Enter the 2-digit key function, any additional information needed for the key and press **Hold** key.

 For available functions codes refer to PRG 15-07 in the SL2100 Programming Manual.

 To undefine a key, enter 00.

To change a 3-digit programmable key:

1. Press **Speaker** key.
2. Dial **752** for 3-digit codes.
3. Press the key you want to program.
4. Enter the 3-digit key function and any additional information needed for the key.

 For available functions codes, refer to PRG 15-07 in the SL2100 Programming Manual.

 To undefine a key, enter 000.

 When a key is programmed using service code 752, that key cannot be programmed with a function using the 751 code until the key is undefined (000). For example with a Park Key programmed by dialing 752 + *04 must be undefined by dialing 000 before it can be programmed as a Voice Over key by dialing 751 + 48.

To check the function of a programmable key:

1. Press **Help** key.

2. Press the programmable key.



The programmed function displays.

Programming from a Multiline Terminal

Description

System Programming can be performed from any display Multiline Terminal. Most programming changes become effective immediately. Other programming changes become effective after the data is backed up from temporary memory to permanent memory.

Conditions

- Up to two telephones can be in programming mode anytime.
- A maximum of four users can be logged into WebPro anytime.
- WebPro user and Phone programming user can be logged in at the same time for a total of four users in programming mode simultaneously. All the logged in users can show up in session management in WebPro.
- PCPro can be logged in with only one user. This is allowed only if no other users are logged into programming mode (PCPro, WebPro, or Phone). Also, if a user is connected to the switch via PCPro, no other user can log in through PCPro, WebPro, or Phone Programming.
- Programming from a Multiline Terminal can require a password to enter programming.

Default Settings

Enabled

System Availability

Terminals

Multiline Terminals with display

Required Component(s)

082U-B1 (2W Digital Multiline Terminal)

Required Software

None

Related Features

PC Programming

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
90-02-01	Programming Password Setup - User Name	Maximum 10 characters	Refer to the Programming Manual for the default values.
90-02-02	Programming Password Setup - Password	Up to eight digits	Refer to the Programming Manual for the default values.
90-02-03	Programming Password Setup - User Level	0 = Prohibited User 2 = IN (Installer Level) 3 = SA (System Administrator Level 1) 4 = SB (System Administrator Level 2) 5 = UA (User Programming Administrator Mode Level 1)	Refer to the Programming Manual for the default values.

Operation

Refer to the SL2100 Programming Manual for additional information.

Pulse to Tone Conversion

Description

An extension can use Pulse to Tone Conversion on trunk calls. Pulse to Tone Conversion lets a user change their extension dialing mode while placing a call. For systems in a Dial Pulse area, this permits users to access dial-up OCCs (Other Common Carriers) from their DP area. The user can, for example:

- Place a call to an OCC over a DP trunk.
- Depending on programming:
Manually implement Pulse to Tone Conversion
- **OR** -
Wait 10 seconds.
- Dial the OCC security code and desired number. The system dials the digits after the conversion as DTMF.

Conditions

Pulse to Tone Conversion is valid only for Dial Pulse trunks (PRG 14-02-01, options 0 or 1).

Default Settings

Enabled

System Availability

Terminals

All Multiline Terminals

Required Component(s)

3COIDB-C1

Related Features

Central Office Calls, Placing

Multiple Trunk Types

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
14-02-01	Analog Trunk Data Setup - Signaling Type (DP/DTMF)	0 = Dial Pulse (10 PPS) 2 = DTMF	2

Program No.	Program Name	Input Data	Default
14-02-07	Analog Trunk Data Setup - DP to DTMF Conversion Options	0 = Automatic 1 = Automatic and Manual 2 = Manual	2

Operation

To convert your telephone dialing to tone after placing your call on a pulse line:

1. Place a call over pulse line.
2. Dial # to switch the DP trunk to DTMF dialing.

Redial Function

Description

Users can press the Redial key to cycle through the last 10 outside numbers dialed. Dialing # redials the number displayed. Users can also press the Redial key and dial a System Speed Dial bin number to access System Speed Dial.

Names stored as common speed dial or extension name can be displayed for redialed numbers.

Conditions

- Redial List requires a display telephone.
- When set PRG 15-02-60 :0, Redial feature work by pressing the **Left Cursor** key, then dial #/ SYS menu is displayed on LCD. When set PRG 15-02-60 :1 or 2, pressing the **Left Cursor** key enter Received call log or pressing the **Right Cursor** key enter Dialed Number log for Redial function. Refer **Navigation** key feature section.
- Stored name for Redial Function is cleared when the system is reset.

Default Settings

Enabled

System Availability

Terminals

All Multiline Terminals

Required Component(s)

None

Related Features

Abbreviated Dialing/Speed Dial

Last Number Redial

Guide to Feature Programming

None

Operation

When set PRG 15-02-60 : 0 case.

To redial the last number dialed:

1. Press the **Left Cursor** key.
REDIAL [#] / ABB is displayed along with the last dialed number.
2. Press the **Up Cursor** key or **Down Cursor** key to view the number to dial.
3. Dial #, press **Speaker** key, lift the handset, or press an idle trunk key.
- OR -
 1. Press the **List** softkey
 2. Press the **Redial** softkey.
REDIAL -01 is displayed along with the last dialed number.
 3. Press the up and down arrow to view the number to dial.
 4. Dial # or press **Speaker** key or lift the handset or press and idle trunk key.

To scroll through the last 10 outside numbers dialed:

1. Press the **Left Cursor** key. Each time the **Left Cursor** key is pressed, it displays the next most recently dialed number.
2. When the desired number is displayed, Dial #, press **Speaker** key, or lift the handset.
- OR -
 1. Press the **List** softkey.
 2. Press the **Redial** softkey.
 3. Press the **Up Cursor** key or **Down Cursor** key to view the number to dial.
 4. Dial #, press **Speaker** key, or lift the handset.

To access a System Speed Dial bin:

1. Press the **Left Cursor** key.
REDIAL [#] / ABB is displayed along with the last dialed number.
2. Dial the System Speed Dial bin number.
The number stored in that bin is displayed for your preview.
3. Dial #, press **Speaker** key, lift the handset, or press an idle trunk key.

To view saved name history of outgoing calls:

1. Press the **Left Cursor** key.
REDIAL [#] / ABB is displayed along with the last dialed number.
2. Press the **Up** or **Down Cursor** key to refresh the list, if the redialed number has a matching common speed dial bin or extension number associated with it, the name information from PRG 13-04-02 or PRG 15-01-01 is displayed.
3. Press **Speaker** key or lift the handset to dial the number.



The name information will not display after dialing.

When set PRG 15-02-60: 1 or 2 case.

To redial the last number dialed:

1. Press the **Right Cursor** key.
Dialed Number is displayed.

2. Press the **Up Cursor** key or **Down Cursor** key to view the number to dial.
3. Press **Right Cursor** key, **Speaker** key or Lift handset.

To scroll through the last 10 outside numbers dialed:

1. Press the **Right Cursor** key.
2. Press the **Up Cursor** key or **Down Cursor** key to view the number to dial.
3. When the desired number is displayed, Press **Right Cursor** key, **Speaker** key or Lift handset.

To access a Speed Dial by Directory Dialing

1. On-Hook condition.
2. Press **Down Cursor** key and press 1st character you want to search.
3. Press **Up Cursor** key or **Down Cursor** key to select the destination name.
4. Press **Enter Cursor** key to confirm a name and number.
5. Press **Right Cursor** key, **Speaker** key or Lift handset.

Repeat Redial

Description

If a Multiline Terminal user places a trunk call that is busy or unanswered, they can have Repeat Redial try it again later on. The user does not continually have to try the number again - hoping it goes through. Repeat Redial automatically retries it until the called party answers (the number of retries is based on system programming).

Conditions

- Lifting the handset during a callout cycle cancels Repeat Redial.
- Other programmed options for outgoing calls can affect how a Repeat Redial call is placed. Refer to Central Office Calls, Placing options as needed.
- For systems with Automatic Route Selection (ARS), ARS selects the trunk for the Repeat Redial call.
- Single Line Terminals cannot use Repeat Redial.
- If a user activates repeat dial while they are on an active call, the repeat dial process will begin once they end the current call.

Default Settings

Enabled

System Availability

Terminals

All Multiline Terminals

Required Component(s)

None

Related Features

Automatic Route Selection (ARS/F-Route)

Central Office Calls, Placing

Last Number Redial

Save Number Dialed

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-08-07	Class of Service Options (Outgoing Call Service) - Repeat Redial	0 = Off 1 = On	COS 01 ~ 15 = 1
21-08-01	Repeat Dial Setup - Repeat Redial Count	0 ~ 255	3
21-08-02	Repeat Dial Setup - Repeat Redial Interval Time	0 ~ 64800 seconds	60
21-08-03	Repeat Dial Setup - Repeat Dial Calling Timer	0 ~ 64800 seconds	30
21-08-04	Repeat Dial Setup - Time for Send Busy Tone for ISDN Trunk	0 ~ 64800 seconds	0

Operation

To use Repeat Redial (if the outside party you call is unavailable or busy):

- Place a trunk call.
 *Listen for busy tone or ring no answer.*
- Press the **Repeat Redial** key (PRG 15-07 or SC **751**: 29).
 *The **Repeat Redial** key flashes while you wait for the system to redial.*
- Press **Speaker** key to hang up.
 *The system periodically redials the call.*
- Lift the handset when called party answers.
 *When using trunks with answer supervision the Repeat Redial feature automatically cancels.*

To cancel Repeat Redial:

- Press the **Repeat Redial** key (PRG 15-07 or SC **751**: 29). (Also refer to [Last Number Redial](#).)

Resident System Program

Description

When power is supplied to the system, the hardware configuration is scanned and Resident System Program default values are assigned including terminal types (e.g. DSS Console). This enables immediate operation, even before the system is programmed to accommodate the individual site requirements.

Conditions

- Default assignments for Multiline Terminals are: LK01~LK12 corresponds to CO01~CO12.
- DSS Console to Extension assignments for Attendant Add-On Consoles are not assigned.
- Default Attendant Add-On Console key assignments are:
DSS Keys = 001~060
Stations = 101~160
- First Initialization of the system returns all programming values to default. Press and hold the **LOAD** button and press the Power switch. Continue to hold the **LOAD** switch for approximately 5~10 seconds before releasing. The system boots loading Resident System Programming.

Default Settings

None

System Availability

Terminals

Not Applicable

Required Component(s)

None

Related Features

None

Guide to Feature Programming

None

Operation

None

Reverse Voice Over

Description

While on a handset call, Reverse Voice Over lets a busy Multiline Terminal user make a private Intercom call to an idle co-worker. The idle co-worker can be at a Multiline Terminal or Single Line Terminal. The busy user just presses and holds down a programmed Reverse Voice Over key to make a private call to a specified co-worker. The initial caller cannot hear the Reverse Voice Over conversation. The private Intercom call continues until the Reverse Voice Over caller releases the key again. The initial call can be an outside call or an Intercom call.

Reverse Voice Over could help a salesman, for example, when placing a call to an important client. The salesman can talk with the client and give special instructions to a secretary - without interrupting the initial call.

When the Multiline Terminal is idle, the Reverse Voice Over key functions the same as a Hotline or One-Touch key. A Multiline Terminal Reverse Voice Over key also shows at a glance the status of the associated extension:

When the key is. . .	The associated extension is. . .
Off	Idle
On	Busy or call ringing
Fast Flash	In Do Not Disturb



When the destination extension is idle, the Reverse Voice Over provides one button calling to the associated extension (like a Hotline key). An extension user cannot, however, use the Reverse Voice Over key to Transfer calls by one-touch operation.

Conditions

- This feature is available for 2W Digital/IP Multiline Terminal Only.
- An extension can have Reverse Voice Over keys for more than one extension (limited only by the number of available function keys).
- When the destination extension is in Do Not Disturb, a Reverse Voice Over placed to an extension always rings, regardless of how Handsfree Answerback/Forced Intercom Ringing is set at the destination.
- When the destination extension is not in Do Not Disturb, Reverse Voice Over follows Handsfree Answerback/Forced Intercom Ringing programming.
- Reverse Voice Over requires a uniquely programmed function key.
- Reverse Voice Over is not available from Single Line Terminals, but a single line can be a Reverse Voice Over destination.
- If an extension user places a Reverse Voice Over to a busy destination extension, the system sets up a Voice Over. The Voice Over continues until the Reverse Voice Over key is pressed again.
- When a Reverse Voice Over call is placed to a destination station, while the originator is on a CO call, the Reverse Voice Over is dropped if the destination station is involved in another call and this call is terminated.

Default Settings

Disabled

None

System Availability

Terminals

All Multiline Terminals

Required Component(s)

None

Related Features

Do Not Disturb (DND)

Handsfree Answerback/Forced Intercom Ringing

Hotline

One-Touch Calling

Programmable Function Keys

Single Line Terminals

Voice Over

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-13-06	Class of Service Options (Supplementary Service) - Automatic Off-Hook Signaling (Automatic Override)	0 = Off (manually) 1 = On (automatically)	COS 01 ~ 15 = 1

Operation

When on a call:

To place a Reverse Voice Over call:

1. Press and hold your **Reverse Voice Over** key (PRG 15-07 or SC **751**: 47 + dest. ext.).



Your Reverse Voice Over key lights steadily (green) and you can talk with the programmed Reverse Voice Over destination.

To return to your initial caller:

1. Release the Reverse Voice Over key.



If the co-worker you call hangs up, you return to the initial call automatically.

To receive a Reverse Voice Over Call while busy:

1. Press and hold the **Voice Over** key PRG 15-07 or SC **751**: 48).



Holding down the Voice Over key allows you to communicate with the initial reverse voice over caller.

To return to your initial caller:

1. Release the **Reverse Voice Over** key.



If the co-worker you call hangs up, you return to the initial call automatically.

When the telephone is idle:**To place a call to your Reverse Voice Over destination:**

1. Press your **Reverse Voice Over** key (PRG 15-07 or SC **751**: 47 + destination extension).



You can optionally lift the handset after this step for privacy.

Ring Groups

Description

Ring Groups determine how trunks ring extensions. Generally, trunks ring extensions only if Ring Group programming allows. For example, to make a trunk ring an extension:

- Assign the trunk and the extension to the same Ring Group.
- In the extension Ring Group programming, assign ringing for the trunk.

Any number of extensions and trunks can be in a specific group. The system allows:

- Ring Groups = 1~50
- In-Skin Voice Mail = 102
- Centralized Voice Mail = 103

If an extension has a line key for the trunk, Ring Group calls ring the line key. If the extension does not have a line key, the trunk rings the line appearance key. If an extension has a key for a trunk that is not in its ring group, the trunk follows Access Map programming.

Conditions

- DIL trunks disregard ring group programming until DIL overflow.

Default Settings

All trunks are in Ring Group 1. Extensions 101 - 108 ring for trunk calls and all other extensions only flash.

System Availability

Terminals

All Multiline Terminals and Single Line Terminals

Required Component(s)

None

Related Features

Automatic Call Distribution (ACD)

Automatic Route Selection (ARS/F-Route)

Direct Inward Line (DIL)

Direct Inward Dialing (DID)

Direct Inward System Access (DISA)

ISDN Compatibility

Night Service

Programmable Function Keys

Guide to Feature Programming

The programs listed below indicate the most commonly used programs required for this feature. The programs are listed in the order that the installer should follow. Refer to the PCPro wizards for further detailed programming.

- When a * is listed next to the Program Number it indicates a program that **MUST** be set (from a default state) for this feature to be enabled.

Analog Trunk Ring Group

Program No.	Program Name	Input Data	Default
22-04-01 *	Incoming Extension Ring Group Assignment - Extension Number	Maximum eight Digits	Group01 has 101, 102, 103, 104, 105, 106, 107, and 108 (First 8 ports ringing)
22-05-01 *	Incoming Trunk Ring Group Assignment - Incoming Group Number	0 = No Setting 01 ~ 50 = Incoming Group 102 = VMI 103 = Centralized VM	1
22-02-01 *	Incoming Call Trunk Setup - Trunk Service Type	0 = Normal 1 = VRS (second dial tone if no VRS installed) 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delayed VRS 7 = ANI/DNIS 8 = DID (DDI) Mode Switching	0
11-15-09	Service Code Setup, Administrative (for Special Access) - Transfer to Incoming Ring Group	0~9, *, # Maximum of 8 digit	No Setting
22-01-04	System Options for Incoming Calls - DIL No Answer Recall Time	0 ~ 64800 seconds 0 = No Overflow	0
22-08-01	DIL/IRG No Answer Destination - Incoming Ring Group Number	0 = No Setting 01 ~ 50 = Incoming Group 102 = VMI 103 = Centralized VM	Group01 has 101, 102, 103, 104, 105, 106, 107, and 108 (First 8 ports ringing)
20-13-49	Class of Service Options (Supplementary Service) - BLF Indication on CO Incoming State	0 = Off (Disabled) 1 = On (Enabled)	COS 01 ~ 15 = 0

DID calls to a Ring Group

Program No.	Program Name	Input Data	Default
22-04-01 *	Incoming Extension Ring Group Assignment - Extension Number	Maximum eight Digits	Group01 has 101, 102, 103, 104, 105, 106, 107, and 108 (First 8 ports ringing)

Program No.	Program Name	Input Data	Default
22-02-01 *	Incoming Call Trunk Setup - Trunk Service Type	0 = Normal 1 = VRS 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delay VRS 7 = ANI/DNIS 8 = DID (DDI) Mode Switching	0
22-05-01	Incoming Trunk Ring Group Assignment - Incoming Group Number	0 = No Setting 01 ~ 50 = Incoming Group 102 = VMI 103 = Centralized VM	1
22-11-01 *	DID Translation Table - Received Number	Maximum eight digits (0 ~ 9, *, #, @)	Refer to Programming Manual.
22-11-02	DID Translation Table - Target Number	Maximum of 36 digits (0 ~ 9, *, #, @)	Refer to Programming Manual.
22-11-05 *	DID Translation Table - Transfer Destination Number 1	0 = No setting 01 ~ 50 = Incoming Ring Group 102 = VM 103 = Centralized VM 201 ~ 250 = Department Group 400 = VRS 401 = DISA 501 ~ 599 = Valid Extension Number/VRS Message 1000 ~ 1999 = Common ABB Dial (000 ~ 999)	0
15-13-01 *	Loop Keys - Outgoing Option	0 ~ 50 (0 = Assigns the Loop Key for ARS, 1 ~ 50 = Assigns the Loop Key to the trunk group specified)	0: Programming Function Key No. = 01 ~ 32
15-13-02 *	Loop Keys - Incoming Option	0 ~ 50 (0 = Assigns the Loop Key to all trunk groups, 1 ~ 50 = Assigns the Loop key to the trunk group specified)	0: Programming Function Key No. = 01 ~ 32
22-06-01 *	Normal Incoming Ring Mode - Incoming Group Number	0 = No Ring 1 = Ring	1
22-11-05/06 *	DID Translation Table - Transfer Target 1 & 2	-	0
22-12-01	DID Intercept Ring Group - Incoming Ring Group Number	0 = No setting 01 ~ 50 = Incoming Ring group 102 = VM 103 = Centralized VM	1
25-03-01	VRS/DISA Transfer Ring Group With Incorrect Dialing - Incoming Group Number	0 = Disconnect 01 ~ 50 = Incoming Ring Group 102 = VMI 103 = Centralized VM 104 = Assign the Speed Dial Number	1

Use the charts below to program the following example:

For this extension . . . *1 *2			
301	Trunk 1 Rings	Trunk 2 Flashes	Trunk 3 Flashes
302	Trunk 1 Flashes	Trunk 2 Rings	Trunk 3 Flashes

For this extension . . . *1 *2			
303	Trunk 1 Flashes	Trunk 2 Flashes	Trunk 3 Rings

*1. Trunks ring the same in the day as at night.

*2. MLT has trunk appearances not Loop keys.

PRG 22-04 : Incoming Extension Ring Group Assignment			
Ring Group> *1	1	2	3
Trunk 1	X	--	--
Trunk 2	--	X	--
Trunk 3	--	--	X

*1. Make the same PRG 22-04 entry for all Night Service modes.

X = Trunk assigned to indicated Ring Group

PRG 22-05 : Incoming Trunk Ring Group Assignment			
Ring Group >	1	2	3
Ext. 301	1	0*1	0*1
Ext. 302	0*1	1	0*1
Ext. 303	0*1	0*1	1

*1. To allow extension user to answer flashing line, be sure to give extension incoming access to the trunk in PRG 14-07 and PRG 15-06.

1 = Extension rings

0 = Extension does not ring

Operation

Refer to [Central Office Calls, Answering](#).

Ringdown Extension (Hotline), Internal/External

Description

With a Ringdown Extension, a user can call another extension, outside number, or Speed Dialing number by just lifting the handset. The call automatically goes through - there is no need for the user to dial digits or press additional keys. Ringdown Extensions are frequently used for lobby telephones, where the caller just lifts the handset to get the information desk or off-site Reservation Desk.

After the Ringdown Extension user lifts the handset, ringdown occurs after a programmable time. Depending on the setting of this time, the extension user may be able to place other calls before the ringdown goes through.

This feature can also be used as an off-hook alarm application. For example, if a patient in a care facility fails to return the handset to the cradle, it routes to a care givers station after a programmed time.

This feature is sometimes known as a Hotline.

Conditions

- Ringdown extension has no effect on an extension current (active) call.
- The Ringdown Extension user can lift the handset or press **Speaker** key to initiate ringdown.
- If the Ringdown/Hotline destination is a speed dial bin, the appropriate service code must precede the bin number.
- Ringdown Extension can use Speed Dial - System/Group/Station numbers (and follow their trunk routing) as the destination number.
- Ringdown Extension follows Call Forwarding. For example, the ringdown destination can forward their calls. When the Ringdown Extension user lifts the handset, ringdown automatically calls the extension to which calls are forwarded.
- If the Ringdown Extension user hears busy tone when they lift the handset, they can Camp-On to the destination, leave a Callback or activate Off-Hook Signaling.
- The ringdown destination user can activate Do Not Disturb. When the Ringdown Extension user lifts the handset, they hear DND. If enabled, the Ringdown Extension user can override the destination DND.
- If the destination extension has Handsfree Answerback enabled, the call voice announces. If the destination extension has Forced Intercom Ringing enabled, the call rings.
- A Virtual Extension can be a ringdown destination. This would allow a front door key to be programmed on every extension.
- Delayed Ringdown can occur by setting the Hotline Start Timer. However, Ringdown does not occur if the Hotline Start Timer is set longer than the Extension Dial Tone Timer.
- The @ code is used to make an outbound call automatically forward to a DISA Trunk or to VM Auto Attendant. This code can be used only on ISDN outbound calls. Internal calls and analog outbound calls are not supported.

Default Settings

Disabled

System Availability

Terminals

All Stations

Required Component(s)

None

Related Features

Abbreviated Dialing/Speed Dial

Callback

Call Arrival (CAR) Keys

Call Forwarding

Call Waiting/Camp-On

Do Not Disturb (DND)

Handsfree Answerback/Forced Intercom Ringing

Off-Hook Signaling

Speed Dial - System/Group/Station

Video Conference with Web RTC

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-08-01	Class of Service Options (Outgoing Call Service) - Intercom Calls	0 = Off 1 = On	COS 01 ~ 15 = 1
20-08-09	Class of Service Options (Outgoing Call Service) - Hotline/Extension Ringdown	0 = Off 1 = On	COS 01 ~ 15 = 1
20-08-19	Class of Service Options (Outgoing Call Service) - Hotline for SPK	0 = Off 1 = On	COS 01 ~ 15 = 0
21-01-09	System Options for Outgoing Calls - Ringdown Extension Timer (Hotline Start)	0 ~ 64800 seconds	0
21-11-01	Dial Block Restriction Class Per Extension - Hotline Destination Number	1 ~ 0, *, #, Pause, Hook Flash, @ (Code to wait for answer supervision) (maximum 36 digits)	No Setting

Operation

To place a call if your extension has ringdown programmed:

1. Lift the handset.



If you want to place a trunk call, press a line key before lifting the handset.



Depending on the setting of your ringdown timer, you may be able to dial an Intercom call before your ringdown goes through.



If the destination has Handsfree Answerback enabled, your call voice announces. If the destination has Forced Intercom Ringing enabled, your call rings.

To answer a call if you are another extension ringdown destination:

1. Speak toward telephone to answer incoming voice announcement.

- OR -

Lift the handset or press **Speaker** key to answer ringing Intercom call.

Room Monitor

Description

Room Monitor lets an extension user listen to the sounds in a co-workers area. For example, the receptionist could listen for sounds in the warehouse when it is left unattended. To use Room Monitor, the initiating extension **and** the receiving extension must activate it.

When using Multiline Terminals for monitoring, an extension user can Monitor only one extension at a time. However, many extensions can Monitor the same extension at the same time. However, only one Single Line Terminal can monitor another Single Line Terminal at a time.

Room Monitor for Single Line Terminals

This option enables you to monitor the room status through your Single Line Terminals. Between Multiline Terminals, the monitored room status is picked up by the telephone microphone and the activity is heard through the speaker of the monitoring Multiline Terminal. Between Single Line Terminals, at the station to be monitored, a user goes off-hook and dials a service code and the extension number of the monitoring telephone. At the monitoring station, a user goes off-hook and dials a service code and the extension number of the monitored telephone. The activity of the area where the monitored telephone is placed can then be heard at the monitoring telephone. This service is available until the handset of the monitored telephone is placed on-hook.

Room Monitor by intercom call (DSX Base)

- Room Monitor can simply start by calling Room Monitored set terminal. During Room monitoring by pressing **Talk** softkey at monitoring terminal both way talk is available. Adding both way talk, monitored terminal can make conference call by **Talk** softkey if multiple terminals are monitoring. To provide this feature, following PRG need to be set On.
PRG 20-13-55: Intercom call to room monitor (COS of Room Monitored)
PRG 20-13-11: Room Monitoring
PRG 20-13-12: Room Monitored
- Setup for Room Monitored terminal is simply pressing **DND** key plus **Mon** softkey or pressing **DND** key plus dialing **5**.
- Room Monitored terminal can display the Monitoring extension number on it's LCD.
- Only Multiline Terminal can be set as Monitored terminal. IP Multiline Terminal or SLT are not supported.
- When Monitored terminal canceled the monitored condition by pressing **DND** key plus dialing **0** or pressing the **Function** key, Monitoring terminal setting also cleared automatically.



WARNING: The use of monitoring, recording, or listening devices to eavesdrop, monitor, retrieve, or record telephone conversation or other sound activities, whether or not contemporaneous with transmission, may be illegal in certain circumstances under each country law. Legal advice should be sought prior to implementing any practice that monitors or records any telephone conversation. Some countries may require some form of notification to all parties to a telephone conversation, such as using a beep tone or other notification methods or requiring the consent of all parties to the telephone conversation, prior to monitoring or recording the telephone conversation. Some of these laws incorporate strict penalties.

Conditions

- Room Monitor is for listening only. It does not allow for conversation between the monitoring and monitored extensions.
- An extension user cannot monitor an Attendant.
- A Multiline Terminal user cannot monitor a Single Line Terminal and a Single Line Terminal cannot monitor a Multiline Terminals.
- Room Monitor for Single Line Terminals can be used with the Hotel/Motel feature.
- For a Multiline Terminal, Room Monitor requires uniquely programmed function keys.
- Call Arrival (CAR) Key (virtual extension) keys do not support Room Monitor Programmable Function keys (code 39).

Default Settings

Disabled

System Availability

Terminals

Multiline Terminals and Single Line Terminals

Required Component(s)

None

Related Features

Hotel/Motel

Programmable Function Keys

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-14-17	Service Code Setup (for Hotel) - Hotel Room Monitor	0~9, *, # Maximum of 8 digit	675
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-13-11	Class of Service Options (Supplementary Service) - Room Monitor, Initiating Extension	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-12	Class of Service Options (Supplementary Service) - Room Monitor, Extension Being Monitored	0 = Off 1 = On	COS 01 ~ 15 = 0

Program No.	Program Name	Input Data	Default
20-13-55	Class of Service Options (Supplementary Service) - Intercom Call to Room Monitor	0 = Off 1 = On	COS 01 ~ 15 = 0
42-03-12	Class of Service Options (Hotel/Motel) - SLT Room Monitor	0 = Off 1 = On	Class 01 ~ 15 = 1

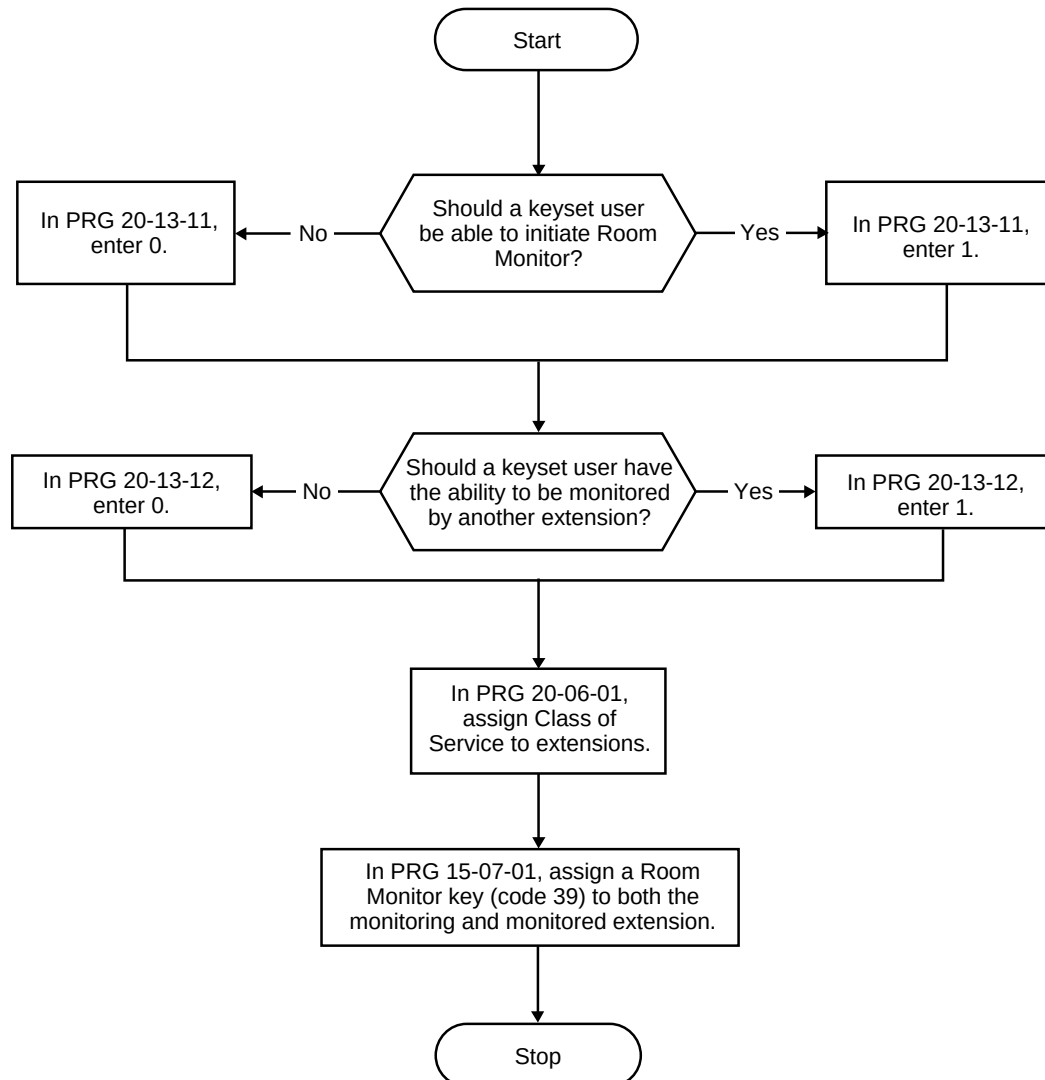


Figure 1-46 Multiline Room Monitoring

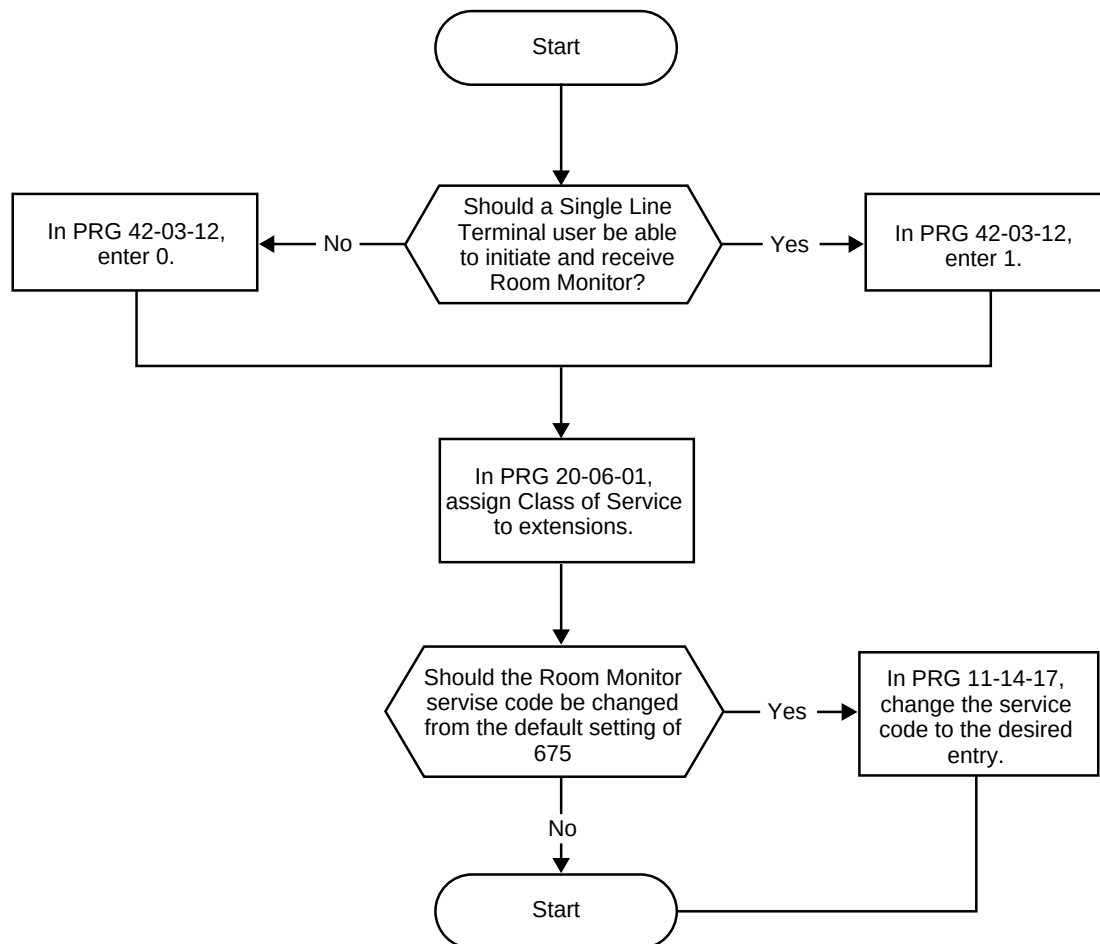


Figure 1-47 Single Line Terminal Room Monitoring

Operation



You must activate Room Monitor at the extension initiating the monitor and at the extension you want to monitor. You can only listen to one extension at a time.

Multiline Terminals:

To activate Room Monitor from an idle Multiline Terminal (initiating extension):

1. Press the **Room Monitor** key (PRG 15-07 or SC **751**: 39).
2. Dial the number of extension you want to monitor.



You can place and answer other calls while Room Monitor is active.

To activate Room Monitor from an idle Multiline Terminal (extension to be monitored):

1. Press the **Room Monitor** key (PRG 15-07 or SC **751**: 39).

2. Dial the number of the extension where you are located.



For example, if you are at extension 206, dial 206.



You can place and answer other calls while Room Monitor is active.

To cancel Room Monitor (at either extension):

1. Press the **Room Monitor** key at both the initiating extension and the monitored extension.

Single Line Terminals:

To activate Room Monitor (at the initiating extension):

1. Lift the handset at the telephone which is monitoring another telephone.
2. Dial **675**.
3. Dial **2**.
4. Dial number of extension number, which will be monitored.



You can place and answer other calls while Room Monitor is active.

To activate Room Monitor (at the extension to be monitored):

1. Lift the handset at the telephone to be monitored.
2. Dial **675**.
3. Dial **1**.
4. Dial number of the extension number, which is monitoring the telephone.
5. Place the handset on the desk, placing the handset transmitter towards the room.



You cannot place or answer other calls while Room Monitor is active.

To cancel Room Monitor (at either extension):

1. Hang up the handsets for both the monitored and the monitoring telephones.

Room Monitor by intercom call (DSX Base)

To activate Room Monitor (at the extension to be monitored):

PRG 20-13-12: 1 (On) to Ext100.

1. Press **DND** key.
2. Press the **Set**, **More**, then **Mon** softkey.

- OR -

1. Press **DND** key.
2. Dial **5**.

To activate Room Monitor (at the initiating extension):

PRG 20-13-11: 1 (On) to Ext101.

PRG 20-13-55: 1 (On) to Ext100.

Ext100 is set as Room Monitored extension.

1. At Ext101 make ICM call to Ext100.
2. Room Monitor starts automatically.
3. Press the **Talk** softkey at Ext101 and start ICM ring to Ext100.
4. At Ext100 Off-hook and talk to Ext101.
5. At either On-hook both Ext back to Monitoring and Monitored state.

To activate Room Monitor (multiple initiating extension case):

PRG 20-13-11: 1 (On) to Ext101 and Ext102.

PRG 20-13-55: 1 (On) to Ext100.

Ext100 is set as Room Monitored extension.

1. At Ext101 and Ext102 make ICM call to Ext100.
2. Room Monitor started automatically.
3. Press the **Talk** softkey at Ext100 and start Conf call with Ext101 and Ext102.
4. At Ext102 On hook backs to Monitoring state, and Ext100 and Ext101 remain ICM talk.
5. At either On Hook both Ext back to Monitoring and Monitored state.

Save Number Dialed

Description

Save Number Dialed allows an extension user to save their last outside number dialed and easily redial it later on. For example, an extension user can recall a busy or unanswered number without manually dialing the digits. The system retains the saved number until the user stores a new one in its place or clears the stored one.

Save Number Dialed saves in system memory a dialed number of up to 36 digits. The number can be any combination of digits 0~9, # and *. The system remembers the digits regardless of whether the call was answered, unanswered or busy. The system normally uses the same trunk group as for the initial call. However, the extension user can preselect a specific trunk if desired.

Conditions

- For systems with Automatic Route Selection, ARS selects the trunk for the call unless the user preselects.
- Function keys simplify Save Number Dialed operation.

Default Settings

Enabled

System Availability

Terminals

All Stations

Required Component(s)

None

Related Features

Automatic Route Selection (ARS/F-Route)

Central Office Calls, Placing

Dial Tone Detection

Last Number Redial

Programmable Function Keys

Repeat Redial

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-12-13	Service Code Setup (for Service Access) - Saved Number Dial	0~9, *, # Maximum of 8 digit	715
11-12-18	Service Code Setup (for Service Access) - Clear Saved Number Dialing Data	0~9, *, # Maximum of 8 digit	785
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.

Operation

To save the outside number you just dialed (maximum of 36 digits):

 Use this feature before hanging up.

Multiline Terminal

1. Press the **Save Number Dialed** key (PRG 15-07 or SC **751**: 30).

Single Line Terminal

1. Hookflash.
2. Dial **715**.

To redial a saved number:

Multiline Terminal

1. Press an idle trunk line key.

 This selects a specific trunk for the call.

2. Press the **Save Number Dialed** key (PRG 15-07 or SC **751**: 30).

 The stored number dials out.

- OR -

1. Press **Speaker** key.
2. Dial **715**.

- OR -

Press the **Save Number Dialed** key (PRG 15-07 or SC **751**: 30).

 Save Number Dialed automatically selects a trunk from the same group as your original call.

 The stored number dials out.

Single Line Terminal

1. Go off-hook.
2. Dial **715**.

To view the number you have saved from a Multiline Terminal with a display:

1. Press the **Save Number Dialed** key (PRG 15-07 or SC **751**: 30).



The stored number displays for 10 seconds.



The stored number dials out if you:

- *Lift the handset,*
- *Press an idle line key,*
- *Press **Speaker** key.*

2. Press **Exit** key.

To clear your saved number:**Multiline Terminal**

1. Press **Speaker** key.
2. Dial **785**.
3. Press **Speaker** key to hang up.

Single Line Terminal

1. Lift the handset and dial **785**.
2. Hang up.

Secondary Incoming Extension

Description

Secondary Incoming Extensions (SIEs) are incoming appearance keys of actual stations assigned in the system. SIE keys are assigned to programmable function keys and can appear on an individual station, or multiple stations. Incoming internal calls, ringing DIL/DID/CO Transfer calls, or call forwarded calls can be picked up from an SIE.

Conditions

- Calls can be originated from a Secondary Incoming Extension, but the actual station cannot place or answer calls.
- Off-Hook ringing is provided with calls ringing to Secondary Incoming Extensions.
- Secondary Incoming Extensions are forwarded when the actual station is set for call forwarding.
- SIE keys can appear on an individual station, or multiple stations.
- A station can have more than one SIE key assigned.
- Up to 32 calls can be queued waiting on an SIE key.
- When a Secondary Incoming Extension call is received and answered while the user is on an outside line, the first call can be automatically put on hold.
- If a trunk call rings a Secondary Incoming Extension, to answer the call, the station must be programmed with the direct trunk appearance key and the SIE must be programmed to allow the call to come off the SIE key and appear on the line.
- The same SIE key cannot be programmed on multiple programmable function keys on the same Multiline Terminal.
- An SIE key does not ring during an Intercom Voice call to the actual station.
- If multiple CAR/SIE/VE keys are ringing on a station at the same time, the CAR/SIE/VE key on the lowest Line Key is answered first.

Default Settings

None

System Availability

Terminals

All Multiline Terminals

Required Component(s)

None

Related Features

Call Waiting/Camp-On

Call Arrival (CAR) Keys

Virtual Extensions

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-04-01	Virtual Extension Numbering - Extension Number	Dial (Up to 8 digits)	All Virtual Extension Port = No Setting
15-01-01	Basic Extension Data Setup - Extension Name	Up to 12 Characters	No Setting
15-02-07	Multiline Telephone Basic Data Setup - Automatic Hold for CO Lines	0 = Hold 1 = Disconnect (Cut)	1
15-02-21	Multiline Telephone Basic Setup - Virtual Extension Access Mode (when idle Virtual Extension key pressed)	0 = DSS 1 = Outgoing (OTG) 2 = Ignore	2
15-02-30	Multiline Telephone Basic Data Setup - Toll Restriction Class	0 = Virtual Extension (Follows virtual extension Toll Class in PRG 21-04.) 1 = Real Extension (Follows physical stations Toll Class in PRG 21-04.)	1
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
15-08-01	Incoming Virtual Extension Ring Tone Setup - Incoming Ring Pattern	0 ~ 8 0 = Tone Pattern 1 1 = Tone Pattern 2 2 = Tone Pattern 3 3 = Tone Pattern 4 4 = Incoming extension ring tone 5 = Melody1 (2W Digital/IP Multiline Terminal) 6 = Melody2 (2W Digital/IP Multiline Terminal) 7 = Melody3 (2W Digital/IP Multiline Terminal) 8 = Melody4 (2W Digital/IP Multiline Terminal)	0
15-09-01	Virtual Extension Ring Assignment - Ringing	0 = No Ringing 1 = Ring	0
15-10-01	Incoming Virtual Extension Ring Tone Order Setup	0 ~ 8 0 = Tone Pattern 1 1 = Tone Pattern 2 2 = Tone Pattern 3 3 = Tone Pattern 4 4 = Incoming extension ring tone 5 = Melody1 (2W Digital/IP Multiline Terminal) 6 = Melody2 (2W Digital/IP Multiline Terminal) 7 = Melody3 (2W Digital/IP Multiline Terminal) 8 = Melody4 (2W Digital/IP Multiline Terminal)	Priority order: 1 = 0 (Tone Pattern 1) 2 = 1 (Tone Pattern 2) 3 = 2 (Tone Pattern 3) 4 = 3 (Tone Pattern 4)
15-11-01	Virtual Extension Delayed Ring Assignment - Ringing	0 = Immediate Ring 1 = Delayed Ring	0
15-18-01	Virtual Extension Key Enhanced Options - Virtual Extension Key Operation Mode	0 = Release 1 = Land on the key	0

Program No.	Program Name	Input Data	Default
15-18-02	Virtual Extension Key Enhanced Options - Display mode when placing a call on Virtual Extension Key	0 = Secondary Extension Name 1 = Actual Station Name	0
20-04-03	System Options for Virtual Extensions - Call Coverage Delay Interval	0 ~ 64800 seconds	10
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-07-10	Class of Service Options (Administrator Level) - Programmable Function Key Programming (Appearance Level)	0 = Off 1 = On	COS 1 ~ 15 = 1
20-10-08	Class of Service Options (Answer Service) - Virtual Extension Off-Hook Answer	0 = Off (Ringing Line Preference Disabled) 1 = On (Ringing Line Preference Enabled)	COS 01 ~ 15 = 1
20-13-27	Class of Service Options (Supplementary Service) - Busy on Seizing Virtual Extension	0 = Off 1 = On	COS 01 ~ 15 = 1
21-01-15	System Options for Outgoing Calls - Outgoing Disable on Incoming Line (Toll Restriction)	0 = Disable (Off) 1 = Enable (On)	1
23-04-01	Ringing Line Preference for Virtual Extensions - Extension Group Number	0 ~ 50 (0 = No Setting)	0

Operation

To answer a call ringing a SIE key:

1. Press the flashing **SIE** key.

To program a SIE key on a phone:

1. Press **Speaker** key.
2. Dial **752**.
3. Press the key you want to program.
4. Dial ***03**.
5. Dial the number of the extension you want to appear on the key.
6. Press **Hold** key once for Immediate Ring, (or skip to step 8 for Delayed Ring).
7. Dial the mode number in which the key rings.
8. Press **Hold** key again for Delayed Ring, (or skip to step 10).
9. Dial the mode number in which the key delays ringing.
10. Press **Speaker** key.

Secretary Call (Buzzer)

Description

Secretary Call lets two co-workers alert each other without disturbing their work. To have Secretary Call, both co-workers must have Multiline Terminals with Secretary Call buzzer keys. When a user presses their buzzer key, the system alerts the called extension by sending a splash tone and flashing the called extension buzzer key. The called user can respond by placing an intercom call to the calling party.

The called extension buzzer key continues to flash and the splash tone is heard until either user cancels the Secretary Call. A secretary could use this feature, for example, to get a message through to the boss in an important meeting. After being alerted, the boss could call the secretary when it is most convenient.

An extension can have a Secretary Call key for any number of extensions, limited only by the available number of programmable keys.

Conditions

- Secretary Call is not available to Single Line Terminal users.
- Secretary Call does not set up an Intercom call.
- When assigning Secretary Call, a user enters the associated extension numbers, not port numbers.
- Secretary Call requires a uniquely programmed function key.

Default Settings

Disabled

System Availability

Terminals

All Multiline Terminals

Required Component(s)

None

Related Features

Programmable Function Keys

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.

Operation

To buzz your secretary or boss:

1. Do not lift the handset.
2. Press the buzzer key (PRG 15-07 or SC **751**: 41 + secretary extension).



Your boss or secretary hears ringing.



Your buzzer key lights steadily.



Your boss's or secretary's buzzer key flashes fast.



The telephone continues to ring until the Secretary Call key is pressed.

To check to see who left you a Secretary Call:

1. Do not lift the handset.
2. Press **Help** key.
3. Press the **Secretary Call** key that flashed.
4. Press **Exit** key.

To answer your Secretary Call indication:

1. Place an Intercom call to the extension that called you.

To cancel a Secretary Call you left at another extension:

1. Press the lit **Secretary Call** key.

To cancel a Secretary Call left at your extension:

1. Do not lift the handset.
2. Press the flashing **Secretary Call** key.

Secretary Call Pickup

Description

Secretary Call Pickup lets a Multiline Terminal user easily reroute calls intended for a co-worker to themselves. By pressing a Secretary Call Pickup key, the user can have all calls to a co-worker's telephone ring or voice-announce theirs instead. Secretary Call Pickup is a simplified type of Call Forward with Follow Me for employees that work closely together. This feature could be helpful to customer service representatives that must frequently cover each other's clients. When a representative leaves their desk, an associate could press the Secretary Call Pickup key to intercept all their calls.

An extension can have a Secretary Call Pickup key for any number of extensions, limited only by the available number of programmable keys.

Conditions

- Secretary Call Pickup is not available to Single Line Terminal users.
- An extension user can also have Call Forwarding with Follow Me reroute a co-worker's calls to themselves.
- A Multiline Terminal can have a Secretary Call Pickup key for a Single Line Terminal.
- ACD agents should not use this feature.

Default Settings

Disabled

System Availability

Terminals

All Multiline Terminals

Required Component(s)

None

Related Features

Call Forwarding with Follow Me

Programmable Function Keys

Secretary Call (Buzzer)

Single Line Terminals

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.

Operation

To activate Secretary Call Pickup:

- Press your **Secretary Call Pickup** key (PRG 15-07 or SC **751**: 42 + boss extension).
 -  *Your Secretary Call Pickup key lights and the boss's telephone display shows "BOSS FWD>>".*
 -  *Calls intended for covered extension, ring your telephone instead.*

To cancel Secretary Call Pickup:

- Press your lit **Secretary Call Pickup** key (PRG 15-07 or SC **751**: 42 + boss extension).

To check a key Secretary Call Pickup assignment:

- Press **Help** key.
- Press your **Secretary Call Pickup** key (PRG 15-07 or SC **751**: 42 + boss's extension).
- Press **Exit** key.

Description

This system supports the following built-in simple security features.

- **Warning Message (Watch mode)**
Automatically and periodically sends the Watching (VRS) Message from the built-In Speaker on the Multiline Terminal or external paging adapter during night mode.
Accommodates 3rd Party PIR (Passive Infrared Sensor) or Emergency Button to provide additional security features such as Auto-Emergency Call with Warning (VRS) Message sending.
- **Room Monitoring from Outside**
Access Multiline Terminal from outside to monitor the room sound.
- **Remote Inspection**
Automatically ring the terminal with pre-programmed schedule in order to check whether users answer or not. If not answered, Emergency Call is placed to predefined destination automatically.

Conditions

Warning Message (Watch Mode)

- Watch mode can provide “Watching message” in a preprogrammed interval via internal paging group terminals and/or external paging group during defined schedule such as night time.
- Watch mode starts and stops automatically according to PRG 20-47-01 setting.
- Watch mode can start and stop manually using Service code (PRG 11-12-63) or function key (*32) assignment.
- To connect security sensor set PRG 20-46-01 Sensor mode to (1; on) and connect to Door Phone port instead of Door phone.
- Security sensor can be connected to Analog Extension Port 1, 2 of 082U-B1. A maximum of 6 sensors can be connected.
 - Applied voltage when sensor is Off: 25V
 - Loop current when sensor is On: 40mA
 PRG 82-21 needs to set up according to used sensor.
- Security sensor can start and stop automatically according to PRG 20-48-01 setting.
- Security sensor can start and stop manually using Service code (719) or function key (*33 assigned after the timer (PRG 20-55-01) time-outs).
- When the system receives a sensor detection signal from a Security sensor, either items (1 or 2) or both items (1 and 2) can be programmed.
 1. A repeated “Warning message” is provided via internal paging group terminals and/or external paging group.
 2. An emergency call can be placed to a pre-programmed destination using a pre-recorded VRS message.
After finishing the VRS message, the person at the receiving destination can monitor the situation using Multiline Terminal defined in PRG 20-46-10. Also, by pressing * key from outside it is possible to enable a two-way path.
- If all VRS channels are busy, a tone will be provided instead of VRS message, such as Watch, Warning or for destination message.
- If a VRS message is not recorded, a tone will be provided.
- A VRS message can be provided to extension Speaker only when the extension is idle. But if Watch or Warning message happened during normal paging is working, normal paging will stop and send Watch or Warning message.
- Warning messages have a higher priority than Watch messages when both are received at same time.

- If multiple sensors are detected at the same time, the latest detected sensor's Warning message is provided.
 - Activating or stopping sensor operations must be set according to sensor specifications.
 - If outgoing call restriction is set in a system, the emergency call number must be pre-registered in restriction allow table, to enable the emergency call to be placed. Even if all trunks are busy, the emergency call has a higher priority and will be placed.
 - If not answered at called destination, the system will repeat the emergency call at times specified in PRG 20-46-08.
 - To stop a Warning message or an emergency call, the Service code for cancel "Warning message" (PRG 11-12-62) must be assigned.
 - If the system time is changed while the Watch Mode page is enabled, the page plays immediately regardless of the assigned time interval.
 - If system reset occurs during Watching mode or Security sensor "On" state, these modes automatically continue after the system reboots.
-  • If system reset occurs when a "Warning message" is being sent or when placing an emergency call, these states will be cleared. As a result, after the system reboots, the "Warning message" or emergency call stops.
- If Sensor mode is set (PRG 20-46-01;1) and an SLT is connected instead of a sensor, when the SLT is off-hook the system detects the off hook state in the same way it would detect a sensor.
- The VRS allows you to record up to 100 VRS messages (001-100). If you are using the built-in VRS, without the SD card, you can record all the incoming/outgoing messages within two hours message storage.

Room Monitoring from outside

- To use the Room Monitoring feature, the caller ID of the outside caller and the monitored extension number have to be set. The monitored extension is set in PRG 13-04-03/04. These program can be set by a Service Code in the Speed Dial name setting indication for the outside caller.
 1. Press **Speaker** key + dial **753** at terminal.
 2. Dial speed dial storage code.
 3. Dial telephone number you want to store (up to 36 digits).
 4. Press **Hold** key.
 5. Enter the name associated with speed dialing number.
 6. Press **Transfer** key.
 7. Select TRF Mode 3 (Remote Monitor: PRG 13-04-03).
 8. Enter monitor extension number and Press **Hold** key.
- Room monitor functions when the set extension is in an idle state, otherwise a busy tone (ISDN trunk) or ringback tone (Analogue trunk) is sent to outside caller. If Room Monitor is active, the terminal will display "Remote Monitored" on the LCD and can not be used.
- By dialing * from an outside caller it is possible to use two-way conversation.
- If the same outside caller number is set to both Room Monitor and Distinctive ring features, the feature set in smallest Speed Dial bin number will work.
- If same outside caller number is set for multiple Room monitor extension, the extension set in smallest Speed Dial bin number is used.
- If multiple outside monitoring telephones are set for one extension, only 1 outside caller can monitor the room at a time.
If the room is being monitored by another caller, the new calls will receive a Busy Tone on ISDN/SIP calls. If the caller is on analog trunk, they will hear ring back tone while someone else is monitoring the extension.
- IP Terminals cannot be used for Room Monitor, only TDM phones can be used for this feature.

Remote Inspection

- When Remote inspection is set to the terminal, “Confirm” and “Ring time” are displayed on the Multiline Terminal LCD.
- If Remote inspection terminal is busy (receiving another incoming call or on call state), inspection ring will start after previous call ends.
- When the terminal does not answer inspection ringing during the time assigned in PRG 20-45-03, emergency calls will be placed to pre-programmed destination with pre-recorded VRS message.
- After finishing VRS message, destination person can start monitoring of inspection terminal. Also by dialing * from outside it is possible to have a two-way conversation.
If you dial * while the message is being played, this will not enable the cutthrough. Dialing * during the message stops the message from being played and you must dial * again to enable two-way speech path.
When using Analog trunks, the destination person must dial * before the initial message is played to the caller.
- If outgoing call restriction is set, the emergency call number must be pre-registered in the restriction allow table, then emergency call can go through. Also even all trunk are busy, the call has high priority and can go out.
- If destination does not answer the emergency call, the system repeatedly places the call for the number of times specified in PRG 20-45-07.
- Maximum of 6 extensions can be set as Remote Inspection terminals.
- If all VRS channels are busy, tone will be provided instead of VRS message, such as for inspection message or for destination message.
- If VRS message itself is not recorded, tone will be provided.



Emergency call destination MUST be set considering this feature's purpose.

- The emergency number dialed does not follow ARS settings.
If PRG 13-01-01 is set to Trunk the system uses command PRG 13-05 to route the emergency call. If PRG 13-01-01 is set to ICM the system uses command PRG 14-06 to route the emergency call.
- The VRS allows you to record up to 100 VRS messages (001-100). If you are using the built in VRS, without the SD card, you can record all the incoming/outgoing messages within two hours message storage.

Emergency Call 1

Emergency calls when “Security Sensor” or “Remote Inspection” performed, SMDR can record these call class as follows.

- Security Sensor: SAD
- Remote Inspection: WAD

Emergency Call 2

Emergency calls when “Security Sensor” or “Remote Inspection” performed, alarm report can record these alarm and alarm display terminal indicates following on LCD.

- Security Sensor: 31: Sensor Dial
- Remote Inspection: 32: Confirm dial

Recording Emergency Call

By setting PRG 90-20-11 (1; Report), Emergency calls can be recorded on security report.

- Maximum of 50 records can be saved.

Default Settings

None

System Availability

Terminals

Multiline Terminal (except IP Multiline Terminal)

Required Component(s)

082U-B1

Related Features

Paging Internal, External

Voice Response System (VRS)

Speed Dial

Guide to Feature Programming

Room Monitoring:

Program No.	Program Name	Input Data	Default
11-10-45	Service Code Setup (for System Administrator) - Room Monitor Permit	0~9, *, # Maximum of 8 digit	610
13-04-01	Speed Dialing Number and Name - Number	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
13-04-03	Speed Dialing Number and Name - Transfer Mode	0 = Not Used (Calls will not be routed based off a users caller ID.) 1 = Internal Dial (Calls will be routed to an internal number specified in PRG 13-04-04.) 2 = Incoming Ring Group (Calls will be routed to a ring group specified in PRG 13-04-04.) 3 = Remote Monitor (Used for the security feature and not Flexible Caller ID routing.)	0

Program No.	Program Name	Input Data	Default
13-04-04	Speed Dialing Number and Name - Transfer Destination Number	If Transfer mode is (Refer to 13-04-03) : 1 = Internal Dial Mode 1 ~ 9, 0, *, #, P, R, @ (Maximum 36 Characters) 2 = Incoming Ring Group 0 ~ 25 (IRG Number) P = Pause R = Recall @ = Additional Digits when using ISDN functionality 3 = Remote Monitor Dial (Up to 8 digits)	No Setting
15-07	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-21-05	System Options for Long Conversation - Conversation cutoff for remote monitor	0 ~ 64800 seconds	180
11-10-49	Service Code Setup (for System Administrator) - Auto Dial Setting for Remote Inspection	0~9, *, # Maximum of 8 digit	619
20-45-01	Remote Watch Setup - Ring Terminal for Remote Inspection	Extension Number (Up to 8 digits)	No Setting
20-45-02	Remote Watch Setup - Ring Time Setting	0000 ~ 2359	0000
20-45-03	Remote Watch Setup - Ring Timer	0 ~ 60	0
20-45-04	Remote Watch Setup - Auto Dial Number Area Setting	0 ~ 999	0
20-45-05	Remote Watch Setup - VRS Message for Answer	0 ~ 100	0
20-45-06	Remote Watch Setup - VRS Message for Auto Dial	0 ~ 100	0
20-45-07	Remote Watch Setup - Time of Repeat Auto Dial	0 ~ 255	0
20-45-08	Remote Watch Setup - Auto Dial Calling Time	0 ~ 3600	0
20-45-09	Remote Watch Setup - Interval of Auto Dial	0 ~ 3600	0
35-02-23	SMDR Output Options - Watch Auto Dialing	0 = No Output 1 = Output	1
90-10-01	System Alarm Setup - Alarm type		Refer to Programming Manual
90-10-02	System Alarm Setup - Report	0 = Not Report (No autodial) 1 = Report (autodial)	Refer to the Programming Manual for the default values.
90-20-11	Traffic Report Data Setup - Security Sensor Dial Record	0 = Not Recorded 1 = Recorded	1

Watch mode:

Program No.	Program Name	Input Data	Default
10-03-05	ETU Setup - Select Port type	0 = SLT (082U-SLT Port 1/2) 1 = Door Phone (082U-SLT Port 1/2)	0
11-10-46	Service Code Setup (for System Administrator) - Watch Message Setting	0~9, *, # Maximum of 8 digit	614

Program No.	Program Name	Input Data	Default
11-10-47	Service Code Setup (for System Administrator) - Warning Message Setting	0~9, *, # Maximum of 8 digit	615
11-10-48	Service Code Setup (for System Administrator) - Auto Dial Setting for Security Sensor	0~9, *, # Maximum of 8 digit	617
11-12-62	Service Code Setup (for Service Access) - Security Sensor Reset	0~9, *, # Maximum of 8 digit	716
11-12-63	Service Code Setup (for Service Access) - Watch Mode Start	0~9, *, # Maximum of 8 digit	717
11-12-64	Service Code Setup (for Service Access) - Security Sensor Mode Start	0~9, *, # Maximum of 8 digit	719
15-07	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-44-01	Watch Mode Setup - Internal Paging Group for Watch Message	0 ~ 50	0
20-44-02	Watch Mode Setup - External Paging Group for Watch Message	0 ~ 8	0
20-44-03	Watch Mode Setup - VRS Message for Watch Mode	0 ~ 100	0
20-44-04	Watch Mode Setup - Interval Timer for Watch Message	0 ~ 60	0
20-46-01	Security Sensor Setup - Sensor Mode	0 = Off 1 = On	0
20-46-02	Security Sensor Setup - Internal Paging Group for Warning Message	0 ~ 50	0
20-46-03	Security Sensor Setup - External Paging Group for Warning Message	0 ~ 3	0
20-46-04	Security Sensor Setup - VRS Message for Warning	0 ~ 100	0
20-46-05	Security Sensor Setup - Auto Dial Number Area Setting	0 ~ 999	0
20-46-06	Security Sensor Setup - VRS Message for Answer	0 ~ 100	0
20-46-07	Security Sensor Setup - Auto Dial Wait Timer	0 ~ 64800	30
20-46-08	Security Sensor Setup - Time of Repeat Auto Dial	0 ~ 255	3
20-46-09	Security Sensor Setup - Auto Dial Calling Time	0, 1 ~ 3600 0 = No Auto Dial	30
20-46-10	Security Sensor Setup - Monitored Terminal	Extension Number (Up to 8 digits)	No Setting
20-46-11	Security Sensor Setup - Interval of Auto Dial	0 ~ 3600	0
20-47-01	Time pattern setting for Watch Mode - Watch Mode Time Pattern	0 = Off 1 = On	0
20-48-01	Time pattern setting for Security Sensor - Security Sensor Time Pattern	0 = Off 1 = On	0
20-55-01	Delay Timer for Security Sensor - Sensor delay timer	0 ~ 3600 (seconds) 0 = Sensor will start immediately	60
35-02-22	SMDR Output Options - Security Auto Dialing	0 = No Output 1 = Output	1
82-21-01	Sensor Setup - Sensor Type	0 = Close Detect 1 = Open Detect	0

Program No.	Program Name	Input Data	Default
82-21-02	Sensor Setup - Sensor Alarm Detect Minimum Level	1 ~ 255 (5 ms ~ 1275 ms)	24 (120 ms)
82-21-03	Sensor Setup - Sensor Idle Detect Minimum Level	1 ~ 255 (5 ms ~ 1275 ms)	24 (120 ms)
90-10-01	System Alarm Setup - Alarm type		Refer to Programming Manual
90-10-02	System Alarm Setup - Report	0 = Not Report (No autodial) 1 = Report (autodial)	Refer to the Programming Manual for the default values.
90-20-11	Traffic Report Data Setup - Security Sensor Dial Record	0 = Not Recorded 1 = Recorded	1

Operation

Warning Message (Watch Mode)

< Program >

PRG 11-10-20: 616; Record, Erase VRS message SC616.

PRG 11-10-46: 614; Watch message setting

PRG 11-12-63: 717+1/0; Watch Mode Start/Stop.

PRG 15-07-01: Set “ *32” to Function key.

PRG 20-44-01:1; Internal paging group, 1

PRG 20-44-02:1; External paging group, 1

PRG 20-44-03:1; VRS message number for watching, 1

PRG 20-44-04:5; Interval time of Watching message, 5 minutes.

PRG 20-47-01:1; Watch mode time pattern, 1

To record Watching message to VRS 001:

1. Press **Speaker** key + dial **616 + 7 + 001** at terminal.
2. After beep tone, record message.
3. Press **Speaker** key and finish recording.

Set up Watch mode

1. Press **Speaker** key + dial **614** at terminal.
2. Dial Internal paging group number, “01”.
3. Dial external paging group number, “1”.
4. Dial Interval time of Watching message, “05”.
5. Dial VRS message number for watching, “001”.
6. After beep tone, record the message.
7. Press **Speaker** key and finish recording.

To start Watch mode

1. Press **Speaker** key + dial **717 + 1** at terminal.
- OR -
2. Press the **Function** key (*32) at Multiline Terminal and the **Function** key turn on Red.
- OR -

3. Watch mode time pattern 1 comes time to start.
4. Each 5 minutes interval, Watching message send to internal page group 1 and external page group 1.

To stop Watch mode

1. Press **Speaker** key + dial **717 + 0** at terminal
- OR -
2. Press the red lit **Function** key (*32) at Multiline Terminal and the **Function** key turn off.
- OR -
3. Watch mode time pattern 1 comes time to stop.

Warning Message (Use Security Sensor and Warning message)

< Program >

PRG 10-03-05 for SLT. Depend on Sensor, SLT port may need to set as DoorPhone type.

PRG 11-10-47: 615; Warning message setting

PRG 11-10-48: 617; Auto Dial Setting for Security Sensor

PRG 11-12-62: 716; Security Sensor Reset

PRG 11-12-64: 719+1/0; Security Sensor Mode Start/Stop

PRG 15-07-01: Set “*33” to Function key

PRG 20-46-01: 1; Sensor mode, on

PRG 20-46-02: 1; Internal paging group, 1

PRG 20-46-03: 1; External paging group 1

PRG 20-46-04: 1; VRS message number for warning, 1

PRG 20-46-05: 999; Speed dial bin number, 999

PRG 20-46-06: 2; VRS message number for destination answer, 2

PRG 20-46-07: 30; Auto Dial Wait Timer, 30 sec

PRG 20-46-08: 3; Times of auto repeat dial, 3

PRG 20-46-09: 30; Auto dial calling time, 30 sec

PRG 20-46-10: 200; Monitored terminal number, 200

PRG 20-46-11: 30; Interval of Auto Dial, 30 sec

PRG 20-48-01: 1; Security sensor time pattern, 1

PRG 20-55-01: 60sec (default); Sensor delay timer

Set up Warning message

1. Press **Speaker** key + dial **615** at terminal.
2. Dial Security sensor number, “1”.
3. Dial Internal paging group number, “01”.
4. Dial external paging group number, “1”.
5. Dial VRS message number for warning, “001”.
6. After beep tone, record the message.
7. Press **Speaker** key and finish recording.

Set up Auto Dial Setting for Security Sensor

1. Press **Speaker** key + dial **617** at Multiline Terminal.
2. Dial Security sensor number (1-6), “1”.
3. Dial Speed dial bin number to use, “999”.

4. Dial emergency call destination number "xxx-xxx" and press **Hold** key.
5. Dial monitored terminal number, "200".
6. Dial VRS message number for destination answer, "002".
7. After beep tone, record the message.
8. Press **Speaker** key and finish recording.

To start Security Sensor operation

1. Press **Speaker** key + dial **719 + 1** at terminal, and sensor is valid after the timer (PRG 20-55-01) passes.
- OR -
2. Press the **Function** key (*33) at Multiline Terminal and Function key blinks.
The key lights after the timer (PRG 20-55-01) passes, and sensor is valid.
- OR -
3. Security Sensor time pattern 1 comes time to start.

To stop Security Sensor operation

1. Press **Speaker** key + dial **719 + 0** at terminal.
- OR -
2. Press the red lit **Function** key (*33) at Multiline Terminal and the **Function** key turn off.
- OR -
3. Security Sensor time pattern 1 comes time to stop.

When detect Security Sensor On

1. Warning message send to internal page group1 and external page group 1.
2. Place outgoing call automatically according to speed dial bin 999.
3. When destination answered send VRS message 2.
4. After finishing VRS message 2, destination person can monitor through extension 200. By dialing * from outside it is possible to make both way talk.

When send Warning message

When send Warning message, but does not place emergency call case:
PRG 20-46-05 is set table number, which has no setting.

When place emergency call

When place emergency call, but does not send Warning message case:
PRG 20-46-02 to PRG 20-46-03 should be set to "0".

Room Monitoring from outside

< Program >

PRG 11-10-45: 610+1/0; Remote Monitor enable/disable.

PRG 13-04-01: Abbreviated Dial Data; set outside telephone number which makes room monitor. PRG 13-04-03: 3; Transfer mode set "Remote monitor".

PRG 13-04-04: 200; Set monitored terminal number.

PRG 15-07-01: Set "#03" to **Function** key.

To start Room Monitor

1. Press **Speaker** key + dial **610 + 1** + monitored terminal number, "200" and press **Speaker** key.
- **OR** -
Press the **Function** key (**#03**) + dial **1** + monitored dial number, "200", the **Function** key turn on Red (slow flash), and press **Speaker** key.
2. Place incoming call from telephone which number is set at PRG 13-04-01.
3. Room Monitor starts at extension 200.
4. By dialing * from outside it is possible to talk both ways.

To stop Room Monitor

1. Press **Speaker** key + dial **610 + 0** + monitored terminal number, "200".
- **OR** -
Press the red flashing **Function** key (**#03**) + dial **0** + monitored dial number, "200".
2. Place outside call from telephone which number is set at PRG 13-04-01.
3. Call ring at extension 200.

Remote Inspection

< Program >

PRG 11-10-49: 619; Auto Dial Setting for Remote

PRG 20-45-01: 200; Remote Inspection terminal, 200

PRG 20-45-02: 12:00; Ringing start time, 12 o'clock noon

PRG 20-45-03: 3; ringing continue time, 3 minutes

PRG 20-45-04: 999; Speed dial bin number, 999

PRG 20-45-05: 1; VRS message number when inspected extension answered, 1

PRG 20-45-06: 2; VRS message number when emergency call destination answered, 2

PRG 20-45-07: 3; Times of auto repeat dial, 3

PRG 20-45-08: 30; Auto dial calling time, 30 sec

PRG 20-45-09: 30; Interval of Auto Dial, 30 sec

Set up Remote Inspection

1. Press **Speaker** key + dial **619** at Multiline Terminal.
2. Dial Remote Inspection terminal number (1-6).
3. Dial 1 (set).
4. Dial Remote Inspection extension number, "200".
5. Dial Ringing start time, "1200".
6. Dial ringing continue time, "03".
7. Dial Speed dial bin number to use, "999".
8. Dial emergency call destination number "xxx-xxx" and press **Hold** key.
9. Dial VRS message number when inspected extension answered, "001".
10. After beep tone, record the message and press # key.
11. Dial VRS message number when emergency call destination answered, "002".
12. After confirmation tone, record the message.
13. Press **Speaker** key and finish recording.

To Cancel the Remote Inspection

1. Press **Speaker** key + dial **619** at Multiline Terminal.

2. Dial Remote Inspection terminal number (1-6).
3. Dial **0** (cancel).

When answered the Remote Inspection ring

1. At 12:00 o'clock start ringing at extension 200.
2. When answered VRS message 1 is played.
3. After finishing VRS 1 message, the call is disconnected.

When Not answered the Remote Inspection ring

1. At 12:00 o'clock start ringing at extension 200.
2. Continue ringing over 3 minutes.
3. Stop ringing at extension 200 and place outgoing call automatically according to speed dial bin 999.
4. When destination answered send VRS message 2.
5. After finishing VRS message 2, destination person can automatically monitor through extension 200.
6. By dialing * from outside it is possible to make both way talk.

Selectable Display Messaging

Description

An extension user can select a preprogrammed Selectable Display Message for their extension. Display Multiline Terminal callers see the selected message when they call the user's extension. Selectable Display Messaging provides personalized messaging. For example, an extension user could select the message GONE FOR THE DAY. Any display Multiline Terminal user calling the extension may hear a DND signal and then see the message. See table below for a list of the standard messages.

An extension user can add digits for date, time or telephone number after messages 1~8 and 10 (up to 16 (Hybrid Multiline Terminal (4W)) 28 (2W Digital/IP Multiline Terminal) characters). For example, an extension user could select the message ON VACATION UNTIL and then enter the date. Callers see the original message followed by the appended date. They could then tell when the user is coming back from vacation. The system allows all telephones to use the Selectable Display Messaging feature at the same time.

All telephones are able to use Selectable Display Messaging at one time.

The default messages are:

Table 1-61 Selectable Display Messaging Defaults (2W Digital/IP Multiline Terminal)

No.	Message	Change “#” to...
01	IN MEETING UNTIL ##:##	Time (when meeting done)
02	MEETING ROOM - #####	Room Name or extension
03	COME BACK ##:##	Time (when returning)
04	PLEASE CALL #####	11 digits (telephone number)
05	BUSY CALL AFTER ##:##	Time (when returning)
06	OUT FOR LUNCH BACK ##:##	Time (when returning)
07	BUSINESS TRIP BACK ###/##	Date (when returning)
08	BUSINESS TRIP #####	10 digits (where reached)
09	GONE FOR THE DAY	
10	ON VACATION UNTIL ###/##	Date (when returning)
11~20	MESSAGE 11~20	

Conditions

- The # cannot be used in a Message.
- When Selectable Display Messaging is set as DND All, all other DND modes are canceled when Selectable Display Messaging is canceled.

Default Settings

Enabled

System Availability

Terminals

All Multiline Terminals with Display

Required Component(s)

None

Related Features

Do Not Disturb (DND)

Programmable Function Keys

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-11-14	Service Code Setup (for Setup/Entry Operation) - Text Message Setting	0~9, *, # Maximum of 8 digit	No Setting
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-01-02	System Options - Text Message Mode	0 = Call mode 1 = No Answer/Busy mode	1
20-02-07	System Options for Multiline Telephones - Time and Date Display Mode		4
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-13-19	Class of Service Options (Supplementary Service) - Selectable Display Messaging (Text Messaging)	0 = Off 1 = On	1
20-16-01	Selectable Display Messages - Selectable Display Messages		Refer to Programming Manual.

Table 1-62 Selectable Display Message - Character Entry Chart

Use this keypad digit . . .	When you want to . . .
1	Enter characters: 1 @ [¥] ^ _ ` { } → ← Á À Â Ã Ä Å Æ Ç È É Ê Ë Ì Í Î Ï
2	Enter characters: A-C, a-c, 2.
3	Enter characters: D-F, a-f, 3.
4	Enter characters: G-I, g-i, 4.
5	Enter characters: J-L, j-l, 5.
6	Enter characters: M-O, m-o, 6.
7	Enter characters: P-S, p-s, 7.
8	Enter characters: T-V, t-v, 8.

Use this keypad digit . . .	When you want to . . .
9	Enter characters: W-Z, w-z, 9.
0	Enter characters: 0 ! " # \$ % & ' () ô õ ú â ã æ ö ü α ε θ B
*	Enter characters: * + , - . / : ; < = > ? π Σ σ Ω ∞ € £
#	Accepts a numeric entry from the user when setting a display message. e.g., time or date. Back at ##:##
Clear/Back or DND (2W Digital/IP Multiline Terminal)	Clear the character entry one character at a time.
Flash	Clear all the entries from the point of the flashing cursor and to the right.

Operation

To select a message:

1. Press **Speaker** key.
2. Dial Text Message Service Code (by **PRG 11-11-14**) .
-OR-
Press the Text Message key (PRG 15-07 or SC **751**: 18) + enter digits to append (if needed) + press **Speaker** key to hang up. Skip the remaining steps.
3. Enter message number.
4. + enter digits to append (if needed) + press **Speaker** key to hang up. Skip the remaining steps.
5. (Optional for messages 1~8 and 10.)
Dial the digits you want to append to the message.



You can append messages 1~8 and 10 with digits (e.g., the time when you will be back). Enter the time in 24-hour format.

6. Press **Speaker** key to hang up.



Intercom calls to extensions with Selectable Display Messaging set receive a DND signal and receive the display message on their telephone display instead of ringing the extension based on the setting in PRG 20-01-02.



*To allow calls to ring through and have the message displayed on the calling extension display, cancel DND by pressing **DND** key + dialing **0**.*

To cancel a message:

1. Press **Speaker** key and the **Text Message** key (PRG 15-07 or SC **751**: 18).
2. Press **Speaker** key to hang up.

Using the Text Message Service Code to select a message:

1. Press **Speaker** key and dial the Text Message service code (PRG 11-11-14).
2. Dial the Selectable Display Message number to be used (**01~20**).
(Optional messages 1~8, and 10, dial the digits you want to append to the message.)
3. Press **Speaker** key to hang up.



To cancel, repeat step 1 and hang up.

Selectable Ring Tones

Description

An extension user can change the way trunks or internal calls ring their telephone. Selectable Ring Tones allow an extension user to set up unique ringing for their calls. This is important in a crowded work area where several telephones are close together. Because their telephone has a characteristic ring, the user always can tell when their telephone is ringing.

Conditions

None

Default Settings

Enabled

System Availability

Terminals

All Multiline Terminals

Required Component(s)

None

Related Features

Distinctive Ringing, Tones and Flash Patterns

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-11-20	Service Code Setup (for Setup/Entry Operation) - Change Incoming CO and ICM Ring Tones	0~9, *, # Maximum of 8 digit	720
11-11-21	Service Code Setup (for Setup/Entry Operation) - Check Incoming Ring Tones	0~9, *, # Maximum of 8 digit	711

Program No.	Program Name	Input Data	Default
15-02-02	Multiline Telephone Basic Data Setup - Trunk Ring Tone	1 = High (2W Digital/IP Multiline Terminal) 2 = Medium (2W Digital/IP Multiline Terminal) 3 = Low (2W Digital/IP Multiline Terminal) 4 = Melody 1 (2W Digital/IP Multiline Terminal) 5 = Melody 2 (2W Digital/IP Multiline Terminal) 6 = Melody 3 (2W Digital/IP Multiline Terminal) 7 = Melody4 (2W Digital/IP Multiline Terminal) 8 = Melody5 (2W Digital/IP Multiline Terminal)	2
15-02-03	Multiline Telephone Basic Data Setup - Extension Ring Tone	1 = High (2W Digital/IP Multiline Terminal) 2 = Medium (2W Digital/IP Multiline Terminal) 3 = Low (2W Digital/IP Multiline Terminal) 4 = Melody 1 (2W Digital/IP Multiline Terminal) 5 = Melody 2 (2W Digital/IP Multiline Terminal) 6 = Melody 3 (2W Digital/IP Multiline Terminal) 7 = Melody4 (2W Digital/IP Multiline Terminal) 8 = Melody5 (2W Digital/IP Multiline Terminal)	8
15-08-01	Incoming Virtual Extension Ring Tone Setup - Incoming Ring Pattern	0 ~ 8 0 = Tone Pattern 1 1 = Tone Pattern 2 2 = Tone Pattern 3 3 = Tone Pattern 4 4 = Incoming extension ring tone 5 = Melody1 (2W Digital/IP Multiline Terminal) 6 = Melody2 (2W Digital/IP Multiline Terminal) 7 = Melody3 (2W Digital/IP Multiline Terminal) 8 = Melody4 (2W Digital/IP Multiline Terminal)	0
15-10-01	Incoming Virtual Extension Ring Tone Order Setup	0 ~ 8 0 = Tone Pattern 1 1 = Tone Pattern 2 2 = Tone Pattern 3 3 = Tone Pattern 4 4 = Incoming extension ring tone 5 = Melody1 (2W Digital/IP Multiline Terminal) 6 = Melody2 (2W Digital/IP Multiline Terminal) 7 = Melody3 (2W Digital/IP Multiline Terminal) 8 = Melody4 (2W Digital/IP Multiline Terminal)	Priority order: 1 = 0 (Tone Pattern 1) 2 = 1 (Tone Pattern 2) 3 = 2 (Tone Pattern 3) 4 = 3 (Tone Pattern 4)

Program No.	Program Name	Input Data	Default
22-03-01	Trunk Ring Tone Range - Ring Tone Pattern	0 = Tone 1 1 = Tone 2 2 = Tone 3 3 = Tone 4 4 = Melody 1 (2W Digital/IP Multiline Terminal) 5 = Melody 2 (2W Digital/IP Multiline Terminal) 6 = Melody 3 (2W Digital/IP Multiline Terminal) 7 = Melody 4 (2W Digital/IP Multiline Terminal) 8 = Melody 5 (2W Digital/IP Multiline Terminal) 9 = Tone 5 (2W Digital/IP Multiline Terminal) 10 = Tone 6 (2W Digital/IP Multiline Terminal) 11 = Tone 7 (2W Digital/IP Multiline Terminal) 12 = Tone 8 (2W Digital/IP Multiline Terminal)	0

Table 1-63 Intercom or Trunk Ring Setting

1 = High	5 = Ring Tone 2
2 = Mid Range	6 = Ring Tone 3
3 = Low	7 = Ring Tone 4
4 = Ring Tone 1	8 = Ring Tone 5

Operation

To change your extension incoming ring tones:

1. Press **Speaker** key.
2. Dial **720**.
3. Dial **1** to set Intercom ring; **2** to set trunk ring.
4. Dial code for the desired ring pattern (**1~8** (2W Digital/IP Multiline Terminal)).
5. Press **Speaker** key to hang up.

To listen to the incoming ring choices:

1. Press idle **Speaker** key.
2. Dial **711**.
3. Dial **1** to listen to Intercom ring; **2** to listen to trunk ring.
4. *For Intercom Ring:*
Dial the code for the ring pattern you want to hear (**1~8** (2W Digital/IP Multiline Terminal)).
- OR -
For Trunk Ring:
Dial code for the ring pattern you want to hear (Ring 1~3, Melody 4~8). If you select Ring 1~3, a second screen prompts for the tone pattern (1~4). (2W Digital/IP Multiline Terminal).
5. Press **Speaker** key to hang up.

Serial Call

Description

Serial Call transfers a call so it automatically returns to the transferring extension. Serial Calling saves transferring steps between users. For example, a Customer Service Representative (CSR) has a client on the telephone who needs technical advice. The CSR wants to send the call to Technical Service, but needs to advise the client of certain costs when Technical Service is done. Rather than transferring the call back and forth, the CSR can use Serial Call to Technical Service and announce, "I have Ted on the telephone. I need to talk to him again. Just hang up when you're done and I'll get him back."

Conditions

- The transferring extension can remain off-hook to auto-receive the callback or hang up and it rings back to them.
- Serial Call requires a uniquely programmed function key (PRG 15-07 or SC **751**: 43) or assigning **Transfer** key as Call Back in (PRG 15-02-05=1).
- Serial Call is not available to Single Line Terminals.
- Serial Call can be activated only during a supervised transfer.

Default Settings

Disabled

System Availability

Terminals

Multiline Terminals

Required Component(s)

None

Related Features

Programmable Function Keys

Transfer

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
15-02-05	Multiline Telephone Basic Data Setup - Transfer Key Operation Mode	0 = Transfer 1 = Serial Call (call back) 2 = Flash	0

Program No.	Program Name	Input Data	Default
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.

Operation

To place a Serial Call to a co-worker:

1. Place or answer a call.
2. Press **Hold** or **Transfer** key.
3. Dial co-worker's extension number.



Co-worker must lift the handset to respond to your announcement.

4. Press the **Serial Call** key (PRG 15-07 or SC **751**: 43).
- OR -
5. Press **Transfer** key if PRG 15-02-05 is set to Call Back (Serial Call).
6. When MLT Display shows WAIT TRF extension can hang up.



When your co-worker hangs up the call, the system makes an automatic live transfer back to your extension.

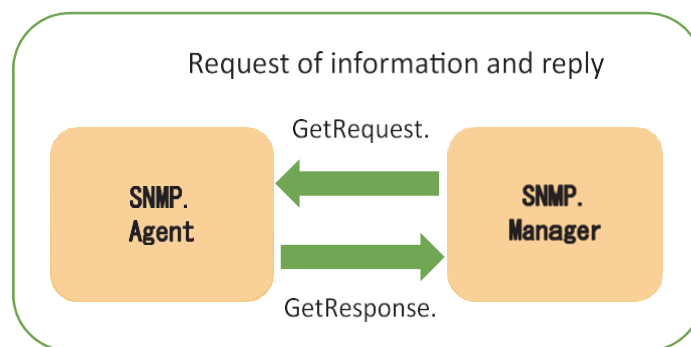
Simple Network Management Protocol (SNMP)

Description

SL2100 system supports Simple Network Management Protocol (SNMP) that functions with standard MIB's and SNMP traps. Typically, an administrator uses a SNMP application to centrally manage network devices. The SL2100 is considered as a SNMP Agent that can talk to a SNMP application.

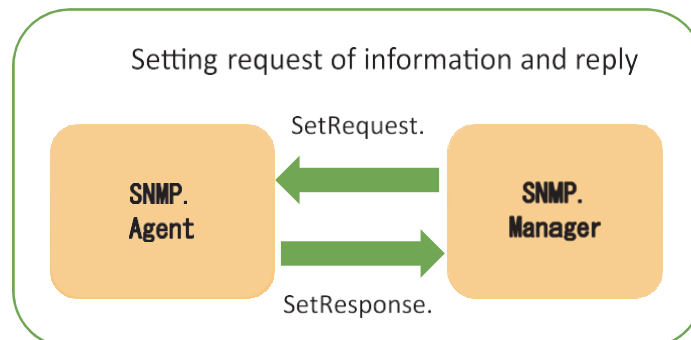
Request of information and reply (GetRequest)

- Information on watch target equipment is requested of an agent from a manager.
- An agent acquires requested information and replies to a manager.



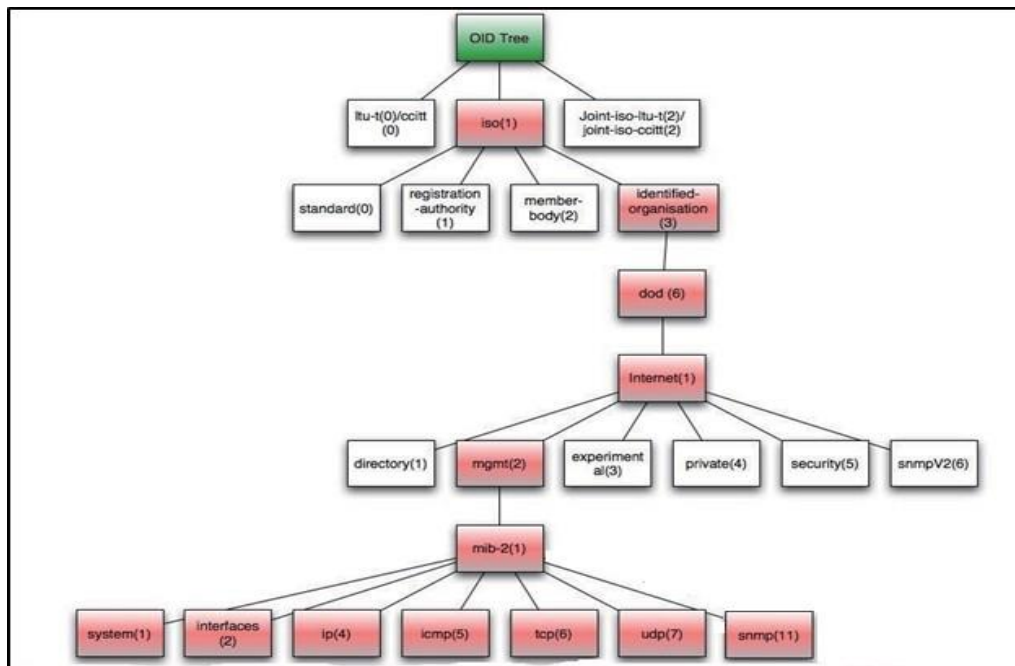
Setting request of information and reply (SetRequest)

- Setting change in the watch target equipment is requested of an agent from a manager.
- An agent carries out requested setting change and replies to a manager.



The Supported Management Information Base are as follows:

System (1), interface (2), ip (4), icmp (5), tcp (6), udp (7), and snmp (11)



SNMP traps can be used for the purpose of monitoring SL2100 alarms via SNMP. When an alarm is triggered on the SL2100, they can be reported in the SNMP application.

Supported traps are as follows:

- ColdStart trap
- LinkDown trap
- LinkUp trap
- Authentication Failure trap

Conditions

- An SNMP browser is required to manage and view SNMP traps.
- When properly configured, an SL2100 sends trap to SNMP Application.
- A properly configured MIB OID file which is fully compiled in the MIB browser is required before the MIB browser can perform Get operations from the SNMP agent.
- The "Target Host" parameter referenced in Program 90-64 is the SNMP network management device (s) that are run on an external PC.
- SL2100 do not support warmStart trap, epgNeighborLoss trap and enterpriseSpecific trap.

Default Settings

None

System Availability

Terminals

None

Required Component(s)

None

Related Features

None

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
90-64-01	SNMP Setup - SNMP	0 = Disable 1 = Enable	0
90-64-02	SNMP Setup - Community Name	Maximum of 12 characters	public
90-64-03	SNMP Setup - Target Host 1	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192..0.0.1 ~ 223.255.255.254	0.0.0.0
90-64-04	SNMP Setup - Target Host 2	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192..0.0.1 ~ 223.255.255.254	0.0.0.0
90-64-05	SNMP Setup - Target Host 3	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192..0.0.1 ~ 223.255.255.254	0.0.0.0
90-64-06	SNMP Setup - Target Host 4	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192..0.0.1 ~ 223.255.255.254	0.0.0.0
90-64-07	SNMP Setup - Target Host 5	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192..0.0.1 ~ 223.255.255.254	0.0.0.0

Single Line Terminals

Description

The system is compatible with Dial Pulse and DTMF analog Single Line Terminals (SLTs). Single Line Terminal users can dial codes to access many of the features available to Multiline Terminal users. With Single Line Terminals, you can have your system simulate PBX type operation.

There are 32 Single Line Terminals available (note that this number may be restricted due to system power requirements).

When installing Single Line Terminals you must have:

- A port on a 082U-B1/008U-()1 for each Single Line Terminal installed.
- If you have DTMF sets, at least one block reserved on the CPU for analog extension DTMF reception.

DTMF Dial Out Timer Added

A program is added for DTMF dialing, PRG 20-03-07 : System Options for Single Line Terminals-Trunk Call Dial Forced Sending Start Time (Forced Dial). When PRG 20-03-03 : System Options for Single Line Terminals - SLT DTMF Dial to Trunk Lines is set to 0 (receive all digits before sending), the system follows the timers in PRG 20-03-04 and PRG 20-03-07.

The timer in PRG 20-03-04 System Options for Single Line Terminals - Dial Sending Start Time for SLT or ARS resets when the user dials another digit.

The timer in PRG 20-03-07 System Options for Single Line Terminals - Trunk Call Dial Forced Sending Start Time (Forced Dial) does not reset when a digit is dialed. The user must finish dialing all the digits before this timer expires (entries: 0~64800 seconds, default: 0).

Conditions

- Dial Pulse Single Line Terminals cannot access any feature that requires the user to dial # or *.
- A Single Line Terminal can initiate an Internal Zone page, but cannot receive an Internal Zone Page.
- When a Ring Group call rings a single line station, the BLF indication shows busy.
- Stutter Dial Tone is supported to Single Line Terminals for Voice Mail Message Waiting.
- The Digital Multiline Terminal (2W) Configuration has 24 resources for DTMF receiving and Dial Tone detection. When an EXIFB-C1 is installed on the CPU, there are 72 resources available.
- When PRG 10-09-01 is set to 0 (Common) and PRG 14-02-10 (Caller ID) is set to 1 (Yes), all DTMF/Dial Tone Detection resources are always allocated to analog trunks, not analog extensions. However, if PRG 14-02-10 (Caller ID) is set to 0 (No), all DTMF/Dial Tone Detection resources can be used for both analog trunks and analog extensions.
- The Exclusive Hold Recall Timer is used when an internal call from a Single Line telephone or 3rd party SIP telephone is placed on Hold.

Default Setting

Single Line Terminals function as soon as they are installed and properly programmed.

System Availability

Terminals

Analog Single Line Terminals(DP and DTMF type)

Required Component(s)

082U-B1

008U-B1

Related Features

Single Line Terminal users have access to the following features:

- Speed Dialing
- Account Codes
- Alarm
- Automatic Route Selection (ARS/F-Route)
- Barge-In
- Call Forwarding
- Call Forwarding with Follow Me
- Call Forwarding/DND Override
- Call Waiting/Camp-On
- Callback
- Central Office Calls, Answering
- Central Office Calls, Placing
- Conference
- Department Calling
- Department Step Calling
- Directed Call Pickup
- Do Not Disturb
- Door Box
- Flash
- Forced Trunk Disconnect
- Group Call Pickup
- Hold
- Intercom
- Last Number Redial
- Line Preference
- Meet Me Conference
- Meet Me Paging
- Meet Me Paging Transfer
- Message Waiting
- Night Service
- Off-Hook Signaling
- Paging
- PBX Compatibility
- Ringdown Extension
- Save Number Dialed

- Toll Restriction
- Transfer
- Trunk Queuing and Camp-On
- Warning Tone for Long Conversation
- Voice Mail
- Voice Over

Data Communications

Refer to the individual features for additional descriptive, programming and operational information.

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-03-01	HBIU Configuration - Terminal Type	0 = No Setting 1 = Multi-Line Telephone 2 = SLT 8 = Door Phone 10 = DSS Console 3 ~ 7, 9, 11, 12 = Not Used	
10-03-03	HBIU Configuration - Transmit Gain Level for SLT	1 ~ 63 (- 15.5 ~ + 15.5 dB)	32 (0dB)
10-03-04	HBIU Configuration - Receive Gain Level for SLT	1 ~ 63 (- 15.5 ~ + 15.5 dB)	32 (0dB)
10-03-05	HBIU Configuration - Select Port Type	0 = Hybrid Port 1 = Door Phone	0
10-09-01	DTMF, Dial Tone Detection Setup - DTMF, Dial Tone Detection	0 = Common use for both analog extensions and trunks 1 = Use for analog extensions (DTMF Receivers) 2 = Use for analog trunks (DTMF receivers/Dial tone detection/ Caller ID detection)	Resource 01 ~ 140 = 0
15-03-01	Single Line Telephone Basic Data Setup - SLT Signaling Type	0 = DP 1 = DTMF	Port1 ~ 112 = 1 (DTMF) Port113 ~ 128 = 0 (DP)
15-03-03	Single Line Telephone Basic Data Setup - Terminal Type	0 = Normal 1 = Special	Port1 ~ 112 = 0 (Normal) Port113 ~ 128 = 1 (Special)
15-03-05	Single Line Telephone Basic Data Setup - Trunk Polarity Reverse	0 = Off 1 = On	0
15-03-06	Single Line Telephone Basic Data Setup - Extension Polarity Reverse	0 = Disable (Off) 1 = Enable (On)	0
15-03-07	Single Line Telephone Basic Data Setup - Enabled On-Hook When Holding (SLT)	0 = No 1 = Yes	1
15-03-08	Single Line Telephone Basic Data Setup - Answer On-Hook when Holding (SLT)	0 = Disable (No) 1 = Yes (Enable)	1
15-03-09	Single Line Telephone Basic Data Setup - Caller ID Function	0 = Disable (Caller ID not displayed.) 1 = Enable (Caller ID is displayed.)	0
15-03-10	Single Line Telephone Basic Data Setup - Caller Name	0 = Disable 1 = Enable	1
15-03-11	Single Line Telephone Basic Data Setup - Caller ID Type	0 = FSK 1 = DTMF	0

Program No.	Program Name	Input Data	Default
15-03-14	Single Line Telephone Basic Data Setup - Forwarded Caller ID Display Mode	0 = Calling Extension Number (Calling) 1 = External Caller ID (Forward)	0
20-03-01	System Options for Single Line Telephones - SLT Call Waiting Answer Mode	0 = Hook Flash (Hooking) 1 = Hook Flash + Service Code 794	0
20-03-02	System Options for Single Line Telephones - Ignore Received DP Dial on DTMF SLT Port	0 = Do Not Ignore (No) 1 = Ignore (Yes)	0
20-03-03	System Options for Single Line Telephones - SLT DTMF Dial to Trunk Lines	0 = Receive all dialed data, before sending (All) 1 = Direct through out (Direct)	0
20-03-04	System Options for Single Line Telephones - Dial Sending Start Time for SLT or ARS	0 ~ 64800 seconds	1
20-03-05	System Options for Single Line Telephones - SLT Operation Mode	0 = Normal Mode 1 = Extended Mode 1 2 = Extended Mode 2	0
20-03-06	System Options for Single Line Telephones - Headset Ringing Start Time (for SLT)	0 ~ 64800 seconds	5
20-03-07	System Options for Single Line Telephones - Trunk Call Dial Forced Sending Start Time (Forced Dial)	0 ~ 64800 seconds	0
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-13-13	Class of Service Options (Supplementary Service) - Continued Dialing (DTMF) Signal on ICM Call	0 = Off 1 = On	COS 01 ~ 15 = 1
20-15-01	Ring Cycle Setup - Incoming Signal Type : Normal Incoming Call on Trunk	Ringling Cycle Number : 1 ~ 13	3
20-15-03	Ring Cycle Setup - Incoming Signal Type : Incoming Internal Call	Ringling Cycle Number : 1 ~ 13	3
20-15-05	Ring Cycle Setup - Incoming Signal Type : DID/DDI	Ringling Cycle Number : 1 ~ 13	8
80-03-01	DTMF Tone Receiver Setup - Detect Level	0 = 0 dBm ~ - 25 dBm 1 = - 5 dBm ~ - 30 dBm 2 = - 10 dBm ~ - 35 dBm 3 = - 15 dBm ~ - 40 dBm 4 = - 20 dBm ~ - 45 dBm 5 = - 25 dBm ~ - 50 dBm 6 = - 30 dBm ~ - 55 dBm	Refer to the Programming Manual for the default values.
80-03-02	DTMF Tone Receiver Setup - Start Delay Time	0 ~ 255 (0.25 ms ~ 64 ms)	Refer to the Programming Manual for the default values.
80-03-03	DTMF Tone Receiver Setup - Min. Detect Level	0 ~ 15 DTMF Tone 0 = - 10 dBm (0) to - 25 dBm (15) DTMF Tone 1 = - 15 dBm (0) to - 30 dBm (15) DTMF Tone 2 = - 20 dBm (0) to - 35 dBm (15) DTMF Tone 3 = - 25 dBm (0) to - 40 dBm (15) DTMF Tone 4 = - 30 dBm (0) to - 45 dBm (15) DTMF Tone 5 = - 35 dBm (0) to - 50 dBm (15) DTMF Tone 6 = - 40 dBm (0) to - 55 dBm (15)	Refer to the Programming Manual for the default values.

Program No.	Program Name	Input Data	Default
80-03-04	DTMF Tone Receiver Setup - Max. Detect Level	0 ~ 15 DTMF Tone 0 = 0 dBm (0) to - 15 dBm (15) DTMF Tone 1 = - 5 dBm (0) to - 20 dBm (15) DTMF Tone 2 = - 10 dBm (0) to - 25 dBm (15) DTMF Tone 3 = - 15 dBm (0) to - 30 dBm (15) DTMF Tone 4 = - 20 dBm (0) to - 35 dBm (15) DTMF Tone 5 = - 25 dBm (0) to - 40 dBm (15) DTMF Tone 6 = - 30 dBm (0) to - 45 dBm (15)	Refer to the Programming Manual for the default values.
80-03-05	DTMF Tone Receiver Setup - Forward Twist Level	0 ~ 9 (1 dB ~ 10 dB)	Refer to the Programming Manual for the default values.
80-03-06	DTMF Tone Receiver Setup - Backward Twist Level	0 ~ 9 (1 dB ~ 10 dB)	Refer to the Programming Manual for the default values.
80-03-07	DTMF Tone Receiver Setup - ON Detect Time	1 ~ 255 (15 + 15 ms ~ 3825 ms)	Refer to the Programming Manual for the default values.
80-03-08	DTMF Tone Receiver Setup - OFF Detect Time	1 ~ 255 (15 + 15 ms ~ 3825 ms)	Refer to the Programming Manual for the default values.
80-04-01	Call Progress Tone Detector Setup - Detection Level	0 = 0 dBm ~ - 25 dBm 1 = - 5 dBm ~ - 30 dBm 2 = - 10 dBm ~ - 35 dBm 3 = - 15 dBm ~ - 40 dBm 4 = - 20 dBm ~ - 45 dBm 5 = - 25 dBm ~ - 50 dBm 6 = - 30 dBm ~ - 55 dBm	Refer to the Programming Manual for the default values.
80-04-04	Call Progress Tone Detector Setup - No Tone Time	0 ~ 255 (30 + 30 ~ 7680 ms) (0 = not detect) 1 ~ 255 = 60 ~ 7680 ms The formula is $30 + 30N$ When set to $N = 1$, it means $30 + 30 * 1 = 60$. When set to $N = 255$, it means $30 + 30 * 255 = 7680$.	Refer to the Programming Manual for the default values.

Operation

Refer to the individual features listed in the Related Features section above in this feature.

SIP Trunk E.164 CLIP Enhancement

Description

With the SIP Trunk E.164 CLIP Enhancement enabled, when an incoming SIP call from an external ITSP is presented at the system with a “+” in the From header field as the international access code, it is recognized and displayed as an international call at the terminal display and also logged in the terminals incoming caller history, allowing any outbound calls made from a multiline terminals caller history possible using this numbering scheme.

This presentation can be a requirement of certain SIP ITSPs (Internet Telephony Service Providers) so it is necessary the PBX can handle these calls and modify any SIP messages to the correct format accordingly.

Conditions

- E.164 Enhancement is applied for the SIP trunk interface.
- Outgoing call from caller history of incoming calls is only possible from multiline terminals.

Default Settings

Disabled

System Availability

Terminals

Multiline Terminals

Trunks

IP SIP

Required Component(s)

- VoIPDB-C1
- IP Trunk License

Related Features

- E.164 Support
- F-Route

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-02-01	Location Setup - Country Code	Dial (up to four digits) : 0 ~ 9, *, #	61
10-02-02	Location Setup - International Access Code	Dial (up to four digits) : 0 ~ 9, *, #	00
10-02-03	Location Setup - Other Area Access Code	Dial (up to two digits) : 0 ~ 9, *, #	0
84-14-13	SIP Trunk Basic Information Setup - SIP Trunk Incoming/Outgoing via E164SIP_URI	0 = Off 1 = Mode 1 2 = Mode 2 3 = Mode 3 (SIP Profile:1-6)	0
84-14-16	SIP Trunk Basic Information Setup - SIP Trunk SIP-URI E.164 Incoming Mode	0 = OFF 1 = Mode 1 2 = Mode 2 (SIP Profile:1-6)	0

Operation

Delete the '+' only from an incoming SIP INVITE using E.164 numbering scheme:

PRG 84-14-16	PRG 84-14-13	Description/Comments
0: OFF	0: OFF Or 1: Mode 1	When a '+' is presented as the international access code in a SIP INVITE for incoming calls then delete the '+' only.

Example Output:

Incoming call from : +4902131795770

Displayed in terminal incoming caller history as:

01:	4902131795770
*	3-5 11:17
↑	↓ Store DEL

Delete and replace the '+' and matched country code from an incoming SIP INVITE using E.164 numbering scheme:

PRG 84-14-16	PRG 84-14-13	Description/Comments
1: Mode 1	1: Mode 1	With a SIP INVITE for incoming calls. When a '+' is presented as the international access code along with a country code that DOES NOT match the value in PRG 10-02-01, then delete the '+' and add the international access code value in PRG 10-02-02 only. Or With a SIP INVITE for incoming calls. When a '+' is presented as the international access code along with a country code that DOES match the value in PRG 10-02-01, then delete the '+' and country code but DO NOT add the international access code value.

Example Output :

Incoming call from: +4902131795770

PRG 10-02-02 = 00

Displayed in terminal incoming caller history as:

Original Display

01:	4902131795770
*	3-5 11:17
↑	↓ Store DEL

- OR -

PRG 10-02-01 = 0

01:	004902131795770
*	3-5 11:17
↑	↓ Store DEL

- OR -

PRG 10-02-01 = 49

01:	02131795770
*	3-5 11:17
↑	↓ Store DEL

Delete and replace the '+' and matched country code from an incoming SIP INVITE using E.164 numbering scheme:

PRG 84-14-16	PRG 84-14-13	Description/Comments
2: Mode 2	1: Mode 1	With a SIP INVITE for incoming calls. When a '+' is presented as the international access code along with a country code that DOES NOT match the value in PRG 10-02-01, then delete the '+' and add the international access code value in PRG 10-02-02 only. Or With a SIP INVITE for incoming calls. When a '+' is presented as the international access code along with a country code that DOES match the value in PRG 10-02-01, then delete the '+' and country code but DO NOT add the international access code value.

Example Output :

Incoming call from: +4902131795770

PRG 10-02-02 = 00

PRG 10-02-03 = 9

Displayed in terminal incoming caller history as:

Original Display

01:	4902131795770
* 3-5	11:17
↑	↓ Store DEL

- OR -

PRG 10-02-01 = 0

01:	004902131795770
* 3-5	11:17
↑	↓ Store DEL

- OR -

PRG 10-02-01 = 49

01:	902131795770
* 3-5	11:17
↑	↓ Store DEL

Making an outgoing call from history of incoming calls:

No.	Operation	LCD
1.	From an idle multiline terminal.	Clock Calendar 101 STA 101 List Dir ICM PRG
2.	Press Soft Key “List”	LIST•MENU Redial CID
3.	Press Soft Key “CID”	01: 004902131795770 * 3-5 11:17 ↑ ↓ Store DEL
5.	Press SPK	Line 001 00:01 004902131795770

SIP Trunk E.164 Support

Description

With the SIP Trunk E.164 Support enabled the PBX is able to support SIP configurations where the number presentation within the SIP messages is formatted using the E.164 international numbering scheme. Specifically the system is able to handle the '+' digit when required as the International Access Code.

For example a normal international SIP call could be dialed and presented from the system as follows;
Number dialed = **00441202223344**

Request-URI: Invite sip:00441202223344@172.16.18.100 SIP/2.0

However with SIP Trunk E.164 Support enabled the SIP call could be presented once dialed as below;

Request-URI: Invite sip:+441202223344@172.16.18.100 SIP/2.0

This presentation can be a requirement of certain SIP ITSPs (Internet Telephony Service Providers) so it is necessary the PBX can handle these calls and modify any SIP messages to the correct format accordingly.

Below is the full list of SIP header fields used by this feature:

Request-URI

To

From

P-Asserted Identity

P-Preferred Identity

Conditions

- E.164 support is applied on the SIP trunk interface.
- E.164 is supported for all carrier choices (PRG 10-29-14).

Default Settings

Disabled

System Availability

Trunks

IP SIP

Required Component(s)

- VoIPDB-C1
- IP Trunk License

Related Features

F-Route

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-02-01	Location Setup - Country Code	Dial (up to four digits) : 0 ~ 9, *, #	61
10-02-02	Location Setup - International Access Code	Dial (up to four digits) : 0 ~ 9, *, #	00
84-14-13	SIP Trunk Basic Information Setup - SIP Trunk Incoming/Outgoing via E164SIP_URI	0 = Off 1 = Mode 1 2 = Mode 2 3 = Mode 3 (SIP Profile:1-6)	0

Operation

To make a call using E.164 number format:

1. Pick up the handset or press **Speaker**.
Dial **00441202223344#**.



The system will automatically modify the required header fields of the SIP INVITE message as per the configuration settings in the table below before then forwarding to the ITSP.

PRG 84-14-13	PRG 10-02-01	PRG 10-02-02	Example Invite SIP Message Fields Calling Party Number is = 44 1509555123 Called Party Number is = 00441202223344
0	44	-	Request-URI: Invite sip: 0044 1202223344@172.16.18.100 SIP/2.0 To header: To:sip:00441202223344@172.16.18.100 From header: From<sip: 44 1509555123 @172.16.0.10>
	No Setting	-	Request-URI: Invite sip: 0044 1202223344@172.16.18.100 SIP/2.0 To header: To:sip:00441202223344@172.16.18.100 From header: From<sip: 44 1509555123 @172.16.0.10>
1	44	-	Request-URI: Invite sip:+ 4400 441202223344@172.16.18.100 SIP/2.0 To header: To:sip:+ 4400 441202223344@172.16.18.100 From header: From<sip:+ 44 44 1509555123 @172.16.0.10>
	No Setting	-	Request-URI: Invite sip: + 0044 1202223344@172.16.18.100 SIP/2.0 To header: To:sip: + 0044 1202223344@172.16.18.100 From header: From<sip: + 44 1509555123@172.16.0.10>
2	-	00	Request-URI: Invite sip:+441202223344@172.16.18.100 SIP/2.0 To header: To:<sip:+441202223344@172.16.18.100> From header: From<sip:+441509555123@172.16.0.10> P-Asserted-Identity: P-Asserted-Identity<+441509555123@172.16.0.10> P-Preferred-Identity: P-Preferred-Identity<+441509555123@172.16.0.10>
	-	No Setting	Request-URI: Invite sip:+441202223344@172.16.18.100 SIP/2.0 To header: To:<sip:+441202223344@172.16.18.100> From header: From<sip:+441509555123@172.16.0.10> P-Asserted-Identity: P-Asserted-Identity<+441509555123@172.16.0.10> P-Preferred-Identity: P-Preferred-Identity<+441509555123@172.16.0.10>
3	-	-	Request-URI: Invite sip: 0044 1202223344@172.16.18.100 SIP/2.0 To header: To:sip: 0044 1202223344@172.16.18.100 From header: From<sip: + 44 1509555123@172.16.0.10>

Softkeys

Description

Each display telephone provides interactive softkeys for intuitive feature access. It is no longer necessary to remember feature codes to access the telephone advanced features because the function of the softkeys change as the user processes calls.

Additional options allow you to fine tune the Multiline Terminal volume levels for handset receive and transmit, speaker volume, ringer and handset volume, and headset volume levels. You can also customize the point at which the built-in speakerphone switches from transmit to receive; a boon for noisy environments. The display telephones also have a contrast control for the LCD display.

Soft Key mode (DSX) is set at PRG 15-02-60 : Mode2 and can be entered by depressing Center key when the terminal is idle. Refer Navigation key feature section.

Softkey Disable

Softkey indication on LCD or related key operations can be configured not to work by each terminal base.

Conditions

- If a feature is restricted by an extension Class of Service, though the Softkey menu still displays the option, the user cannot set the feature.
- The feature must be active to change the volume (e.g., telephone must be ringing, page being heard, etc.).
- To use Softkey Disable function, PRG 15-02-71 has to set "1 = Disable" at associated terminal. And this works only when PRG 15-02-60 is set to "0 = standard mode".
- When set Softkey Disabled, Softkey indications on LCD are not displayed, and related SoftKeys are not operational. Also Cursor keys are all disabled.
- Depend on the feature Softkey indication may appear, however Softkey operation does not work.

Default Settings

Display shows time/date/extension/Softkey menu information.

System Availability

Terminals

All Multiline Terminals with Display

Required Component(s)

None

Related Features

Directory Dialing

Volume Controls

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-11-13	Service Code Setup (for Setup/Entry Operation) - Display Language Selection for Multiline Terminal	0~9, *, # Maximum of 8 digit	678
15-02-01	Multiline Telephone Basic Data Setup - Display Language Selection	1 = English 2 = German 3 = French 4 = Italian 5 = Spanish 6 = Dutch 7 = Portuguese 8 = Norwegian 9 = Danish 10 = Swedish 11 = Turkish 12 = Latin American Spanish 13 = Romanian 14 = Polish 16 = Russian	1
15-02-60	Multiline Telephone Basic Data Setup - Soft Key/Navigation key Mode	0 = Standard Mode 1 = Advanced Mode1 2 = Advanced Mode2	2
15-02-71	Multiline Telephone Basic Data Setup - Disable Softkey	0 = Off 1 = On	0

Operation

None

Station Hunt

Description

After calling a busy extension, a call immediately hunts to the next available member of the Hunt Group (Department Group). The caller does not have to hang up and place another Intercom call if the first extension called is unavailable.

Conditions

- If required, use this option to change the Department Step Calling Single Digit Service Code (default 2).
- A function key for Department Step Calling can be assigned (code 36).
- In PRG 20-08-12, enable (1) or disable (0) an extension user ability to use Department Step Calling.

Default Settings

Disabled

System Availability

Terminals

All Terminals

Required Component(s)

None

Related Features

Department Calling

Department Step Calling

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-16-01	Single Digit Service Code Setup - Step Call	0~9, *, # Maximum of 1 digit	2
16-01-03	Department Group Basic Data Setup - Department Routing when Busy (Auto Step Call)	0 = Normal (Intercom caller hears busy tone.) 1 = Circular (Intercom caller routes to an idle group member.)	0
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1

Program No.	Program Name	Input Data	Default
20-09-07	Class of Service Options (Incoming Call Service) - Call Queuing	0 = Off (Calls are not queued.) 1 = On (Calls are queued.)	COS 01 ~ 15 = 0
20-13-06	Class of Service Options (Supplementary Service) - Automatic Off-Hook Signaling (Automatic Override)	0 = Off (manually) 1 = On (automatically)	COS 01 ~ 15 = 1

Operation

To make a Step Call:

1. Place a call to a busy extension.

Station Message Detail Recording

Description

Station Message Detail Recording (SMDR) provides a record of the system trunk calls and internal calls. Typically, the record outputs to a customer-provided printer, terminal or SMDR data collection device. SMDR allows you to monitor the usage at each extension and trunk. This makes charge-back and traffic management easier.

SMDR provides the following options:

Trunks:

- **Abandoned Call Reporting**

The SMDR report includes calls that rang into the system but were unanswered (i.e., abandoned). SMDR can include all abandoned calls or only those abandoned calls that rang longer than the specified duration. The Abandoned Call Report helps you keep track of lost business.

- **Blocked Call Reporting**

When Toll Restriction blocks a call, you can have SMDR print the blocked call information. Or, you can have SMDR exclude these types of calls. With Blocked Call Reporting, you can better customize Toll Restriction for the site application.

- **Customized Date Format**

The SMDR header can show the report date in one of three formats: American, European or Japanese. Set the format for your preference.

- **Transferred Call Tracking**

SMDR shows each extension share of a transferred call. If an outside call is transferred among four extensions, SMDR shows how long each of the callers stayed on the call.

- **Data Call Tracking**

Data Call Tracking can log the system internal data calls. Since SMDR normally logs external (trunk) data calls, Data Call Tracking lets you get a complete picture of data terminal activity.

- **Digit Counting**

With Digit Counting, SMDR can selectively keep track of toll calls. For example, if the digit count is nine, SMDR does not include toll calls in the home area code. Digit Counting permits SMDR to include only the calls you want to monitor.

- **Digit Masking**

Digit Masking lets you X out portions of the number dialed on the SMDR report. A digit mask of seven, for example, masks out all exchange codes (NNXs) and local addresses. Digit Masking makes it easier to keep track of calling patterns, without having to interpret each individual number. You can also use Digit Masking to block out access and security codes.

- **Duration Monitoring**

SMDR can include calls of any duration, or only those that last longer than the interval you specify. If you want to keep track of all trunk activity, use a short duration. To keep track of only significant usage, use a longer duration.

- **Extension Exclusion**

You can selectively exclude extensions from the SMDR report. This ensures privacy for high-profile callers. For example, the company attorney negotiating a merger may not want his calls to show up on an in-house report.

- **PBX Call Reporting**

If your system is behind a PBX, you can have SMDR monitor all traffic into the PBX or just calls placed over PBX trunks. The SMDR record can include all PBX calls (including calls to PBX extensions) or just calls that include the PBX trunk access code.

- **Trunk Exclusion**

Use Trunk Exclusion to exclude certain trunks not subject to per-call charges (like WATS lines) from the SMDR report. This makes call accounting easier, since you review only those calls with variable costs.

- **Usage Summaries**

SMDR can automatically print daily, weekly and monthly call activity summaries. Each summary includes the total number of regular trunk calls and ISDN trunk calls, and the costs for each type. The daily report prints every day at midnight. The weekly report prints every Sunday night at midnight. The monthly report prints at midnight on the last day of the month.

- **Extension Name or Number**

The SMDR report can include an extension name or extension number. Choose the method that makes it easier for you to track call usage.

Extension:

- **Answered Calls**

SMDR records the calling extension and the extension number or name of who was called.

- **Held Calls**

SMDR records the extension numbers of the party on hold and the held party. The duration of the call is recorded as the time both parties are connected until one party becomes idle. Duration Time starts when both sides are connected until one side becomes idle.

- **2nd Call Made While 1st is on Hold**

When party A puts party B on hold and then dials party C, SMDR records the time party A and C talk until one party goes idle. If party B is picked up from hold and then either party goes idle, SMDR creates a 2nd record for that call.

- **Transferred Calls**

Screened Transfer - If party A calls Party B and then transfers B to party C after talking to party C, there are 2 records at this point: 1 for the A to B call and 1 for the A to C call. A 3rd record is printed once party B or C goes idle.

Unscreened Transfer - If party A calls Party B and transfers to party C without talking to party C, there is 1 record at this point. A 2nd record is printed once party B or C goes idle.

- **Mobile Extension**

An internal call to a mobile extension generates two records:

- Internal extension to mobile extension.
- Mobile extension call to trunk call.



The same is true if a mobile user calls in from outside the system and gets a dial tone from the mobile extension and makes an internal or trunk call.

- **Conferences**

If party A establishes a conference with party B and C and then drops out, a record will print for party A to B and party A to C. A 3rd record will print when either B or C goes idle. Calls are printed in the order they leave the conference.

- **Virtual Extension**

SMDR records the extension that the virtual extension resides on.

- **Answering Paging**

SMDR will record the Extension that answered the Page.

- **Group call**

SMDR will record the Extension that answered the Group call.

- **Break-In**

SMDR won't record Break-in.

- **Room Monitor**

SMDR won't record Room Monitor.

- **Retrieving parked calls**

SMDR prints the parked extension in the STATION column and the extension that retrieved the park in the DIALLED column.

(The LAN port only provides information through LAN-capable programs, such as HyperTerminal. Printing of the SMDR information must be done from within that program.)

SMDR Enhanced for Caller ID

The SMDR output is enhanced to include up to 16 or 24 characters of the Caller ID name information (depending on the view option selected in PRG 35-02-18). You can select to display the Caller ID number or name or the DID number. If you want to display the Caller Name in the DIALLED NO./CLI and ACCOUNT area, select 2 in the updated PRG 35-02-15 and 1 in PRG 35-02-17.

If the Caller ID name is not received, the area for Caller ID Name is left blank.

Sample SMDR Report

For example, with PRG 35-01-08 = 0 (Format for NA), PRG 35-01-14 = 1 (Date) and PRG 35-02-17 = 1 (Caller ID Name), if a call is received with the Caller ID Name of NECPlatforms Corporation (24 characters), the following SMDR record is displayed:

CLASS	TIME	DATE	LINE	DURATION	STATION	DIALLED No./CLI	ACCOUNT
POT	10:52	12/09	002	00:00:10	2001	2142623801	08754
PIN	10:52	12/09	001	00:00:20	2017	2142623802	NECPlatforms Corp.
PIN	10:53	12/09	002			2142623801	NO ANSWER

If PRG 35-02-18 = 1 (Caller ID Name Output Method) is set to line feed, the SMDR displays as follows:

CLASS	TIME	DATE	LINE	DURATION	STATION	DIALLED No./CLI	ACCOUNT
POT	10:52	12/09	002	00:00:10	2001	2142623801	08754
PIN	10:52	12/09	001	00:00:20	2017	2142623802	NECPlatforms Corp.
NEXT NECinfrontia Corp.							
PIN	10:53	12/09	002			2142623801	NO ANSWER

For Intercom call setup, with PRG 15-01-14 = 1 (SMDR Output for placed Intercom Calls) and PRG 15-01-15 = 1 (SMDR Output for answered Intercom Calls), in this example Extension 201 calls 202 and answered the call. Then 201 Put 202 on hold and call 203. 203 then answered the 201 call. Then 201 transferred the call and 202 and 203 is connected, displays as follows:

CLASS	TIME	LINE	DURATION	STATION	DIALLED No./CLI	RD/COST	ACCOUNT
01 ICM	08:39		00:03:15	201	202		
02 ICM	08:41		00:01:05	201	203		
03 ICM	08:42		00:07:55	202	203		

Table 1-64 SMDR Report Definitions

Report Headings	Definitions
Call Record Number	SMDR record number (consecutive)
CLASS	Type of call (see Class Definitions below)
TIME	Time call placed or answered. (For Transferred calls, shows time user picked up Transfer.)
DATE	Date the call was made (PRG 35-02-14= 1). For Extension Call this area will be empty.
LINE	Trunk number used for call. For Extension Call this area will be empty
DURATION	The time the call lasted. (For Transferred calls, shows how long user was on call after answering the Transfer.)
STATION	Extension number of call owner (i.e., extension that first placed or answered call) (For Transferred calls, there can be more than one owner - depending on how many extensions shared the call.)
DIALLED No./CLI	For outgoing calls, the number dialed or, for incoming calls, the Caller ID information

Report Headings	Definitions
RD/COST	Shows the cost (PRG 35-01-08 = 1)  This area will be empty in Extension Call
ACCOUNT	Account Code number entered by extension user For Extension Call this area will be empty.
Class Definitions	
POT	Outgoing trunk call
ICM	Extension Call
POTA	Outgoing trunk call placed using Toll Restriction Override
PIN	Incoming trunk calls
POTP	Outgoing trunk call with Personal Code
POTW	Outgoing trunk call by using Walking Toll Restriction
ALB	All lines in group are busy (group number follows TIME field)
BRD	Call blocked due to Toll Restriction
BFL	SMDR Buffer Full
NEXT	Calling Party Name for previous record
PTRS	Transferred call (Incoming/Outgoing)
IVIN	BRI/PRI inbound trunk call
IVOT	Outgoing BRI/PRI trunk call
IVOTP	Outgoing BRI/PRI trunk call with Personal Code
ITRS	Transferred BRI/PRI call (Incoming/Outgoing)
SDTA	Internal Data Call
IDIN	Incoming Tie Line call
IDOT	Outgoing Tie Line call
SAD	Outgoing call from sensor
WAD	Outgoing call form remote inspection

Table 1-65 SMDR Report Format with PRG 35-02-14 Set to '0'

Character Position	Field Definition
Header Line 1	
1~60	Spaces
61~70	MM/DD/YYYY
71	Space
72~75	PAGE
76	Space
77~79	Report page number (e.g., 001)
CR & LF	Carriage return and line feed
Header Line 2	
1~5	CLASS
6	Space
7~10	TIME
11~14	Spaces
15~18	LINE
19~22	Spaces

Character Position	Field Definition
23~30	DURATION
31~32	Spaces
33~39	STATION
40~44	Spaces
45~51	DIALLED
52	Space
53~59	No./CLI
60~63	Spaces
64~70	ACCOUNT
CR & LF	Carriage return and line feed
LF	Line feed
SMDR Record	
1~4	Call type (e.g., POT for outgoing)
5	Space
6~10	Time in 24 hour clock (HH:MM)
11	Space
12~21	LINE
22	Space
23~30	Call Duration (HH:MM:SS)
31	Space
32~41	Station number or name
42	Space
43~62	Number dialed (20 digits maximum)
63	Space
64~79	Account number or NO ANSWER

Table 1-66 SMDR Report Format with PRG 35-02-14 Set to '1'

Character Position	Field Definition
Header Line 1	
1~60	Spaces
61~70	MM/DD/YYYY
71	Space
72~75	PAGE
76	Space
77~79	Report page number (e.g., 001)
CR & LF	Carriage return and line feed
Header Line 2	
1~5	CLASS
6	Space
7~10	TIME
11	Spaces
12~15	DATE
16~17	Spaces

Character Position	Field Definition
18~21	LINE
22	Space
23~30	DURATION
31~32	Spaces
33~39	STATION
40~44	Spaces
45~51	DIALLED
52	Space
53~59	No./CLI
60~63	Spaces
64~70	ACCOUNT
CR & LF	Carriage return and line feed
LF	Line feed
SMDR Record	
1~4	Call type (e.g., POT for outgoing)
5	Space
6~10	Time in 24 hour clock (HH:MM)
11	Space
12~16	DATE
17	Space
18~21	LINE
22	Space
23~30	Call Duration (HH:MM:SS)
31	Space
32~41	Station number or name
42	Space
43~62	Number dialed (20 digits maximum)
63	Space
64~79	Account number or NO ANSWER

Table 1-67 SMDR Summary Report

OUTGOING CALL/COST SUMMARY

FOR DAY OF nn/nn/nn

TOTAL NO. OF OUTGOING PSTN CALLS: 0

TOTAL NO. OF OUTGOING ISDN CALLS: 0

NO. OF OUTGOING PSTN CALLS COSTED: 0 COST: 0

NO. OF OUTGOING ISDN CALLS COSTED: 0 COST: 0

OUTGOING CALL/COST

SUMMARY FOR WEEK ENDING nn/nn/nn

TOTAL NO. OF OUTGOING PSTN CALLS: 49

TOTAL NO. OF OUTGOING ISDN CALLS: 0

	NO. OF OUTGOING PSTN CALLS COSTED: 0 COST: 0
	NO. OF OUTGOING ISDN CALLS COSTED: 0 COST: 0
OUTGOING CALL/COST SUMMARY	
FOR MONTH ENDING nn/nn/nn	
	TOTAL NO. OF OUTGOING PSTN CALLS: 49
	TOTAL NO. OF OUTGOING ISDN CALLS: 0
	NO. OF OUTGOING PSTN CALLS COSTED: 0 COST: 0
	NO. OF OUTGOING ISDN CALLS COSTED: 0 COST: 0

Conditions

- The SMDR call buffer stores up to 4000 calls.
Internal SMDR records are included in 4000 calls.
- When SMDR reports are enabled using the same port as the Traffic Reporting feature (example: 147), the SMDR blocks the Traffic reports. Unplug the cable and plug it back in to allow Traffic reports to print.
- SMDR requires a connection to the CPU LAN.
- If no answer is received, NO ANSWER is displayed regardless of the system programming for the Caller ID display option.
- The setting in PRG 35-02-18 works regardless of the entry in PRG 35-02-15 or 35-02-17.
- When PRG 35-02-18 is set to 1, the first and second lines are sometimes separated. When the buffer is full, the overflowed data may not be shown.
- The special characters used in the system cannot be output to the SMDR - they are converted to ().
- To use the PBX Call Reporting option, program system for behind PBX operation.
- SMDR can record/print Internal calls.
- Terminal that has a tandem setting will not be included in Internal SMDR feature.
- Internal SMDR is not included in Summary Report. (PRG 35-02-04/05/06)
- The SMDR call records will be buffered when the system cannot Output the SMDR information due to the lost connection.
- When the connection is active, the SMDR information will be immediately output and it will not be buffered.
- When the system is powered off, all current records in the buffer are deleted.
- When the call record reaches 4000 calls and the buffer becomes full, then there is no record from the next call.
- When the buffer fills, the oldest record remains and the new record is counted as overflow records.
- A maximum of 10 devices can simultaneously collect SMDR.
- Only one SMDR buffer exists in the SL2100 even if multiple SMDR collection devices are being used.
- SMDR does not buffer for devices that are disconnected. For example, if two SMDR collection devices are installed and collecting SMDR output and one device is disconnected, SMDR continues sending output to the remaining connected device.

Default Settings

Disabled

System Availability

Terminals

All Stations

Required Component(s)

None

Related Features

PBX Compatibility/Behind PBX

Traffic Reports

Guide to Feature Programming

The programs listed below indicate the most commonly used programs required for this feature. The programs are listed in the order that the installer should follow. Refer to the PCPro wizards for further detailed programming.

- When a * is listed next to the Program Number it indicates a program that **MUST** be set (from a default state) for this feature to be enabled.

Program No.	Program Name	Input Data	Default
10-20-01 *	LAN Setup for External Equipment - TCP Port	Available values are: 0 ~ 65535	External Device 1 (CTI Server) = 0 External Device 2 (ACD-MIS) = 0 External Device 5 (SMDR Output) = 0 External Device 6 (DIM Output) = 0 External Device 8 (UC Web Application) = 0 External Device 9 (1st Party CTI) = 0 External Device 11 (O&M Server) = 8010 External Device 12 (Traffic Report Output) = 0 External Device 13 (Room Data Output for Hotel Service) = 0 External Device 14 (IP-DECT Directory Access) = 0 External Device 15 (Presence) = 0
14-01-06	Basic Trunk Data Setup - SMDR Printout	0 = No (trunk will not be reported in the SMDR print out.) 1 = Yes (trunk will be reported in the SMDR print out.)	1

Program No.	Program Name	Input Data	Default
15-01-03	Basic Extension Data Setup - SMDR Printout	0 = None (Station will not be reported in the SMDR print out.) 1 = Yes (Station will be reported in the SMDR print out.)	1
15-01-14	Basic Extension Data Setup - SMDR output of made intercom calls	0 = Disable 1 = Enable	0
15-01-15	Basic Extension Data Setup - SMDR output of answered intercom calls	0 = Disable 1 = Enable	0
35-01-01	SMDR Options - Output Port Type	0 = No Setting (SMDR disabled) 3 = LAN (SMDR enabled and sent out of the LAN port.)	3
35-02-21	SMDR Output Options - S-Point Terminal Number	0 = MSN Number 1 = Extension Number	0
10-12-01	CPU Network Setup - IP Address	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	192.168.0.10
10-12-02	CPU Network Setup - Subnet Mask	128.0.0.0 192.0.0.0 224.0.0.0 240.0.0.0 248.0.0.0 252.0.0.0 254.0.0.0 255.0.0.0 255.128.0.0 255.192.0.0 255.224.0.0 255.240.0.0 255.248.0.0 255.252.0.0 255.254.0.0 255.255.0.0 255.255.128.0 255.255.192.0 255.255.224.0 255.255.240.0 255.255.248.0 255.255.252.0 255.255.254.0 255.255.255.0 255.255.255.128 255.255.255.192 255.255.255.224 255.255.255.240 255.255.255.248 255.255.255.252 255.255.255.254 255.255.255.255	255.255.255.0
10-12-03	CPU Network Setup - Default Gateway	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0
10-12-09	CPU Network Setup - IP Address (VoIPDB)	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	172.16.0.10
10-12-10	CPU Network Setup - Subnet Mask (VoIPDB)	128.0.0.0 192.0.0.0 224.0.0.0 240.0.0.0 248.0.0.0 252.0.0.0 254.0.0.0 255.0.0.0 255.128.0.0 255.192.0.0 255.224.0.0 255.240.0.0 255.248.0.0 255.252.0.0 255.254.0.0 255.255.0.0 255.255.128.0 255.255.192.0 255.255.224.0 255.255.240.0 255.255.248.0 255.255.252.0 255.255.254.0 255.255.255.0 255.255.255.128 255.255.255.192 255.255.255.224 255.255.255.240 255.255.255.248 255.255.255.252 255.255.255.254 255.255.255.255	Refer to the programming manual for all the possible valid subnet mask entries. (default = 255.255.0.0)
10-20-03	LAN Setup for External Equipment - Keep Alive Time	1 ~ 255 seconds	30

Program No.	Program Name	Input Data	Default
20-07-18	Class of Service Options (Administrator Level) - SMDR Printout Accumulated Extension Data	0 = Off 1 = On	COS1 ~ 14/COS15 = 1
20-07-19	Class of Service Options (Administrator Level) - SMDR Printout Department Group (STG) Data	0 = Off 1 = On	COS1 ~ 14/COS15 = 1
20-13-20	Class of Service Options (Supplementary Service) - Account Code/Toll Restriction Operator Alert (Restricted Operation Transfer)	0 = Off (Call restricted.) 1 = On (Call routed to operator.)	COS 01 ~ 15 = 0
20-13-36	Class of Service Options (Supplementary Service) - Call Duration Timer Display	0 = Off 1 = On	COS 01 ~ 15 = 1
35-01-03	SMDR Options - Header Language	0 = English 1 = German 2 = French 3 = Italian 4 = Spanish	0
35-01-04	SMDR Options - Omit Digits	0 ~ 24 (0 = Not applied)	0
35-01-05	SMDR Options - Minimum Digits	0 ~ 24 (0 = Not applied)	0
35-01-06	SMDR Options - Minimum Call Duration	0 ~ 65535 seconds (0 = All)	0
35-01-07	SMDR Options - Minimum Ring Time (For Incoming Calls)	0 ~ 65535 seconds (0 = All)	0
35-01-08	SMDR Options - Format Selection	0 = Format1 Type (North America) 1 = Format2 Type (Overseas)	0
35-02-01	SMDR Output Options - Toll Restricted Call	0 = Not Displayed 1 = Displayed	1
35-02-02	SMDR Output Options - PBX Calls	0 = Not Displayed 1 = Displayed	1
35-02-03	SMDR Output Options - Trunk Number or Name	0 = Name 1 = Number	1
35-02-04	SMDR Output Options - Summary (Daily)	0 = Not Displayed 1 = Displayed	1
35-02-05	SMDR Output Options - Summary (Weekly)	0 = Not Displayed 1 = Displayed	1
35-02-06	SMDR Output Options - Summary (Monthly)	0 = Not Displayed 1 = Displayed	1
35-02-07	SMDR Output Options - Toll Charge Cost	0 = Not Displayed 1 = Displayed	1
35-02-08	SMDR Output Options - Incoming Call	0 = Not Displayed 1 = Displayed	1
35-02-09	SMDR Output Options - Extension Number or Name	0 = Name 1 = Number	1
35-02-10	SMDR Output Options - All Lines Busy (ALB) Output	0 = Not Displayed 1 = Displayed	0
35-02-12	SMDR Output Options - DID Table Name Output	0 = Not Displayed 1 = Displayed	0
35-02-13	SMDR Output Options - CLI Output When DID to Trunk	0 = Not Displayed 1 = Displayed	0
35-02-14	SMDR Output Options - Date	0 = Not Displayed 1 = Displayed	0
35-02-15	SMDR Output Options - CLI/DID Number Switching	0 = CLI (CLIP) 1 = DID Calling Number 2 = Calling Party Name	0
35-02-16	SMDR Output Options - Trunk Name or Received Dialed Number	0 = Trunk Port Name 1 = Received Dialed Number 2 = Both 3 = Both (8digits)	0

Program No.	Program Name	Input Data	Default
35-02-17	SMDR Output Options - Print Account Code or Caller Name of Incoming Call	0 = ACC 1 = CNAME	0
35-02-18	SMDR Output Options - Print Mode for Caller Name of Incoming Call	0 = Normal 1 = Line Feed	0
35-02-19	SMDR Output Options - Dialed Number Output Format	0 = Display from the first digit 1 = Display from the last digit	0
35-02-20	SMDR Output Options - External Information CFW Mode	0 = Transfer Information 1 = Incoming Information	0
14-04-01	Behind PBX Setup - Type of Connection	0 = Stand Alone (Trunk) 1 = Behind PBX (PBX) 3 = CTX assume 9	0
16-02-01	Department Group Assignment for Extensions	1 - 50	1
80-05-01	Date Format for SMDR and System - Date Format Needs to be set to European Format	0 = American Format (Month / Day / Year) 1 = Japanese Format (Year / Month / Day) 2 = European Format (Day / Month / Year)	2

SMDR flowcharts are located on the following pages.

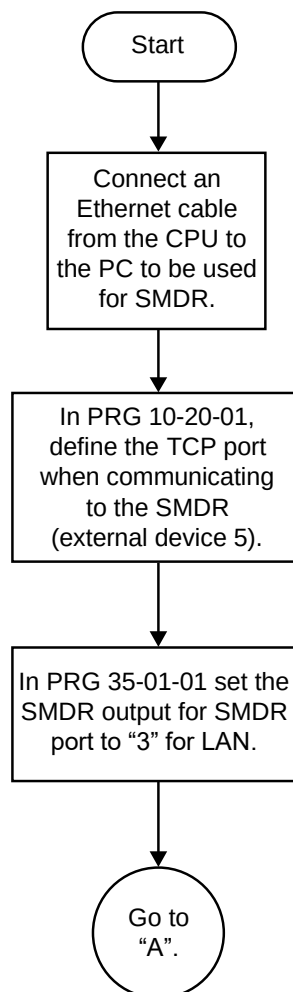


Figure 1-48 SMDR with a CPU Connection Ethernet

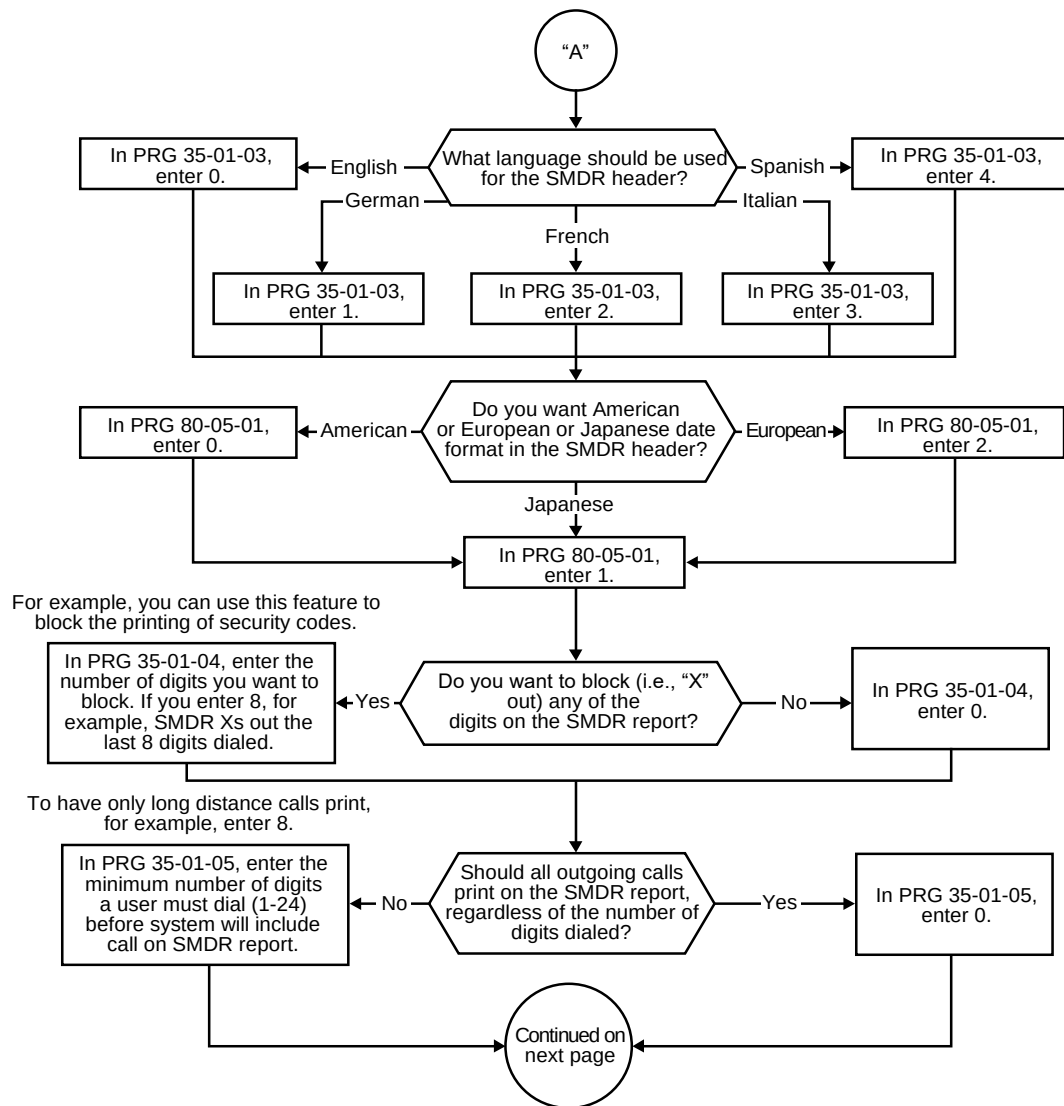


Figure 1-49 SMDR Flowchart

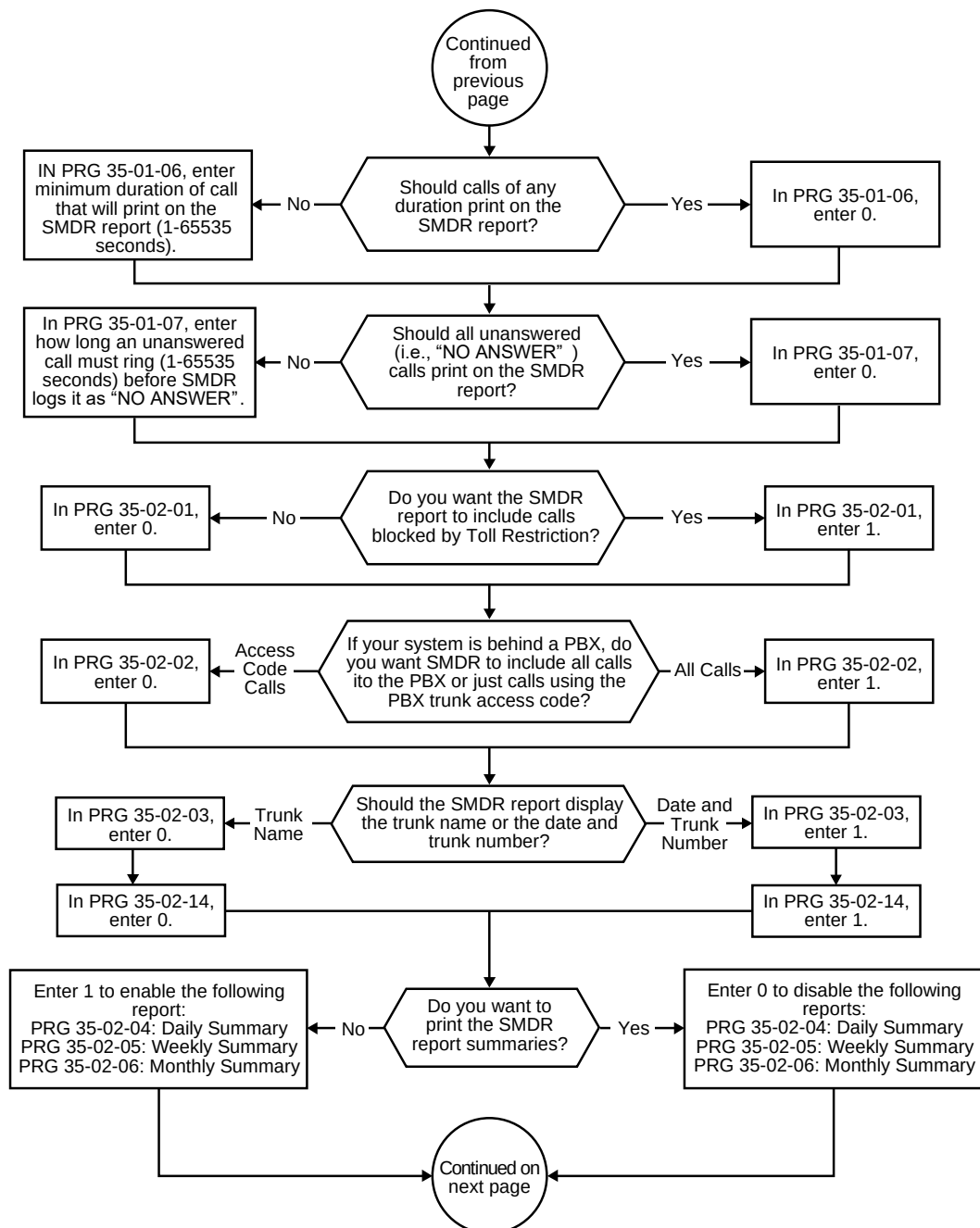


Figure 1-50 SMDR Flowchart (Continued)

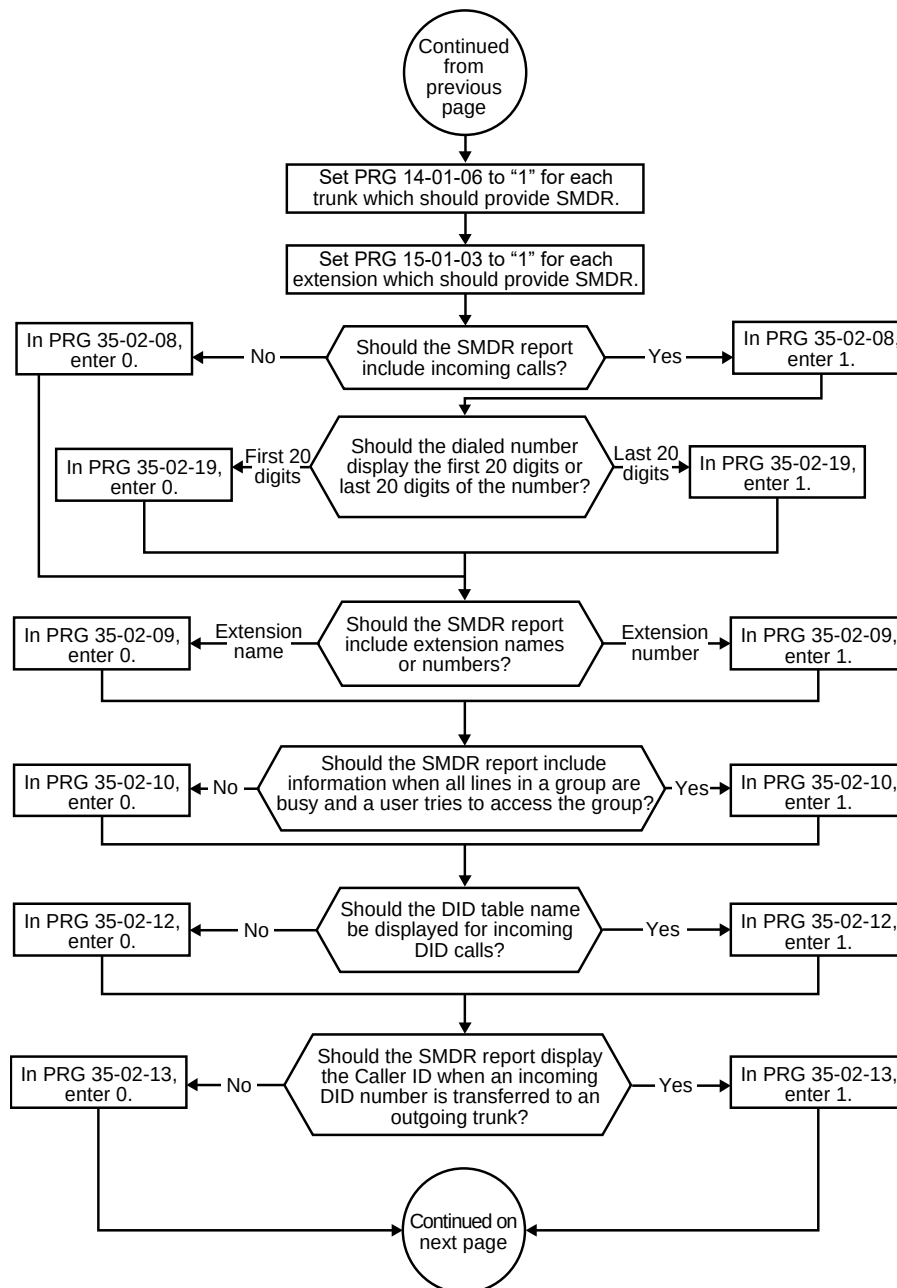


Figure 1-51 SMDR Flowchart (Continued)

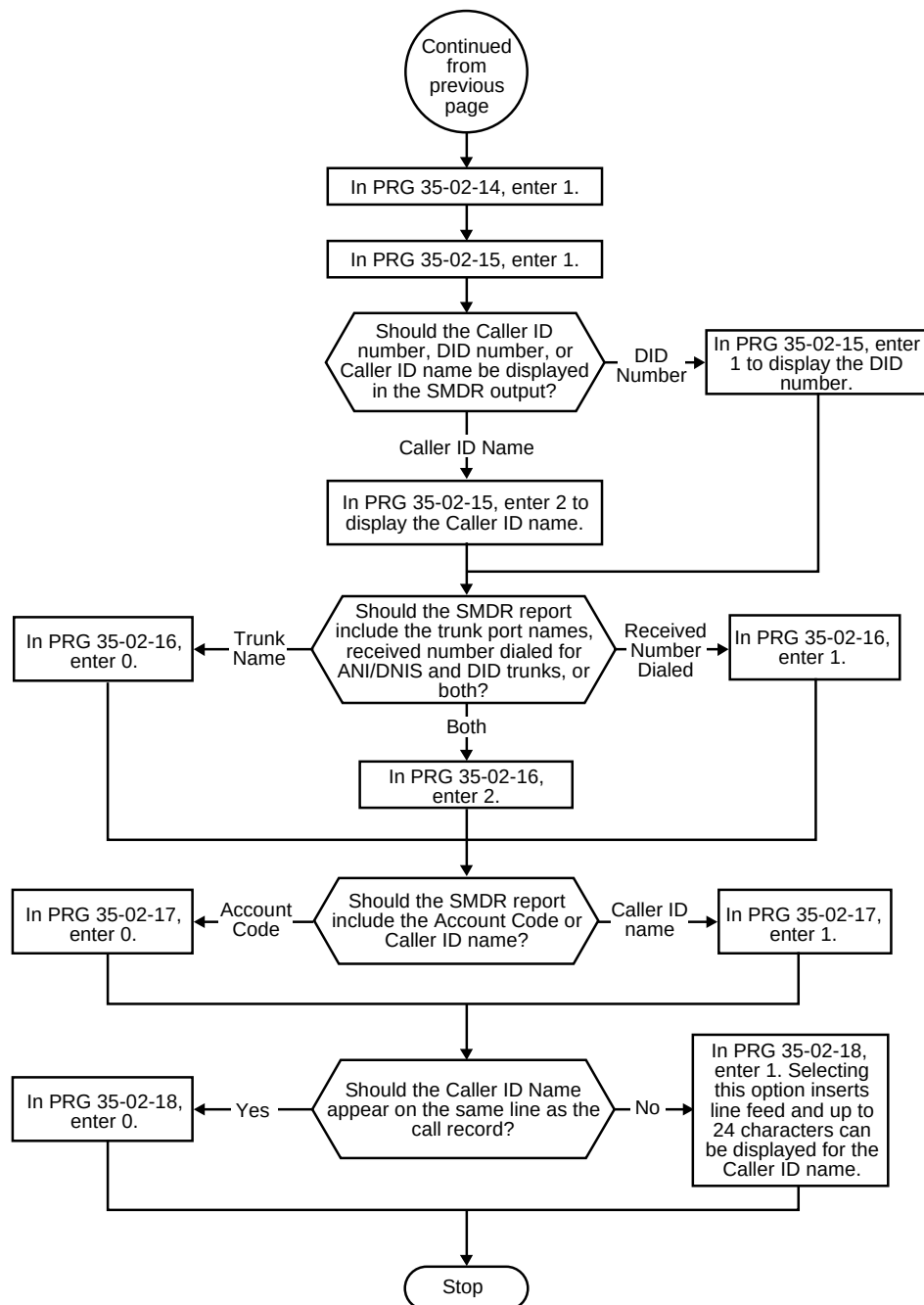


Figure 1-52 SMDR Flowchart (Continued)

Operation

Once installed and programmed, SMDR operation is automatic.

Station Name Assignment - User Programmable

Description

This feature allows a user to program the Station Name for their telephone extension or any extension within the system. The name is displayed on the Multiline Terminal LCD when an intercom call is placed.

Conditions

- Display telephones use extension names for Directory Dialing.
- Single Line Terminal extensions cannot program names.

Default Settings

Enabled

System Availability

Terminals

All display Multiline Terminals

Required Component(s)

None

Related Features

Directory Dialing

Name Storing

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-11-22	Service Code Setup (for Setup/Entry Operation) - Extension Name Programming	0~9, *, # Maximum of 8 digit	700
15-01-01	Basic Extension Data Setup - Extension Name	Up to 12 Characters	No Setting
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.

Program No.	Program Name	Input Data	Default
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-13-21	Class of Service Options (Supplementary Service) - Extension Name	0 = Off 1 = On	COS 01 ~ 15 = 1

Operation

To program your extension name:

1. Press **Speaker** key.
2. Dial **700**.
- OR -
Press the **Extension Name Change** key (PRG 15-07 or SC **751**: 55).
3. Press **Hold** key.
4. Enter the name. (Refer to [Table 1-61 Selectable Display Messaging Defaults \(2W Digital/IP Multiline Terminal\)](#).)



Your name can be up to 12 digits maximum.

5. Press **Hold** key.
6. Press **Speaker** key to hang up.

To program any extension name:

1. Press **Speaker** key.
2. Dial **700**.
- OR -
Press the **Extension Name Change** key (PRG 15-07 or SC **751**: 55).
3. Enter the extension number to be named.
4. Enter a name. (Refer to [Table 1-68 Keys for Entering Names](#).)



The name can have up to 12 digits maximum.

5. Press **Hold** key.

6. Press **Speaker** key to hang up.

Table 1-68 Keys for Entering Names

Use this keypad digit . . .	When you want to . . .
1	Enter characters: 1 @ [¥] ^ _ ` { } → ← Á Â Ã Ä Å Æ Ç È É Ê Ë Ì Í Î Ï
2	Enter characters: A-C, a-c, 2.
3	Enter characters: D-F, d-f, 3.
4	Enter characters: G-I, g-i, 4.
5	Enter characters: J-L, j-l, 5.
6	Enter characters: M-O, m-o, 6.
7	Enter characters: P-S, p-s, 7.
8	Enter characters: T-V, t-v, 8.
9	Enter characters: W-Z, w-z, 9.
0	Enter characters: 0 ! “ # \$ % & ' () ð ó ú â ã ä å æ ö ü α ε θ ß
*	Enter characters: * + , - . / : ; < = > ? π Σ σ Ω ∞ € £
#	# = Accepts an entry (only required if two letters on the same key are needed - ex: TOM). Pressing # again = Space. (In system programming mode, use the right arrow Softkey instead to accept and/or add a space.)
Clear/Back or DND (2W Digital/IP Multiline Terminal)	Clear the character entry one character at a time.
Flash	Clear all the entries from the point of the flashing cursor and to the right.

Station Relocation

Description

Station Relocation allows a station to be moved from one location to another, without having to reprogram the station data. The station features and extension number are the same after it is moved to the new location.

Conditions

- This feature can be used to swap or relocate multiline and Single Line Terminals.
- The destination extension must be idle. If the station is not idle, busy tone is heard.
- If the Extension Swap service code is dialed from an extension that does not have an extension swap password programmed, busy tone is heard.
- If the Extension Swap service code is dialed from an extension whose Class of Service does not allow Extension Data Swap, busy tone is heard.
- If the destination extension entered is not a valid extension, busy tone is heard.
- The following user setting data is relocated with the extension. All other user setting data is either not relocated or cleared.
 - DND
 - Call Forwarding
 - Memo Dial
 - Last Number Dial History
 - Saved Number Dial
 - Incoming History
 - Mute LED Status
 - VM MW LED Status

Refer to the Programming section in this feature for system programs that are swapped.

Default Settings

None

System Availability

Terminals

All Multiline Terminals and Single Line Terminals

Required Component(s)

None

Related Features

None

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-15-12	Service Code Setup, Administrative (for Special Access) - Extension Data Swap	0~9, *, # Maximum of 8 digit	No Setting
20-13-42	Class of Service Options (Supplementary Service) - Extension Data Swap Enabling	0 = Off 1 = On	COS 01 ~ 15 = 1
92-05-01	Extension Data Swap Password - Password	Fixed four digits (No setting at default)	No Setting

The following programs are swapped when Station Relocation is used:

- PRG 11-02 Extension Numbering
- PRG 12-05 Night Mode Group Assignment for Extensions
- PRG 13-03 Speed Dialing Group Assignment for Extensions
- PRG 15-01 Basic Extension Data Setup
- PRG 15-02 Multiline Terminal Basic Data Setup
- PRG 15-03 Single Line Terminal Basic Data Setup
- PRG 15-06 Trunk Access Map for Extensions
- PRG 15-07 Programmable Function Keys
- PRG 15-08 Incoming Virtual Extension Ring Tone Setup
- PRG 15-09 Virtual Extension Ring Assignment
- PRG 15-10 Incoming Virtual Extension Ring Tone Order Setup
- PRG 15-11 Virtual Extension Delayed Ring Assignment
- PRG 15-12 Conversation Recording Destination for Extensions
- PRG 15-14 Programmable One-Touch Keys
- PRG 15-20 LCD Line Key Name Assignment
- PRG 16-02 Department Group Assignment for Extensions
- PRG 20-06 Class of Service for Extensions
- PRG 21-02 Trunk Group Routing for Extensions
- PRG 21-04 Toll Restriction Class for Extensions
- PRG 21-07 Toll Restriction Override Password Setup
- PRG 21-10 Dial Block Restriction Class Per Extension
- PRG 21-11 Extension Ringdown (Hotline) Assignment
- PRG 21-13 ISDN Calling Party Number Setup for Extensions
- PRG 21-15 Individual Trunk Group Routing for Extensions
- PRG 21-19 IP Trunk (SIP) Calling Party Number Setup for Extension
- PRG 23-02 Call Pickup Groups
- PRG 23-03 Universal Answer/Auto Answer
- PRG 23-04 Ringing Line Preference for Virtual Extensions
- PRG 24-03 Park Group
- PRG 26-04 ARS Class of Service
- PRG 30-02 DSS Console Extension Assignment
- PRG 31-02 Internal Paging Group Assignment
- PRG 41-17 ACD Login Mode Setup
- PRG 42-02 Hotel/Motel Telephone Setup

Operation

To exchange two terminals:

1. Pick up the handset or press **Speaker** key.
2. Dial the Extension Data Swap Service Code - not assigned at default (PRG 11-15-12).
3. Dial the Extension Data Swap Password - not assigned at default (PRG 92-05-01).
4. Dial the extension to be swapped with or relocated to.
5. When successfully completed, confirmation tone is heard and the display shows completed.
6. Press **Speaker** key twice to exit.

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System Caller Log

Description

With this feature, the user can check all caller logs one by one when they push the system caller log function key. User can check 200 caller logs in the System. All outside calls whether answered or not are stored in the System Call log.

Conditions

- The system caller log key is appearance function code. Set Program 20-07-10 to '1' in order to set key via service code.
- The latest log is shown first. The system call log is registered when a call ends. (The call log list is not the order of incoming call time.)
- The oldest log can be checked when the user presses the up soft-key or Volume UP Key.
- Only trunk Calls are displayed.(Program 15-02-34 settings are not used.)
- The Cursor key on Digital and IP Multiline Terminals can be used to control the scroll feature.
- One record in 'SYSTEM CALL HISTORY' function is registered relating to one external incoming call.
- If a notified calling number agrees in search of Common ABB (Program 13-04) area, the name of ABB is registered into the 'SYSTEM CALL HISTORY' record. Telephone Book is not applied.
- Internal Caller Logs are not displayed in this feature.
- Search and jump function are not supported.
- The Caller Logs are erased when system is reset.
- Only a user can operate the system caller log key.
- The system caller log is not supported on the DSS console function key.
- The called extension number is not displayed.
- If Program 20-02-18 times out, the LCD display changes to IDLE automatically.
- Missed calls are noted by an asterisk.

Default Settings

Enabled

System Availability

Terminals

All Station and Trunk Terminals

Required Component(s)

IP7[]-CPU-C1

Table 1-69 Station Application

Terminal Type	Applied/Not Applied	Remarks
IP7WW-12/24TXH-B1	Y	

Terminal Type	Applied/Not Applied	Remarks
IP7[]-8IPLD-C1	Y	
Digital Multiline Terminal	Y	
IP Multiline Terminal	Y	

Y = Applied, N = Not Applied

Table 1-70 Trunk Application

Trunk Type	Applied/Not Applied	Remarks
Analog Line	Y	*1
ISDN (BRI) Line	Y	*1
ISDN (PRI) Line	Y	*1
SIP Line	Y	*1
H.323 Line	Y	*1

Y = Applied, N = Not Applied, *1 = Trunk is registered to Caller Log.

Related Features

None

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
15-07-01	Programmable Function Keys	Line Key 1 ~ 32 0 ~ 99 (Normal Function Code 751 by default) *00 ~ *99 (Appearance Function Code) (Service Code 752 by default) *35 - System Call History	Refer to the Programming Manual for the default values.

Related System Data:

Program No.	Program Name	Input Data	Default
15-02-34	Multiline Telephone Basic Data Setup - Call Register Mode	0 = Trunk Mode 1 = Extension/Trunk Mode	0
15-07-01	Programmable Function Keys	Line Key 1 ~ 32 0 ~ 99 (Normal Function Code 751 by default) *00 ~ *99 (Appearance Function Code) (Service Code 752 by default) *35 - System Call History	Refer to the Programming Manual for the default values.

Operation

1. User pushes the System Caller Log key in idle mode.
2. User can check the all of the system caller log one by one.

001:			4002
	9-30	16:13	Jeff
↑	↓	Store	DEL

Figure 1-53 System Caller Log Example 1

3. User can page by pushing up and down key.

200:			4001
*	9-25	13:10	Bill
↑	↓	Store	DEL

Figure 1-54 System Caller Log Example 2

4. LED Operation:

On (Red)	Other Using
On (Green)	Using
Off	Not Using

Tandem Ringing

Description

Tandem Ringing allows an extension user to have two telephones with one telephone number. For example, extension 205 (the master telephone) sets Tandem Ringing with extension 206. When extension 205 receives an incoming call, both extensions 205 and 206 ring. Callers would dial the master extension number (extension 205 in this example). When either the master telephone or slave telephone is in use, the other telephone cannot be used for outgoing calls or incoming calls.

The Multiline Terminal must be paired with a Single Line Terminal. It cannot be paired with another Multiline Terminal or a SIP Terminal.

A Single Line Terminal can be the master of another Single Line Terminal but cannot be the master of a Multiline Terminal.

Conditions

- The slave telephone cannot call the master telephone.
- Extension numbers up to eight digits can be registered on the Tandem Ringing key. Extension numbers over as well cannot be registered.
- If Tandem Ringing is enabled, and one of the extensions is busy, no additional calls can be received or placed from either telephone.
- Tandem Ringing can support up to 64 pairs of Tandem Ringing extensions.
- The extension user which enables Tandem Ringing is the master, while the slave telephone is the extension entered by the user while setting up the feature.
- A slave telephone ignores the settings for DND and follows the master telephone settings instead.
- Voice Call is not supported on a Multiline Terminal with Tandem Ringing.
- Calls placed on Hold while Tandem Ringing is active, immediately recall if the handset is placed On-hook.
- A slave telephone ignores the settings for Ring Groups and follows the master telephone settings instead.
- To transfer calls between the two Tandem Ringing stations, a System Park Orbit should be used.
- A message waiting indication set for the master telephone only lights the message waiting LED on the master telephone.
- When tandem ringing is enabled the slave telephone extension cannot be called direct, calls must be placed to the master telephone.
- Tandem ringing is not supported for the following terminals: Operator Terminal, IP Terminal, Mobile Extension, and Voice Mail.

Default Settings

Disabled

System Availability

Terminals

Master Telephone:

TDM Multiline Terminals or Single Line Terminals

Slave Telephone:

Single Line Terminals

Required Component(s)

None

Related Features

Call Forwarding

Call Forwarding/Do Not Disturb Override

Direct Station Selection (DSS) Console

Do Not Disturb (DND)

Hold

Intercom

Message Waiting

Ring Groups

Multiple Trunk Types

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-11-41	Service Code Setup (for Setup/Entry Operation) - Tandem Ringing	0~9, *, # Maximum of 8 digit	No Setting
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
30-03-01	DSS Console Key Assignment		The DSS keys 001~060 of all DSS consoles = DSS/One-Touch key 101~160 The DSS keys 061~114 of all DSS consoles = No Setting

Operation

To set up Tandem Ringing:

1. Press **Speaker** key at the extension considered to be the master telephone (optional).

2. Dial **PRG 11-11-41**.
- OR -
Press the **Tandem Ringing** key (PRG 15-07 or SC **751**: 80).
3. Dial **1** to set the feature.
4. Enter the extension number to be considered the slave telephone (the telephone that rings when the master extension rings).
A confirmation tone is heard (if the speaker was used).
5. Press **Speaker** key to hang up (if the key is lit).
While the feature is active, if either the master or slave telephone is on a call, no calls can be placed or answered at the other extension until the busy telephone has hung up. Multiline Terminals indicate TANDEM IN USE in the display and Single Line Terminal users hear a busy signal when the handset is lifted.

To cancel Tandem Ringing:

1. Dial **PRG 11-11-41**.
- OR -
Press the **Tandem Ringing** key (PRG 15-07 or SC **751**: 80).
2. Dial **0** to cancel the feature.

Tandem Trunking (Unsupervised Conference)

Description

Tandem Trunking allows an extension user to join two outside callers in a Trunk-to-Trunk Conference. The extension user can then drop out of the call, leaving the trunks in an Unsupervised Conference. The extension user that established the conference is not part of the conversation. The conference continues until either outside party hangs up. The extension user that set up the conference can end the tandem call anytime.

The number of simultaneous conference calls is limited by the number of conference circuits in the system. Due to this fact, the maximum number of conference calls cannot exceed the limits defined below:

The CPU provides two blocks of 16 conference circuits, allowing each block to have any number of conferences with any number of internal or external parties conferenced as long as the total number of conference channels used does not exceed the block limit of 16.

Tandem Trunking could help an office manager, for example, put two outside sales people in touch. The office manager could:

- Answer a call from one salesperson
- Place a call to the second salesperson
- Set up the Trunk-to-Trunk Conference
- Drop out of the call

The office manager could terminate the conference anytime.

There are four methods for Tandem Trunking:

- Method A - Tandem Trunking from Conference
An extension user can set up Tandem Trunking (Unsupervised Conference) by dialing a 3-digit service code (#8) or a uniquely programmed Transfer key.
- Method B - Tandem Trunking with Transfer Key
This method allows an extension user to easily set up an Unsupervised Conference with a call they have placed on Hold. It uses a uniquely programmed Transfer key to set up a tandem call.
- Method C - Automatic Tandem Trunking on Hang Up
This method allows an extension user to easily set up an Unsupervised Conference without having to place the conference call on Hold. A Class of Service option is available, which allows or denies an extension user from automatically setting up a Conference/Tandem Trunking call after hanging up the telephone.
- Method D - Automatic Tandem Trunking Setup to Speed Dial Number
This method allows an extension user to easily set up an Unsupervised Conference with a call they have placed on Hold. A Class of Service option is available, which allows or denies an extension user from automatically setting up a Conference/Tandem Trunking call after hanging up the telephone.

Trunk Continue/Disconnect Codes Added

Software enhances the forced trunk release option with the Tandem Trunking and DISA features. Users can be allowed to use a Continue or Disconnect service code. The Continue service code extends the conversation a programmed time. If the user enters the Disconnect service code, the call is disconnected immediately.

EXAMPLE:

The following example indicates how a call is handled with the system programmed as follows:

- PRG 14-01-25: 1 (Continued/Discontinued Trunk-to-Trunk Conversation)
 - PRG 20-28-01: # (Conversation Continue Code)
 - PRG 20-28-02: No Setting (No Conversation Disconnect Code is entered)
 - PRG 20-28-03: 180 (Conversation Continue Time)
 - PRG 24-02-07: 600 (Only used with Trunk-to-Trunk Transfer Release Warning Tone)
 - PRG 24-02-10: 30 (Only used with Disconnect Trunk-to-Trunk)
 - PRG 25-07-07: 600 (Long Conversation Warning Tone Timer)
 - PRG 25-07-08: 30 (Long Conversation Disconnect)
1. An external call connects to an external number (either by transferring with Tandem Trunking or by DISA caller).
 2. After 10 minutes (Tandem Trunking = PRG 24-02-07 or DISA = PRG 25-07-07), a warning tone is heard and the user dials # (PRG 20-28-01) to extend the conversation.
 3. After three minutes (PRG 20-28-03), the warning tone is heard again. After 30 seconds (Tandem Trunking = PRG 24-02-10 or DISA = PRG 25-07-08), the call is disconnected.

Conditions

- Tandem Trunking requires loop start trunks with disconnect supervision.
- The maximum number of simultaneous trunk-to-trunk conferences allowed is determined by the Conference feature setup. Refer to the Programming section for this feature.
- The Continue/Disconnect code must be DTMF.
- With an analog trunk, the Continue/Disconnect code may work using DTMF sounds from the opposite side trunk. With an ISDN trunk, PRG 14-01-25 must be enabled to detect the Continue/Disconnect code.
- The Continue/Disconnect code is not accepted while dialing a trunk.
- Continue/Disconnect codes do not work if all receivers are busy.
- A trunk can be set up to automatically tandem trunk/forward to an outside telephone number or Speed Dial - System/Group Dialing bin.
- Other programmed options for incoming and outgoing calls can affect how calls are handled. Refer to Central Office Calls, Answering/Central Office Calls, Placing and check or program these options as needed.
- DISA calls also use the same Continue/Disconnect codes.
- After initiating an unsupervised conference, selecting one of the line keys allows you to barge-in to the conference.
- If the station that barges into an unsupervised conference hangs up, the conference is terminated.
- A Trunk-to-Trunk transfer can be established by the following operation:
 1. While talking to an outside party, press **Hold** key.
 2. Access a second outside line and dial the desired number.
 3. Press **Transfer** key to complete the Trunk-to-Trunk transfer.



*When the second call is to be transferred to another station (Not Trunk-to-Trunk), the user should press **Hold** key at step 3, then dial the desired station, and press **Transfer** key to complete the transfer.*

Default Settings

Disabled

System Availability

Terminals

Multiline Terminals and Single Line Terminals

Required Component(s)

None

Related Features

Call Forwarding, Off-Premise

Central Office Calls, Answering

Central Office Calls, Placing

Direct Inward System Access (DISA)

Guide to Feature Programming

Method A - Tandem Trunking from Conference

Program No.	Program Name	Input Data	Default
11-12-57	Service Code Setup (for Service Access) - Tandem Trunking	0~9, *, # Maximum of 8 digit	#8
14-01-04	Basic Trunk Data Setup - Transmit Gain Level for Conference and Transfer Calls	1 ~ 57 (-15.5 dB ~ +12.5 dB in 0.5 dB intervals)	32 (0 dB)
14-01-05	Basic Trunk Data Setup - Receive Gain Level for Conference and Transfer Calls	1 ~ 57 (-15.5 dB ~ +12.5 dB in 0.5 dB intervals)	32 (0 dB)
14-01-13	Basic Trunk Data Setup - Trunk-to-Trunk Transfer	0 = Disable (No) 1 = Enable (Yes)	1
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-07-11	Class of Service Options (Administrator Level) - Forced Trunk Disconnect (analog trunk only)	0 = Off 1 = On	COS1 ~ 14/COS15 = 1
20-11-14	Class of Service Options (Hold/Transfer Service) - Trunk-to-Trunk Transfer Restriction	0 = Off 1 = On	COS 01 ~ 15 = 0
20-11-21	Class of Service Options (Hold/Transfer Service) - Restriction for Tandem Trunking on Hang Up	0 = Allow 1 = Deny	COS 01 ~ 15 = 0
20-11-22	Class of Service Options (Hold/Transfer Service) - Restricted Unsupervised Conference	0 = Allow 1 = Deny	COS 01 ~ 15 = 0
20-13-08	Class of Service Options (Supplementary Service) - Conference	0 = Off 1 = On	COS 01 ~ 15 = 1

Program No.	Program Name	Input Data	Default
20-13-10	Class of Service Options (Supplementary Service) - Barge-In Monitor	0 = Speech 1 = Monitor	COS 01 ~ 15 = 0
24-02-07	System Options for Transfer - Trunk-to-Trunk Transfer Release Warning Tone	0 ~ 64800 seconds	1800
24-02-10	System Options for Transfer - Disconnect Trunk-to-Trunk	0 ~ 64800 seconds	0
25-07-07	System Timers for VRS/DISA - Long Conversation Warning Tone Time	0 ~ 64800 seconds	1800
25-07-08	System Timers for VRS/DISA - Long Conversation Disconnect Time	0 ~ 64800 seconds	30

Method B - Tandem Trunking with Transfer Key

Program No.	Program Name	Input Data	Default
14-01-04	Basic Trunk Data Setup - Transmit Gain Level for Conference and Transfer Calls	1 ~ 57 (-15.5 dB ~ +12.5 dB in 0.5 dB intervals)	32 (0 dB)
14-01-05	Basic Trunk Data Setup - Receive Gain Level for Conference and Transfer Calls	1 ~ 57 (-15.5 dB ~ +12.5 dB in 0.5 dB intervals)	32 (0 dB)
14-01-13	Basic Trunk Data Setup - Trunk-to-Trunk Transfer	0 = Disable (No) 1 = Enable (Yes)	1
14-02-12	Analog Trunk Data Setup - Detect Network Disconnect Signal	0 = Disable (No) 1 = Enable (Yes)	0
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-07-11	Class of Service Options (Administrator Level) - Forced Trunk Disconnect (analog trunk only)	0 = Off 1 = On	COS1 ~ 14/COS15 = 1
20-11-14	Class of Service Options (Hold/Transfer Service) - Trunk-to-Trunk Transfer Restriction	0 = Off 1 = On	COS 01 ~ 15 = 0
20-11-21	Class of Service Options (Hold/Transfer Service) - Restriction for Tandem Trunking on Hang Up	0 = Allow 1 = Deny	COS 01 ~ 15 = 0
20-13-10	Class of Service Options (Supplementary Service) - Barge-In Monitor	0 = Speech 1 = Monitor	COS 01 ~ 15 = 0
24-02-07	System Options for Transfer - Trunk-to-Trunk Transfer Release Warning Tone	0 ~ 64800 seconds	1800
24-02-10	System Options for Transfer - Disconnect Trunk-to-Trunk	0 ~ 64800 seconds	0
25-07-07	System Timers for VRS/DISA - Long Conversation Warning Tone Time	0 ~ 64800 seconds	1800
25-07-08	System Timers for VRS/DISA - Long Conversation Disconnect Time	0 ~ 64800 seconds	30
81-01-03	CO Initial Data Setup - Clear Signal (Open Loop) Detection Time	1 ~ 255 (5 ~ 1275 ms)	62 (310 ms)

Method C - Tandem Trunking on Hang up

Program No.	Program Name	Input Data	Default
14-01-04	Basic Trunk Data Setup - Transmit Gain Level for Conference and Transfer Calls	1 ~ 57 (-15.5 dB ~ +12.5 dB in 0.5 dB intervals)	32 (0 dB)
14-01-05	Basic Trunk Data Setup - Receive Gain Level for Conference and Transfer Calls	1 ~ 57 (-15.5 dB ~ +12.5 dB in 0.5 dB intervals)	32 (0 dB)
14-01-13	Basic Trunk Data Setup - Trunk-to-Trunk Transfer	0 = Disable (No) 1 = Enable (Yes)	1
14-02-12	Analog Trunk Data Setup - Detect Network Disconnect Signal	0 = Disable (No) 1 = Enable (Yes)	0
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-07-11	Class of Service Options (Administrator Level) - Forced Trunk Disconnect (analog trunk only)	0 = Off 1 = On	COS1 ~ 14/COS15 = 1
20-11-11	Class of Service Options (Hold/Transfer Service) - Automatic On-Hook Transfer	0 = Off 1 = On	COS 01 ~ 15 = 0
20-11-14	Class of Service Options (Hold/Transfer Service) - Trunk-to-Trunk Transfer Restriction	0 = Off 1 = On	COS 01 ~ 15 = 0
20-11-21	Class of Service Options (Hold/Transfer Service) - Restriction for Tandem Trunking on Hang Up	0 = Allow 1 = Deny	COS 01 ~ 15 = 0
24-02-07	System Options for Transfer - Trunk-to-Trunk Transfer Release Warning Tone	0 ~ 64800 seconds	1800
24-02-10	System Options for Transfer - Disconnect Trunk-to-Trunk	0 ~ 64800 seconds	0
25-07-07	System Timers for VRS/DISA - Long Conversation Warning Tone Time	0 ~ 64800 seconds	1800
25-07-08	System Timers for VRS/DISA - Long Conversation Disconnect Time	0 ~ 64800 seconds	30
81-01-03	CO Initial Data Setup - Clear Signal (Open Loop) Detection Time	1 ~ 255 (5 ~ 1275 ms)	62 (310 ms)

Method D - Tandem Trunking to Speed Dial Number

Program No.	Program Name	Input Data	Default
11-10-06	Service Code Setup (for System Administrator) - Set Trunk to Trunk Transfer per Trunk	0~9, *, # Maximum of 8 digit	733
11-10-07	Service Code Setup (for System Administrator) - Cancel Trunk to Trunk Transfer per Trunk	0~9, *, # Maximum of 8 digit	734
11-10-08	Service Code Setup (for System Administrator) - Set Trunk to Trunk Transfer Destination per Trunk	0~9, *, # Maximum of 8 digit	735
13-04-01	Speed Dialing Number and Name - Number	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
13-04-02	Speed Dialing Number and Name - Name	Maximum 12 Characters (Use dial pad to enter name)	No Setting

Program No.	Program Name	Input Data	Default
13-04-03	Speed Dialing Number and Name - Transfer Mode	0 = Not Used (Calls will not be routed based off a users caller ID.) 1 = Internal Dial (Calls will be routed to an internal number specified in PRG 13-04-04.) 2 = Incoming Ring Group (Calls will be routed to a ring group specified in PRG 13-04-04.) 3 = Remote Monitor (Used for the security feature and not Flexible Caller ID routing.)	0
13-04-04	Speed Dialing Number and Name - Transfer Destination Number	If Transfer mode is (Refer to 13-04-03) : 1 = Internal Dial Mode 1 ~ 9, 0, *, #, P, R, @ (Maximum 36 Characters) 2 = Incoming Ring Group 0 ~ 25 (IRG Number) P = Pause R = Recall @ = Additional Digits when using ISDN functionality 3 = Remote Monitor Dial (Up to 8 digits)	No Setting
13-04-05	Speed Dialing Number and Name - Incoming Ring Pattern	0 = Normal System Ring Pattern 1 ~ 4 = Tone Pattern 1 ~ 4 5 ~ 9 = Scale Pattern 1 ~ 5 10 ~ 13 = Tone Pattern 5 ~ 8	0
14-01-04	Basic Trunk Data Setup - Transmit Gain Level for Conference and Transfer Calls	1 ~ 57 (-15.5 dB ~ +12.5 dB in 0.5 dB intervals)	32 (0 dB)
14-01-05	Basic Trunk Data Setup - Receive Gain Level for Conference and Transfer Calls	1 ~ 57 (-15.5 dB ~ +12.5 dB in 0.5 dB intervals)	32 (0 dB)
14-01-13	Basic Trunk Data Setup - Trunk-to-Trunk Transfer	0 = Disable (No) 1 = Enable (Yes)	1
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-07-05	Class of Service Options (Administrator Level) - Set/Cancel Automatic Trunk-to-Trunk Transfer	0 = Off 1 = On	COS1 ~ 14/COS15 = 0
20-07-11	Class of Service Options (Administrator Level) - Forced Trunk Disconnect (analog trunk only)	0 = Off 1 = On	COS1 ~ 14/COS15 = 1
24-02-07	System Options for Transfer - Trunk-to-Trunk Transfer Release Warning Tone	0 ~ 64800 seconds	1800
24-02-10	System Options for Transfer - Disconnect Trunk-to-Trunk	0 ~ 64800 seconds	0
24-04-01	Automatic Trunk-to-Trunk Transfer Target Setup - Speed Dial Area Number	Trunk Port Number : 1 - 128 0 ~ 999	999
25-07-07	System Timers for VRS/DISA - Long Conversation Warning Tone Time	0 ~ 64800 seconds	1800
25-07-08	System Timers for VRS/DISA - Long Conversation Disconnect Time	0 ~ 64800 seconds	30

Trunk Disconnect Continue/Disconnect Codes

Program No.	Program Name	Input Data	Default
14-01-25	Basic Trunk Data Setup - Continued/Discontinued Trunk-to-Trunk Conversation	0 = Disable (No) 1 = Enable (Yes)	0
20-28-01	Trunk to Trunk Conversation - Conversation Continue Code	0 ~ 9, *, # (Set for one digit only)	No Setting
20-28-02	Trunk to Trunk Conversation - Conversation Disconnect Code	0 ~ 9, *, # (Set for one digit only)	No Setting
20-28-03	Trunk to Trunk Conversation - Conversation Continue Time	0 ~ 64800 seconds	0
24-02-07	System Options for Transfer - Trunk-to-Trunk Transfer Release Warning Tone	0 ~ 64800 seconds	1800
24-02-10	System Options for Transfer - Disconnect Trunk-to-Trunk	0 ~ 64800 seconds	0
25-07-07	System Timers for VRS/DISA - Long Conversation Warning Tone Time	0 ~ 64800 seconds	1800
25-07-08	System Timers for VRS/DISA - Long Conversation Disconnect Time	0 ~ 64800 seconds	30
80-01-02 (35)	Service Tone Setup - Basic Tone Number	0~33 0 = No Tone 33 = Default Time Slot	Refer to Programming Manual.

Operation

Method A - Tandem Trunking from Conference

To set up a Tandem Call:

1. Place or answer first trunk call.
2. Press the **Conf** softkey.
3. Place or answer second trunk call.
4. To set up the tandem call, press the **Conf** softkey.

 This sets up a Conference between you and both outside parties.

5. Press **Transfer** key.
- OR -
Press **Hold** key and dial **#8** or the service code set for Unsupervised Conference/Tandem Trunking in PRG 11-12-57.

 The line keys for the trunks blink green as long as the Unsupervised Conference continues.

To end the Tandem Call:

1. Press either flashing line key.

 The line keys light steadily (green). You can listen (i.e., monitor) to the call or rejoin the conversation, based on the setting in PRG 20-13-10.

2. Press **Speaker** key or hang up.



If PRG 20-13-10 is set to 0, the Conference ends and the line keys go out.



If PRG 20-13-10 is set to 1, to manually disconnect the Conference, Forced Trunk Disconnect (i.e., Press the line key + the service code set of Forced Trunk Disconnect in PRG 11-10-26) must be used by an extension other than the originating extension.

Method B - Tandem Trunking with Transfer Key

To set up a Tandem Call:

1. Place or answer first trunk call.
2. Press **Hold** key to place the first trunk call on hold.
3. Place a second trunk call.
4. Press **Transfer** key.



This sets up an Unsupervised Conference with both outside parties.



The line keys for the trunks light solid red.



To disconnect the Conference, use Forced Trunk Disconnect (i.e., Press the line key + the service code set of Forced Trunk Disconnect in PRG 11-10-26) must be used by an extension other than the originating extension.

Single Line Terminal

To set up a Tandem Call:

1. Place or answer first trunk call.
2. Press hookflash and dial **#1**.
3. Place or answer second trunk call.
4. To set up the tandem call, press hookflash and dial **#8**.
5. Hang up.



This sets up a Conference between both outside parties.

Method C - Tandem Trunking on Hang up

To set up a Tandem Call:

1. Place or answer first trunk call.
2. Press **Hold** key to place the first trunk call on hold.
3. Place a second trunk call.
4. Hang up.



This sets up an Unsupervised Conference with both outside parties.



The line keys for the trunks light solid red.



To disconnect the Conference, use Forced Trunk Disconnect (i.e., Press the line key + the service code set of Forced Trunk Disconnect in PRG 11-10-26).

Single Line Terminal

To set up a Tandem Call:

1. Place or answer first trunk call.
2. Press hookflash.
3. Place or answer second trunk call.
4. To set up the tandem call, hang up.



This sets up a Conference between both outside parties.



To disconnect the Conference, use Forced Trunk Disconnect [i.e., Dial the trunk access code #0 + trunk number) + the service code set of Forced Trunk Disconnect in PRG 11-10-26].

Method D - Automatic Tandem Trunking Using Speed Dialing

To set Automatic Tandem Trunking:

1. Dial service code **733** (or the service code set for Set Automatic Transfer per Trunk).
2. Dial the desired trunk number (Trunk Number: **001~128**).
3. Hang up.



The line key for the trunk is solid red as long as the Unsupervised Conference continues.



To disconnect the Conference, use Forced Trunk Disconnect (i.e., Press the line key or dial #0 plus the trunk number + PRG 11-10-26).

To cancel Automatic Tandem Trunking:

1. Dial service code **734** (or the service code set for Disable Automatic Transfer per Trunk).
2. Dial the desired trunk number (Trunk Number: **001~128**).
3. Hang up.



To disconnect the Conference, Forced Trunk Disconnect (i.e., Press the line key or dial #0 plus the trunk number + the service code set of Forced Trunk Disconnect in PRG 11-10-26).

To set and change the destination of the Automatic Tandem Trunk call:

1. Dial service code **735** (or the service code set for Set Destination for Automatic Trunk-to-Trunk Transfer).
2. Dial the desired trunk number (Trunk Number: 001~128).
3. Dial the destination Number (trunk access code is not needed).
4. Dial the desired time mode (Time Mode: 1~8).
5. Press **Hold** key.
6. Hang up.



To disconnect the Conference, use Forced Trunk Disconnect (i.e., Press the line key or dial #0 plus the trunk number + PRG 11-10-26).

Continue/Disconnect Codes

To use the Continue code to extend a Tandem Trunk call:

1. An external call connects to an external number either by transferring with Tandem Trunking or by DISA caller.

2. After the programmed time (PRG 24-02-07), a warning tone is heard and the user dials the Continue code (PRG 20-28-01) to extend the conversation.
3. After the programmed time (PRG 20-28-03), the warning tone is heard again. After the programmed time (PRG 24-02-10), the call is disconnected.

TAPI Compatibility

Description

The system has Telephony Applications Programming Interface (TAPI) compatibility that provides:

- Reduced TAPI Feature Set (see the Supported TAPI Commands chart below)
- Caller ID data to the PC for data base lookups and screen pops (see the Caller ID Data chart below)
- Telephone control (Off-Hook, On-Hook and dialing)

The 1st-Party TAPI Ethernet Driver provides an interface that allows the user personalized control of the telephone system from a desktop or laptop PC when used in conjunction with a TAPI-compliant application. The telephone system and PC are connected by installing TAPI Drivers, allowing the PC user to access sophisticated communications services via the telephone lines.

Conditions

- The 3rd Party CTI driver requires the 3rd Party CTI Client license 0112.
- The 1st Party CTI driver does not require any additional license.
- Caller ID and Call status are available from the TAPI interface functions.
- Only one 3rd-Party CTI connection to the SL2100 is supported.
- Refer to [Table 1-71 TAPI Commands](#) for a list of supported TAPI commands.

Table 1-71 TAPI Commands

lineAddProvider	lineAnswer
lineConfigDialog	lineBlindTransfer
lineGetAddressCaps	lineCompleteCall
lineGetDevCaps	lineCompleteTransfer
lineGetDevConfig	lineDevSpecific
lineGetIcon	lineDial
lineGetID	lineDrop
lineInitializeEx	lineForward
lineNegotiateAPIVersion	lineHold
lineNegotiateExtVersion	lineMakeCall
lineRemoveProvider	linePark
lineSetDevConfig	linePickup
lineShutdown	linePrepareAddToConference
lineClose	lineRedirect
lineDeallocateCall	lineRemoveFromConference
lineGetAddressStatus	lineSetupConference
lineGetCallInfo	lineSetupTransfer
lineGetCallStatus	lineSwapHold
lineGetLineDevStatus	lineUncompleteCall
lineOpen	lineUnhold
lineSetAppSpecific	lineUnpark
lineSetLineDevStatus	lineGatherDigits
lineSetMediaMode	lineGenerateDigits

lineSetStatusMessages	lineGenerateTone
lineMonitorDigits	

Default Settings

Disabled

System Availability

Terminals

SL2100 Multiline Terminals

Required Component(s)

CPU should have LAN connection ability

A TAPI compatible Windows application

3rd Party CTI Client or 1st Party CTI Client

3rd Party CTI Client license 0112

Related Features

Headset Operation

Guide to Feature Programming



The items highlighted in gray are read only and cannot be changed.

Program No.	Program Name	Input Data	Default
10-12-01	CPU Network Setup - IP Address	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	192.168.0.10

Program No.	Program Name	Input Data	Default
10-12-02	CPU Network Setup - Subnet Mask	128.0.0.0 192.0.0.0 224.0.0.0 240.0.0.0 248.0.0.0 252.0.0.0 254.0.0.0 255.0.0.0 255.128.0.0 255.192.0.0 255.224.0.0 255.240.0.0 255.248.0.0 255.252.0.0 255.254.0.0 255.255.0.0 255.255.128.0 255.255.192.0 255.255.224.0 255.255.240.0 255.255.248.0 255.255.252.0 255.255.254.0 255.255.255.0 255.255.255.128 255.255.255.192 255.255.255.224 255.255.255.240 255.255.255.248 255.255.255.252 255.255.255.254 255.255.255.255	255.255.255.0
10-12-03	CPU Network Setup - Default Gateway	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0
10-20-01	LAN Setup for External Equipment - TCP Port	Available values are: 0 ~ 65535	External Device 1 (CTI Server) = 0 External Device 2 (ACD-MIS) = 0 External Device 5 (SMDR Output) = 0 External Device 6 (DIM Output) = 0 External Device 8 (UC Web Application) = 0 External Device 9 (1st Party CTI) = 0 External Device 11 (O&M Server) = 8010 External Device 12 (Traffic Report Output) = 0 External Device 13 (Room Data Output for Hotel Service) = 0 External Device 14 (IP-DECT Directory Access) = 0 External Device 15 (Presence) = 0
10-20-03	LAN Setup for External Equipment - Keep Alive Time	1 ~ 255 seconds	30
10-50-01	License Information - License Name	Read Only: Character	None
10-50-02	License Information - License Quantity	Read Only: 0 ~ 32767	None
10-50-03	License Information - Campaign License Quantity	Read Only: 0 ~ 32767	None
10-50-04	License Information - Campaign License Remaining Days	Read Only: 0 ~ 9999	None
93-06-01	IP Address List - IP Address of 1st Party CTI Client	IP Address: xxx.xxx.xxx.xxx	No Setting
93-06-02	IP Address List - Availability of 1st Party CTI Connection	0 = Not Available 1 = Available	No Setting

Operation

TAPI operation is automatic once programmed in the telephone system and enabled in the PC TAPI application, unless a headset is used.

Using the Headset with Automatic Answer:

1. With the Multiline Terminal in an idle state, press the **Help** key.
2. Press the **Headset** key (PRG 15-07 or SC : 05) twice.
3. Press the **Exit** key to return the display to idle.



The Headset key blinks when Automatic Headset is activated.



To cancel Automatic Headset, repeat these steps.

To redirect calls to the headset and disable the hookswitch (required for some TAPI features):

1. With the Multiline Terminal in an idle state, press the **Help** key.
2. Press the **Headset** key (PRG 15-07 or SC : 05) twice.
3. Press the **Exit** key to return the display to idle.



The Headset key blinks when Automatic Headset is activated.



To cancel Automatic Headset, repeat these steps.

4. Press the **Headset** key (PRG 15-07 or SC : 05) to go off-hook.

Tone Override

Description

The Multiline Terminal user that calls a busy station and receives a call waiting tone can generate a Tone Override that is heard by the originator and busy station. The busy station user can place the existing call on hold to answer the Override.

Conditions

- One Tone Override at a time can be received at a Multiline Terminal.
- Tone Override can be accomplished only after receiving a BUSY tone.
- Tone Override originate is allowed from a Single Line Terminal until the PBR times out.
- Virtual Extensions do not support Tone Override.

Default Settings

None

System Availability

Terminals

All Multiline Terminals

Required Component(s)

None

Related Features

Call Waiting/Camp-On

Data Line Security

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-12-03	Service Code Setup (for Service Access) - Override (Off-Hook Signaling)	0~9, *, # Maximum of 8 digit	709
11-16-04	Single Digit Service Code Setup - Intercom Off-Hook Signaling	0~9, *, # Maximum of 1 digit	*

Program No.	Program Name	Input Data	Default
15-02-12	Multiline Telephone Basic Data Setup - Off-Hook Ringing	0 = Muted Off-Hook Ringing 1 = No Off-Hook Ringing 3 = Beep in Speaker (SP) 4 = Beep in Handset (HS) 5 = Speaker and Handset Beep	5
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-09-01	Class of Service Options (Incoming Call Service) - Second Call for DID/DISA/DIL/E&M Override	0 = Off (2nd call will not be allowed.) 1 = On (2nd call is allowed.)	COS 01 ~ 15 = 1
20-09-07	Class of Service Options (Incoming Call Service) - Call Queuing	0 = Off (Calls are not queued.) 1 = On (Calls are queued.)	COS 01 ~ 15 = 0
20-13-05	Class of Service Options (Supplementary Service) - Intercom Off-Hook Signaling	0 = Off (ICM off hook signaling disabled.) 1 = On (ICM off hook signaling enabled.)	COS 01 ~ 15 = 1
20-13-06	Class of Service Options (Supplementary Service) - Automatic Off-Hook Signaling (Automatic Override)	0 = Off (manually) 1 = On (automatically)	COS 01 ~ 15 = 1
20-13-34	Class of Service Options (Supplementary Service) - Block Manual Off-Hook Signaling	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-35	Class of Service Options (Supplementary Service) - Block Camp On	0 = Off (Camp On blocked.) 1 = On (Camp On allowed.)	COS 01 ~ 15 = 0
20-18-06	Service Tone Timers - Interval of Call Waiting Tone	1 ~ 64800 seconds	10
80-01-01	Service Tone Setup - Tone Override Tone 15	0~255 (0~Endless)	Refer to Programming Manual.
80-01-02	Service Tone Setup - Ring Busy Tone Tone 39	0~33 (0=No Tone, 33=Default Time Slot)	Refer to Programming Manual.

Operation

To send Off-Hook signals to an extension busy on a call:

 Your extension may send Off-Hook signals automatically.

1. Dial **709** (PRG 11-12-02).
- OR -
Press the **Off-Hook Signaling** key (PRG 15-07-01 code 33).

 You hear Ring Busy Tone.

 The called extension hears Call Alert Notification.

To answer Tone Override:

1. Receive Tone Override.

- 2 Press **Hold** key and talk with the party.

Traffic Reports

Description

The system provides the ability to send data to a PC connected to the SL2100. The telephone call traffic data for each extension is captured for use with the Station Message Detail Recording (SMDR) feature.

Total Report - Sample Report

Terminal	OTG	Duration	Cost	ICM	Answer	Duration	Ringing	Abandon
301	54	01:45:14	720	326	115	02:11:52	00:09:36	
301	92	02:37:22	1855	84	84	01:58:31	00:04:19	
LINE001	- —	- —	- —	79	71	01:05:26	- —	8

Term	Definition
Terminal	Terminal Number/Called Party Number (maximum 24 digits)
OTG	Outgoing Call Frequency/number of outgoing calls (maximum 65535 calls)
Duration	Call Duration for an Outgoing Call
Cost	Call Charge (Not Used)
ICM	Incoming Call Frequency/number of incoming calls (maximum 65535 calls)
Answer	Answer Frequency (maximum 65535 calls)
Duration	Call Duration for an Incoming Call
Ringing	Ringing Duration
Abandon	Number of Abandoned Calls (maximum 65535 calls)

Call Traffic

The total of outgoing call frequency, outgoing call duration, incoming call frequency, answer frequency, incoming call duration, ringing duration for each line and extension, and abandon call frequency for each line is logged. The total of incoming calls, answer frequency, call duration for each line and extension, and abandon call frequency of each line is logged and the data is outputted to the PC. The system totals the hour, day, week, and month for each terminal and trunk number. This information is used by the SMDR feature. The extension which is totaled is determined by system programming. The system outputs this data to the PC for the total period.

Conditions

- The SMDR call buffer stores 4000 calls. The buffer stores calls when the SMDR device is unavailable. When the buffer fills, the oldest record is deleted to allow the new record to be saved.
- If connected to the output device, the reports print hourly. If not connected and the data is not output at the end of the hour, the traffic data is overwritten by new incoming data.
- The traffic data is lost if power failure occurs.
- Traffic Reports require connection to the serial connector on the CPU. Additional programming and a customer-provided printer are also required. Refer to the SL2100 System Hardware Manual for more on setting up and connecting to the SL2100 system.
- SMDR provides additional information about the system trunk calling patterns. Refer to [Station Message Detail Recording](#) for more information.

Default Settings

Disabled

System Availability

Terminals

All Terminals

Required Component(s)

None

Related Features

Station Message Detail Recording

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-20-01	LAN Setup for External Equipment - TCP Port	Available values are: 0 ~ 65535	External Device 1 (CTI Server) = 0 External Device 2 (ACD-MIS) = 0 External Device 5 (SMDR Output) = 0 External Device 6 (DIM Output) = 0 External Device 8 (UC Web Application) = 0 External Device 9 (1st Party CTI) = 0 External Device 11 (O&M Server) = 8010 External Device 12 (Traffic Report Output) = 0 External Device 13 (Room Data Output for Hotel Service) = 0 External Device 14 (IP-DECT Directory Access) = 0 External Device 15 (Presence) = 0
90-20-01	Traffic Report Data Setup - Call Traffic Output	0 = Not Measured 1 = Measure	0
90-20-03	Traffic Report Data Setup - All Line Busy Output	0 = Not Detected 1 ~ 256 (Report when the data reaches the defined value)	0
90-20-04	Traffic Report Data Setup - DTMF Receiver Busy Output	0 = Not Detected 1 ~ 256 (Report when the data reaches the defined value)	0

Program No.	Program Name	Input Data	Default
90-20-05	Traffic Report Data Setup - Dial Tone Detector Busy Output	0 = Not Detected 1 ~ 256 (Report when the data reaches the defined value)	0
90-20-06	Traffic Report Data Setup - Caller ID Receiver Busy Output	0 = Not Detected 1 ~ 256 (Report when the data reaches the defined value)	0
90-20-07	Traffic Report Data Setup - Voice Mail Channel All Busy Output	0 = Not Detected 1 ~ 256 (Report when the data reaches the defined value)	0
90-20-09	Traffic Report Data Setup - Attendant Channel All Busy Output	0 = Not Detected 1 ~ 256 (Report when the data reaches the defined value)	0
90-21-01	Traffic Report Output - Output Port Type	0 = No setting 3 = LAN	0

Operation

None

Transfer

Description

Transfer permits an extension user to send an active Intercom or outside call to any other extension in the system. With Transfer, any extension user can quickly send a call to the desired co-worker. A call a user transfers automatically recalls if not picked up at the destination extension. This assures that users do not lose or inadvertently abandon their transfers. While a transferred call is ringing an extension the system can optionally play ringback tone or Music on Hold to the caller.

The system allows the following types of transfers:

- **Screened Transfer**
The transferring user announces the call to the destination before hanging up.
- **Unscreened Transfer**
The transferring party extends the call without an announcement.
- **Extension (Department) Groups Transfer**
The Transferring party sends the call to a Department instead of an extension.
- **Transfer Without Holding**
A user presses a busy line key and waits for the call to complete. The system automatically sends them the call when the internal caller hangs up.

Automatic On-Hook transfer Operation

With Automatic On-Hook Transfer, a transfer goes through as soon as the transferring user hangs up. For example, extension 204 can answer a trunk, press Hold/Transfer, dial 205 and hang up. The system extends the call to extension 205. Without Automatic On-Hook Transfer, the call would stay on Hold at extension 204 when the user hangs up. To extend the call, the user at extension 204 would have to press the Transfer key before hanging up.

Each method has advantages. Automatic On-Hook Transfer makes transferring calls easier. However, users have to be more aware of how they handle their calls on Hold. Without Automatic On-Hook Transfer, extending a call becomes a two-step operation - but separate from placing calls on Hold.

Prevent Recall of Transferred Call

The Class of Service program has an option that allows you to prevent a Transferred call from recalling the originating extension if the call is not answered.

Transfer Call into Conference/Existing Call

This feature allows either a Multiline Terminal or Single Line Terminal user with Barge-In ability to transfer a call into an existing call. This call can be a 2-party call, a Conference call, or a Barge-In Conference. The system allows Intercom and trunk calls to be transferred into a Conference call. This allows, for example, an attendant to locate co-workers and then transfer them into an existing telephone meeting. There is no need for the attendant to locate all the parties at the same time and sequentially add them into the Conference.

Transfer to Trunk Ring Group Available

It is possible to transfer a trunk call to the trunk defined ring group (defined in PRG 22-05-01: Incoming Trunk Ring Group Assignment). The trunk then rings the defined extensions for the ring group.

This also allows the transferred call to ring over the External Paging (PRG 31-05: Universal Night Answer/Ring Over Page) so that an employee can answer the call from any available telephone.

To enable this feature, the system has a program option, PRG 11-15-09: Service Code Setup Administrative (for Special Access) - Transfer to Trunk Ring Group Code (not assigned at default).

When a call is transferred using this service code, it is transferred to the ring group destination for that incoming trunk. For example, trunk 2 is in Ring Group 4. When the call is transferred using this service code, the trunk rings all extensions programmed for Ring Group 4 or rings the External Paging Group for Ring Group 4, depending on how the system is programmed.

PRG 22-04-01: Extension Ring Group Assignment and PRG 22-05-01: Incoming Trunk Ring Group Assignment must be programmed to allow an extension access to the ring groups. If the call is not answered, it can overflow to the destination defined in PRG 22-08-01: DIL/IRG No Answer Destination.

This service code can also be used with the VRS. This provides the caller listening to the VRS message with the ability to transfer their call and have it ring the external page. The code the caller would dial is defined in PRG 25-06-02: VRS/DISA One-Digit Code Attendant Setup.

Transfer Key Can Place Call on Hold

While on a call, and **Transfer** key is pressed, the call is placed on hold.

Conditions

- An existing call can be transferred into a call with Barge-In enabled.
- Unscreened Transfers from voice mail show pre-answer Caller ID information.
- With Transfer to Busy Extensions enabled (PRG 24-02-01 = 1), Call Forwarding with Both Ringing offers a unique option. A transferred call waits for either the forwarding or destination extension to become free. The call goes through to the extension that first becomes available. If neither extension becomes free in the Transfer Recall Time, the call recalls the transferring extension.



With Transfer to Busy Extensions disabled (PRG 24-02-02 = 0), you must also set PRG 20-09-07 for the extensions COS to 0 to disable call queuing and PRG 20-13-06 to set Automatic Off-hook Signaling to manual.

- An existing call can be transferred into a conference call.
- Meet Me Paging Transfer allows the user to page a co-worker and have the call automatically transferred when the co-worker answers the page.
- When transferring, an extension user can press a One-Touch key instead of dialing the extension number.
- Serial calls allow for transferring a call so it automatically returns to the transferring extension when completed.
- When a Multiline Terminal user is on a call, they can transfer to another station by pressing a DSS key for that station. It is not necessary to press **Transfer** key to transfer to another station with a DSS key.



*When a Multiline Terminal user is on a call, they must press **Transfer** key to transfer a call off site with a DSS key.*

- The following features require certain tones be changed in PRG 80-01-02. Refer to the table in the InMail feature programming section for settings:
 - Call Holding
 - Busy Greeting
 - Call Screening
 - Await Answer Transfer
- A Trunk-to-Trunk transfer can be established by the following operation:
 1. While talking to an outside party, press **Hold** key.
 2. Access a second outside line and dial the desired number.
 3. Press **Transfer** key to complete the Trunk-to-Trunk transfer.



When the second call is to be transferred to another station (Not Trunk-to-Trunk), the user should press Hold at step 3, then dial the desired station and press Transfer to complete the transfer.

- If station A calls Station B, and station A puts station B on hold and then calls station C, station C cannot transfer the call.

- A transferred call to an extension will not follow the extensions distinctive ring pattern. A transferred call will follow the pattern assigned in PRG 20-15-09.
- A held call by pressing HOLD key is transferred certainly by pressing the Transfer key. Therefore, while talking with other call, the held call is transferred to other call by pressing Transfer key.

Default Settings

Enabled

System Availability

Terminals

All Multiline Terminals

Required Component(s)

None

Related Features

Barge-In

Call Waiting/Camp-On

Caller ID

Call Forwarding

Conference

Meet Me Paging Transfer

One-Touch Calling

Quick Transfer to Voice Mail

Serial Call

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-12-58	Service Code Setup (for Service Access) - Transfer Into Conference	0~9, *, # Maximum of 8 digit	624
11-15-09	Service Code Setup, Administrative (for Special Access) - Transfer to Incoming Ring Group	0~9, *, # Maximum of 8 digit	No Setting
15-02-05	Multiline Telephone Basic Data Setup - Transfer Key Operation Mode	0 = Transfer 1 = Serial Call (call back) 2 = Hook (Flash)	0

Program No.	Program Name	Input Data	Default
15-07-01	Programmable Function Keys	Line Key 1 ~ 32 0 ~ 99, #00 ~ #99 (Normal Function Code 751 by default) *00 ~ *99 (Appearance Function Code) (Service Code 752 by default)	Refer to the programming manual for the default values and for all other available options in this command.
20-02-04	System Options for Multiline Telephones - Retrieve the Line After Transfer	0 = Extinction 1 = Keep Lamp	1
20-03-01	System Options for Single Line Telephones - SLT Call Waiting Answer Mode	0 = Hook Flash (Hooking) 1 = Hook Flash + Service Code 794	0
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-09-07	Class of Service Options (Incoming Call Service) - Call Queuing	0 = Off (Calls are not queued.) 1 = On (Calls are queued.)	COS 01 ~ 15 = 0
20-11-06	Class of Service Options (Hold/Transfer Service) - Unscreened Transfer (Ring Inward Transfer)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-07	Class of Service Options (Hold/Transfer Service) - Transfer Without Holding	0 = Off 1 = On	COS 01 ~ 15 = 0
20-11-08	Class of Service Options (Hold/Transfer Service) - Transfer Information Display	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-11	Class of Service Options (Hold/Transfer Service) - Automatic On-Hook Transfer	0 = Off 1 = On	COS 01 ~ 15 = 0
20-11-18	Class of Service Options (Hold/Transfer Service) - Transfer Recall on Receiving CoS	0 = Off 1 = On	COS 01 ~ 15 = 0
20-11-20	Class of Service Options (Hold/Transfer Service) - No Callback	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-06	Class of Service Options (Supplementary Service) - Automatic Off-Hook Signaling (Automatic Override)	0 = Off (manually) 1 = On (automatically)	COS 01 ~ 15 = 1
20-13-10	Class of Service Options (Supplementary Service) - Barge-In Monitor	0 = Speech 1 = Monitor	COS 01 ~ 15 = 0
20-13-15	Class of Service Options (Supplementary Service) - Barge-In, Initiate	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-16	Class of Service Options (Supplementary Service) - Barge-In, Receive	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-17	Class of Service Options (Supplementary Service) - Barge-in Tone/Display (Intrusion Tone)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-32	Class of Service Options (Supplementary Service) - Deny Multiple Barge-Ins	0 = Off 1 = On	COS 01 ~ 15 = 0
20-14-11	Class of Service Options for DISA/E&M - DISA/Tie Trunk Barge-In	0 = Off 1 = On	COS 01 ~ 15 = 0
20-18-07	Service Tone Timers - Intrusion Tone Repeat Time	0 ~ 64800 seconds	0
21-01-03	Outgoing Calls System Option - External Call, inter digits timer	0 ~ 64800 seconds	10
22-04-01	Incoming Extension Ring Group Assignment - Extension Number	Maximum eight Digits	Group 01 has 101, 102, 103, 104, 105, 106, 107, and 108 (First 8 ports ringing)
22-05-01	Incoming Trunk Ring Group Assignment - Incoming Ring Group Number	0 = No Setting 01 ~ 50 = Incoming Group 102 = VMI 103 = Centralized VM	1

Program No.	Program Name	Input Data	Default
22-08-01	DIL/IRG No Answer Destination - Incoming Ring Group Number	0 = No Setting 01 ~ 50 = Incoming Group 102 = VMI 103 = Centralized VM	Group01 has 101, 102, 103, 104, 105, 106, 107, and 108 (First 8 ports ringing)
24-02-01	Transfer System Options - Transfer to busy Extension	0 = Disable (No) 1 = Enable (Yes)	1
24-02-02	System Options for Transfer - MOH or Ringback on Transferred Calls	0 = Hold Tone 1 = Ring Back Tone	0
24-02-03	System Options for Transfer - Delayed Call Forwarding Time	0 ~ 64800 seconds	10
24-02-04	System Options for Transfer - Transfer Recall Time	0 ~ 64800 seconds	30
24-02-05	System Options for Transfer - Message Wait Ring Interval Time	0 ~ 64800 seconds	30
25-06-01	VRS/DISA One-Digit Code Attendant Setup - Next Attendant Message Number	0 ~ 100 (0 = No Setting) 101 = Voice Mail answers 104 = Refer to Programming Manual. 105 = Dial the other extension	0
25-06-02	VRS/DISA One-Digit Code Attendant Setup - Destination Number	Up to eight digits  <i>Must be a valid extension number that is programmed in command 11-02 or 11-04.</i>	No Setting
31-05-01	Universal Night Answer/Ring Over Page - Universal Night Answer/Ring	0 = No Ringing (No) 1 = Ringing (Yes)	0

Operation

Transferring Trunk Calls

To Transfer a trunk calls to a co-worker's extension:

- At the Multiline Terminal, press **Hold/Transfer** key.

- OR -

At a Single Line Terminal, hookflash.

 *You hear Transfer dial tone.*

- Dial the co-worker's extension number.

 *If the extension is busy or does not answer, you can dial another extension number or press the line key to return to the call. In addition, you may be able to hang up and have the call Camp-On.*

 *SLT users can retrieve the call by pressing hookflash. If a call has been transferred and the SLT user has hung up the handset, the call can be retrieved by dialing ** and the extension number to which it had been transferred.*

3. Announce the call and press the **Transfer** key (PRG 15-07 or SC **751**: 06) or hang up.



If you do not have Automatic On-Hook Transfer, you must press your Transfer Programmable Function Key to Transfer the call.



If your co-worker does not want the call, press the flashing line key to return to the call.



*Single Line Terminal users can retrieve the call by pressing hookflash. If a call has been transferred and the SLT user has hung up the handset, the call can be retrieved by dialing ** and the extension number to which it had been transferred.*



If you do not want to screen the call, hang up without making an announcement.

To answer a call transferred to your extension:

1. Lift the handset or press **Speaker** key when a co-worker announces the call.

Transferring without Holding

To Transfer without holding (Multiline Terminal only):

1. Lift the handset or press **Speaker** key.
2. When original caller hangs up, you are connected.

Transferring Intercom Calls

To Transfer your Intercom call:

1. At the Multiline Terminal, press **Hold** key.

- OR -

At Single Line Terminal, hookflash.

2. Dial extension to receive your call.



If the extension is busy, does not answer or does not want the call, you can dial another extension number or press the lit line key to return to the call. In addition, you may be able to hang up and have the call Camp-On.



*Single Line Terminal users can retrieve the call by pressing hookflash. If a call has been transferred and the SLT user has hung up the handset, the call can be retrieved by dialing ** and the extension number to which it transferred.*

3. Announce your call and press the **Transfer** key (PRG 15-07 or SC **751**: 06) or hang up.



With Automatic On-Hook Transfer

When you hang up, the call is automatically transferred.



Without Automatic On-Hook Transfer

You must press your Transfer Programmable Function key to Transfer the call.

To Transfer the call unscreened, press your Transfer Programmable Function key and hang up without making an announcement.

Transferring a Call into a Conference/Existing Call

1. While on a call, press the **Transfer** key and dial service code defined in PRG 11-12-58.



The display shows Transfer to Conf. ICM Dial.

2. Enter the extension number of the co-worker currently on a Conference call to which the call should be transferred.
 -  *To cancel the transfer, press the flashing line key to retrieve the call.*
 -  *If an error tone is heard, Barge-In is disabled for the extension and the call does not go through. Retrieve the call by pressing the flashing line key or hang up and the call recalls the extension.*
3. The transferred call is incorporated into the conference call.
 -  *The callers hear the Barge-In tone if enabled in PRG 20-13-17.*
 -  *If a call is transferred into a Barge-In Conference (an existing 2-party call into which an extension user has used the Barge-In feature to join), the Conference becomes a regular 4-party Conference call.*
4. Hang up.

Transferring a Call to a Trunk Ring Group

1. While on a call, press **Transfer** key.
2. Dial the Transfer to Ring Group service code defined in PRG 11-15-09.
 -  *You hear confirmation tone.*
3. Hang up.
 -  *The call is transferred to the trunk ring group defined in PRG 22-05-01 and all assigned extensions in the group (PRG 22-04-01) ring or it rings the External Paging, enabling anyone to answer the call.*

Transferring an Intercom or Trunk Call using a DSS/One-Touch Key

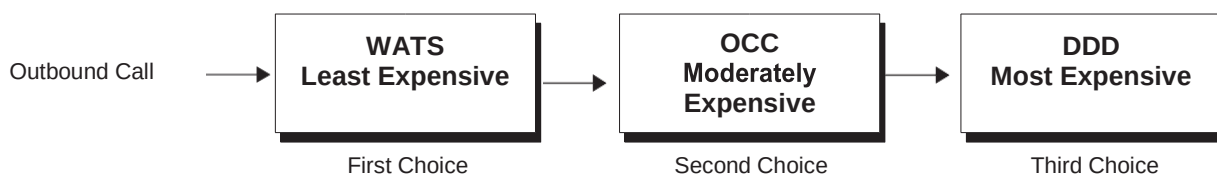
1. While on a call, press the **DSS/One-Touch** key.
2. Announce the call or hang up.

Trunk Group Routing

Description

Trunk Group Routing sets outbound call routing options for users that dial the Trunk Group Routing code (0) for trunk calls. Trunk Group Routing routes calls in the order specified by system programming. If a user dials 0 and all trunks in the first group are busy, the system may route the call to another group. When you are setting up your system, Trunk Group Routing helps you minimize the expense of toll calls. For example, if your system has outbound line groups, use Trunk Group Routing to route calls to the cheapest lines first.

There are 50 available Trunk Groups and 50 Routes.



Conditions

- DISA (PRG 25-10) have separate Trunk Group Routing programs.
- The system uses Trunk Group Routing programming (PRG 14-06) when setting up Ringing Line Preference.
- Use trunk group programming to set the order in which users access trunks within a specific trunk group.
- Dialing 0 activates ARS, overriding trunk group routing if ARS service is turned on.
- Call Forwarding, Off-Premise is not supported when using Alternate Trunk Group Routing.

Default Settings

Enabled (All trunks are in Group 1)

System Availability

Terminals

All Stations

Required Component(s)

None

Related Features

Automatic Route Selection (ARS/F-Route)

Central Office Calls, Placing

Direct Inward Dialing (DID)

Dial Tone Detection

Multiple Trunk Types

Programmable Function Keys

Prime Line Selection

Trunk Groups

Guide to Feature Programming

The programs listed below indicate the most commonly used programs required for this feature. The programs are listed in the order that the installer should follow. Refer to the PCPro wizards for further detailed programming.

- When a * is listed next to the Program Number it indicates a program that **MUST** be set (from a default state) for this feature to be enabled.

Primary Trunk Group Routing

Program No.	Program Name	Input Data	Default
11-09-01	Trunk Access Code - Trunk Access Code	Dial (Up to four digits)	0
14-05-01 *	Trunk Group - Trunk Group Number	Trunk Port 1 ~ 128 Group Number 0 ~ 50 Priority 1 ~ 128	1
21-02-01 *	Trunk Group Routing for Extensions - Route Table Number	0 ~ 50 0 = No Setting (Calls will not route.)	1
14-06-01	Trunk Group Routing - Trunk Group	0 = Not Set 001 ~ 050 = Trunk group No. 1001 ~ 1050 = 1000 + Route Table No.	Refer to Programming Manual.

Alternate Trunk Group Routing

Program No.	Program Name	Input Data	Default
11-09-02 *	Trunk Access Code - 2nd Trunk Route Access Code	Dial (Up to four digits)	No Setting
14-05-01 *	Trunk Group - Trunk Group Setup	Trunk Port 1 ~ 128 Group Number 0 ~ 50 Priority 1 ~ 128	1
21-15-01 *	Individual Trunk Group Routing for Extensions - Route Table Number	0 ~ 50 0 = No Setting (Calls will not route.)	0

Program No.	Program Name	Input Data	Default
14-06-01 *	Trunk Group Routing - Trunk Group	0 = Not Set 001 ~ 050 = Trunk group No. 1001 ~ 1050 = 1000 + Route Table No.	1
15-06-01	Trunk Access Map for Extensions - Trunk Access Map Number	001 ~ 128	1
23-03-01	Universal Answer/Auto Answer - Route Table Number	0 ~ 50	0
25-10-01	Trunk Group Routing for DISA - Route Table Number	0 ~ 50 (0 = No Setting)	1
25-12-01	Alternate Trunk Group Routing for DISA - Route Table Number	0 ~ 50 (0 = No Setting)	1
34-03-01	Trunk Group Routing for E&M Tie Lines - Route Table Number	00 ~ 50 (0 = No setting)	1
14-07-01	Trunk Access Map Setup - Trunk Port Number	0 = No access 1 = Outgoing access only 2 = Incoming access only 3 = Access only when trunk on Hold 4 = Outgoing access and access when trunk on Hold 5 = Incoming and access when trunk on Hold 6 = Incoming and outgoing access 7 = Full access	Access Map 1~128 = Trunk Ports 1~128 assigned with option 7 access (incoming and outgoing access and access when trunk is on Hold).
15-07-01	Programmable Function Keys	Line Key 1 ~ 32 0 ~ 99, #00 ~ #99 (Normal Function Code 751 by default) *00 ~ *99 (Appearance Function Code) (Service Code 752 by default)	Refer to the programming manual for the default values and for all other available options in this command.

Operation

To place a call using Trunk Group Routing

- At the Multiline Terminal, press **Speaker** key.
- OR -
At Single Line Terminal, lift the handset.
- Dial 0 .
- Dial number.

- OR -

- At the Multiline Terminal, press the **Trunk Group Routing** key (PRG 15-07 or SC **752**: *05).
- Dial the number.

Trunk Groups

Description

Trunk Groups let you optimize trunk usage for incoming and outgoing calls. Each group can be accessed by an Access Code plus the group number. There are 50 available Trunk Groups and you set the access order in trunk group programming.

Conditions

- Unless a user preselects a trunk, Trunk Group programming selects the trunk Speed Dialing used for trunk calls.
- If a user dials a number that is not programmed in ARS, the system can route the call to a trunk group.
- All DID trunks of the same type should be placed in the same trunk group. These trunk groups must then be assigned to a DID Translation Table.
- Trunks ring extensions according to Ring Group programming.

Default Settings

All trunks are in group 1.

System Availability

Terminals

All Stations

Required Component(s)

None

Related Features

Abbreviated Dialing/Speed Dial

Automatic Route Selection (ARS/F-Route)

Central Office Calls, Placing

Dial Tone Detection

Direct Inward Dialing (DID)

Programmable Function Keys

Ring Groups

Trunk Group Routing

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-09-01	DTMF, Dial Tone Detection Setup - DTMF, Dial Tone Detection	0 = Common use for both analog extensions and trunks 1 = Use for analog extensions (DTMF Receivers) 2 = Use for analog trunks (DTMF receivers/Dial tone detection/ Caller ID detection)	Resource 01 - 140 = 0
11-12-14	Service Code Setup (for Service Access) - Trunk Group Access	0~9, *, # Maximum of 8 digit	704
14-02-11	Analog Trunk Data Setup - Next Trunk in Rotary if No Dial Tone	0 = Disable (No) 1 = Enable (Yes)	0
14-05-01	Trunk Group - Trunk Group Number	Trunk Port 1 ~ 128 Group Number 0 ~ 50 Priority 1 ~ 128	Refer to Programming Manual.
14-06-01	Trunk Group Routing - Trunk Group	0 = Not Set 001 ~ 050 = Trunk group No. 1001 ~ 1050 = 1000 + Route Table No.	Refer to the Programming Manual for the default values.
14-07-01	Trunk Access Map Setup - Trunk Port Number	0 = No access 1 = Outgoing access only 2 = Incoming access only 3 = Access only when trunk on Hold 4 = Outgoing access and access when trunk on Hold 5 = Incoming and access when trunk on Hold 6 = Incoming and outgoing access 7 = Full access	Access Map 1~128 = Trunk Ports 1~128 assigned with option 7 access (incoming and outgoing access and access when trunk is on Hold).
15-06-01	Trunk Access Map for Extensions - Trunk Access Map Number	001 ~ 128	1
15-07-01	Programmable Function Keys	Line Key 1 ~ 32 0 ~ 99 (Normal Function Code 751 by default) *00 ~ *99 (Appearance Function Code) (Service Code 752 by default)	Refer to the programming manual for the default values and for all other available options in this command.
15-13-01	Loop Keys - Outgoing Option	0 ~ 50 (0 = Assigns the Loop Key for ARS, 1 ~ 50 = Assigns the Loop Key to the trunk group specified)	0: Programming Function Key No. = 01 ~ 32
15-13-02	Loop Keys - Incoming Option	0 ~ 50 (0 = Assigns the Loop Key to all trunk groups, 1 ~ 50 = Assigns the Loop key to the trunk group specified)	0: Programming Function Key No. = 01 ~ 32
20-02-02	System Options for Multiline Telephones - Trunk Group Access Key Operating Mode	0 = Outgoing / Incoming 1 = Outgoing 2 = Incoming	0
20-29-01	Timer Class for Extension - Timer Class for Extension	0 ~ 15 0 = Not assigned	0
20-31-04	Timer Class Timer Assignment - Intercom Inter-digits Time (Intercom I/D Timer)	0 ~ 64800 seconds	10
21-01-02	System Options for Outgoing Calls - Intercom Interdigit Time	0 ~ 64800 seconds	10

Program No.	Program Name	Input Data	Default
21-01-05	System Options for Outgoing Calls - Disconnect Time when Dial Tone not Detected	0 ~ 64800 seconds	3

Operation

To place a call over a Trunk Group

1. At the Multiline Telephone, press **Speaker** key.
- OR -
At the Single Line Terminal, lift the handset.
2. Dial **704**.
3. Dial trunk group number (01~50).
4. Dial number.

- OR -

1. Press the **Trunk Group** key (PRG 15-07 or SC **752**: *02 +group).
2. Dial the number.

To answer an incoming trunk group call:

1. Lift the handset.
2. Press the flashing **Trunk Group** key.

Trunk Queuing/Camp-On

Description

Trunk Queuing permits an extension user to queue (wait in line) on-hook for a busy trunk or trunk group to become free. The system recalls the queued extension as soon as the trunk is available. The user does not have to manually retry the trunk later. Trunk Queuing lets the caller know when the call can go through. If the extension user does not answer the Trunk Queuing ring, the system cancels the queue request.

With Trunk Camp-On, an extension user can queue (wait in line) Off-Hook for a busy trunk or trunk group to become free. The caller connects to the trunk when the trunk becomes free. As with Trunk Queuing, the user does not have to manually retry the trunk later.

Any number of extensions may simultaneously queue or Camp-On for the same trunk or trunk group. When a trunk becomes free, the system connects the extensions in the order that the requests were left.

Conditions

- With Automatic Route Selection (ARS), Trunk Queuing automatically queues for the least costly route.
- A user can camp-on or leave a callback request for an extension.
- Other programmed options for outgoing calls can affect how a call is placed. Check or program these options as needed (e.g., access line etc.).
- Using a Programmable Function Key can simplify the trunk queuing operation.

Default Settings

Enabled

Related Features

Automatic Route Selection (ARS/F-Route)

Call Waiting/Camp-On

Callback

Central Office Calls, Placing

Programmable Function Keys

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-12-04	Service Code Setup (for Service Access) - Set Camp-On	0~9, *, # Maximum of 8 digit	750

Program No.	Program Name	Input Data	Default
11-12-05	Service Code Setup (for Service Access) - Cancel Camp-On	0~9, *, # Maximum of 8 digit	770
11-16-05	Single Digit Service Code Setup - Camp-On	0~9, *, # Maximum of 1 digit	#
15-07-01	Programmable Function Keys	Line Key 1 ~ 32 0 ~ 99 (Normal Function Code 751 by default) *00 ~ *99 (Appearance Function Code) (Service Code 752 by default)	Refer to the programming manual for the default values and for all other available options in this command.
20-01-08	System Options - Trunk Queuing Callback Time	0 ~ 64800 seconds	15
20-01-09	System Options - Callback/Trunk Queuing Cancel Time	0 ~ 64800 seconds	64800
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-11-07	Class of Service Options (Hold/Transfer Service) - Transfer Without Holding	0 = Off 1 = On	COS 01 ~ 15 = 0
20-29-01	Timer Class for Extension - Timer Class for Extension	0 ~ 15 0 = Not assigned	0
20-31-01	Timer Class Timer Assignment - Trunk Queuing Callback Duration Time	0 ~ 64800 seconds	15
20-31-02	Timer Class Timer Assignment - Callback / Trunk Queuing Cancel Time	0 ~ 64800 seconds	64800

Operation

To queue for a busy trunk:

1. Try to access the busy trunk.
2. Dial **750** or press the **Trunk Queuing/Camp-On** key (PRG 15-07 or SC **751**: 35).
3. Hang up to leave a Trunk Queuing request.
- OR -
Wait Off-Hook to Camp-On to the trunk.

To answer when Trunk Queuing calls you back:

1. Lift the handset.

To cancel a Trunk Queuing/Camp-On request:

1. At the Multiline Terminal, press idle **Speaker** key.
- OR -
At the Single Line Terminal, lift the handset.
2. Dial **770**.
3. At the Multiline Terminal, press **Speaker** key to hang up.
- OR -
At the Single Line Terminal, hang up.

Unicast/Multicast Paging Mode

Description

IP Terminals can receive an Internal Page via a Unicast or Multicast packet based upon system programming. This feature allows IP Terminals to be assigned to Unicast Mode, Multicast Mode, or Auto.

When the phone is set to **Unicast Mode** the internal paging is sent to the phone via a Unicast Packet.

When the phone is set to **Multicast Mode** the internal page is sent to the phone via a Multicast Packet.

When the phone is set to Auto, the internal page is sent to the phone either by Multicast or Unicast based on the subnet of the IP station. If the terminal is in the same subnet as the VoIPDB then it will receive the Internal Page via a Multicast Packet. If the terminal is in a different subnet than the VoIPDB the IP Terminals will receive the Internal Page via a Unicast Packet.

When phones are set to receive Unicast packets the VoIPDB will send a separate RTP stream to each phone that is set to receive the page. E.g. If there are five IP Terminals in the page group and they are all set to Unicast Page Mode the VoIPDB will send five separate RTP streams utilizing five DSP resources.

When the phones are set to receive Multicast packets the VoIPDB will send one RTP stream. Multicast is a protocol that allows one device to communicate to multiple devices without the need to stream to the individual end point. E.g. If there are five IP Terminals in the page group that are set to Multicast Mode, the VoIPDB will send one RTP stream utilizing only one DSP resource.

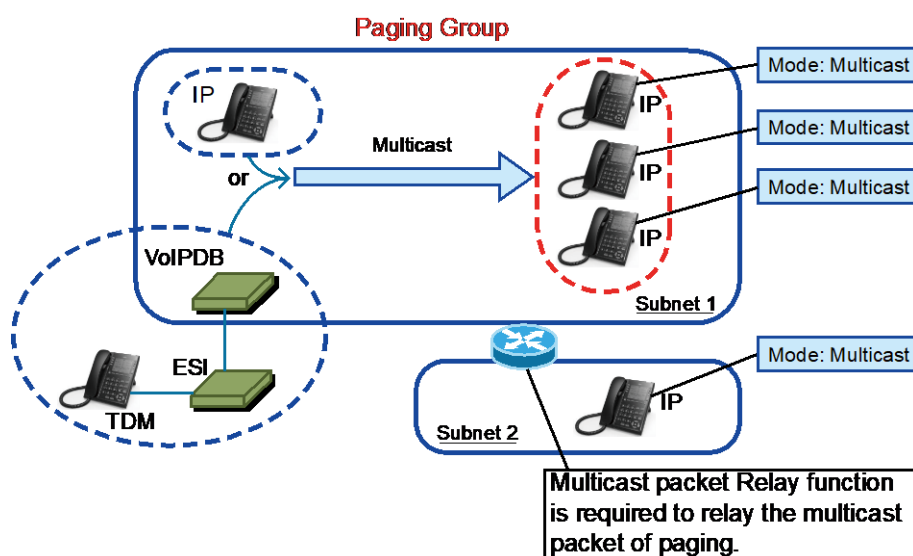


Figure 1-55 Multicast Mode Example

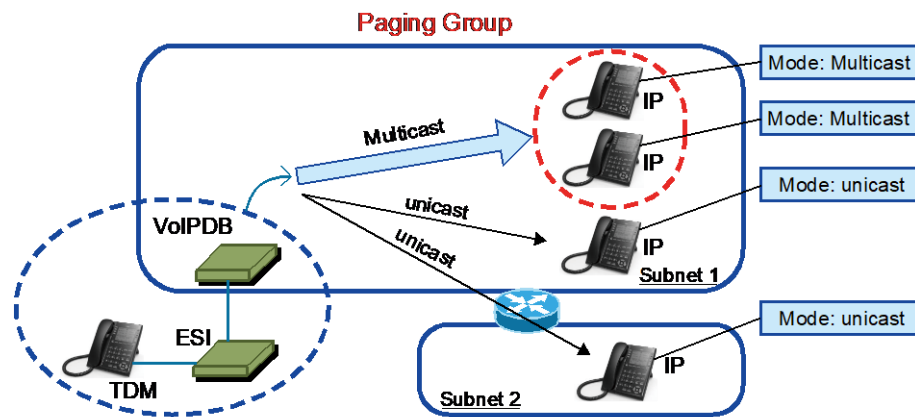


Figure 1-56 Unicast Mode Example

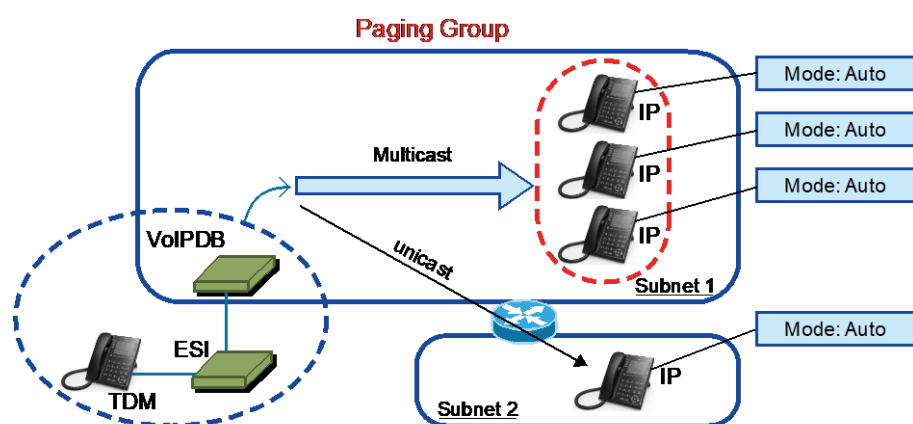


Figure 1-57 Auto Mode Example

-  By default routers do not pass Multicast packets between subnets. If you have IP Terminals in different subnets than the VoIPDB, and you are trying to utilize Multicast paging, you have to program the router to pass the Multicast packet. Routing of Multicast Packets is not a default routing feature and should be confirmed with the manufacturer of the routing equipment.
-  The default multicast address utilized by the SL2100 is 224.0.0.10. It should be noted that many routing devices available do not support multicast within the range of 224.0.0.0/24 and may require the default address to be changed in the SL2100.

VoIPDB DSP Resource Selection

Three additional VoIPDB DSP resource assignments are available. The assignments are: **Common without Unicast Paging**, **Multicast Paging**, and **Unicast Paging**. The assignments assist with keeping IP Terminals from using all available DSP resources when utilizing Unicast Paging.

When the DSP resource is set to **Common without Unicast Paging** the resource can be accessed by anything but a Unicast page.

When the DSP resource is set to **Multicast Paging** the resource can only be accessed by a Multicast page no other device/feature can access this resource.

When the DSP resource is set to **Unicast Paging** the resource can only be accessed by a Unicast page no other device/feature can access this resource.

Conditions

- You can assign up to 50 IP Terminals in an Internal or All call paging group.
- When using Unicast mode, there must be an available DSP resource for each IP Terminal in the page group at the time of the internal page. If the resources are less than the number of IP Terminals, the page will be delivered to the IP Terminals with the lowest port numbers. IP Terminals that cannot obtain a DSP resource will not receive the page.
- IP Terminals via NAT cannot utilize Multicast paging. These terminals must use Unicast paging.
- The ability to assign Unicast or Multicast on an IP Terminal basis, is restricted to internal paging only. Other Multicast features (External MOH, Background Music, Room Monitor) cannot utilize Unicast.
- For an IP Terminal to utilize the Multicast feature the IP Terminal must have a gateway programmed to accomplish the multicast transmission. When an actual gateway device does not exist on the network, a dummy gateway address on the same subnet must be defined.
- When utilizing Multicast mode and a page group consists of all IP Terminals, the page is sent via a multicast message from the initiating phone. If a paging group has IP and TDM Terminals, when an IP Terminal initiates the page, a message is sent to the VoIPDB and the VoIPDB sends the Multicast message for the IP Terminals.
- When using the G.711 Codec for multicast paging, only 10ms, 20ms, 30ms, and 40ms frame sizes can be used.

Default Settings

Multicast

System Availability

Terminals

All IP Terminals

Required Component(s)

IP Terminal

CPU and IP7WW-VOIPDB-C1

Router that supports Multicast Packets if utilizing Multicast Mode

Related Features

IP Multiline Station (SIP)

Meet Me Paging

Meet Me Paging Transfer

Paging, External

Paging, Internal

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-19-01	VoIPDB DSP Resource Selection - VoIPDB DSP Resource Selection	0 = Common use for both IP extensions and trunks 1 = Use for IP extensions 2 = Use for SIP trunks 5 = Blocked 6 = Common without unicast paging 7 = Multicast paging 8 = Unicast paging	Resource 1 ~ 128 = 0
10-46-11	IP MLT Server Information Setup - Multi- cast IP Address	224.0.0.0 ~ 239.255.255.255	224.0.0.10
10-46-12	IP MLT Server Information Setup - Multi- cast Port	0 ~ 65535	30000
11-12-19	Service Code Setup (for Service Access) - Internal Group Paging	0~9, *, # Maximum of 8 digit	701
15-05-38	IP Telephone Terminal Basic Data Setup - Paging Protocol Mode	0 = Multicast 1 = Unicast 2 = Auto	0
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-13-29	Class of Service Options (Supplementary Service) - Paging Display	0 = Off 1 = On	COS 01 ~ 15 = 1
31-01-01	System Options for Internal/External Paging - All Call Paging Zone Name	Up to 12 Characters	Group all
31-01-02	System Options for Internal/External Paging - Page Announcement Duration	0 ~ 64800 seconds	1200 seconds
31-02-01	Internal Paging Group Assignment - Internal Paging Group Number	0 ~ 50 (0 = No setting)	All stations = 1
31-02-02	Internal Paging Group Assignment - Internal All Call Paging Receiving	0 = Off 1 = On	1
31-03-01	Internal Paging Group Settings - Internal Paging Group Name	Up to 12 Characters	Refer to the Programming Manual for the default values.
31-07-01	Combined Paging Assignments - Internal Paging Group Number	0 ~ 50 (0 = All Internal Paging)	1

Operation

To make an Internal Page announcement:

Multiline Terminal/IP Terminal

1. Press the zone **Internal Paging** key (PRG 15-07 or SC **752**: 21 + 0 or 1~9 or 01~50 for zones (0 or 00 for All Call).

- OR -

Press **Speaker** key or lift the handset. Dial **701** and the Paging Zone number (0~9 or 00~50).

 *Dialing 0 or 00 calls All Call Internal Paging.*

- OR -

Dial ***1** and the Combined Paging Group code 1~8 or 0 (for Internal/External All Call).

 *Display indicates the Combined Paging as an External Page.*

 *If the Internal Page Zone is busy or if there are no extensions in a page group, the page is announced as an External Page only.*

2. Make announcement.
3. Press **Speaker** key to hang up.

Single Line Terminal

1. Lift the handset.
2. Dial **701** and the Paging Zone number (0~9 or 00~50).

 *Dialing 0 or 00 calls All Call Internal Paging.*

 *Dial ***1** and the Combined Paging Group code 1~8 or 0 (for Internal/External All Call).*

3. Make announcement.
4. Hang up.

U

Uniform Call Distribution (UCD)

Description

With Uniform Call Distribution (UCD), an extension user can call an idle extension in a preprogrammed UCD Group (Department Group - 50 Department Groups available) by dialing the group pilot number. For example, this would let a caller dial the Sales department just by knowing the Sales department pilot number. The caller would not have to know any of the Sales department extension numbers.

Use Log Out/Log In

An extension user can log out and log in to a UCD (Department) group. By logging out, the user removes their extension from the group. Once logged out, UCD (Department Calling) bypasses their extension. When they log back in, UCD (Department Calling) routes to their extension normally. All users can dial a code to log in or log out of their UCD (Department Calling) Group. A Multiline Terminal can optionally have a function key programmed for one-button log in and log out.

Enhanced Hunting

UCD (Department Calling) is enhanced with expanded hunting abilities. Hunting sets the conditions under which calls to a UCD (Department Group) pilot number cycles through the members of the group. The hunting choices are:

- **Busy**
A call to the pilot number only hunts past a busy group member to the first available extension. A call rings on an unanswered extension until it is answered, or the caller hangs up.
- **Not Answered**
A call to the pilot number cycles through the idle members of a UCD (Department Calling) group. The call continues to cycle until it is answered or the calling party hangs up. However, if the next station in the cycle is busy when a new call comes in, the call queues to the busy agent. New calls do not hunt past a busy agent.
- **Busy or Not Answered**
A call to the pilot number cycles through the idle members of a UCD (Department Calling) group. The call continues to cycle until it is answered or the calling party hangs up.

If all members of the UCD (Department) group are busy, an incoming or transferred call to the group pilot number queues for an available member. Each group has a queue that can hold any number of waiting calls. If a display telephone is waiting in queue, the user sees: WAITING (group name). If a transferred call in queue is an outside call, and the system has a DSP daughter board installed with the VRS SD Card, the queued caller hears, "Please hold on. All lines are busy. Your call will be answered when a line becomes free."

The VRS can also transfer calls to UCD (Department) groups. Refer to the [Voice Response System \(VRS\)](#) feature for more information on setting up the VRS.

The system prevents hunting to a UCD (Department) group extension if it is:

- Busy on a call
- In Do Not Disturb
- Call Forwarded
- Logged Out

Conditions

- When a DIL rings to a UCD (Department) groups, the DIL may follow overflow programming (PRG 22-01-04 and PRG 22-08-01).
- If an extension has Call Forwarding set, the system does not hunt to the forwarded extension.

Default Settings

Disabled

Priority Routing

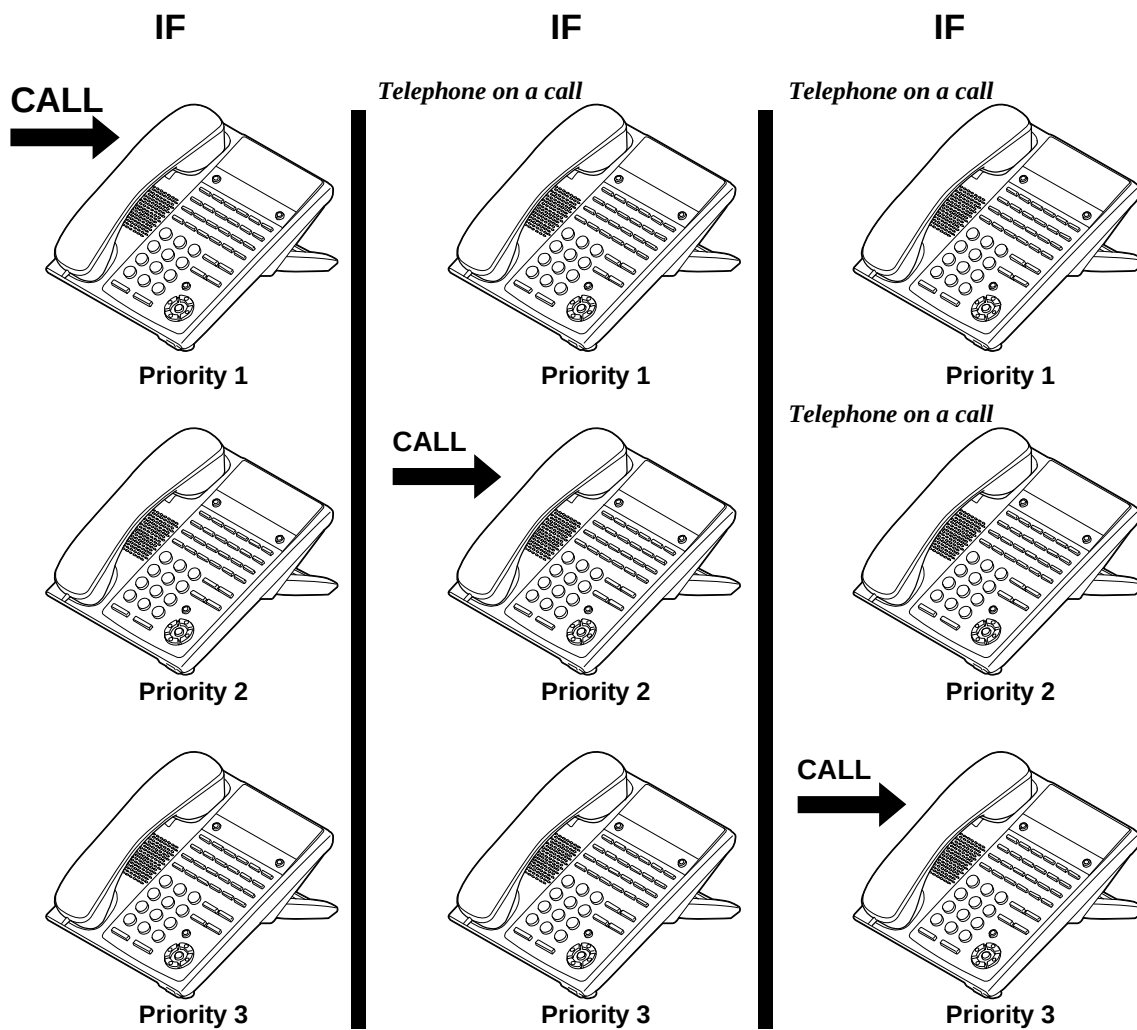


Figure 1-58 Uniform Call Distribution (UCD) Priority Call Routing

Circular Routing

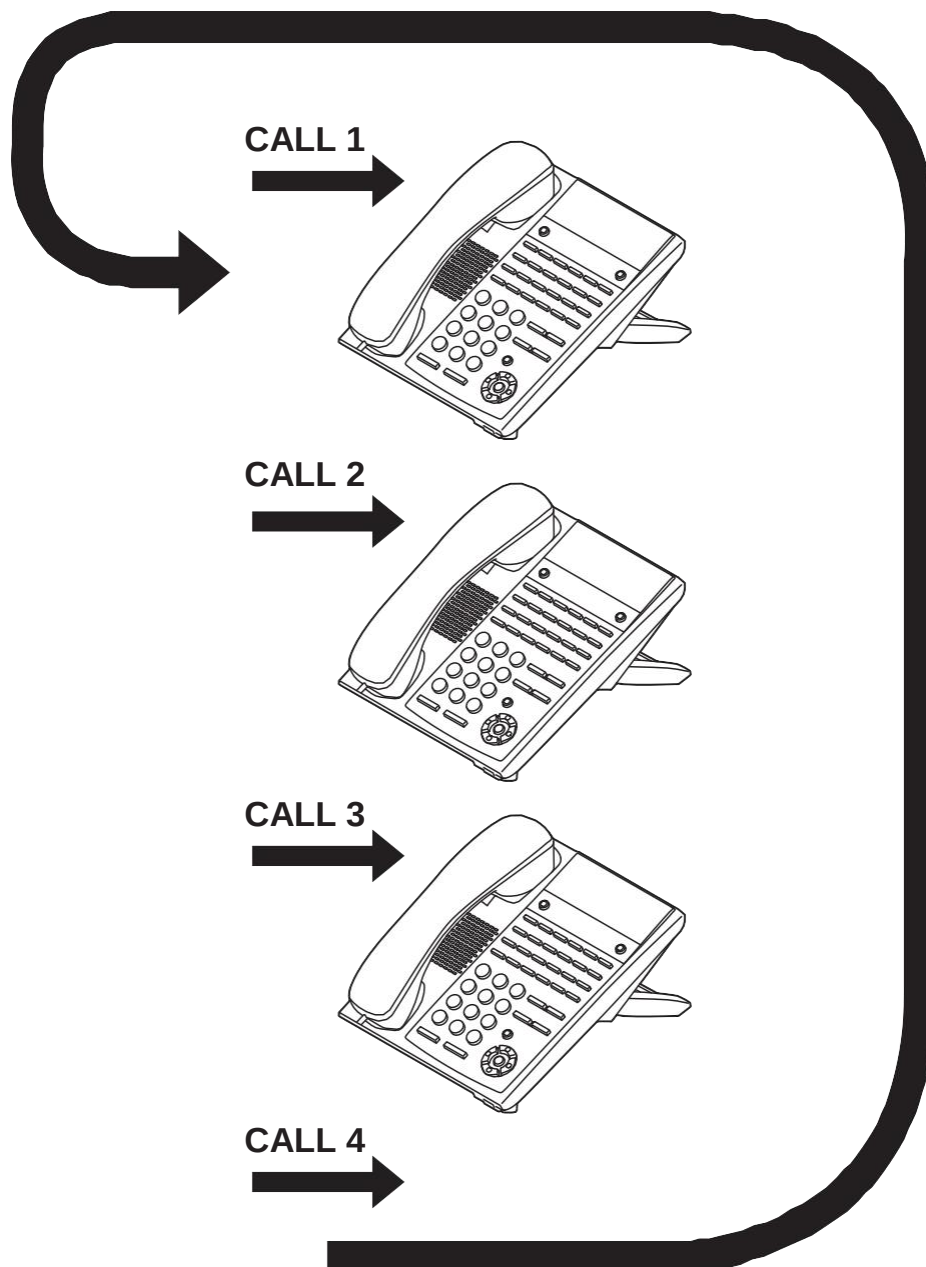


Figure 1-59 Uniform Call Distribution (UCD) Circular Routing

System Availability

Terminals

All Terminals

Required Component(s)

None

Related Features

Automatic Call Distribution (ACD)

Call Forwarding

Transfer

InMail

Voice Response System (VRS)

Guide to Feature Programming



The items highlighted in gray are read only and cannot be changed.

Program No.	Program Name	Input Data	Default
11-07-01	Department Group Pilot Numbers - Extension Group Pilot Number	Dial (Up to 8 digits)	Group Number 1 ~ 49 = No Setting Group Number 50 = 3999
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
16-01-01	Department Group Basic Data Setup - Department Name	Maximum 12 characters	No Setting
16-01-02	Department Group Basic Data Setup - Department Calling Cycle	0 = Normal Routing (Priority) 1 = Easy - UCD Routing (Circular)	0
16-01-03	Department Group Basic Data Setup - Department Routing when Busy (Auto Step Call)	0 = Normal (Intercom caller hears busy tone.) 1 = Circular (Intercom caller routes to an idle group member.)	0
16-01-04	Department Group Basic Data Setup - Hunting Mode	0 = Stop at last member (non-loop) 1 = Circular	0
16-01-05	Department Group Basic Data Setup - Extension Group All Ring Mode Operation	0 = Manual (Ring the extensions one at a time when the service code are pressed.) 1 = Automatic (Ring all extensions.)	0
16-01-06	Department Group Basic Data Setup - STG Withdraw Mode	0 = Disabled (Call will camp on to the group.) 1 = Automatic (Call follows PRG 22-11-11.)	0
16-01-07	Department Group Basic Data Setup - Call Recall Restriction for STG	0 = Disabled (Call will recall.) 1 = Enabled (Call will not recall.)	0
16-01-09	Department Group Basic Data Setup - Department Hunting No Answer Time	0 ~ 64800 seconds	15
16-01-10	Department Group Basic Data Setup - Enhanced Hunt Type	0 = No hunting 1 = Hunting When Busy 2 = Hunting When Not Answered 3 = Hunting When Busy or No Answer	0

Program No.	Program Name	Input Data	Default
16-02-01	Department Group Assignment for Extensions	-	Refer to Programming Manual.
16-03-01	Secondary Department Group	-	No Setting
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-09-07	Class of Service Options (Incoming Call Service) - Call Queuing	0 = Off (Calls are not queued.) 1 = On (Calls are queued.)	COS 01 ~ 15 = 0
20-11-17	Class of Service Options (Hold/Transfer Service) - Department Group Trunk-to-Trunk Transfer (Each Telephone Group Transfer)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-06	Class of Service Options (Supplementary Service) - Automatic Off-Hook Signaling (Automatic Override)	0 = Off (manually) 1 = On (automatically)	COS 01 ~ 15 = 1
20-13-14	Class of Service Options (Supplementary Service) - Department Calling (PLT No Called Extension)	0 = Off 1 = On	COS 01 ~ 15 = 1
22-02-01	Incoming Call Trunk Setup - Trunk Service Type	0 = Normal 1 = VRS (second dial tone if no VRS installed) 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delayed VRS 7 = ANI/DNIS 8 = DID (DDI) Mode Switching	0
22-07-01	DIL Assignment - Number of Transferring Destination	Maximum of 8 digits (0 ~ 9, *, #)	No Setting
24-02-05	System Options for Transfer - Message Wait Ring Interval Time	0 ~ 64800 seconds	30
24-02-08	System Options for Transfer - Delayed Transfer Time for all Department Groups	0 ~ 64800 seconds	10
24-05-01	Department Group Transfer Target Setup - Speed Dial Area Number	0 ~ 999	999

Operation

To call a UCD Group:

- At the Multiline Terminal, press **Speaker** key.
- OR -
At Single Line Terminal, lift the handset.
- Dial the UCD group (department) extension or pilot number.



The system routes the call to the first free telephone in the (UCD group) department.

To log out of your UCD (Department Calling) Group:



While you are logged out, UCD (Department Calling) cannot route calls to your extension.

- Press **Speaker** key.

2. Dial **650** and **1**.

- OR -

Press the **Uniform Call Distribution Log In** key (PRG 15-07 or SC **751**: 46).



The key lights while you are logged out.

To log back in to your UCD (Department Calling) Group:



While you log back in, Uniform Call Distribution routes calls to your extension.

1. Press **Speaker** key.

2. Dial **650** and **0**.

- OR -

Press the **UCD (Department Calling) Log In** key (PRG 15-07 or SC **751**: 46).



The key goes out when you log back in.

Universal Slots

Description

The SL2100 has four universal slots in one chassis.

Example:

One 4KSU-C1 (One Main Chassis): 4 Universal Slots

System Chassis Capacities

	1 Chassis	
Total System Ports (Trunk + Extension)	256	128 Trunk Ports + 128 Extensions (software)
Universal Slot	4	
System Maximum Port	96	Max. 80 ports per Chassis + 16ch for VM (In-Mail)
Analog Trunk	12	Max. 4pcs of 3COIDB per Chassis
BRI	16	Max. 4pcs of 2BRIDB per Chassis
PRI (2M)	30	Max. 1pcs of 1PRIDB per Chassis
IP Trunk (SIP/H.323)	64	
Digital Extension (2W)	24	Max. 3pcs of 082U per Chassis
Analog Extension	32	Max. 4pcs of 008U per Chassis
IP Extension (IP-MLT/Std-SIP)	112	
DTMF Receiver (2W)	72	CPU(24) + EXIFB(48)
VoIP Channels	128	Number of available Channels is Controlled by license
Voice Mail Channels	16	CPU Built-In (4ch), EXIFB (4ch -> 16ch)
V.34 Modem	1 Channel	The Modem circuit is on the EXIFB board
IP4WW-Battery Box	1	

Note1: "Slot-4" of each chassis does NOT SUPPORT any types of Multi-Line Terminals. Analog extensions (and any types of Trunks) shall work.

The available interface boards and maximum capacities for Universal Slots with the SL2100 system are as shown below table.

Board Capacities

	1 Chassis	
Number of slots for Interface Boards	4 slots	
Chassis:		
IP7xx-4KSU-C1	1	
Expansion:		
IP7WW-EXIFB-C1	1	
Common Control Boards:		
IP7xx-CPU-C1	1	
IP7WW-VoIPDB-C1	1	
Trunk and Station Boards:		

	1 Chassis	
IP7WW-082U-B1	4	No.4 slot of each chassis does not support any type of Multiline Terminal.
Station Board:		
IP7AU-008U-B1	4	
Trunk Board:		
IP7WW-3COIDB-C1	4	Mount to 082U/008U/000U
IP7WW-2BRIDB-C1	4	Mount to 082U/008U/000U
IP7WW-1PRIDB-C1	1	Mount to 082U/008U/000U
Optional Board/Cards:		
IP7WW-000U-C1	4	Either 3COIDB/2BRIDB/1PRIDB can be Mounted.
IP7WW-SDVMS-C1	1	Mount to CPU-C1 and Extended InMail storage
IP7WW-SDVML-C1		

Default Settings

None

System Availability

Terminals

N/A

Required Component(s)

Any Board

Related Features

None

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-03-01	ETU Setup	The assigned data varies depending on the board installed in the slot. Please refer to the SL2100 Programming Manual for more detailed description of the 10-03-xx programs.	
90-34-01	Firmware Information – Pkg Name	The data varies depending on the card in the slot.	
90-34-02	Firmware Information – Firmware Version Number	The data varies depending on the card in the slot.	

Operation

None

User Programming Ability

Description

A station user can perform programming functions. Speed Group Dialing and Function Keys are just two features programmable from a station.

Conditions

- Multiline Terminals must be idle an Off-Hook and have entered the service code when programming any function.

Default Settings

None

System Availability

Terminals

All Terminals

Required Component(s)

None

Related Features

Abbreviated Dialing/Speed Dial

Clock/Calendar Display/Time and Date

Code Restriction/Toll Restriction

One-Touch Calling

Programmable Function Keys

Guide to Feature Programming

None

Operation

None

Video Conference with Web RTC

Description

Video Conference with WebRTC supports video conferencing, voice conferencing and screen sharing. This feature allows users to enable video conferencing using a unified communication Web Application in a browser supporting WebRTC and Web sockets. WebRTC allows real time communication without any downloads or plugins. With a device and browser supporting WebRTC, video conferencing can be used without requiring application setup or installation.

Administrators or other users can access the Web Application from the link <https://SL2100/uc/>. Once downloaded, the Web Application can be used to create a conference. Users then distribute the URL [https://SL2100/uc/conf?id=\[Conference-ID\]](https://SL2100/uc/conf?id=[Conference-ID]) inviting participants to the conference.

The Web Application also requests access to the device's camera and MIC for video and audio conferencing. All clients are connected through P2P connections and video conferencing is achieved by using a full mesh system (refer to [Figure 1-60 Audio/Video Conferencing using WebRTC](#)).

NAT Traversal

The NAT Traversal is supported for this feature. The STUN/TURN server can be used to achieve NAT Traversal. First STUN is used to test the possibility of peer-to-peer communication via NAT. If STUN is successful the peer-to-peer communication is established. If STUN fails, TURN is used for Relay communication where the TURN server acts as a Relay Server. If this occurs, clients make connection with the external TURN server and the TURN server relays further to other clients. Contact the organization's Network Administrator for requirements and configurations on the Routers/Firewalls for NAT Traversal. If the SL2100 resides on a private network, Port Forwarding can be used to access the application from public networks. The application can be accessed on the same port as WebPro.

The following are the STUN/TURN servers that have been tested:

Stun Server: Port

stun.1.google.com : 19302

stun.ekiga.net : 3478

numb.viagenie.ca : 3478

stun.iptel.org : 3478

TURN Server: Port

numb.viagenie.ca : 3478

For the TURN Server, the user needs to create an account on the server's website (<http://numb.viagenie.ca/>). After the account is created, the user will be provided with credentials via email used for authentication with this server.

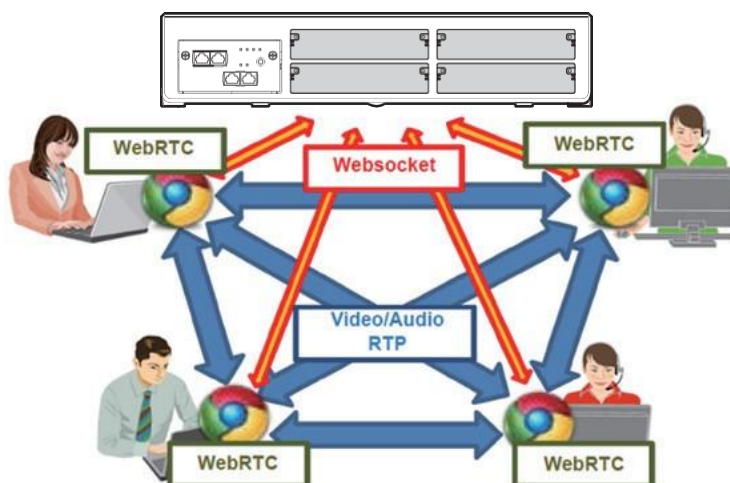


Figure 1-60 Audio/Video Conferencing using WebRTC

Conditions

- The number of conference sessions depend on the number of Web Video Conference License (0080). The maximum number of supported sessions is 16.
- Each client on the network should be able to establish P2P communication with each other.
- A maximum of four conferences is supported at one time.
- A maximum of eight users can participate in a conference.
- If a media connection between clients cannot be established or 90 seconds passes without a media connection being established, the screen displays Impossible media connection.
- NAT Traversal is supported using the STUN/TURN server.
- In some routers it may be necessary to configure the NAT type to allow the STUN messages.
- In some NAT types (e.g. Symmetric NAT) the STUN messages may be blocked, the TURN server can be used in such cases.
- NAT traversal is always dependent on the Network policies adopted by that organization. Consult with the Network administrator for any configuration changes.
- If the STUN/TURN server requires authentication, it is recommended to use a HTTPS connection for this application.
- If the connection of conference with the system is disconnected the conference is closed.
- Standard SIP or Simple MCU is not supported.
- If user accesses the secondary system's URL when using NetLink, the system displays an error.
- There is a possibility that after a browser upgrade this feature becomes unusable.
- Thin Client PC is not supported.
- When using HTTPS connection, a security warning of server certificate is displayed if user accesses SL2100 by IP address or NetBIOS name, which is not default.
- The URL Copy button is supported with Android operating system.
- If the Android operating system does not support NetBIOS, then accessing with NetBIOS name will not work.
- If multiple terminals have the same NetBIOS name, then accessing with NetBIOS name may not work.
- With Chrome, an HTTPS connection must be used for Audio and Video support to be enabled.
- With versions prior to 3.00, installation of Chrome extension and HTTPS connection is required for screen sharing. The chrome extension can be downloaded from the Chrome Web Store using the following URL: <https://chrome.google.com/webstore/detail/dddkgjbmnganocogdlemehnehmpodgij>

- Screen sharing can be used if camera is not connected.
- Screen Sharing is not supported with Internet Explorer.
- Screen Sharing is not supported with Android.
- In Windows 8.1/10 systems, screen sharing does not function if sharing window is minimized.
- Pinch zoom on Android platform is not supported.

Default Settings

None

System Availability

Terminals

None

Required Component(s)

- IP7xx-CPU-C1 or IP7WW-VoIPDB-C1
- CPU or VOIPDB Ethernet can be used
- Web Video Conference License (0080)

Supported Platforms

- Windows: Windows 8.1/10 with Microsoft Edge v83 or higher / Google Chrome v83 or higher.
- Mac: macOS v10.14 or higher with Google Chrome v83 or higher.
- Android: Android v8.1 or higher with Google Chrome v83 or higher. Screen Sharing is not supported.
- iOS and iPadOS are not supported.



This is the SL2100 v3.00 software information on platforms. When using the previous SL2100 software version, refer to the previous SL2100 Feature and Specification manual to check the OS and Web browser.

Table 1-72 Recommended Client Device Specifications

Hardware	Specification
Windows	
CPU	Core i5 2.7 GHz or more
RAM	4 GB or more
Android	
CPU	Quad-core 2.5 GHz or more
RAM	3 GB or more



If client devices do not meet recommended specifications, delays or disturbances may occur in video conference.

The following is an example of bandwidth utilization based on the number of conference participants and the above Hardware requirements:

Table 1-73 Hardware Specifications

Hardware	Specification
CPU	Intel® Core™ i5-3340M 2.70 GHz
Memory	4.00 GB
Camera	Logicool® c920t (Full HD 1080p)
Browser	Google Chrome v43.0.2357.130 m

Table 1-74 Example of Bandwidth Utilization

MBit/Sec	Stream	Audio (Send)	Audio (Receive)	Video (Send)	Video (Receive)	Total without Screen-Share	Screen-Share (Send)	Screen-Share (Receive)	Total with both Screen-Share
2 person	0.069	0.031	0.031	2.152	2.125	4.435	1.471	1.471	7.377
3 person	0.138	0.062	0.062	4.304	4.304	8.870	2.942	2.942	14.754
4 person	0.207	0.093	0.093	6.456	6.456	13.305	4.413	4.413	22.131
5 person	0.276	0.124	0.124	8.608	8.608	17.740	5.884	5.884	29.508
6 person	0.345	0.155	0.155	10.76	10.76	22.175	7.355	7.355	36.885
7 person	0.414	0.186	0.186	12.912	12.912	26.610	8.826	8.826	44.262
8 person	0.483	0.217	0.217	15.064	15.064	31.045	10.927	10.927	51.639

Related Features

None

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-12-01	CPU Network Setup - IP Address	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	192.168.0.10
10-12-02	CPU Network Setup - Subnet Mask	128.0.0.0 192.0.0.0 224.0.0.0 240.0.0.0 248.0.0.0 252.0.0.0 254.0.0.0 255.0.0.0 255.128.0.0 255.192.0.0 255.224.0.0 255.240.0.0 255.248.0.0 255.252.0.0 255.254.0.0 255.255.0.0 255.255.128.0 255.255.192.0 255.255.224.0 255.255.240.0 255.255.248.0 255.255.252.0 255.255.254.0 255.255.255.0 255.255.255.128 255.255.255.192 255.255.255.224 255.255.255.240 255.255.255.248 255.255.255.252 255.255.255.254 255.255.255.255	255.255.255.0

Program No.	Program Name	Input Data	Default
10-12-03	CPU Network Setup - Default Gateway	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	0.0.0.0
10-12-09	CPU Network Setup - VoIP IP Address	0.0.0.0 ~ 126.255.255.254 128.0.0.1 ~ 191.255.255.254 192.0.0.1 ~ 223.255.255.254	172.16.0.10
10-12-10	CPU Network Setup - VoIP Subnet Mask	128.0.0.0 192.0.0.0 224.0.0.0 240.0.0.0 248.0.0.0 252.0.0.0 254.0.0.0 255.0.0.0 255.128.0.0 255.192.0.0 255.224.0.0 255.240.0.0 255.248.0.0 255.252.0.0 255.254.0.0 255.255.0.0 255.255.128.0 255.255.192.0 255.255.224.0 255.255.240.0 255.255.248.0 255.255.252.0 255.255.254.0 255.255.255.0 255.255.255.128 255.255.255.192 255.255.255.224 255.255.255.240 255.255.255.248 255.255.255.252 255.255.255.254 255.255.255.255	255.255.0.0
10-20-01	LAN Setup for External Equipment - TCP Port	Available value are: 0 ~ 65535	External Device 1 (CTI Sever) = 0 External Device 2 (ACD-MIS) = 0 External Device 4 (Networking system) = 0 External Device 5 (SMDR Output) = 0 External Device 6 (DIM Output) = 0 External Device 8 (UC Web Application) = 0 External Device 9 (1st Party CTI) = 0 External Device 11 (O&M Server) = 8010 External Device 12 (Traffic Report Output) = 0 External Device 13 (Room Data Output for Hotel Service) = 0 External Device 14 (IP-DECT Directory Access) = 0 External Device 15 (Presence) = 0
10-62-01	NetBIOS Setting - NetBIOS Mode	0 = Disable 1 = Enable	1
10-62-02	NetBIOS Setting - NetBIOS Name	Maximum of 15 characters	SL2100
20-57-01	UC User Information Settings - User ID	Maximum of 16 characters	No Setting
20-57-02	UC User Information Settings - Password	Maximum of 16 characters Version 3.00 or higher: Enter 8 or more characters. Password must contain at least one uppercase letter, one lowercase letter and a number.	No Setting
20-64-01	UC Web Application Setting - Web Conference Duration Timer	0 ~ 64800 seconds	7200
20-64-02	UC Web Application Setting - Web Conference Duration Timer	0 ~ 64800 seconds	300
20-66-01	STUN/TURN Server Setting - Server Type	0 = Disable 1 = STUN 2 = TURN	0

Program No.	Program Name	Input Data	Default
20-66-02	STUN/TURN Server Setting - IP Address/Server Name	Maximum of 128 characters	No Setting
20-66-03	STUN/TURN Server Setting - Port Number	0 ~ 65535	3478
20-66-04	STUN/TURN Server Setting - Authentication Name	Maximum of 32 characters	No Setting
20-66-05	STUN/TURN Server Setting - Password	Maximum of 32 characters	No Setting
90-54-01	PC/Web Programming Setting - WebPro TCP Port Number	0 ~ 65535	Version 3.00 or higher: 0 Version 2.xx or lower: 80
90-54-03	PC/Web Programming Setting - Web Programming TCP Port (HTTPS)	0 ~ 65535 0 = HTTP access is not available	443

Operation

Login:

1. Access the following URL using the web browser: (<http://[System-URL (IP address or NetBIOS Name)]/uc/> or <https://[System-URL (IP address or NetBIOS Name)]/uc/>).



With Version 3.00 or higher, HTTP protocol(http://) is initially disabled in Program 90-54-01.

2. Enter the User ID and Password defined in Programs 20-57-01 and 20-57-02, then press **Login** (refer to [Figure 1-61 Login Screen](#)).

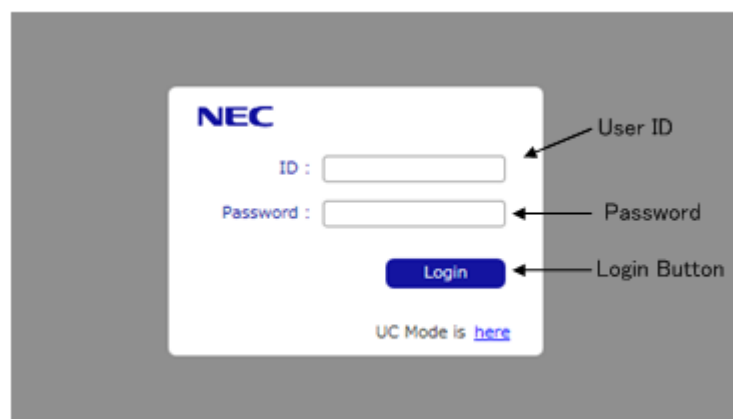


Figure 1-61 Login Screen

3. If authentication is successful, the conference creation screen is displayed (refer to [Figure 1-62 Video Conference Screen](#)).

 An error message is displayed if an incorrect User ID or Password is entered.

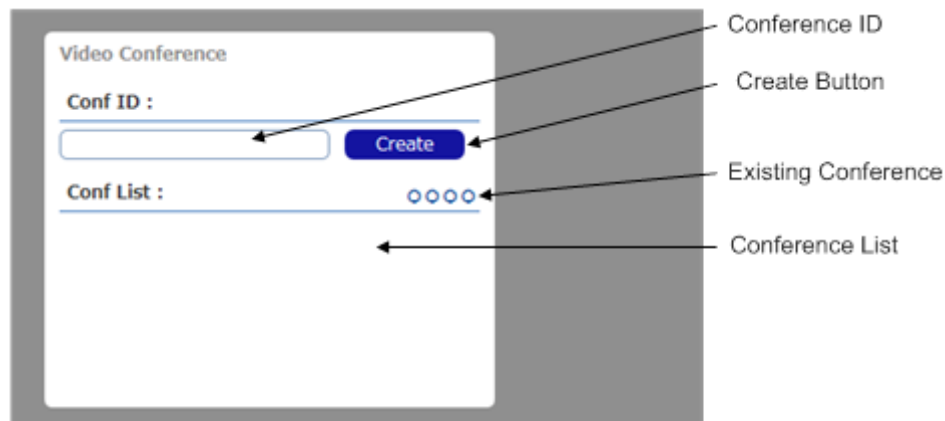


Figure 1-62 Video Conference Screen

Conference ID Creation:

1. Enter the conference ID using a maximum of 32 alphanumeric characters and press **Create** (refer to [Figure 1-62 Video Conference Screen](#)).
2. Conf List displays existing conference/maximum conference. Serial number, organizer name and the number of participants in a conference is displayed. This list is updated in real time.
3. If the creation of conference is successful, the conference screen appears (refer to [Figure 1-63 Conference Screen with Conference ID](#)). This webpage asks permission to access the camera and MIC.

 In case of a duplicated conference ID, any license issue, or if the web browser is not supported an error message is displayed.

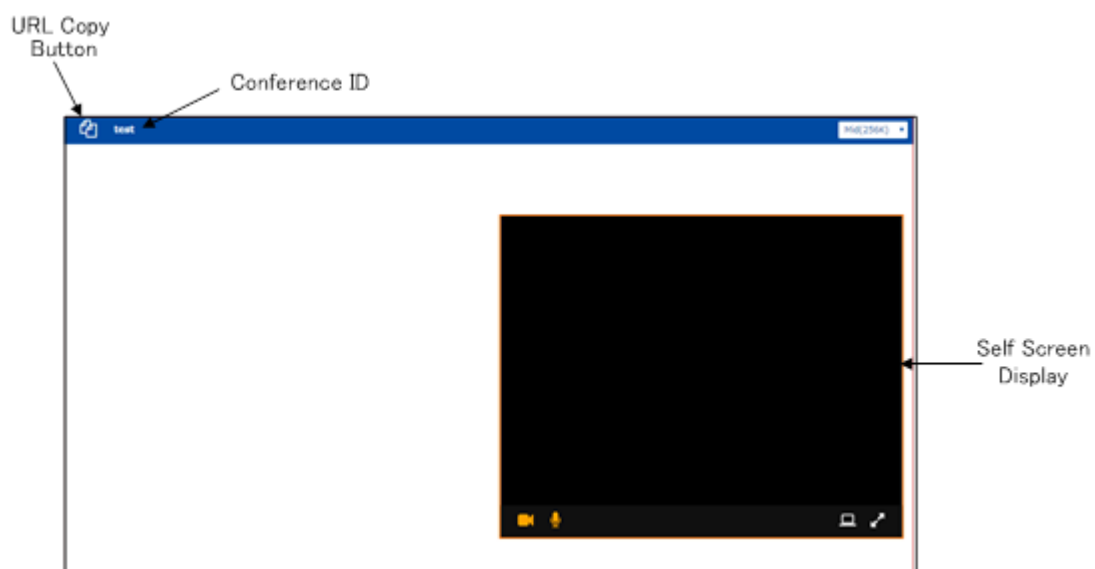


Figure 1-63 Conference Screen with Conference ID

Inviting and Participating:

1. The organizer can invite the participants by sharing the conference URL. The following are conference URL formats:
<http://System-URL/uc/conf?id=[Conference ID]> or
<https://System-URL/uc/conf?id=[Conference ID]>
2. To copy the URL, click on the **URL Copy Button** (refer to [Figure 1-63 Conference Screen with Conference ID](#)). The URL is copied to the clipboard. The organizer can share the same URL with participants. The URL is copied with the HTTPS option.
 - This button is supported with the Android Operating System.
3. Participants can join the conference by accessing the shared conference URL using a web browser. When the participant accesses the conference, the conference screen is displayed with self and other's screen display. The webpage ask the permission to access the camera and MIC.
 - If the number of participant reaches the maximum limit, an error message is displayed.

Conference:

1. After successful participation of a conference the following is displayed.
2. When a user joins the conference, the application will attempt to access the camera and MIC of the device. If user allows, then self-video along with the other participant's screen is displayed on the window and a P2P connection is established with other clients. If the user does not have a camera or MIC with the device or access is denied, then the user enters the conference as receive-only participant. The users are required to re-join the conference, if they want to connect a camera or a MIC.

- The browser can store the access permissions of conference users. If a user re-joins the conference, the browser may apply the previous permission rights.

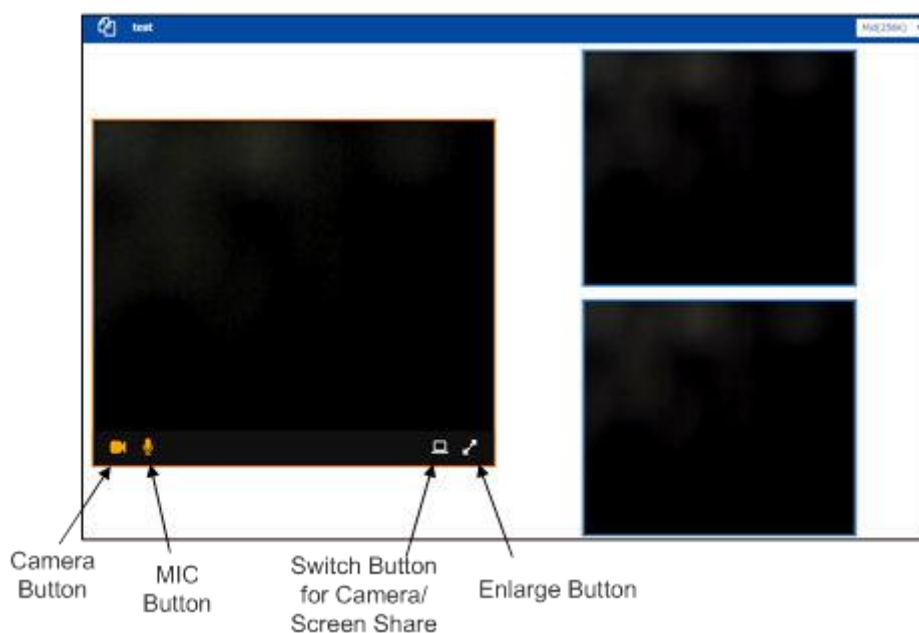


Figure 1-64 Conference Screen with Toolbar

Camera Button

This button is displayed only on the self-screen. If the browser cannot access the camera this button is not displayed. This button is used to switch ON/OFF the transmission of video. When video transmission is off, this button appears white. A video off is indicated on the upper part of self-screen and no video illustration is displayed on other participant's video. When video transmission is on, this button appears orange and the video off indicator disappears.

Mic Button

This button is displayed only on the self-screen. If the browser cannot access the MIC this button is not displayed. This button is used to switch ON/OFF the transmission of audio. When audio transmission is off, this button appears white and an audio off indicator is displayed on upper part of self and other participant's screen. When audio transmission is on, this button appears orange and the audio off indicator disappears.

Switch Button for Camera/Screen Share

This button is only displayed on the self-video screen. This button is used to switch camera to screen share and vice-versa. While using screen share this button turns orange.

- The Video Switching button is not displayed on Android systems, or if the connection is not made using HTTPS.
- <Versions prior to 3.00> If the Chrome extension for screen sharing is not installed and the Switch button is pressed, the installation page for this extension opens. Following installation, screen sharing is available.

Enlarge Button

This button is displayed on all video screens and is used to enlarge a particular video screen. Only one video can be enlarged at a time. When one video is enlarged the video bar of other video screens is not displayed. Various video screens in a conference are arranged per screen size and orientation. The drag and drop operation can also be used to rearrange the order of video screens except when the enlarge operation is used.

- This drag and drop operation is not possible with Android operating systems.

Conference Exit:

Closing the webpage closes the conference for that user and video is disappeared from other user's displays.

Release of Conference ID:

The Conference ID is released under following conditions:

- The number of participants becomes zero.
- The Web Conference Duration Timer expires.

If a conference URL is accessed after the conference ID is released, an error is displayed. As soon as the conference ID is released, it becomes available for re-use.

Reloading the Webpage:

When a conference web-page is reloaded, it is considered as exiting and re-entering the conference. If a user reloads the webpage when no other user exists, the conference ID is released and the user cannot re-enter.

Forced Disconnect:

If the connection with the server is lost, all the conferences will be closed with an error. If any user is disconnected, the user is disconnected from the conference.

Creating a Conference Without a Login:

With the following URL format user can directly create a conference by passing the login screen

<https://[System URL]/uc/conf?id=[Conference ID]&u=[User ID]&p=[Password]>

Duration Timer and End Alert Timer:

The SL2100 starts the web conference duration timer from the time when an organizer creates a conference. When the End Alert timer is not zero and is shorter than the Web Conference Duration timer then an End Alert is displayed as per Program 20-64-02 value before the Web Conference Duration timer expires. The warning alert asks if the conference needs to be continued or not. If yes is pressed then timers are reset and count starts again. When the End Alert timer is zero or is greater than Web conference duration timer then warning dialogue is not displayed. If the conference timer expires, then a time out error is displayed to all the participants and the conference is released.

Screen Sharing:

For screen sharing press the **Switch Button for Camera/Screen Share** (refer to [Figure 1-65 Switch Button for Video/Screen Sharing](#)).

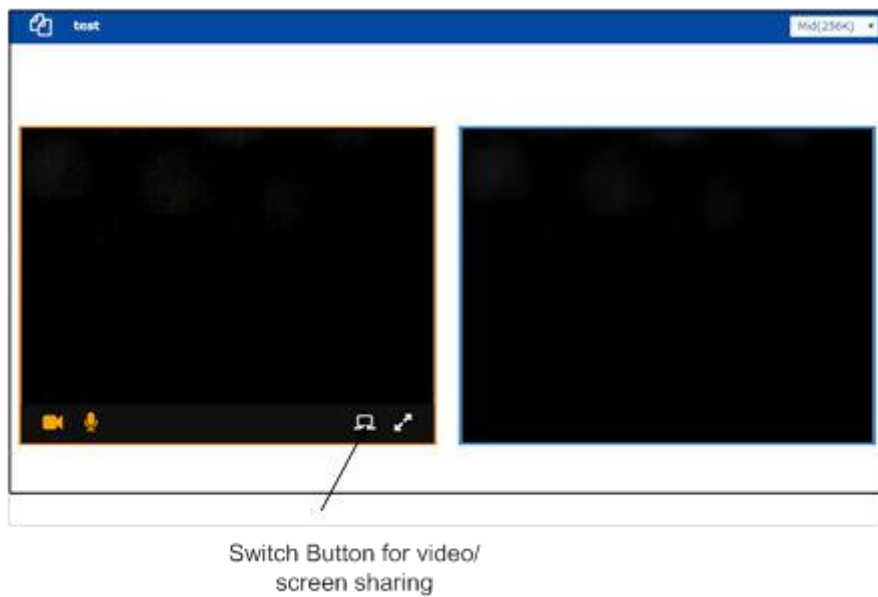


Figure 1-65 Switch Button for Video/Screen Sharing

The following screen sharing option will be displayed. Select **Entire Screen** or particular application & press **Share** button on the NEC Screen Sharing window to share the screen with other user.

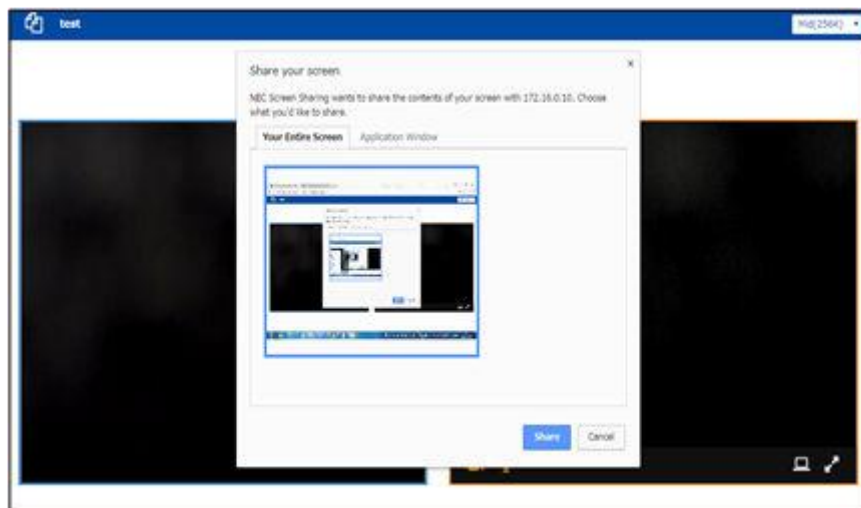


Figure 1-66 NEC Screen Sharing Window

Screen will be shared with other users (refer to [Figure 1-67 Example of Users Sharing Window](#)).

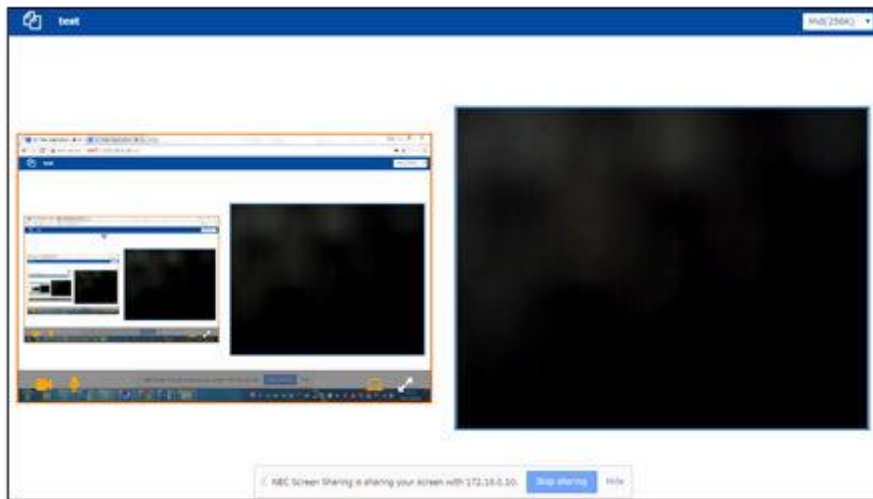


Figure 1-67 Example of Users Sharing Window

To stop screen sharing or switch back to camera, press the **Switch Button** or **Stop Sharing** button (refer to [Figure 1-68 Stop Screen Sharing or Camera Switch Window](#)).

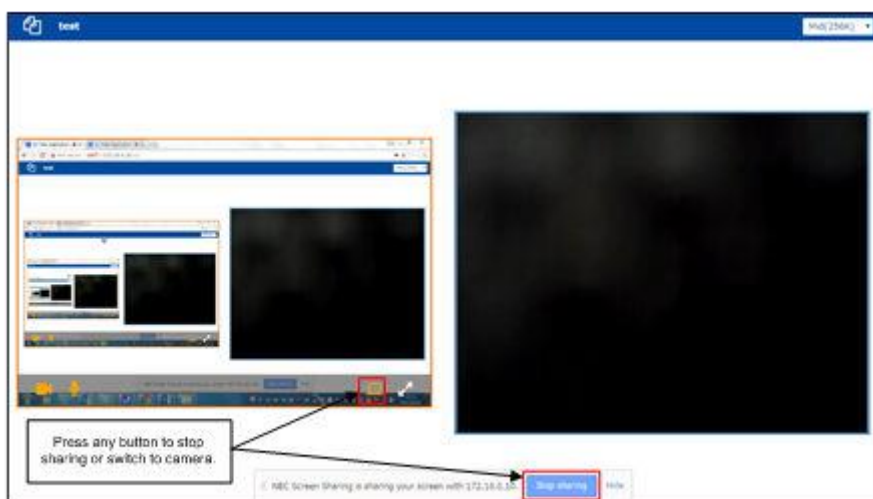


Figure 1-68 Stop Screen Sharing or Camera Switch Window

Error List:

[Table 1-75 Common Errors](#) lists the common errors displayed using the status and error conditions.

Table 1-75 Common Errors

Status	Error Condition	Displayed Messages
Loading	Non-supported browser or OS.	This Web Browser/OS is not supported.
Login	Error with User ID or password.	The user name/password combination is invalid.
Create	Conference ID is duplicated.	The conference ID is already in use.
	Conference error.	License capacity has been exceeded.

Status	Error Condition	Displayed Messages
Join	Number of members has reached maximum.	The conference is full.
	Session license error.	License capacity has been exceeded.
Conference	Disconnected from SL2100.	Lost connection with the SL2100, the conference has ended.
	Web Conference Duration Timer (Program 20-64-01) is expired.	Web Conference Duration Timer has expired. The conference has ended.

[Table 1-76 Special Conditions](#) lists special conditions where the system returns a 204 No Content without displaying an error message to prevent external attacks.

Table 1-76 Special Conditions

Status	Error Condition
Join	Accessing an invalid URL.
	Accessing the secondary system's URL in a NetLink system.
By-passing the Login	There is an error in User ID or Password.

Virtual Extensions

Description

Virtual Extensions are available software extensions in the SL2100. A Virtual Extension assigned to a line key, can appear and ring on an individual station or multiple stations and be used for outbound access.

Up to 50 VE keys are provided.

Conditions

- More than 17 IP Multiline Terminals are not recommended when the same Virtual Extension Keys are assigned to each IP Multiline Terminal.
- The 50 available ports/Extensions are assigned on a per extension basis for Virtual Extension key mode.
- The 50 available ports/Extensions are assigned per extension for CAR key mode or Virtual Extension key mode.
- More than one extension can share a Virtual Extension key.
- An extension can have more than one Virtual Extension key assigned.



Assigning a Virtual Extension key of the extension the key is assigned on is not supported.

- Up to 32 incoming calls can be queued to busy Virtual Extension key.
- You cannot have a CAR key and Virtual Extension on the same telephone.
- Virtual Extensions do not support the following features:
 - Barge-In
 - Conference
 - Conference, Voice Call/Privacy Release
 - Reverse Voice Over
 - Tone Override
 - Voice Over
- When a valid system station calls a Virtual Extension appearing on another station, Voice and MW softkeys appear in the display of the calling station, but they do not operate.
- When talking on a Virtual Extension you can mute the handset.
- Incoming calls to a virtual extension that appear on stations that are used with the CTI applications, PC Assistant, or PC Attendant, do not show up as a second call in the CTI application.
- If multiple CAR/SIE/VE keys are ringing on a station at the same time, the CAR/SIE/VE key on the lowest Line Key is answered first.
- Virtual Extension Keys assigned as code *03 do not support Voice Mail Message Indication on Line Keys.
- Busy Virtual Extensions cannot be Tone overridden.
- Class of service feature PRG 20-11-20: No Call Back (transfer recall disable) is not supported for calls from a physical extension to a virtual extension.
- When a call is parked from a virtual extension, the virtual extension is released.
- When parking a call from a virtual extension, PRG 15-02-21 and PRG 15-18-01 must be set to 1.
- Park Group assignment is by terminal extension, not the virtual extension.
- When a call parked from a virtual extension recalls, it will ring the terminal where the virtual extension is programmed to, not the virtual extension key.

- When an internal station-to-station call is made to a virtual extension, the name and number of the calling party does not appear in the display of the station the virtual extension resides on until the call is answered.
- A door box cannot ring a virtual extension.
- If a user dials a number not programmed in ARS, PRG 26-01-03 determines if the system should route over the trunk group settings defined in PRG 21-02 or play an error tone.
- When using ARS Class of Service, with PRG 26-01-03 set to (1) "Play Warning Tone", Any trunk pointed or transferred to a virtual that is Call Forward Off-Premise will not complete. For a virtual to Call Forward Off-Premise, PRG 26-01-03 must be set to "Route to trunk group" and the call will follow the trunk group settings of the trunk, assigned in PRG 21-03.
- When using ARS Class of Service, with PRG 26-01-03 set to (1) "Play Warning Tone" or transferred to a virtual that is call forwarded off premise will always follow ARS Class 1 routing properties.
- Software supports distinctive ring tones for external calls or intercom calls from specified extensions.
- Calls made from Virtual Extensions will show up in SMDR as calls made from the physical extension the VE resides on.
- Virtual Extension Ring Assignment (command 15-09) will follow the ring assignment for the Night Mode Group the virtual extension is assigned to (default Night Mode Group 1) and not the Night Mode Group of the keyset the virtual is appearing on.
- A special ringtone is provided when a pre-assigned extension places an Intercom call.
- While on a call (ICM or Trunk) if an internal call is received on a virtual appearance of a physical station, the caller ID of the internal party will not be displayed to the user who is on the call.

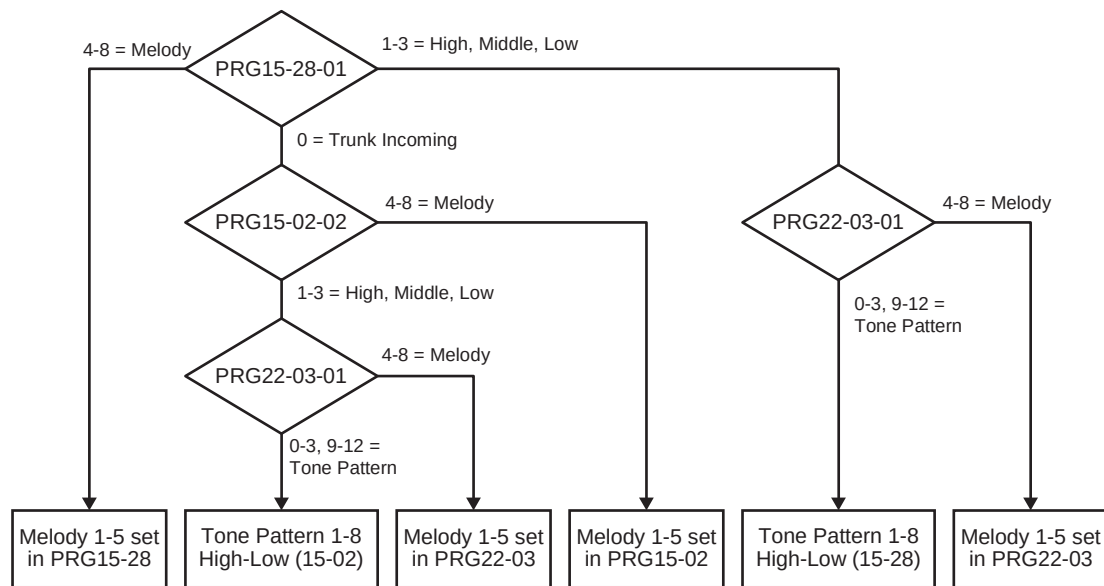
<In case of assigned at Digital and IP Multiline Terminals>

PRG 15-01-13	PRG 15-02-03	Ring Tone at called Virtual Extension
Special Ringtone Choice	Extension Ring Tone	
0 (Incoming extension ringtone)	any	Same internal ringtone.
1 - 8 (Tone pattern 1 - 8)	1 - 3 (High, Middle, Low)	<u>Special ringtone.</u>
any	4 - 8 (Melody 1 ~ 5)	Same internal ringtone.

- Distinctive ringing on VE is supported which can distinguish between external and internal calls. When Program 20-04-05 is set to "On", an outside call to VE follows the trunk incoming ringtone configured in Program 22-03-01 and Program 15-02-02.
- The incoming ringtone from a pre-assigned extension (set in Program 15-01-13) is limited to calls to the actual extension, not the Virtual Extension. Incoming calls to the VE follows Program 15-08-1 settings.
- A virtual extension can display the caller ID of an internal caller (Callers station name is displayed, if station name is not available the extension number is displayed). Also, a virtual extension can now display the caller ID of an internal or external caller when the virtual is not set to ring (Previously the virtual extension must be set to ring or CID is not displayed).
- Call Forwarding for a Virtual Extension cannot be set from DISA.
- Caller ID is not supported when transferring to a virtual extension that is set to call forward both ring.
- For calls to queue to that virtual extension, Call Forward No Answer must be used.
- When Program 20-04-05 is "On; distinguish ringtone enable", outside call to Virtual Extension follows trunk incoming ringtone configured by PRG 15-28-01, PRG 22-03-01 and PRG 15-02-02, beside internal call follows Virtual Extension ringtone configured by PRG 15-28-01, PRG 15-08-01 and PRG 15-02-02. Below charts show the ringtone configuration when PRG 20-04-05 is On or Off case.

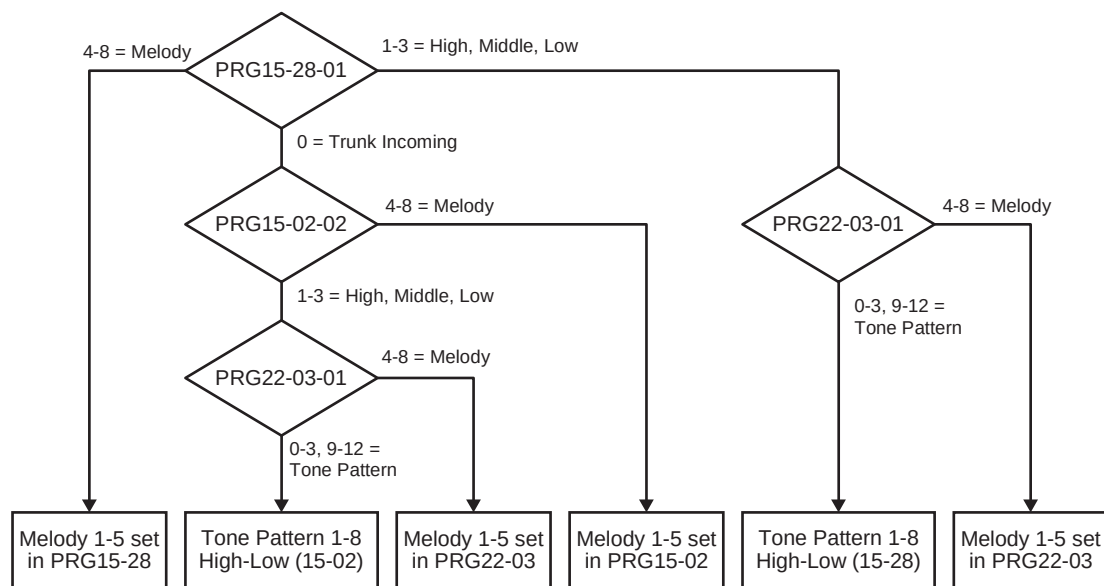
When PRG 20-04-05 is On and called from outside.

<Digital and IP Multiline Terminals>



When PRG20-04-05 is Off or When PRG20-04-05 is On and called from Internal.

<Digital and IP Multiline Terminals>



Default Settings

Not Assigned

System Availability

Terminals

All Multiline Terminals

Required Component(s)

None

Related Features

Call Waiting/Camp-On

Call Arrival (CAR) Keys

Secondary Incoming Extension

Guide to Feature Programming

The programs listed below indicate the most commonly used programs required for this feature. The programs are listed in the order that the installer should follow. Refer to the PCPro wizards for further detailed programming.

- When a * is listed next to the Program Number it indicates a program that **MUST** be set (from a default state) for this feature to be enabled.

Program No.	Program Name	Input Data	Default
11-04-01 *	Virtual Extension Numbering - Extension Number	Dial (Up to 8 digits)	All Virtual Extension Port = No Setting
15-02-02	Multiline Telephone Basic Data Setup - Trunk Ring Tone	1 = High (2W Digital/IP Multiline Terminal) 2 = Medium (2W Digital/IP Multiline Terminal) 3 = Low (2W Digital/IP Multiline Terminal) 4 = Melody 1 (2W Digital/IP Multiline Terminal) 5 = Melody 2 (2W Digital/IP Multiline Terminal) 6 = Melody 3 (2W Digital/IP Multiline Terminal) 7 = Melody 4 (2W Digital/IP Multiline Terminal) 8 = Melody 5 (2W Digital/IP Multiline Terminal)	2

Program No.	Program Name	Input Data	Default
15-02-03	Multiline Telephone Basic Data Setup - Extension Ring Tone	1 = High (2W Digital/IP Multiline Terminal) 2 = Medium (2W Digital/IP Multiline Terminal) 3 = Low (2W Digital/IP Multiline Terminal) 4 = Melody 1 (2W Digital/IP Multiline Terminal) 5 = Melody 2 (2W Digital/IP Multiline Terminal) 6 = Melody 3 (2W Digital/IP Multiline Terminal) 7 = Melody 4 (2W Digital/IP Multiline Terminal) 8 = Melody 5 (2W Digital/IP Multiline Terminal)	8
15-07-01 *	Programmable Function Keys	*03 = Virtual Extension	Refer to the programming manual for the default values and for all other available options in this command.
15-09-01	Virtual Extension Ring Assignment - Ringing	0 = No Ringing 1 = Ring	0
15-11-01	Virtual Extension Delayed Ring Assignment - Ringing	0 = Immediate Ring 1 = Delayed Ring	0
15-28-01	Trunk Incoming Ring Tone of Extension Setup - Trunk Incoming Ring Tone	0 ~ 8 0 = Trunk incoming ring tone (2W Digital/IP Multiline Terminal) 1 = High (2W Digital/IP Multiline Terminal) 2 = Middle (2W Digital/IP Multiline Terminal) 3 = Low (2W Digital/IP Multiline Terminal) 4 = Melody1 (2W Digital/IP Multiline Terminal) 5 = Melody2 (2W Digital/IP Multiline Terminal) 6 = Melody3 (2W Digital/IP Multiline Terminal) 7 = Melody4 (2W Digital/IP Multiline Terminal) 8 = Melody5 (2W Digital/IP Multiline Terminal)	0
20-04-03	System Options for Virtual Extensions - Call Coverage Delay Interval	0 ~ 64800 seconds	10
15-02-21	Multiline Telephone Basic Data Setup - Virtual Extension Access Mode (when idle Virtual Extension key pressed)	0 = DSS 1 = Outgoing (OTG) 2 = Ignore	2
15-18-01	Virtual Extension Key Enhanced Options - Virtual Extension Key Operation Mode	0 = Release 1 = Land on the key	1
15-18-02	Virtual Extension Key Enhanced Options - Display mode when placing a call on Virtual Extension Key	0 = Secondary Extension Name 1 = Actual Station Name	1
15-18-03	Virtual Extension Key Enhanced Option - Show CLI	0 = No CLI info 1 = Show CLI info	0
15-18-04	Virtual Extension Key Enhanced Option - Show Internal Caller Information	0 = Do Not Show 1 = Show	0
15-18-05	Virtual Extension Key Enhanced Option - One Ring	0 = Normal Ring Cycle 1 = One Ring	0
15-01-01	Basic Extension Data Setup - Extension Name	Up to 12 Characters	No Setting

Program No.	Program Name	Input Data	Default
20-04-05	System Options for Virtual Extensions - Ring-tone mode for incoming to VE	0 = Off 1 = On	0
20-10-08	Class of Service Options (Answer Service) - Virtual Extension Off-Hook Answer	0 = Off (Ringing Line Preference Disabled) 1 = On (Ringing Line Preference Enabled)	COS 01 ~ 15 = 1
20-15-03	Ring Cycle Setup - Incoming Signal Type : Incoming Internal Call	Ringing Cycle Number : 1 ~ 13	3
22-03-01	Trunk Ring Tone Range - Ring Tone Pattern	0 = Tone 1 1 = Tone 2 2 = Tone 3 3 = Tone 4 4 = Melody 1 (2W Digital/IP Multiline Terminal Mode) 5 = Melody 2 (2W Digital/IP Multiline Terminal Mode) 6 = Melody 3 (2W Digital/IP Multiline Terminal Mode) 7 = Melody 4 (2W Digital/IP Multiline Terminal Mode) 8 = Melody 5 (2W Digital/IP Multiline Terminal Mode) 9 = Tone 5 (2W Digital/IP Multiline Terminal Mode) 10 = Tone 6 (2W Digital/IP Multiline Terminal Mode) 11 = Tone 7 (2W Digital/IP Multiline Terminal Mode) 12 = Tone 8 (2W Digital/IP Multiline Terminal Mode)	0
15-02-30	Multiline Telephone Basic Data Setup - Toll Restriction Class	0 = Virtual Extension (Follows virtual extension Toll Class in PRG 21-04.) 1 = Real Extension (Follows physical stations Toll Class in PRG 21-04.)	1
15-08-01	Incoming Virtual Extension Ring Tone Setup - Incoming Ring Pattern	0 ~ 8 0 = Tone Pattern 1 1 = Tone Pattern 2 2 = Tone Pattern 3 3 = Tone Pattern 4 4 = Incoming extension ring tone 5 = Melody1 (2W Digital/IP Multiline Terminal) 6 = Melody2 (2W Digital/IP Multiline Terminal) 7 = Melody3 (2W Digital/IP Multiline Terminal) 8 = Melody4 (2W Digital/IP Multiline Terminal)	0
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-07-10	Class of Service Options (Administrator Level) - Programmable Function Key Programming (Appearance Level)	0 = Off 1 = On	COS1 ~ 14/COS15 = 1
20-13-27	Class of Service Options (Supplementary Service) - Busy on Seizing Virtual Extension	0 = Off 1 = On	COS 01 ~ 15 = 1
21-01-15	System Options for Outgoing Calls - Outgoing Disable on Incoming Line (Toll Restriction)	0 = Disable (Off) 1 = Enable (On)	0
23-04-01	Ringing Line Preference for Virtual Extensions - Extension Group Number	0 ~ 50 (0 = No Setting)	0

Program No.	Program Name	Input Data	Default
15-10-01	Incoming Virtual Extension Ring Tone Order Setup - Virtual Incoming Extension Ring Tone Order Setup	0 ~ 8 0 = Tone Pattern 1 1 = Tone Pattern 2 2 = Tone Pattern 3 3 = Tone Pattern 4 4 = Incoming extension ring tone 5 = Melody1 (2W Digital/IP Multi-line Terminal) 6 = Melody2 (2W Digital/IP Multi-line Terminal) 7 = Melody3 (2W Digital/IP Multi-line Terminal) 8 = Melody4 (2W Digital/IP Multi-line Terminal)	Priority order: 1 = 0 (Tone Pattern 1) 2 = 1 (Tone Pattern 2) 3 = 2 (Tone Pattern 3) 4 = 3 (Tone Pattern 4)
20-02-19	System Options for Multiline Telephones - Virtual Extension Mode	0 = No 1 = Yes	0
15-01-13	Basic Extension Data Setup - Special ringtone choice	0 = Incoming extension ring tone 1 = Tone pattern 1 2 = Tone pattern 2 3 = Tone pattern 3 4 = Tone pattern 4 5 = Melody1 (2W Digital/IP Multi-line Terminal) 6 = Melody2 (2W Digital/IP Multi-line Terminal) 7 = Melody3 (2W Digital/IP Multi-line Terminal) 8 = Melody4 (2W Digital/IP Multi-line Terminal)	0

Operation

To answer a call ringing a Virtual Extension:

1. Press the flashing **Virtual Extension** key.
- **OR** -
Go off-hook.



PRG 20-10-08 needs to be set to on (1) for extension Class of Service.

To place a call to a Virtual Extension:

1. Go off-hook.
2. Dial the Virtual Extension, or press the **Virtual Extension** key.



The operation depends on the setting in PRG 15-02-21.

To place a call from a Virtual Extension:

1. Press the **Virtual Extension** key.



The operation depends on the setting in PRG 15-02-21.

2. Place an intercom call or dial a trunk access code to seize an outside line and place your call.

To program a Virtual Extension key on a telephone:

1. Press **Speaker** key.
2. Dial **752**.
3. Press the key you want to program.
4. Dial ***03**.
5. Dial the number of the extension you want to appear on the key.
6. Press **Hold** key once for Immediate Ring (skip to step 8 for Delayed Ring).
7. Dial the mode number in which the key rings.
 - 1 = Day 1
 - 2 = Night 1
 - 3 = Midnight 1
 - 4 = Rest 1
 - 5 = Day 2
 - 6 = Night 2
 - 7 = Midnight 2
 - 8 = Rest 2
8. Press **Hold** key for a second time for Delayed Ring, or Skip to step 10.
9. Dial the mode number in which the key delay rings.
 - 1 = Day 1
 - 2 = Night 1
 - 3 = Midnight 1
 - 4 = Rest 1
 - 5 = Day 2
 - 6 = Night 2
 - 7 = Midnight 2
 - 8 = Rest 2
10. Press **Speaker** key.

Voice Mail Integration (Analog)

Description

The system provides telephone users with comprehensive Voice Mail features. Voice Mail ends the frustration and cost of missed calls, inaccurate written messages and telephone tag. This frees busy receptionists and secretaries for more productive work.

External voice mail requires available analog station ports based on the number of voice mail ports connected.

Integrated voice mail enhances the telephone system with the following features:

- **Call Forwarding to Voice Mail**

An extension user can forward their calls to Voice Mail. Once forwarded, calls to the extension connect to that extension mailbox. The caller can leave a message in the mailbox instead of calling back later. Forwarding can occur for all calls immediately, for unanswered calls or only when the extension is busy. When a user transfers a call to an extension forwarded to Voice Mail, the call waits for the Delayed Call Forwarding time before routing to the called extension mailbox. This gives the transferring party the option of retrieving the call instead of having it go directly to the mailbox.

- **Leaving a Message**

Voice Mail lets a Multiline Terminal extension user easily leave a message at an extension that is unanswered, busy or in Do Not Disturb. The caller just presses their Voice Mail key to leave a message in the called extension mailbox. There is no need to call back later.

- **Transferring to Voice Mail**

By using Transfer to Voice Mail, a Multiline Terminal extension user can Transfer a call to the user's or a co-worker's mailbox. After the Transfer goes through, the caller can leave a message in the mailbox.

Voice Mail Queuing

When accessing the voice mail, the system provides a voice mail queue. If all the voice mail ports are busy, any calls trying to get to the voice mail are placed in queue. As the voice mail ports become available, the calls are connected to the voice mail in the order in which they were received.

As the Voice Mail Queue follows Department Hunting programming, the queue can hold a maximum of 10 calls. If the queue is full or if the voice mail ports are not assigned to a Department Group, the calls are handled as though no voice mail queuing feature is enabled. The calls either access voice mail if a port is available or they receive a busy signal.



The Voice Mail Queuing feature does not work with the Conversation Record feature.

Voice Mail Key

When an extension receives a voice mail, the Voice Mail key can be used to call the voice mail to listen to the messages.

Analog Voice Mail Protocol Leading and Trailing Digits Assignment

The Analog Voice Mail Protocol Leading Digits (Chassis to VM) and the Trailing Digits format can be changed.

The following chart illustrates the input data for PRG 45-04-01~PRG 45-04-09 (Voice Mail Digit Add Assignment) based on the setting in PRG 45-01-15 (Analog Voice Mail Protocol Selection) and PRG 45-01-17 (Reply Mailbox Number). If PRG 45-01-15 is set to Fixed (0) it uses the Fixed Memory Location for the Leading Digits or, if set to Program (1) it uses PRG 45-04-01~PRG 45-04-09 for the Leading Digits. If PRG 45-01-17 is set to 0 (No), it does not have the calling party in the Trailing Digits.

 The default values for PRG 45-04-01~PRG 45-04-09 are not assigned.

Use the chart below to determine what leading and trailing digits will be sent to the Analog Voice Mail System.

Program	PRG 45-01-15 (0 = Fixed) PRG 45-01-17 (1=Yes or 0=No)	PRG 45-01-15 (1 = Program) PRG 45-01-17 (1=Yes)	PRG 45-01-15 (1=Program) PRG 45-01-17 (0=No)	Description
45-04-01 - Remote Logon (Internal) Up to four digits * Default not assigned	***1XXX	Up to four digits + XXX	Up to four digits + XXX	Remote Log-On (Internal) - Internal call to VM from extension XXX. - User has not indicated intent to enter mail box.
45-04-02 - Direct Logon Up to four digits * Default not assigned	#XXX	Up to four digits + XXX	Up to four digits + XXX	Direct Log-On Connect user to mail box for extension XXX.
45-04-03 - Transfer Message Up to four digits * Default not assigned	***2YYY ***2XXXXYY	Up to four digits + YYY Or Up to four digits + XXXYYY	Up to four digits + YYY	Transfer Message - User is transferring a call to VM - Record a message to be placed in mail box of extension YYY. Record Message for Called Extension (QVM) - Record a message to be placed in mail box of extension YYY. - Store source extension number XXX for automatic reply feature.
45-04-04 - Forward-All Up to four digits * Default not assigned	***3UUUZZZ	Up to four digits + UUUZZZ	Up to four digits + ZZZ	Forward-All Extension or Trunk UUU that called extension ZZZ and was forwarded to the Voice Mail Box of extension ZZZ.
45-04-05 - Forward-Busy Up to four digits * Default not assigned	***4UUUZZZ	Up to four digits + UUUZZZ	Up to four digits + ZZZ	Forward-Busy Extension or Trunk UUU that called extension ZZZ and was forwarded to the Voice Mail Box of extension ZZZ.
45-04-06 - Forward RNA Up to four digits * Default not assigned	***5UUUZZZ	Up to four digits + UUUZZZ	Up to four digits + ZZZ	Forward RNA Extension or Trunk UUU that called extension ZZZ and was forwarded to the Voice Mail Box of extension ZZZ.

Program	PRG 45-01-15 (0 = Fixed) PRG 45-01-17 (1=Yes or 0=No)	PRG 45-01-15 (1 = Program) PRG 45-01-17 (1=Yes)	PRG 45-01-15 (1=Program) PRG 45-01-17 (0=No)	Description
45-04-07 - Remote Logon Up to four digits * Default not assigned	***6TTT	Up to four digits + TTT	Up to four digits + TTT	Remote Log-on • External call to Voice Mail from Trunk TTT. • Play welcome greeting and connect user to prompt.
45-04-08 - Conversation Recording Up to four digits * Default not assigned	***8NNN	Up to four digits + NNN	Up to four digits + NNN	Conversation Recording • Record a message to be placed in voice mail box of extension NNN.
45-04-09 - Clear Down String Up to four digits * Default not assigned	9999	Up to four digits	Up to four digits	Clear down string. • Terminate

* = If leading digits are blanks, nothing will be sent to the Analog VM as integration.

Conditions

- Ring Group calls do not follow extension call forwarding to voice mail.
- Only one Voice Mail system can be installed in an SL2100 system (Analog or Digital, but not both in same system). This restriction is because only one Department Group can be assigned for Voice Mail.
- If installing an Analog Voice Mail System, any Analog station port (SLT port) can be assigned to support the Analog Voice Mail system.
- If installing a InMail system (In-Skin product), an Analog station port (SLT port) can be assigned to support the sending of DTMF tones and Disconnect Signal to support a Fax server or other like products.
- When using Programmed (PRG 45-01-15 = 1) integration and PRG 45-04-XX is blank, no trailing digits are sent. You can allow only the trailing digits to be sent by setting PRG 45-05-XX to 1.
- Stutter Dial Tone is supported to Single Line Terminals for Voice Mail Message Waiting.

Default Settings

Disabled

System Availability

Terminals

All Terminals

Required Component(s)

008U-B1 or 082U-B1

Related Features

Barge-In

Caller ID

Direct Inward Line (DIL)

Hold

Message Waiting

One-Touch Calling

Programmable Function Keys

Transfer

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
10-09-01	DTMF, Dial Tone Detection Setup - DTMF, Dial Tone Detection	0 = Common use for both analog extensions and trunks 1 = Use for analog extensions (DTMF Receivers) 2 = Use for analog trunks (DTMF receivers/Dial tone detection/ Caller ID detection)	Resource 01 - 140 = 0
11-07-01	Department Group Pilot Numbers - Extension Group Pilot Number	Dial (Up to 8 digits)	Group Number 1 ~ 49 = No Setting Group Number 50 = 3999
11-11-50	Service Code Setup (for Setup/Entry Operation) - Set Message Waiting Indication	0~9, *, # Maximum of 8 digit	No Setting
11-11-51	Service Code Setup (for Setup/Entry Operation) - Cancel Message Waiting Indication	0~9, *, # Maximum of 8 digit	No Setting
15-02-35	Multiline Telephone Basic Data Setup - Message Waiting Lamp Cycle for Calling Extension	1 = Cycle 1 2 = Cycle 2 3 = Cycle 3 4 = Cycle 4 5 = Cycle 5 6 = Cycle 6 7 = Cycle 7	3
15-02-36	Multiline Telephone Basic Data Setup - Message Waiting Lamp Cycle for Called Extension	1 = Cycle 1 2 = Cycle 2 3 = Cycle 3 4 = Cycle 4 5 = Cycle 5 6 = Cycle 6 7 = Cycle 7	2
15-02-37	Multiline Telephone Basic Data Setup - Voice Mail Message Wait Lamp Color	0 = Green 1 = Red	1
15-02-38	Multiline Telephone Basic Data Setup - Voice Mail Message Wait Lamp Cycle	1 = Cycle 1 2 = Cycle 2 3 = Cycle 3 4 = Cycle 4 5 = Cycle 5 6 = Cycle 6 7 = Cycle 7	2

Program No.	Program Name	Input Data	Default
15-03-01	Single Line Telephone Basic Data Setup - SLT Signaling Type	0 = DP 1 = DTMF	1
15-03-03	Single Line Telephone Basic Data Setup - Terminal Type	0 = Normal 1 = Special	0
15-03-09	Single Line Telephone Basic Data Setup - Caller ID Function	0 = Disable (Caller ID not displayed.) 1 = Enable (Caller ID is displayed.)	1
15-03-16	Single Line Telephone Basic Data Setup - Special DTMF Protocol Send	0 = No 1 = Yes	0
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
16-01-01	Department Group Basic Data Setup - Department Name	Maximum 12 characters	No Setting
16-01-02	Department Group Basic Data Setup - Department Calling Cycle	0 = Normal Routing (Priority) 1 = Easy - UCD Routing (Circular)	0
16-01-03	Department Group Basic Data Setup - Department Routing when Busy (Auto Step Call)	0 = Normal (Intercom caller hears busy tone.) 1 = Circular (Intercom caller routes to an idle group member.)	0
16-01-04	Department Group Basic Data Setup - Hunting Mode	0 = Stop at last member (non-loop) 1 = Circular	0
16-01-05	Department Group Basic Data Setup - Extension Group All Ring Mode Operation	0 = Manual (Ring the extensions one at a time when the service code are pressed.) 1 = Automatic (Ring all extensions.)	0
16-01-06	Department Group Basic Data Setup - STG Withdraw Mode	0 = Disabled (Call will camp on to the group.) 1 = Automatic (Call follows PRG 22-11-11.)	0
16-01-07	Department Group Basic Data Setup - Call Recall Restriction for STG	0 = Disabled (Call will recall.) 1 = Enabled (Call will not recall.)	0
16-01-09	Department Group Basic Data Setup - Department Hunting No Answer Time	0 ~ 64800 seconds	15
16-01-10	Department Group Basic Data Setup - Enhanced Hunt Type	0 = No hunting 1 = Hunting When Busy 2 = Hunting When Not Answered 3 = Hunting When Busy or No Answer	0
16-02-01	Department Group Assignment for Extensions	-	Refer to Programming Manual.
20-02-09	System Options for Multiline Telephones - Disconnect Supervision	0 = Disable (Off) 1 = Enable (On)	1
20-03-01	System Options for Single Line Telephones - SLT Call Waiting Answer Mode	0 = Hook Flash (Hooking) 1 = Hook Flash + Service Code 794	0
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-11-01	Class of Service Options (Hold/Transfer Service) - Call Forward All	0 = Off 1 = On	COS 01 ~ 15 = 1

Program No.	Program Name	Input Data	Default
20-11-02	Class of Service Options (Hold/Transfer Service) - Call Forward When Busy	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-03	Class of Service Options (Hold/Transfer Service) - Call Forwarding When Unanswered	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-04	Class of Service Options (Hold/Transfer Service) - Call Forwarding (Both Ringing)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-05	Class of Service Options (Hold/Transfer Service) - Call Forwarding with Follow Me	0 = Off 1 = On	COS 01 ~ 15 = 1
20-11-12	Class of Service Options (Hold/Transfer Service) - Call Forwarding Off Premise (External Call Forwarding)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-01	Class of Service Options (Supplementary Service) - Long Conversation Alarm	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-02	Class of Service Options (Supplementary Service) - Long Conversation Cutoff (Incoming)	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-03	Class of Service Options (Supplementary Service) - Long Conversation Cutoff (Outgoing)	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-04	Class of Service Options (Supplementary Service) - Call Forward/DND Override (Bypass Call)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-05	Class of Service Options (Supplementary Service) - Intercom Off-Hook Signaling	0 = Off (ICM off hook signaling disabled.) 1 = On (ICM off hook signaling enabled.)	COS 01 ~ 15 = 1
20-13-06	Class of Service Options (Supplementary Service) - Automatic Off-Hook Signaling (Automatic Override)	0 = Off (manually) 1 = On (automatically)	COS 01 ~ 15 = 1
20-13-07	Class of Service Options (Supplementary Service) - Message Waiting	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-12	Class of Service Options (Supplementary Service) - Room Monitor, Extension Being Monitored	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-13	Class of Service Options (Supplementary Service) - Continued Dialing (DTMF) Signal on ICM Call	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-16	Class of Service Options (Supplementary Service) - Barge-In, Receive	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-28	Class of Service Options (Supplementary Service) - Allow Class of Service to be Changed	0 = Off 1 = On	COS 01 ~ 15 = 0
20-13-35	Class of Service Options (Supplementary Service) - Block Camp On	0 = Off (Camp On blocked.) 1 = On (Camp On allowed.)	COS 01 ~ 15 = 0
22-02-01	Incoming Call Trunk Setup - Trunk Service Type	0 = Normal 1 = VRS (second dial tone if no VRS installed) 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delayed VRS 7 = ANI/DNIS 8 = DID (DDI) Mode Switching	0
22-04-01	Incoming Extension Ring Group Assignment - Extension Number	Maximum eight Digits	Group01 has 101, 102, 103, 104, 105, 106, 107, and 108 (First 8 ports ringing)
22-07-01	DIL Assignment - Number of Transferring Destination	Maximum of 8 digits (0 ~ 9, *, #)	No Setting

Program No.	Program Name	Input Data	Default
22-08-01	DIL/IRG No Answer Destination - Incoming Ring Group Number	0 = No Setting 01 ~ 25 = Incoming Group 102 = VMI 103 = Centralized VM	Group01 has 101, 102, 103, 104, 105, 106, 107, and 108 (First 8 ports ringing)
24-02-02	System Options for Transfer - MOH or Ringback on Transferred Calls	0 = Hold Tone 1 = Ring Back Tone	0
24-02-03	System Options for Transfer - Delayed Call Forwarding Time	0 ~ 64800 seconds	10
40-07-01	Voice Prompt Language Assignment for System Based - Voice Prompt Language	01 = US English 02 = UK English 03 = Australian English 04 = French Canadian 05 = Dutch 06 = Mexican Spanish 07 = Latin America Spanish 08 = Italian 09 = German 10 = Madrid Spanish 11 = Norwegian 12 = Parisian French 13 = Brazilian Portuguese 14 = Japanese 15 = Mandarin Chinese 16 = Korean 17 = Iberian Portuguese 18 = Greek 19 = Danish 20 = Swedish 21 = Thai 22 = Mandarin Chinese (Taiwan) 23 = Flemish 24 = Turkish 25 = Arabic 26 = Russian	3
45-01-01	Voice Mail Integration Options - Voice Mail Department Group Number	0 = No Voice Mail Assigned 1 ~ 50 = Department Group 1 ~ 50	0
45-01-02	Voice Mail Integration Options - Voice Mail Master Name	Up to 12 Characters	VOICE MAIL
45-01-04	Voice Mail Integration Options - Park and Page	0 = Off 1 = On	1
45-01-05	Voice Mail Integration Options - Message Wait	0 = Off 1 = On	1
45-01-06	Voice Mail Integration Options - Record Alert Tone Interval Time	0 ~ 64800 seconds	0
45-01-15	Voice Mail Integration Options - Analog Voice Mail Protocol Selection	0 = Fixed 1 = Program	0
45-01-16	Voice Mail Integration Options - Voice Mail Fax Digit Add Assignment	Up to four digits	No Setting
45-01-17	Voice Mail Integration Options - Reply Mailbox Number	0 = No 1 = Yes	1
45-01-18	Voice Mail Integration Options - Trunk Number Mapping	2 ~ 3	2
45-04-01	Voice Mail Digit Add Assignment - Remote Logon (Internal)	Up to four digits	No Setting
45-04-02	Voice Mail Digit Add Assignment - Direct Logon	Up to four digits	No Setting
45-04-03	Voice Mail Digit Add Assignment - Transfer Message	Up to four digits	No Setting
45-04-04	Voice Mail Digit Add Assignment - Forward-All	Up to four digits	No Setting

Program No.	Program Name	Input Data	Default
45-04-05	Voice Mail Digit Add Assignment - Forward-Busy	Up to four digits	No Setting
45-04-06	Voice Mail Digit Add Assignment - Forward RNA	Up to four digits	No Setting
45-04-07	Voice Mail Digit Add Assignment - Remote Log-on	Up to four digits	No Setting
45-04-08	Voice Mail Digit Add Assignment - Conversation Recording	Up to four digits	No Setting
45-04-09	Voice Mail Digit Add Assignment - Clear Down String	Up to four digits	No Setting
45-05-01	Voice Mail Send Protocol Signal Without Additional Digits - Remote Log-On Internal	0 = Off 1 = On	0
45-05-02	Voice Mail Send Protocol Signal Without Additional Digits - Direct Log-On	0 = Off 1 = On	0
45-05-03	Voice Mail Send Protocol Signal Without Additional Digits - Transfer Message/QVM	0 = Off 1 = On	0
45-05-04	Voice Mail Send Protocol Signal Without Additional Digits - Forward-All	0 = Off 1 = On	0
45-05-05	Voice Mail Send Protocol Signal Without Additional Digits - Forward-Busy	0 = Off 1 = On	0
45-05-06	Voice Mail Send Protocol Signal Without Additional Digits - Forward RNA	0 = Off 1 = On	0
45-05-07	Voice Mail Send Protocol Signal Without Additional Digits - Remote Log-On	0 = Off 1 = On	0
45-05-08	Voice Mail Send Protocol Signal Without Additional Digits - Conversation Recording	0 = Off 1 = On	0
45-05-09	Voice Mail Send Protocol Signal Without Additional Digits - Clear Down String	0 = Off 1 = On	0
80-03-01	DTMF Tone Receiver Setup - Detect Level	0 = 0 dBm ~ - 25 dBm 1 = - 5 dBm ~ - 30 dBm 2 = - 10 dBm ~ - 35 dBm 3 = - 15 dBm ~ - 40 dBm 4 = - 20 dBm ~ - 45 dBm 5 = - 25 dBm ~ - 50 dBm 6 = - 30 dBm ~ - 55 dBm	Refer to the Programming Manual for the default values.
80-03-02	DTMF Tone Receiver Setup - Start Delay Time	0 ~ 255 (0.25 ms ~ 64 ms)	Refer to the Programming Manual for the default values.
80-03-03	DTMF Tone Receiver Setup - Min. Detect Level	0 ~ 15 DTMF Tone 0 = - 10 dBm (0) to - 25 dBm (15) DTMF Tone 1 = - 15 dBm (0) to - 30 dBm (15) DTMF Tone 2 = - 20 dBm (0) to - 35 dBm (15) DTMF Tone 3 = - 25 dBm (0) to - 40 dBm (15) DTMF Tone 4 = - 30 dBm (0) to - 45 dBm (15) DTMF Tone 5 = - 35 dBm (0) to - 50 dBm (15) DTMF Tone 6 = - 40 dBm (0) to - 55 dBm (15)	Refer to the Programming Manual for the default values.

Program No.	Program Name	Input Data	Default
80-03-04	DTMF Tone Receiver Setup - Max. Detect Level	0 ~ 15 DTMF Tone 0 = 0 dBm (0) to - 15 dBm (15) DTMF Tone 1 = - 5 dBm (0) to - 20 dBm (15) DTMF Tone 2 = - 10 dBm (0) to - 25 dBm (15) DTMF Tone 3 = - 15 dBm (0) to - 30 dBm (15) DTMF Tone 4 = - 20 dBm (0) to - 35 dBm (15) DTMF Tone 5 = - 25 dBm (0) to - 40 dBm (15) DTMF Tone 6 = - 30 dBm (0) to - 45 dBm (15)	Refer to the Programming Manual for the default values.
80-03-05	DTMF Tone Receiver Setup - Forward Twist Level	0 ~ 9 (1 dB ~ 10 dB)	Refer to the Programming Manual for the default values.
80-03-06	DTMF Tone Receiver Setup - Backward Twist Level	0 ~ 9 (1 dB ~ 10 dB)	Refer to the Programming Manual for the default values.
80-03-07	DTMF Tone Receiver Setup - ON Detect Time	1 ~ 255 (15 + 15 ms ~ 3825 ms)	Refer to the Programming Manual for the default values.
80-03-08	DTMF Tone Receiver Setup - OFF Detect Time	1 ~ 255 (15 + 15 ms ~ 3825 ms)	Refer to the Programming Manual for the default values.
80-04-01	Call Progress Tone Detector Setup - Detection Level	0 = 0 dBm ~ - 25 dBm 1 = - 5 dBm ~ - 30 dBm 2 = - 10 dBm ~ - 35 dBm 3 = - 15 dBm ~ - 40 dBm 4 = - 20 dBm ~ - 45 dBm 5 = - 25 dBm ~ - 50 dBm 6 = - 30 dBm ~ - 55 dBm	Refer to the Programming Manual for the default values.
80-04-02	Call Progress Tone Detector Setup - Min. Detection Level	0 ~ 15 0 = - 10 dBm (0) ~ - 25 dBm (15) 1 = - 15 dBm (0) ~ - 30 dBm (15) 2 = - 20 dBm (0) ~ - 35 dBm (15) 3 = - 25 dBm (0) ~ - 40 dBm (15) 4 = - 30 dBm (0) ~ - 45 dBm (15) 5 = - 35 dBm (0) ~ - 50 dBm (15) 6 = - 40 dBm (0) ~ - 55 dBm (15)	Refer to the Programming Manual for the default values.
80-04-03	Call Progress Tone Detector Setup - S/N Ratio	0 ~ 4 (0 dB ~ - 20 dB)	Refer to the Programming Manual for the default values.
80-04-04	Call Progress Tone Detector Setup - No Tone Time	0 ~ 255 (30 + 30 ~ 7680 ms) (0 = not detect) 1 ~ 255 = 60 ~ 7680 ms The formula is 30 + 30N When set to N = 1, it means 30 + 30 * 1 = 60. When set to N = 255, it means 30 + 30 * 255 = 7680.	Refer to the Programming Manual for the default values.
80-04-05	Call Progress Tone Detector Setup - Pulse Count	1 ~ 255	Refer to the Programming Manual for the default values.
80-04-06	Call Progress Tone Detector Setup - ON Minimum Time	1 ~ 255 (30 + 30 ~ 7680 ms)	Refer to the Programming Manual for the default values.
80-04-07	Call Progress Tone Detector Setup - ON Maximum Time	0 ~ 255 (30 + 30 ~ 7680 ms)	Refer to the Programming Manual for the default values.

Program No.	Program Name	Input Data	Default
80-04-08	Call Progress Tone Detector Setup - OFF Minimum Time	1 ~ 255 (30 + 30 ~ 7680 ms)	Refer to the Programming Manual for the default values.
80-04-09	Call Progress Tone Detector Setup - OFF Maximum Time	0 ~ 255 (30 + 30 ~ 7680 ms)	Refer to the Programming Manual for the default values.

Operation

Calling your Mailbox

To call your mailbox:

Multiline Terminal

1. Press your **Voice Mail** key (PRG 15-07 or SC **751**: 77).
- OR -
Press **Speaker** key and dial the Voice Mail Master Number. After Voice Mail Answers, dial your mailbox number.
 *Your mailbox number is normally the same as your extension number. You may optionally dial a co-worker's mailbox - or use this procedure to call your mailbox from a co-worker's telephone.*
2. If requested by Voice Mail, enter your security code.
 *Ask your Voice Mail system administrator for your security code.*
 *Normally, your Message Waiting LED goes out (if applicable). If it continues to flash, you have unanswered Message Waiting requests or a new General Message.*

Single Line Terminal

1. Lift the handset and dial *8.
 *If you are at a co-worker's telephone, you can dial the Voice Mail master number and your mailbox number instead. You can also use this procedure from your own telephone to call a co-worker's mailbox.*
2. If requested by Voice Mail, enter your security code.

Recording your Call

To record your active call in your mailbox:

Multiline Terminal

1. Press the **Voice Mail Record** key (PRG 15-07 or SC **751**: code 78).
 *You hear two beeps and your Record key flashes. The beeps periodically repeat to remind you that you are recording.*
 *To stop recording, press the Voice Mail Record key again. You can restart and stop recording as required.*

- OR -

1. Press **Hold** key.

2. Dial **654**.



The system automatically reconnects you to your call.



To stop recording, place the call on hold then pick the call back up. You can restart and stop recording as required.

Single Line Terminal

1. Hookflash.
2. Dial **654**.



The system automatically reconnects you to your call.



To stop recording, hookflash twice. You can restart and stop recording as required.

Voice Mail Message Indication on Line Keys

Description

Voice Mail Message Indication on Line Keys indicates a new voice mail message on Line Keys or DSS/BLF keys.

Conditions

- When a DSS key of an installed extension is pressed when flashing it calls that extension.
- You have to use a Voice Mail key (code 77) to get the indication when there is a new message. It can also be used for installed extensions.
- Voice Mail key calls the VM and logs into the mail box.
- If an Voice Mail key for extension A is placed on extension A, the Large LED lights on extension A for new message indication. Also the Voice Mail key flashes green.
- Voice Mail LED is a higher priority then any other status for the DSS/BLF key.
- The enabling or disabling of Voice Mail Indication on BLF enables the station with the message to show up on other telephones. It does not enable/disable stations from seeing the BLF indication.
- Virtual Extension Keys assigned as code *03 do not support Voice Mail Message Indication on Line Keys.

Default Setting

Not allowed

System Availability

Terminals

All Multiline Terminals

Required Component(s)

VM (Digital or Analog)

Related Features

Class of Service

Direct Station Selection (DSS) Console

Programmable Function Keys

InMail

Voice Mail Integration (Analog)

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-13-41	Class of Service Options (Supplementary Service) - Voice Mail Message Indication on DSS	0 = Off 1 = On	COS 01 ~ 15 = 0
30-01-01	DSS Console Operating Mode - DSS Operation Mode	0 = Business Mode 1 = Hotel Mode	0
30-02-01	DSS Console Extension Assignment - Extension Port connected to DSS	Up to eight digits	No Setting
30-03-01	DSS Console Key Assignment		The DSS keys 001~060 of all DSS consoles = DSS/One-Touch key 101~160 The DSS keys 061~114 of all DSS consoles = No Setting
30-05-02	DSS Console Lamp Table - Busy Extension	0 ~ 7 (Lamp Pattern Data)	7
30-05-03	DSS Console Lamp Table - DND Extension	0 ~ 7 (Lamp Pattern Data)	3
30-05-09	DSS Console Lamp Table - Hotel Status Code 1 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	7
30-05-10	DSS Console Lamp Table - Hotel Status Code 2 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	1
30-05-11	DSS Console Lamp Table - Hotel Status Code 3 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	2
30-05-12	DSS Console Lamp Table - Hotel Status Code 4 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	3
30-05-13	DSS Console Lamp Table - Hotel Status Code 5 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	5
30-05-14	DSS Console Lamp Table - Hotel Status Code 6 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	3
30-05-15	DSS Console Lamp Table - Hotel Status Code 7 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	6
30-05-16	DSS Console Lamp Table - Hotel Status Code 8 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	4
30-05-17	DSS Console Lamp Table - Hotel Status Code 9 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	3
30-05-18	DSS Console Lamp Table - Hotel Status Code 0 (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	0
30-05-19	DSS Console Lamp Table - Hotel Status Code * (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	4
30-05-20	DSS Console Lamp Table - Hotel Status Code # (Hotel DSS)	0 ~ 7 (Lamp Pattern Data)	5
30-05-21	DSS Console Lamp Table - VM Message Indication	0 ~ 7 (Lamp Pattern Data)	3

Operation

To program a DSS/BLF key on a telephone:

1. Press **Speaker** key.
2. Dial **751**.
3. Press the key you want to program.
4. Dial **01**.
5. Dial the number of the extension you want to appear on the key.
6. Press **Hold** key.
7. Press **Speaker** key.

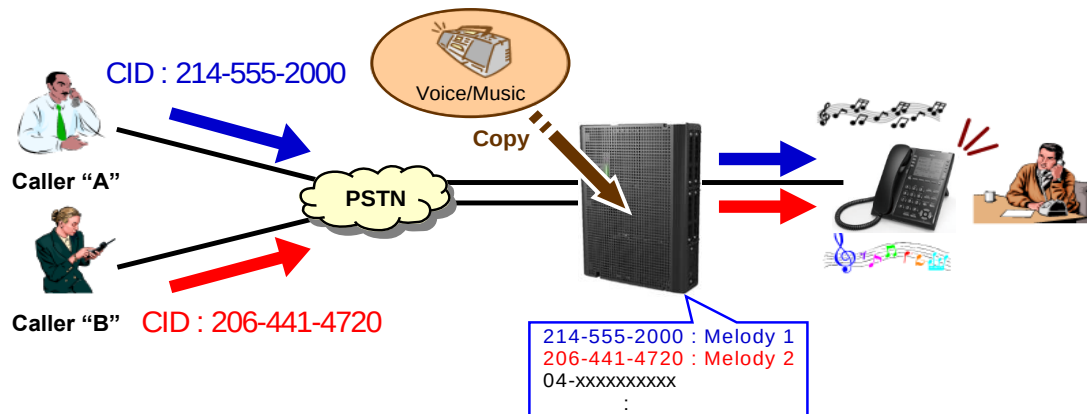
To program a Voice Mail key on a telephone:

1. Press **Speaker** key.
2. Dial **751**.
3. Press the key you want to program.
4. Dial **77**.
5. Dial the number of the extension you want to appear on the key.
6. Press **Speaker** key.

Voice/Melody Ringing by VM

Description

The Voice/Melody Ringing feature will play a pre-recorded WAV file (voice or melodies...) instead of ringing tone to indicate an incoming trunk call. The system can be configured to play a WAV file either on a per Caller-ID or per extension basis which can be used to identify the incoming caller.



Audio Prompt Format

In order for uploaded greetings to properly play on the SL2100 they must be in the proper format. Audio files not recorded in the proper format may not playback. The proper format is:

Table 1-77 WAV Format

Item	Specification
Bit Rate	64 kbps
Sampling Size	8 bits
Channel	1 (Mono)
Sampling Rate	8 kHz
Audio Format	CCITT A-law
Size	2 MB
Length	2 Min.



To upload the WAV file to the system please refer to [InMail Upload Download Audio](#).

Conditions

- The feature basically work with Normal Trunk Incoming call, PBX, CES Incoming Call, DID/DISA/VRS, DID/DDI and Dial-In in the Tie Line.
- The feature does not work for Internal Incoming Call, Virtual extension ring, Door Box ring, Callback, Alarm, VRS Waiting Message incoming call.
- This feature is only supported on Digital Multiline Terminals. Analog and IP Phones do not support this feature.
- If all the VRS channels are busy, the normal incoming ring tone takes place.
- The Multiline Terminal must be idle for this feature to work.

- The feature works during play BGM or Room Monitor.
- If the WAV file number sets for both Caller-ID ring and Extension ring, the priority of Caller-ID ring is higher than Extension Ring.
- The Voice channel will be released when the incoming ring has been stopped and stop to play the WAV file.
- The WAV file is limited to play from a head of melody when receive an incoming call.
- For the occupied channel numbers for VRS incoming message is depending on the number of play WAV file. Even though the three incoming calls have been received and two calls are used same WAV file, in case the occupied channel number is two channels. The Ringing terminal numbers are not related to the count of channels.
- The Ringing priority is as follows;
CID Incoming Voice/Melody Ring (PRG13-04-07) > CID Incoming Ring (PRG13-04-05) > Voice/Melody ring for each extension (PRG15-02-55) > Normal Ring
- This feature can not be set from Navigation Key.

Default Settings

Disabled

System Availability

Terminals

Digital Multiline Terminal

Required Component(s)

None

Related Features

Caller ID

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
13-04-01	Speed Dialing Number and Name - Number	Maximum of 36 digits (0 ~ 9, *, #, @, P, R) @ = Wait for Answer Supervision - ISDN trunks only P = Pause - Analog Trunk Only R = Hook flash - Analog Trunk Only	No Setting
13-04-02	Speed Dialing Number and Name - Name	Maximum 12 Characters (Use dial pad to enter name)	No Setting

Program No.	Program Name	Input Data	Default
13-04-03	Speed Dialing Number and Name - Transfer Mode	0 = Not Used (Calls will not be routed based off a users caller ID.) 1 = Internal Dial (Calls will be routed to an internal number specified in PRG 13-04-04.) 2 = Incoming Ring Group (Calls will be routed to a ring group specified in PRG 13-04-04.) 3 = Remote Monitor (Used for the security feature and not Flexible Caller ID routing.)	0
13-04-04	Speed Dialing Number and Name - Transfer Destination Number	If Transfer mode is (Refer to 13-04-03) : 1 = Internal Dial Mode 1 ~ 9, 0, *, #, P, R, @ (Maximum 36 Characters) 2 = Incoming Ring Group 0 ~ 25 (IRG Number) P = Pause R = Recall @ = Additional Digits when using ISDN functionality 3 = Remote Monitor Dial (Up to 8 digits)	No Setting
13-04-05	Speed Dialing Number and Name - Incoming Ring Pattern	0 = Normal System Ring Pattern 1 ~ 4 = Tone Pattern 1 ~ 4 5 ~ 9 = Scale Pattern 1 ~ 5 10 ~ 13 = Tone Pattern 5 ~ 8	0
13-04-06	Speed Dialing Number and Name - CR/PR feature	0 = Disable 1 = Enable	0
13-04-07	Speed Dialing Number and Name - VRS Message Number	0 ~ 100	0
15-02-55	Multiline Telephone Basic Data Setup - VRS Message Number	0 ~ 100	0
11-10-43	Service Code Setup (for System Administrator) - VRS Incoming	0~9, *, # Maximum of 8 digit	778

Operation

To Set the Incoming Voice/Melody ringing from Service Code

1. Press Service Code 778.

```
VRS INCOM
RI:1 STA:2
```

(2W Digital/IP Multiline Terminal)

2. Press Enter 1 (RI).

```
VRS INCOM CID
```

(2W Digital/IP Multiline Terminal)

3. Enter the Caller ID Number.



*You can clear the digits entered by pressing **Exit** key.*

VRS INCOM	CID
	123

(2W Digital/IP Multiline Terminal)

4. Press **Hold**.

ABB 0005	123

(2W Digital/IP Multiline Terminal)

5. Press **Hold**. You can set Name (PRG 13-04-02).

ABB 0005	-

(2W Digital/IP Multiline Terminal)

6. Press **Hold** and Enter the Transfer Mode 0 ~ 3 (PRG13-04-03).

TRF0 = Not defined
TRF1 = Internal Dial
TRF2 = IRG
TRG3 = Remote Monitor

ABB0005	TRF Mode (0-3) ?0-

(2W Digital/IP Multiline Terminal)

7. Press **Hold** and Enter the Ringing Destination (13-04-04).

If you Select TRF1 ~3 following can be entered/

TRF1 (Internal Dial): Up to 36 digits
TRF2 (Incoming ring Group): 0-50
TRF3 (Remote Monitor): Dial Up to 8 digits.



*If you press **Exit** Key you can clear the digits you entered.*

ABB0005 ModeX	Target

ModeX= X is Mode 1 ~ 3 (13-04-03) (2W Digital/IP Multiline Terminal)

8. Press **Hold** and you enter the Incoming Ring Pattern (13-04-05).
 0 ~ 13 can be entered and 0 ~ 13 are followings:
 0 = Normal pattern
 1-4 = Tone pattern (1-4)
 5-9 = Scale pattern (1-5)
 10-13 = Tone pattern (5-8)

```
ABB0005 ModeX
Ring (0-9) ?1-
```

ModeX = X is Mode 1 ~ 3 (PRG 13-04-03) (2W Digital/IP Multiline Terminal)

9. Enter the VRS Incoming Message Number: 000 ~ 100 (13-04-07).

```
ABB0005 ModeX      VRS
                   001
```

ModeX = X is Mode 1 ~ 3 (PRG 13-04-03) (2W Digital/IP Multiline Terminal)

10. If you set correctly you will hear the Confirmation Beep and see the following Screen.

```
Set ABB
```

(2W Digital/IP Multiline Terminal)

11. Press **Speaker** and end the Setting.

To Cancel the Incoming Voice Melody ringing from Service Code

1. Press Service Code 778.

```
VRS INCOM
RI:1 STA:2
```

(2W Digital/IP Multiline Terminal)

2. Press Enter **1** (RI).

```
VRS INCOM      CID
```

(2W Digital/IP Multiline Terminal)

3. Enter the Caller ID Number.



*You can clear the digits entered by pressing **Exit** key.*

VRS INCOM	CID
	123

(2W Digital/IP Multiline Terminal)

4. Press **Hold**.

ABB 0005	123

(2W Digital/IP Multiline Terminal)

5. Press **Hold**. You can set Name (PRG 13-04-02).

ABB 0005	-

(2W Digital/IP Multiline Terminal)

6. Press **Hold** and Enter the Transfer Mode 0 ~ 3 (PRG13-04-03).

TRF0 = Not defined

TRF1 = Internal Dial TRF2 = IRG

TRG3 = Remote Monitor

ABB0005
TRF Mode (0-3) ?0-

(2W Digital/IP Multiline Terminal)

7. Press **0** and RI Set will be canceled.

Set ABB
Cancel RI

(2W Digital/IP Multiline Terminal)

8. Press **Speaker**.

Voice Over

Description

Voice Over lets a user interrupt a busy station user that is on another call. With Voice Over, the busy extension user hears an alert tone followed by the voice of the interrupting party. The extension user receiving the Voice Over can respond to the interrupting party without being heard by the original caller. If desired, the user can easily switch between their original caller and the interrupting co-worker. The original caller and the interrupting party can never hear each other.

Example:

Voice Over could help a lawyer waiting for an urgent call. While on a call with another client, the lawyer's paralegal could announce the urgent call as soon as it comes in. The lawyer could then give the paralegal instructions how to handle the situation - all without the original client hearing the conversation.

Both Multiline Terminal users and SLT set users can initiate and receive a Voice Over.

To enable Voice Over, a Multiline Terminal can have a function key programmed for Voice Over. In addition to one-touch Voice Over operation, the key shows the Voice Over status as follows:

When the key is . . .	You are . . .
Off	Not using Voice Over
Flashing (Red)	Listening to the interrupting party
On (Green)	Responding to the interrupting party

Conditions

- While active, Voice Over uses a Conference circuit on a CPU. Refer to the Conference feature for Conference circuit programming.
- Voice Over can interrupt a trunk call only if the trunk is set up for at least six seconds.
- Do not use Voice Over to a user on **Speaker** phone as the conversation may be heard by the outside party.
- When a Multiline Terminal user performs Voice Over, the speech path is 1-way from the originator to the destination.
- The Voice Over Access Code can be assigned on a Programmable Function Key.
- An override tone is sent to both calling and called parties. A Single Line Terminal user can receive Voice Over. After a Tone Override is heard, Voice Over can be set.
- When a Programmable Function Key (programmed with the Voice Over Access Code) is pressed, the LED lights while responding to the page.
- When a Multiline Terminal has a Handsfree Unit programmed, the Voice Over call can be received and answered handsfree.
- When Data Line Security is assigned to a station, the Voice Over to the station is disabled.
- When a Multiline Terminal user performs Voice Over, the speech path is 1-way from the originator to the destination.
- An extension user cannot Voice Over to another extension user in a Conference.
- If you place a call on hold and then Voice Over to a busy extension, the call on hold does not transfer to the busy party when you end the Voice Over.
- A station can receive only one Voice Over at a time.
- A Multiline Terminal user cannot answer a Voice Over with an internal call on hold.

- An attempt to Voice Over a station can be denied if the station is in DND (Do Not Disturb) Mode, Automatic Redial is activated, during Station Programming, during Incoming Ringing, during Internal/External Paging, during a Conference Call, during a conference call on hold, the terminal is on internal hold, or the terminal has a call on internal hold.
- When a Single Line Terminal is on a call and Voice Over is presented, the Single Line Terminal cannot talk back to the party that originated the Voice Over.
- Voice Over to a Single Line Terminal is not recommended because cross talk is inherent in the side tone of analog telephones.
- Voice Over to a user on **Speakerphone** is not recommended because the conversation may be heard by the outside party.
- Answering a Voice Over requires a uniquely programmed Voice Over key.

Default Settings

Disabled

System Availability

Terminals

Multiline and Single Line Terminals

Required Component(s)

None

Related Features

Conference

Off-Hook Signaling

Programmable Function Keys

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-12-41	Service Code Setup (for Service Access) - Voice Over	0~9, *, # Maximum of 8 digit	690
11-16-08	Single Digit Service Code Setup - Voice Over	0~9, *, # Maximum of 1 digit	6
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1

Program No.	Program Name	Input Data	Default
20-13-06	Class of Service Options (Supplementary Service) - Automatic Off-Hook Signaling (Automatic Override)	0 = Off (manually) 1 = On (automatically)	COS 01 ~ 15 = 1
21-01-03	Outgoing Calls System Option - External Call, inter digits timer	0 ~ 64800 seconds	10

Operation

To Initiate a Voice Over to a busy extension:

- Press **Voice Over** key (PRG 15-07 or SC **751**: 48)
- **OR** -
Dial **690**.



You hear an alert tone and the Voice Over key flashes. You can talk to the called party after the alert tone ends.



To use Service Code 690 for Voice Over, PRG 11-16-09 (Voice Mail Service Code) must be undefined.

To respond to a Voice Over alert tone to your extension:

You can respond only if you have a Voice Over key.

- Press and hold down the **Voice Over** key while responding.



The Voice Over key lights steadily (green) and you can talk to the interrupting party.

To return to your original call:

- Release the **Voice Over** key.



Your Voice Over key flashes red when you are talking to your original call.



To switch between your original call and the interrupting party, just keep pressing the Voice Over key.

Voice Response System (VRS)

Description

The SL2100 system supports the Voice Response System (VRS) which gives the system voice recording and playback ability. Four channels of VRS, one language, 2 hours of total recording time and 100 VRS messages are built-in the CPU-C1. The optional SDVM()-C1 card provides access to up to 120 hours of recording time for messages (General Message, Automated Attendant greetings, ACD Messages and the Preamble) and 26 languages.

- **General Message** - provides a prerecorded message to which any user can listen
- **Automated Attendant (Operator Assistance)** - answers incoming calls, plays a greeting to the caller and then lets the caller directly dial a system extension
- **Transfer to the VRS** - allows any extension user to Transfer their outside call to the VRS
- **Voice Prompting Messages** - plays call and feature status messages to users
- **Time, Date and Station Number Check** - lets a Multiline Terminal extension user quickly hear a recording for the time, date, or the extension number
- When installing a SD card onto the CPU-C1 the system **MUST** be powered off. Never install or uninstall the SD card while the system is under power.

VRS Messages

The VRS allows you to record up to 100 VRS messages (001-100). You allocate these messages for Automated Attendant greetings, the General Message, ACD Messages, and the Preamble message. The maximum duration for any message is four minutes - this is not programmable. VRS messages are stored on a system drive, and do not require battery back up.

Any on-premise extension caller can listen, record and erase VRS Messages (unless restricted in programming). DISA and DID callers can listen and record VRS messages (unless restricted in programming).

General Message

A General Message is a prerecorded message available to all callers. A General Message typically contains important company information that all employees should hear. To hear the General Message, an employee can go to any Multiline Terminal and press 4 (for General Message). You can restrict the ability to record the General Message in an extension Class of Service. This allows you to give recording ability to the System Administrator or Communications Manager, for example, but not any other employee. The Message Waiting LED at each telephone flashes when a new General Message is recorded. After the extension user listens to the message, the Message Waiting LED goes out.

Park and Page

When an extension user is away from their telephone, Park and Page can let them know when they have a call waiting to be answered. The Personal Greeting and Park & Page options can have up to 200 total messages (note that the Park & Page feature uses two messages). To enable Park and Page, the user records a Personal Greeting along with an additional Paging announcement. Park and Page then answers an incoming call and plays the Personal Greeting to the caller. The caller then listens to Music on Hold (if available) while the system broadcasts the prerecorded Paging announcement. When the extension user hears the Page, they can go to any telephone and use Directed Call Pickup to intercept the call. Refer to [Call Forwarding](#) , [Paging, External](#), [Paging, Internal](#), and [Park](#).

Automated Attendant (Operator Assistance)

Automated Attendant automatically answers outside calls, plays a prerecorded greeting and then lets the outside callers directly dial system extensions, Department Calling Groups and Voice Mail.

Automated Attendant provides immediate answering and routing of outside calls without the need for an operator or dispatcher. Automated Attendant provides:

- **Single Digit Dialing**

Single Digit Dialing allows Automated Attendant callers to dial extensions, Department Calling Groups, and Voice Mail by pressing a single digit. For example, your Automated Attendant can greet calls with, "Thank you for calling. To place an order, dial 1. To check on an existing order, dial 2. To speak with an operator, dial 9." You can set up single digit dialing for each VRS Message programmed to answer outside calls via the Automated Attendant. This allows you to set up day/ night/holiday greetings or unique greetings for each incoming trunk. (Keep in mind that, with a default system, if you assign destinations to digits 3, 4 and 5, outside callers cannot dial system extensions.)

Security of a communication system is the responsibility of the installer/maintainer and the network providers. However NEC will, of course, be pleased to offer advice on specific queries or issues brought to our attention.

The timer in Program 25-16-01, has been added, per single digit table, which enables the direct dialing of destinations even if a destination or another VRS message has been assigned to a digit. This timer, when set, defines a time that is required to expire after the first digit is dialed before the action assigned to the digit in the single digit table is used. If additional digits arrive before the timer expires, these and possible further digits are used as the direct dial destination.



- *The timer (Program 25-16-01) works only when destination is set in Program 25-06-02. If Program 25-06-01 is used (other than 0), single digit attendant works.*
- *If the timer (Program 25-16-01) is set 0, this feature is deactivated. If the timer value is longer than inter-digit timer (Program 21-01-03), the setting of Program 25-16-01 has no effect.*

- **Simultaneous Call Answering**

With VRS installed, the Automated Attendant can answer up to 16 calls (Need optional hardware (IP7WW-EXIFB-C1)) simultaneously.

- **Flexible Routing**

The outside caller can directly dial any system extension, Department Calling Group or Voice Mail. If the caller dials a busy extension, Automated Attendant allows them to dial another extension or wait for the busy extension to become free.

- **Automatic Overflow**

Automatic Overflow can automatically redirect a call if it cannot go through. This can happen if all VRS ports are busy, if the called extension does not answer, or if the caller misdials or waits too long to dial. (This occurs if the caller is using a dial pulse telephone.) When the call overflows, it rings a designated Ring Group or the Voice Mail system.

- **Programmable Automated Attendant Greetings**

You can record a different greeting for each trunk answered by the Automated Attendant. The greetings can be different in the day, at night or on holidays or weekends. You can also have a special greeting if the caller misdials. You record the greetings just the way you want. For example, "Dial the 3-digit extension number you wish to reach, dial 500 for Sales or dial 600 for Customer Service." When assigning and recording Automated Attendant greetings, you can choose among the 100 VRS messages.

VRS Waiting Message

Using VRS Waiting Message, the system can automatically answer an incoming trunk call first (either a normal trunk or one designated for a department group) to let the outside caller hear a recorded message when the call is not answered in a programmed time. With this feature, the call keeps ringing at the same destination until it is answered or until other programming, takes affect.

This feature can use up to two messages for an incoming call and the duration between the messages is programmable. These messages are repeated and, between these messages, either ring back tone or Music on Hold can be played.

This feature has two different modes:

- **Permanent Mode**

This mode sets the feature using system programming and is available for the following types of calls.

- Normal Incoming Call

When the call is not answered or a user presses the VRS Waiting Message function key, this feature is initiated. The waiting message is played until other no-answer program (e.g. transfer to another incoming ring group or disconnect) takes affect.

- Designated Call for the Department Group

When a department group receives a call from a DID, DIL or DISA and all terminals in the group are busy, the call is put in a queue and VRS Waiting Message is also initiated. The waiting message is played until other no-answer program (e.g. transfer to another incoming ring group or disconnect) takes affect or a terminal becomes available to receive the department call.

- **Manual Mode**

This mode can be programmed by pressing the VRS Waiting Message function key from a Multiline Terminal to set this feature for each incoming ring group. This mode can be used for normal incoming calls only.

The following programs would be used to define the VRS Waiting Message feature and the trunk overflow:

- PRG 11-10-20: Service Code Setup (for System Administrator) - VRS - Record/Erase Message
- PRG 15-07: Programmable Function Keys

Automatic Answer with Delay Message Setup (Function Number 52)



Function Key 52 can be used to enable the VRS Waiting Message feature when PRG 22-01-10 is set to 1 (Changed by Manual Operation).

Automatic Answer with Delay Message Start (Function Number 53)



Function Key 53 can be used to play the VRS Waiting Message immediately when Function Key 53 + the ringing Trunk Appearance Key are pressed.

- 20-07-13: Class of Service Options (Administrator Level) - VRS Record (VRS Msg Operation)
- 20-15-11: Ring Cycle Setup - VRS Waiting Message Incoming Call
- 22-01-04: System Options for Incoming Calls - DIL No Answer Recall Time
- 22-01-08: System Options for Incoming Calls - DID Pilot Call No Answer Timer
- 22-01-10: System Options for Incoming Calls - VRS Waiting Message Operation
- 22-01-11: System Options for Incoming Calls - VRS Waiting Message Interval Time
- 22-08-01: DIL/IRG No Answer Destination
- 22-14-01~07: VRS Delayed Message for IRG
- 22-15-01~07: VRS Waiting Message for Department Group
- 25-07-02: System Timers for VRS/DISA - VRS/DISA No Answer Time
- 25-07-03: System Timers for VRS/DISA - Disconnect after VRS/DISA retransfer to IRG

Transfer to the VRS

Any extension user can Transfer their outside call to the VRS. This lets their caller take advantage of the Automated Attendant's extensive routing abilities. To Transfer the call, the user places the call on Hold, dials the unique VRS service code (set up in system programming : default **782**), and hangs up.

Voice Prompting Messages

The VRS feature provides the system with Voice Prompting Messages. These Voice Prompting Messages tell the extension user the status or progress of their call.

Preamble

You can use the Preamble message to set up an Auto-Answer with Greeting application. When a receptionist answers a call, the VRS can play a preamble message such as, "Welcome to ABC Company. How can I help you?" When the caller replies, the receptionist answers, "One moment

please,” and quickly extends the call to the desired party. This ensures that all incoming calls are answered quickly, courteously and consistently.

Conditions

- VRS record time is fixed at four minutes per message and cannot be changed.
- The Automated Attendant (VRS) can answer up to 16 calls (Needs EXIFB) simultaneously.
- The maximum number of VRS ports is 16 when the EXIFB is installed on the CPU. If the EXIFB is not installed, the maximum number of VRS ports is four.

Default Settings

Disabled

System Availability

Terminals

None

Required Component(s)

None

Related Features

Transfer

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-10-20	Service Code Setup (for System Administrator) - VRS - Record/Erase Message	0~9, *, # Maximum of 8 digit	616
11-10-21	Service Code Setup (for System Administrator) - VRS - General Message Playback	0~9, *, # Maximum of 8 digit	611
11-10-22	Service Code Setup (for System Administrator) - VRS - Record or Erase General Message	0~9, *, # Maximum of 8 digit	612
11-12-54	Service Code Setup (for Service Access) - VRS Routing for ANI/DNIS	0~9, *, # Maximum of 8 digit	782
15-07-01	Programmable Function Keys	-	Refer to the programming manual for the default values and for all other available options in this command.
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-07-13	Class of Service Options (Administrator Level) - VRS Record (VRS Msg Operation)	0 = Off 1 = On	COS1 ~ 14/COS15 = 0/1

Program No.	Program Name	Input Data	Default
20-07-14	Class of Service Options (Administrator Level) - VRS General Message Play	0 = Off 1 = On	COS1 ~ 14/COS15 = 0/1
20-07-15	Class of Service Options (Administrator Level) - VRS General Message Record/Delete	0 = Off 1 = On	COS1 ~ 14/COS15 = 0/1
20-11-15	Class of Service Options (Hold/Transfer Service) - VRS Personal Greeting (Message Greeting)	0 = Off 1 = On	COS 01 ~ 15 = 1
20-13-23	Class of Service Options (Supplementary Service) - Display the Reason for Transfer	0 = Off 1 = On	COS 01 ~ 15 = 0
20-15-11	Ring Cycle Setup - Incoming Signal Type : VRS Waiting Message Incoming Call	Ring Cycle Number : 1 ~ 13	8
21-01-02	System Options for Outgoing Calls - Intercom Interdigit Time	0 ~ 64800 seconds	10
22-01-10	System Options for Incoming Calls - VRS Waiting Message Operation	0 = Automatic Operation 1 = Manual Operation	0
22-01-11	System Options for Incoming Calls - VRS Waiting Message Interval Time	0 ~ 64800 seconds	20
22-02-01	Incoming Call Trunk Setup - Trunk Service Type	0 = Normal 1 = VRS (second dial tone if no VRS installed) 2 = DISA 3 = DID 4 = DIL 5 = Tie Line 6 = Delayed VRS 7 = ANI/DNIS 8 = DID (DDI) Mode Switching	0
22-04-01	Incoming Extension Ring Group Assignment - Extension Number	Maximum eight Digits	Group01 has 101, 102, 103, 104, 105, 106, 107, and 108 (First 8 ports ringing)
22-14-01	VRS Delayed Message for IRG - 1 st Delayed Message Start Time	0 ~ 64800 seconds	0
22-14-02	VRS Delayed Message for IRG - 1 st Delayed Message Number	0 ~ 101 0 = No Message 101 = Fixed Message	0
22-14-03	VRS Delayed Message for IRG - 1 st Delayed Message Sending Count	0 ~ 255 (time)	0
22-14-04	VRS Delayed Message for IRG - 2 nd Delayed Message Number	0 ~ 101 0 = No Message 101 = Fixed Message	0
22-14-05	VRS Delayed Message for IRG - 2 nd Delayed Message Sending Count	0 ~ 255 (time)	0
22-14-06	VRS Delayed Message for IRG - Tone Kind at Message Interval	0 = Ring Back Tone 1 = MOH Tone 2 = BGM Source	0
22-14-07	VRS Delayed Message for IRG - Disconnect Time After the End of VRS Delayed Message	0 ~ 64800 seconds 0 = No Disconnect	60
22-15-01	VRS Delayed Message for Department Group - 1 st Delayed Message Start Time	0 ~ 64800 seconds	0
22-15-02	VRS Delayed Message for Department Group - 1 st Delayed Message Number	0 ~ 101 0 = No Message 101 = Fixed Message	101
22-15-03	VRS Delayed Message for Department Group - 1 st Delayed Message Sending Count	0~255 (time)	0
22-15-04	VRS Delayed Message for Department Group - 2 nd Delayed Message Number	0 ~ 101 0 = No Message 101 = Fixed Message	101

Program No.	Program Name	Input Data	Default
22-15-05	VRS Delayed Message for Department Group - 2 nd Delayed Message Sending Count	0 ~ 255 (time)	0
22-15-06	VRS Delayed Message for Department Group - Tone Kind at Message Interval	0 = Ring Back Tone 1 = MOH Tone 2 = BGM Source	0
22-15-07	VRS Delayed Message for Department Group - Disconnect Time After the End of VRS Delayed Message	0 ~ 64800 seconds 0 = No Disconnect	60
24-02-03	System Options for Transfer - Delayed Call Forwarding Time	0 ~ 64800 seconds	10
25-01-02	VRS/DISA Line Basic Data Setup - DISA User ID	0 = Off 1 = On	0
25-02-01	DID/DISA VRS Message - Message (Talkie) Source		Talkie Type = 1 Additional Data = 1
25-03-01	VRS/DISA Transfer Ring Group With Incorrect Dialing - Incoming Group Number	0 = Disconnect 01 ~ 50 = Incoming Ring Group 102 = VMI 104 = Assign the Speed Dial Number	1
25-04-01	VRS/DISA Transfer Ring Group With No Answer/Busy - Incoming Group Number	0 = Disconnect 01 ~ 50 = Incoming Ring Group 102 = VMI 104 = Assign the Speed Dial Number	0
25-05-01	VRS/DISA Error Message Assignment - VRS Message Number	0 ~ 100 (0 = No Setting)	0
25-06-01	VRS/DISA One-Digit Code Attendant Setup - Next Attendant Message Number	0 ~ 100 (0 = No Setting) 101 = Voice Mail answers 104 = Refer to Programming Manual. 105 = Dial the other extension	0
25-06-02	VRS/DISA One-Digit Code Attendant Setup - Destination Number	Up to eight digits  <i>Must be a valid extension number that is programmed in command 11-02 or 11-04.</i>	No Setting
25-07-02	System Timers for VRS/DISA - VRS/DISA No Answer Time	0 ~ 64800 seconds	0
25-07-03	System Timers for VRS/DISA - Disconnect after VRS/DISA retransfer to IRG	0 ~ 64800 seconds	60 seconds
25-08-01	DISA User ID Setup - Password	Dial (Fixed - six digits) 0 ~ 9, *, #	DISA User No. 01 = DISA User ID 000001 DISA User No. 02 = DISA User ID 000002 : DISA User No. 15 = DISA User ID 000015
25-13-01	System Option for DISA - VRS Message Access Password	1 ~ 9, 0, *, # (Fixed six digits)	No Setting
25-15-01	DISA Transfer Target Setup - DISA Transfer Target Area At Wrong Dial	Speed Dial bin number 0 ~ 999	999
25-15-02	DISA Transfer Target Setup - DISA Transfer Target Area At No Answer or Busy	Speed Dial bin number 0 ~ 999	999
25-16-01	DID/DISA Talkie Base Setup - Single Digit Timer	0 ~ 64800 (0 = No Setting)	0
25-16-02	DID/DISA Talkie Base Setup - DTMF Detect	0 = Off 1 = On	1

Program No.	Program Name	Input Data	Default
31-02-01	Internal Paging Group Assignment - Internal Paging Group Number	0 ~ 50 (0 = No setting)	All stations = 1
31-02-02	Internal Paging Group Assignment - Internal All Call Paging Receiving	0 = Off 1 = On	1
31-04-01 *	External Paging Zone Group - Paging Group Number	0 ~ 3 (0 = No setting, 1 ~ 3 = Group number)	Speaker 1 = 1 (Group 1) Speaker 2 = 2 (Group 2) Speaker 3 = 3 (Group 3)
31-07-01	Combined Paging Assignments - Internal Paging Group Number	0 ~ 50 (0 = All Internal Paging)	1
40-07-01	Voice Prompt Language Assignment for VRS - Voice Prompt Language Assignment for VRS	01 = US English 02 = UK English 03 = Australian English 04 = French Canadian 05 = Dutch 06 = Mexican Spanish 07 = Latin America Spanish 08 = Italian 09 = German 10 = Madrid Spanish 11 = Norwegian 12 = Parisian French 13 = Brazilian Portuguese 14 = Japanese 15 = Mandarin Chinese 16 = Korean 17 = Iberian Portuguese 18 = Greek 19 = Danish 20 = Swedish 21 = Thai 22 = Mandarin Chinese (Taiwan) 23 = Flemish 24 = Turkish 25 = Arabic 26 = Russian	3
40-10-01	Voice Announcement Service Option - VRS Fixed Message	0 = Disable (VRS fixed message will not be played.) 1 = Enable (VRS fixed message will be played.)	0
40-10-02	Voice Announcement Service Option - General Message Number	0 ~ 100 (0 = No General Message Service)	0
40-10-03	Voice Announcement Service Option - VRS No Answer Destination	0 ~ 50 (Incoming Ring Group Number)	0 (No Setting)
40-10-04	Voice Announcement Service Option - VRS No Answer Time	0 ~ 64800 seconds	0
40-10-05	Voice Announcement Service Option - Park and Page Repeat Timer (VRS Msg Resend)	0 ~ 64800 seconds	0
40-10-06	Voice Announcement Service Option - Set VRS Message for Private Call Refuse (VRS Msg Private Call)	0 = No Message Played 1 ~ 100 = VRS Message 1 ~ 100 101 = VRS Fixed message (Message will only play if PRG 40-10-01 is enabled.)	0
40-10-07	Voice Announcement Service Option - Set VRS Message for Caller ID Refuse (VRS Msg CID)	0 = No Message Played 1 ~ 100 = VRS Message 1 ~ 100 101 = VRS Fixed message (Message will only play if PRG 40-10-01 is enabled.)	0

Program No.	Program Name	Input Data	Default
40-11-01	Preamble Message Assignment - VRS Message Number	0 ~ 100 (0 = No Service)	0
47-03-02	InMail Group Mailbox Options - Mailbox Number	Up to eight digits No Setting (entered by pressing Hold)	No Setting

Operation

VRS Messages

To record a VRS message:

1. Press **Speaker** key or lift the handset.
- OR -
At a Single Line Terminal, lift the handset.
2. Dial **616**.
3. Dial **7 (Record)**.
4. Dial the VRS message number you want to record (001~100).
5. When you hear, "Please start recording" followed by a beep, record your message.
6. Press **#** to end recording
- OR -
Hang up to save the message.

To listen to a previously recorded VRS message:

1. Press **Speaker** key or lift the handset.
- OR -
At a Single Line Terminal, lift the handset.
2. Dial **616**.
3. Dial **5 (Listen)**.
4. Dial the VRS message number to which you want to listen (01~100).
 *You hear the previously recorded message. If you hear a beep instead, no previous message is recorded.*
5. Press **#** to hear the message again.
- OR -
To hear another message, dial **5** and then enter the message number (01~100).
- OR -
Hang up.

To erase a previously recorded VRS message:

1. Press **Speaker** key or lift the handset.
- OR -
At a Single Line Terminal, lift the handset.
2. Dial **616**.
3. Dial **3 (Erase)**.
4. Dial the number of the VRS message you want to erase (001~100).

5. Press **Hold** key (Multiline Terminal only) to cancel the procedure without erasing (and return to step 3).
- OR -
- Hang up to erase the message.

To record, listen to or erase a VRS message if you call in using DISA:

1. Place call to the system.
 *You hear dial tone.*
2. After the system answers, dial the DISA password (normally 000000).
 *You hear dial tone.*
3. Dial **616** and the VRS password.
4. Dial the function you want.
7 = Record
5 = Listen
3 = Erase
5. Dial the message number (001~100), record the message and press # to end recording.
 *If you dialed 7 to record, you can dial # to listen to the message you just recorded.*
 *If you dialed 5 to listen, you can dial 5 and the message number to hear it again or if you want to Record, listen to or erase another message, go back to step 4.*

General Message

To listen to the General Message:

Multiline Terminal Only

Your Message Waiting LED flashes when there is a new General Message. A voice message periodically reminds you.

1. Do not lift the handset or press **Speaker** key.
2. Dial **611**.
 *You hear the General Message.*
 *Normally, your Message Waiting LED goes out. If it continues to flash, you have unanswered Message Waiting requests or new messages in your Voice Mail mailbox.*

To record, listen to or erase the General Message:

1. Press **Speaker** key or lift the handset.
- OR -
At Single Line Terminal, lift the handset.
2. Dial **612**.

3. Dial the function you want.

7 = Record

5 = Listen

3 = Erase

 *If you dialed 7 to record, dial # to end the recording.*

 *If you dialed 5 to listen, you can dial 5 to listen to the message again.*

 *To Record the General Message again, go back to step 1.*

 *If you dialed 3 to erase the General Message, you must go to step 4 (hang up). To cancel without erasing on a Multiline Terminal, press **Hold** key instead and go back to step 1.*

4. Hang up when you are done.

Time, Date and Station Number Check

 *Time, Date and Station number check require PRG 40-10-01 VRS Fixed Message to be Enabled, and PRG 20-08-05 to be disabled per Class of Service.*

To check the extension number of any Multiline Terminal:

1. Do not lift the handset or press **Speaker** key.
2. Dial **6** for extension number.

To check the system time and date from any Multiline Terminal extension:

1. Do not lift the handset or press **Speaker** key.
2. Dial **8** for time and date.

Preamble

To answer a Preamble call:

1. Answer the ringing call.

 *The line key turns solid red as the system plays the preamble to the caller.*
2. When you hear two beeps and the line key turns green, converse with the caller.

Voice Response System (VRS) Upload Download Audio

Description

The Voice Response System (VRS) Upload Download Audio feature allows the upload of VRS greetings up to 2MB in size, recorded on a PC or professionally, to any valid VRS message in the system. It also allows users to listen to and delete VRS messages from callers. Access to the InMail/VRS data is via the HTML User Pro (Web Pro).

The User Admin (UA Mode) can change Routing Mailbox greetings for the following Routing mailbox types: Instruction (Call Routing), Announcement and Group.

Audio Prompt Format

In order for uploaded greetings to properly play on the System they must be in the proper format. Audio files not recorded in the proper format may not playback on the System. The proper format is:

Bit Rate	64 kbps
Sampling Size	8 bits
Channel	1 (Mono)
Sampling Rate	8 KHz
Audio Format	CCITT A-law/ μ -law

User Pro Access

There are two different User Pro logins available to make changes to audio files, but only one allows changes to be made to VRS messages. To login, open an Internet browser and enter the IP of the SL2100 LAN port in the address line. At default, the IP address is 192.168.0.10.

User Admin Mode (UA Mode): This mode allows the user admin to access any telephone and mailbox in the system. This mode must be used to change VRS and Routing Mailbox greetings. At default, the login ID is USER1 and the password is 1111.

User Mode (UB Mode): This mode allows a user to access only their own telephone and mailbox when logged in. They will not be able to change any other telephone, mailbox, VRS or Routing Mailbox. At default the login ID is the "Extension Number" and the password is 1111.

The following details the page layout diagram of the two different User Pro login IDs:

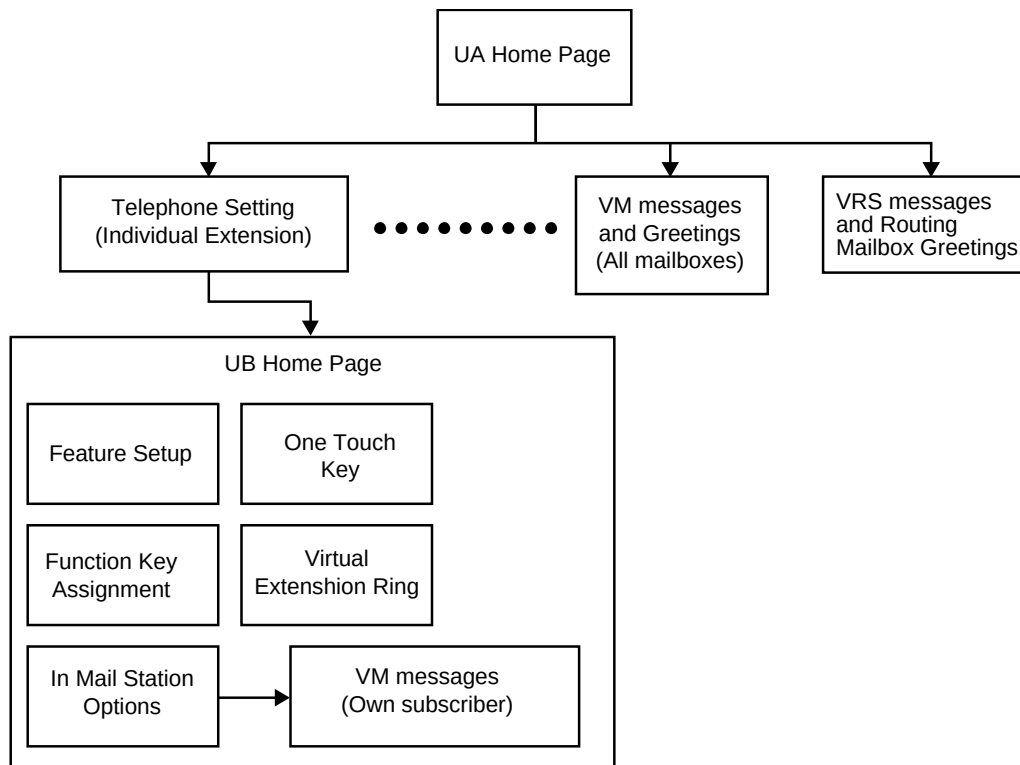


Figure 1-69 VRS User Pro Login Diagram

Message Name Format

Downloaded messages are automatically assigned a name by the SL2100. This name includes the mailbox number the message was left in, type of message, the message number and the date and time to the second the message was left. The table below shows how to interpret the message name to determine this information.

Table 1-78 Default Incoming Ringing Tone

File Name Format	BTNNN_YYYYMMDD_HHMMSS.wav (maximum 32 characters)
B	Mailbox number (maximum eight digits) or VRS for the VRS message
T	Message Type + : Greeting or VRS message - : Recorded message
NNN	Message number (three digits)
YYYY	Year
MM	Month (1~12)
DD	Date (1~31)
HH	Hour (00~23)
MM	Minute (00~59)
SS	Second (00~59)

Conditions

- Uploading audio files to any type of Call Routing box and Group mailboxes is supported. Auto attendant and group mailbox greetings can be uploaded or deleted using End User WebPro interface with the UA login.

- VRS and InMail messages are recorded in an ADPCM format which may not be easily opened on the support PC.
- It is not possible to upload/download/delete multiple files simultaneously.
- The mailbox will be inaccessible from the telephone under these conditions:
 - Mailbox XXX will not be accessible when opening the telephone setup screen of extension XXX by UA mode in User Pro.
 - Mailbox XXX will not be accessible when selecting the extension XXX on the file upload/download screen of UA mode User Pro.
 - Mailbox XXX will be inaccessible when logging in the UB mode User Pro for extension XXX.
- While uploading an audio file via User Pro the greeting is not accessible by telephone.
- When downloading/deleting an audio file via User Pro, the file is not accessible by another User Pro session or from the telephone.
- This feature is only supported using a LAN connection.
- When uploading an audio file the extension will be checked whether it is WAV or not. However, the format of the uploaded file will not be checked. If the uploaded file is not in the proper format it may not playback properly.
- The largest allowed upload file size is approximately 2MB. Files larger than this cannot be uploaded.
- There is no size limitation when downloading audio files.
- User Pro does not check the uploaded file for correct naming format (i.e., BTNNN_YYYYMMDD_HHMMSS.wav). The file name will be automatically changed when the file is written in the System.
- The actual file name of the messages is not displayed in User Pro. The message number, modified date and file size are displayed instead. If there is no message file, “-” will be displayed and the download/delete icon will not be displayed.
- The User Pro message page does not refresh automatically, to see new messages the page must be refreshed. For instance, if a new message is received via regular operation on the system while a user is viewing the upload/download screen, the new message is not shown until the page is reloaded by clicking the  icon.
- At default, Microsoft Windows will automatically open and play the downloaded WAV. To make **Open** or **Save** selectable, the following settings are required:
 - Windows Vista: It is not possible to change the save to folder option. The downloaded file is automatically opened for playback.

Default Settings

None

System Availability

Terminals

All Terminals

Required Component(s)

IP7WW-SDVM()-C1

Related Features

Voice Response System (VRS)

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
90-02-01	Programming Password Setup - User Name	Maximum 10 characters	Refer to the Programming Manual for the default values.
90-02-02	Programming Password Setup - Password	Up to eight digits	Refer to the Programming Manual for the default values.
90-02-03	Programming Password Setup - User Level	0 = Prohibited User 2 = IN (Installer Level) 3 = SA (System Administrator Level 1) 4 = SB (System Administrator Level 2) 5 = UA (User Programming Administrator Mode Level 1)	Refer to the Programming Manual for the default values.

Troubleshooting

The table below shows possible Error messages and Causes:

Table 1-79 Error Messages and Causes

Error Message	Cause
Mailbox XXX does not exist. (XXX = mailbox number)	The mailbox does not exist
The mailbox is being used by another session	When the mailbox is being used by another session, either PC or telephone.
There is no available space in the SD.	When there is no available space in the SD.
The file is being used by another session. Please try again later.	When the file to be downloaded is being used by another session, either PC or telephone.
The selected file has already been deleted.	When the file selected for download has already been deleted.
The file is being used by another session. Please try again later.	When the file selected for deletion is being used by another session.
The selected file has already been deleted.	When the file selected for deletion has already been deleted.
Cannot upload the file since the original file is being used by another session. Please try again later.	When the file to be replaced is being used when trying to upload the replacement.

Operation

Changing VRS Messages using User Admin Mode (UA)

Audio files up to 2MB may be uploaded to the SL2100 for VRS messages. All 100 VRS messages can be uploaded or deleted. The messages can be used on all VRS features: General Message, Automated Attendant greetings, ACD messages and the 900 Preamble.

In order for uploaded messages to play they must be in the proper format. Audio files not recorded in the proper format may not playback. The proper format is:

Bit Rate	64kbps
Sampling Size	8 bits
Channel	1 (Mono)

Sampling Rate	8 KHz
Audio Format	CCITT A-law/ μ -law

1. To login, open an Internet browser and enter the IP of the SL2100 LAN port in the address line. At default, the IP address is 192.168.0.10.
2. At the login screen enter username = USER1 and password = 1111.
3. You will then see the main menu, click on the VRS Audio Up/Download icon.
4. There can be up to 100 VRS messages and you may need to scroll through several pages or jump to get to the desired message number.



The message numbers correspond to the same message number when accessed via the telephone. Message 1 is 001, message 2 is 002 and message 3 is 003, etc.

5. To delete a message, click on the red X to the right of the appropriate message.
6. To Upload a message :
 - Under Message No, enter the message number to be replaced.
 - Browse to find the location where the greeting file is stored.
 - Click on the upload icon to the right of the selected file name.
 - Depending on file size and LAN speed, it may take a minute to upload the greeting.
 - The uploaded message will appear in the assigned location.

Voice Response System (VRS) - Call Forwarding - Park and Page

Description

When an extension user is away from their phone, VRS Park and Page can let them know when they have a call waiting to be answered. The Personal Greeting and Park & Page options can have up to 200 messages total (note that the Park & Page feature uses two messages). To enable VRS Park and Page, the user records a Personal Greeting along with an additional Paging announcement. VRS Park and Page then answers an incoming call and plays the Personal Greeting to the caller. The caller then listens to Music on Hold (if available) while the system broadcasts the prerecorded Paging announcement. When the extension user hears the Page, they can go to any telephone and use Directed Call Pickup to intercept the call.

For example, John Smith could record a Personal Greeting that says:

“Hello, this is John Smith. I am away from my phone right now but please hold on while I am automatically paged.”

The prerecorded Paging announcement could say:

“John Smith, you have a call waiting on your line.”

The incoming caller hears the first message and listens to Music on Hold while the system broadcasts the second message. John Smith could then walk to any phone and pick up his call. If John doesn't pick up the call, the Page can be set to repeat once.

VRS Park and Page follows the rules for Personal Greeting for All Calls, immediately rerouted. This means that Park and Page activates for ringing Intercom calls, DID calls and DISA calls. It also activates for calls transferred from the Automated Attendant. Additionally, calls from the Automated Attendant follow Automatic Overflow routing if not picked up. VRS Park and Page activates for transferred outside calls but does not play the Personal Greeting to the caller. If a call comes in when the specified Page zone is busy, the system broadcasts the announcement when the zone becomes free.

Conditions

- Park and Page announcements only repeat once.
- Voice Announcement (VAU) recording time is fixed at four minutes and cannot be changed.
- While VRS Park and Page is enabled, only one DID call at a time can be processed. Subsequent calls hear a busy tone.
- This feature is not supported for CO transferred calls.

Default Setting

- VRS Park and Page is available at default for internal paging access code **701**, zone 1.
- User access code of **713**. See feature Operation. Set PRG 40-10-01 for VRS guidance message.

System Availability

Terminals

None

Required Component(s)

None

Related Features

Analog Communication Interface (ACI)

Music on Hold

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
11-11-58	Service Code Setup (for Setup/Entry Operation) - Call Forward with VAU Personal Greeting	0~9, *, # Maximum of 8 digit	713
11-12-19	Service Code Setup (for Service Access) - Internal Group Paging	0~9, *, # Maximum of 8 digit	701
11-12-20	Service Code Setup (for Service Access) - External Paging	0~9, *, # Maximum of 8 digit	703
11-12-24	Service Code Setup (for Service Access) - Combined Paging	0~9, *, # Maximum of 8 digit	*1
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
31-02-01	Internal Paging Group Assignment - Internal Paging Group Number	0 ~ 50 (0 = No setting)	All stations = 1
31-03-01	Internal Paging Group Settings - Internal Paging Group Name	Up to 12 Characters	Refer to the Programming Manual for the default values.
31-04-01 *	External Paging Zone Group - Paging Group Number	0 ~ 3 (0 = No setting, 1 ~ 3= Group number)	Speaker 1 = 1 (Group 1) Speaker 2 = 2 (Group 2) Speaker 3 = 3 (Group 3)
40-10-01	Voice Announcement Service Option - VRS Fixed Message	0 = Disable (VRS fixed message will not be played.) 1 = Enable (VRS fixed message will be played.)	0
40-10-05	Voice Announcement Service Option - Park and Page Repeat Timer (VRS Msg Resend)	0 ~ 64800 seconds	0

Operation

To have the system page you when you have a call:

1. Press **Speaker** key (or lift the handset at the Single Line Terminal) and dial **713**.
2. When you hear, "Start recording at the tone and press the **HASH** key when you are done." record your Personal Greeting and dial # when the announcement is complete.
 *If you already have Park and Page or Personal Greeting set up, you can dial:
3 to erase (the optionally pressing **Hold** key to cancel the erase)
5 to listen (then # again to listen again)
7 to re-record*
3. Dial **7**.
4. When you hear, "Start recording at the tone and press the **HASH** key when you are done" record your page and dial # when the announcement is complete.
 *A paging chime overrides the first four seconds of an announcement. Allow a delay in announcement recording for chime time.*
5. Dial the Page Zone that should broadcast your announcement.
For example, for Internal Zone 1 dial **701** + 01, or for Combined Paging Zone, 1 dial ***1** + 1.
6. Dial the Park and Page type:
2 = All Calls
3 = Outside Calls Only
7. Press **Speaker** key to hang up (or go on-hook at the Single Line Terminal).

To pick up your Park and Page:

1. Press **Speaker** key (or lift the handset at the Single Line Terminal).
2. Dial ** + your extension number.

To cancel your Park and Page:

1. Press **Speaker** key (or lift the handset at the Single Line Terminal).
2. Dial **713** + 3.
3. Press **Speaker** key to hang up (or go on-hook at the Single Line Terminal).

Volume Controls

Description

Each Multiline Terminal user can control the volume of incoming ringing, splash tone, Paging, Background Music, Handsfree and your handset. Multiline Terminals consolidate all adjustments into the volume buttons. Pressing the VOLUME ▲ or ▼ key adjusts the volume level for whichever feature is active (outside call, ICM, ICM ringing, paging, etc.). Pressing these keys when the telephone is idle adjusts the contrast level of the telephone display. The users should set the volumes for their most comfortable levels.

Conditions

- When the telephone is IDLE contrast can not be changed when BGM is enable or when Navigation Mode (PRG 15-02-60) is enable.
- When Navigation is enabled Contrast can be changed by using a Navigation mode.
- Multiline Terminal users can further increase station ring volume by pressing **Speaker** key and dialing Code 729.
- Headset volume, off-hook ringing volume, station ringing volume, and Speaker volume adjustments are determined by PRG 15-02-27.
- The LCD of the SL2100 terminals provide a volume bar indication while adjusting the following volumes or controls:
 - Speaker Volume
 - Handset/Headset Volume
 - Background Music (BGM) Volume
 - Ring Volume/Off-Hook Ring Volume
 - LCD Contrast
- With the SL2100, the handset/speaker volume for intercom calls or outside calls can be adjusted.

Default Settings

Enabled

System Availability

Terminals

All Multiline Terminals

Required Component(s)

None

Related Features

Off-Hook Signaling

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
15-02-27	Multiline Telephone Basic Data Setup - Handset Volume	0 = Back to Default (Back) 1 = Stay at previous level (Stay)	1

Operation

To adjust the volume of incoming ringing and splash tone:

1. If the telephone is idle, press **Speaker** key and dial **729**. If the telephone is ringing, skip to step 2.
2. Press the **VOLUME ▲** or **▼** key.

To adjust the volume of ringing incoming Paging announcements, Handsfree, the handset or Background Music:



*If the user is using a Navigation While receiving the call, **Up** and **Down Cursor** keys will not adjust the Volume.*

1. Press the **VOLUME ▲** or **▼** key.



The feature must be active to change the volume. Pressing the volume keys when the telephone is idle adjusts the display contrast.

Warning Tone for Long Conversation

Description

The system can broadcast warning tones to a trunk caller, warning the caller that he has been on the call too long. If he chooses, the caller can disregard the tones and continue talking. The outside caller does not hear the warning tones. Warning tones do not occur for Intercom calls and most incoming trunk calls. DISA trunks can also have warning tones. Warning tones are not available to analog Single Line Terminal (SLT) users.

There are two types of warning tones: Alarm Tone 1 and Alarm Tone 2. Alarm Tone 1 is the first set of tones that occur after the user initially places a trunk call. Alarm Tone 2 broadcasts periodically after Alarm Tone 1 as a continued reminder. Each alarm tone consists of three short beeps.

If programmed, DISA calls are disconnected unless the continue code is entered by the user. With the Long Conversation Cutoff feature, incoming or outgoing central office calls can also be disconnected.

Warning Tone for DISA Callers

For DISA callers, with this feature enabled, the warning tone timer begins when an incoming DISA call places an outgoing call and either the inter-digit timer expires or the outgoing call is answered.

If an outside call is transferred to forwarded off-premise using an outside trunk, the warning tone timer begins immediately. This occurs only if either trunk involved in the call is programmed for this feature (PRG 14-01-17). When transferring a trunk call off-premise, PRG 14-01-13 must be enabled (set to 1).

Conditions

- Warning Tone for Long Conversation does not occur for incoming trunk calls.
- Warning Tone for Long Conversation occurs for all outgoing trunk calls, regardless of how they are placed or other outgoing restrictions.
- Warning Tone for Long Conversation can be enabled for DISA calls.
- Warning Tone for Long Conversation does not occur for Intercom calls.
- Warning Tone for Long Conversation can be used with the Long Conversation Cutoff feature for outgoing calls.
- Warning Tone is presented on a Single Line Terminal in the ear piece.

Default Settings

Disabled

Related Features

Central Office Calls, Answering

Central Office Calls, Placing

Direct Inward System Access (DISA)

Intercom

Long Conversation Cutoff

Single Line Terminals

Code Restriction/Toll Restriction

Guide to Feature Programming

Program No.	Program Name	Input Data	Default
14-01-17	Basic Trunk Data Setup - Trunk to Trunk Warning Tone for Long Conversation Alarm	0 = Disable (No) 1 = Enable (Yes)	0
14-01-25	Basic Trunk Data Setup - Continued/Discontinued Trunk-to-Trunk Conversation	0 = Disable (No) 1 = Enable (Yes)	0
20-06-01	Class of Service for Extensions - Class of Service for Extensions	1 ~ 15	Extension 101 is Class 15 and other Extension are Class 1
20-13-01	Class of Service Options (Supplementary Service) - Long Conversation Alarm	0 = Off 1 = On	COS 01 ~ 15 = 0
20-21-01	System Options for Long Conversation - Long Conversation Alarm 1	0 ~ 64800 seconds	170
20-21-02	System Options for Long Conversation - Long Conversation Alarm 2	0 ~ 64800 seconds	180
20-28-01	Trunk to Trunk Conversation - Conversation Continue Code	0 ~ 9, *, # (Set for one digit only)	No Setting
20-28-02	Trunk to Trunk Conversation - Conversation Disconnect Code	0 ~ 9, *, # (Set for one digit only)	No Setting
20-28-03	Trunk to Trunk Conversation - Conversation Continue Time	0 ~ 64800 seconds	0
21-01-01	System Options for Outgoing Calls - Seizure Trunk Line Mode	0 = Priority Route 1 = Circular Route	0
21-01-03	System Options for Outgoing Calls - Trunk Interdigit Time (External)	0 ~ 64800 seconds	10
25-07-07	System Timers for VRS/DISA - Long Conversation Warning Tone Time	0 ~ 64800 seconds	1800
25-07-08	System Timers for VRS/DISA - Long Conversation Disconnect Time	0 ~ 64800 seconds	30

Operation

Warning Tone for Long Conversation is automatic if programmed.

Warning Tone for Long Conversation for DISA Callers:

1. A DISA caller dials into the system and places a call.
 2. Once the Warning Tone is heard, **To continue the call** the DISA caller presses the programmed Continue Code.
- OR -**
- To disconnect the call**, the DISA caller presses the programmed Disconnect Code.

MEMO

Chapter 2. Codes Tables

Section 1 ABOUT THIS CHAPTER

The charts in this chapter provide a list of the Service Codes, Function Key Codes, and System Number Plan/Capacities. The service codes and function codes are listed by number and by feature in separate charts for ease of use.

Section 2 SIMPLIFYING MULTILINE TERMINAL OPERATIONS WITH ONE-TOUCH KEY OPERATION

A Multiline Terminal user can access many features through Service Codes (e.g., Service Code **#0** to access a specific trunk). To streamline the operation of their telephone, a Multiline Terminal user can store these codes under One-Touch Keys. This provides one-button operation for almost any feature. To find out more, turn to the One-Touch Calling feature.

When reading an instruction using programmable keys, you will see a notation similar to (**PRG 15-07 or SC 7nn**). This means that the key requires function code nnn, and you can program this code through PRG 15-07 or by dialing Service Code **751** or **752**. Refer to the Programmable Function Keys feature for more information.

Section 3 USING HANDSFREE

The manual assumes each extension has Automatic Handsfree. This lets a user just press a line key or **Speaker** key to answer or place a call. For extensions without Automatic Handsfree, the user must:

- Lift the handset or press **Speaker** key for intercom dial tone.
- Lift the handset or press **Speaker** key, then press a line key for trunk dial tone.

Post Dialing Service Codes

Table 2-1 Post Dialing Service Codes - Single Digit Post Dialing Codes

Code	For this feature. . .	When you are. . .	Note
1	Handsfree Answerback / Forced intercom Ringing	Changing the signaling mode of your outgoing Intercom call	
2	Department Step Calling	Cycling to the next member of a Department Calling Group	
3	Not used		
6	Voice Over	Sending a Voice Over to a busy extension after hearing Busy/Ring tone	
Set by PRG 11-16-02	Barge-In	Barge into another station's active call	
8	Voice Mail	Leaving a message in a co-worker's mailbox after calling their busy or unanswered extension	

Code	For this feature. . .	When you are. . .	Note
0	Message Waiting	Leaving a Message Waiting at a co-work-er's busy or unanswered extension	
#	Call Waiting / Camp-On / Callback / Trunk Queuing	Call Waiting / Camp-On / Callback / Trunk Queuing	
*	Off-Hook Signaling	Sending off-hook signal tones to a busy extension	

Service Codes by Number

Table 2-2 Service Codes by Number

Dial this Service Code. . . ¹	When you . . .	For this feature. . .	Also see Function Key. . .	Note
¹ Except where indicated, dial Service Code from Intercom dial tone (e.g., press idle Speaker key first).				
+ Enter Account Code +	Enter an Account Code.	Account Codes	-	
**	Pick up a call ringing or waiting at another extension.	Directed Call Pickup Voice Response System (VRS)	-	
*#	Pick up a call ringing an extension in your pickup group (except Ring Group calls).	Group Call Pickup	24	
*0	Answer a Message Waiting request.	Message Waiting	38	
733	Set the Automatic Transfer for each trunk line.	Transfer	-	
734	Cancel the Automatic Transfer for each trunk line.	Transfer	-	
735	Set the Destination for Automatic Trunk Transfer.	Transfer	-	
*1 + Paging Group Number	Make a Combined Page.	Paging	-	
+ 0	Cancel Call Forwarding.	Call Forwarding	-	
No setting (After + 001 ~ 128 + busy)	Disconnect a call in progress on a trunk.	Forced Trunk Disconnect	-	
*5	Log out of or in to an ACD group.	Automatic Call Distribution (ACD)	*10	
*6 + Orbit (01 ~ 64)	Pick up a call parked in a system Park orbit (01 ~ 64).	Park	*04 + orbit	
*8	Call your mailbox.	Voice Mail	-	
#* #*	Enter system programming mode.	System Programming Password Protection	-	
Hookflash + ## + Enter Account Code + Hookflash	Enter an Account Code at a Single Line Terminal.	Account Codes	-	
#9	Use Universal Answer Code to pick up a call ringing over the paging system.	Central Office Calls, Answering	-	
Hookflash + #1 + extension + hookflash twice	Activate Conference from a Single Line Terminal.	Conference	-	
#2 + bin	Dial a Common Speed Dialing number.	Speed Dialing	27	

Dial this Service Code. . . ¹	When you . . .	For this feature. . .	Also see Function Key. . .	Note
¹ Except where indicated, dial Service Code from Intercom dial tone (e.g., press idle Speaker key first).				
#3	Flash a trunk from an Single Line Terminal.	Flash	-	
#4 + bin	Dial a group Speed Dialing number.	Speed Dialing	28	
#5	Use Last Number Redial.	Last Number Redial	-	
#6 + orbit (01 ~ 64)	Park a call in a system Park orbit (1 ~ 8, 01 ~ 32 or 01 ~ 64).	Park	*04 + orbit (1 ~ 64)	
#7	Use Personal Speed dialing.	Speed Dialing	-	
#8	Set up an Unsupervised Conference.	Tandem Trunking (Unsupervised Conference)	-	
#9 + 001 ~ 128 #0 + 001 ~ 128	Place a call over a specific trunk.	Central Office Calls, Placing	*01 + trunk (001 ~ 128)	
0 (Off-Hook)	Leave a Message Waiting at a co-worker's busy or unanswered extension.	Message Waiting	35	
1 (Off-Hook)	Change the signaling mode of your outgoing Intercom call.	Handsfree Answerback/Forced Intercom Ringing	-	
4 (On-Hook)	Listen to the General Message.	Voice Response System (VRS)	-	
6 (On-Hook)	Check an extension number.	Voice Response System (VRS)	-	
8 (On-Hook)	Listen for the time.	Voice Response System (VRS)	-	
9	Place a call using ARS or Trunk Group Routing.	Automatic Route Selection Trunk Group Routing	*02	
600 + code + 0	Use Dial Block.	Toll Restriction, Dial Block	-	
601 + code + 0	As a supervisor use Dial Block.	Toll Restriction, Dial Block	-	
602 + Group number (01 ~ 50)	Set Automatic Transfer Setup for each extension group.	Transfer	-	
603 + Group number (01 ~ 50)	Cancel Automatic Transfer Setup.	Transfer	-	
604 + Group number (01 ~ 50) + mode + extension	Set the destination for Automatic Transfer Setup for each extension group.	Transfer	-	
605 + Group number (01 ~ 50)	Set Delayed Transfer for each extension group.	Transfer	-	
606 + Group number (01 ~ 50)	Cancel Delayed Transfer.	Transfer	-	
607 + Group number (01 ~ 50)	Set up DND for each extension group.	Transfer	-	
608 + Group number (01 ~ 50)	Cancel DND for each extension group.	Transfer	-	
611	Use a SLT to listen the General Message.	Voice Response System (VRS)	-	
612 + 3 to erase, 5 to listen or 7 to record	Record, listen to or erase the General Message.	Voice Response System (VRS)	-	
616 + 3 to erase, 5 to listen or 7 to record	Record, listen to or erase a VRS Message.	Voice Response System (VRS)	-	
618	Use Night Mode Switch for other group.	Night Answer		
620	Use Common Cancel Service Code.	Common Cancel	-	

Dial this Service Code. . . ¹	When you . . .	For this feature. . .	Also see Function Key. . .	Note
¹ Except where indicated, dial Service Code from Intercom dial tone (e.g., press idle Speaker key first).				
621	Print the SMDR Extension Accumulated printout.	Station Message Detail Recording (SMDR)	-	
622	Print the SMDR Group Accumulated printout.	Station Message Detail Recording (SMDR)	-	
623	Print the SMDR Account Code Accumulated printout.	Station Message Detail Recording (SMDR)	-	
782	Transfer a call to the VRS This can also be used for routing ANI/DNIS to the VRS.	Transfer	-	
627	Enable DND at a room telephone.	Hotel/Motel (Do Not Disturb)	-	
628	Cancel DND at a room telephone.	Hotel/Motel (Do Not Disturb)	-	
629	Enable DND for another room telephone.	Hotel/Motel (Do Not Disturb)	-	
630	Cancel DND at another room telephone.	Hotel/Motel (Wake Up Call)	-	
631	Set up a Wake Up call for your own room telephone.	Hotel/Motel (Wake Up Call)	-	
632	Cancel a Wake Up Call for your room telephone.	Hotel/Motel (Wake Up Call)	-	
633	Set a Wake Up Call for another guest room telephone.	Hotel/Motel (Wake Up Call)	-	
634	Cancel a Wake Up Call for another guest room telephone.	Hotel/Motel (Wake Up Call)	-	
635	Enable Room to Room Call Restriction for a guest room telephone.	Hotel/Motel (Room to Room Call Restriction)	-	
636	Disable Room to Room Call Restriction for a guest room telephone.	Hotel/Motel (Room to Room Call Restriction)	-	
637	Change a room telephone Toll Restriction (When Checked In) level.	Hotel/Motel (Toll Restriction When Checked In)	-	
638	Set a room as checked in.	Hotel/Motel (Room Status)	-	
639	Set a room as checked out.	Hotel/Motel (Room Status)	-	
640	Change room status for own extension	Hotel/Motel (Room Status)	-	
641	Set a room status from another telephone.	Hotel/Motel (Room Status)	-	
642	Request a Room Status Printout.	Hotel/Motel (Room Status Printouts)	-	
645 + trunk # + 1 (block) 645 + trunk # + 0 (enable)	Block/busy out outbound usage on a trunk with Trunk Port Disable.	Central Office Calls, Placing	-	
650 + 0 (install) or 1 (remove)	Log in (0) or log out (1) for your Department Calling Group.	Department Calling	-	
654	Enable Conversation Record at a SLT.	Voice Mail	-	

Dial this Service Code. . . ¹	When you . . .	For this feature. . .	Also see Function Key. . .	Note
¹ Except where indicated, dial Service Code from Intercom dial tone (e.g., press idle Speaker key first).				
655	Log out of or in to an ACD Group from a single line telephone.	Automatic Call Distribution (ACD)	-	
656	Activate Work Time from a SLT.	Automatic Call Distribution (ACD)	*17	
657	Cancel Work Time from a SLT.	Automatic Call Distribution (ACD)	*17	
658	Activate Rest Mode from a SLT.	Automatic Call Distribution (ACD)	*13	
659	Cancel Rest Mode from a SLT.	Automatic Call Distribution (ACD)	*13	
Hookflash + 160	ACD Record for a SLT.	Automatic Call Distribution (ACD)	-	
667	Log an agent into their ACD Group.	Automatic Call Distribution (ACD)	-	
668	Log an agent out of their ACD Group.	Automatic Call Distribution (ACD)	-	
669	Are a supervisor assigning an agent into another ACD Group or changing an agent's status.	Automatic Call Distribution (ACD)	-	
670 + ACD Group	Change your ACD Group assignment.	Automatic Call Distribution (ACD)	-	
663 + 6-digit code + line + telephone number	Override Toll Restriction.	Toll Restriction	-	
672 + Line number (001 ~ 128)	Answer a call on a specific trunk.	Central Office Calls, Answering Hold	-	
675	Monitor a room telephone.	Hotel/Motel (Room Monitor)	-	
677	Change the COS of another extension. Must be allowed in PRG 20-13-28.	Class of Service	-	
678 + 0~9	Change the language of a display telephone.	Alphanumeric Display / Maintenance	-	
679 + 1 (set) or 0 (cancel)	Change the ability for a second call with DID/DISA/DIL.	Central Office Calls, Answering	-	
700 + extension # + enter name + Hold	Program extension names.	Name Storing	55	
701 + zone (1 ~ 9 or 01 ~ 32) 701 + zone (0 or 00)	Make an Internal Zone Page. Make an All Call Internal Page.	Paging, Internal	21 + zone 22	
702 + Door Box (1 ~ 6)	Place a call to a Door Box.	Door Box	-	
703 + zone (1 ~ 3) 703 + zone (0)	Make an External Zone page. Make an External All Call page.	External Paging	19 + zone 20	
704 + trunk group (1 ~ 50)	Place an outside call over a trunk group.	Central Office Calls, Placing	*02 + group	
707	Override Do Not Disturb or Call Forwarding.	Call Forwarding Do Not Disturb	37	
708	Step through a Department Group.	Department Step Calling	36	

Dial this Service Code. . . ¹	When you . . .	For this feature. . .	Also see Function Key. . .	Note
¹ Except where indicated, dial Service Code from Intercom dial tone (e.g., press idle Speaker key first).				
709	Send a Call Waiting tone to a busy extension.	Call Waiting	33	
710	Break into another extension call.	Barge-In	-	
711 + 1 (ICM) or 2 (TRK) + tone (1 ~ 8)	Listen to the incoming ring choices.	Selectable Ring Tones	-	
712	Change the signal type for calling an extension.	Intercom	-	
715	Save a number (from SLT) or dial a saved number	Save Number Dialed	30	
718 + 1 718 + 2 718 + 3 718 + 4 718 + 5 718 + 6 718 + 7 718 + 8	Activate Day 1 Mode. Activate Night 1 Mode. Activate Midnight 1 Mode. Activate Rest 1 Mode. Activate Day 2 Mode. Activate Night 2 Mode. Activate Midnight 2 Mode. Activate Rest 2 Mode.	Night Service	09 + 1 09 + 2 09 + 3 09 + 4 09 + 5 09 + 6 09 + 7 09 + 8	
720 + 1 (ICM) or 2 (TRK) + tone (1 ~ 8)	Change your extension incoming ring tones.	Selectable Ring Tones	-	
721	Enable Handsfree Answerback for incoming Intercom calls.	Handsfree Answerback/Forced Intercom Ringing	-	
722	Call off-premise with a Door Box.	Call Forwarding, Off-Premise Door Box	54	
723	Enable Forced Ringing for incoming Intercom calls.	Handsfree Answerback/Forced Intercom ringing	-	
724	Enable/disable Dial Pad Confirmation Tone.	Dialing Pad Confirmation tone	-	
725	Turn Background Music on and off.	Background Music	04	
727 + 1 or 2 + time, or 727 + 1 or 2 + 9999 to cancel	Check, set or cancel an alarm.	Alarm	-	
728 + hour + minutes	Set the system Time.	Time and Date Clock/Calendar Display	-	
729	Check or change ring volume.	Volume Control	-	
730	Use Remote maintenance.	-	-	
732	Place a call on Group Hold.	Hold	-	
747 + 0 (Cancel) 1 (Trk calls) 2 (Paging, ICM, Call Forward and transfers) 3 (All calls) 4 (Call Forwards)	Activate Do Not Disturb.	Do Not Disturb	-	
749	Place a call on Exclusive Hold at a SLT.	Hold	-	
750	Camp On to an extension when calling into the system through the VRS.	Voice Response System (VRS)	35	
751 + key + code	Change the function of a programmable key using 751 service code.	Programmable Function Keys	-	

Dial this Service Code. . . ¹	When you . . .	For this feature. . .	Also see Function Key. . .	Note
¹ Except where indicated, dial Service Code from Intercom dial tone (e.g., press idle Speaker key first).				
752 + key + code	Change the function of a programmable key using 752 service code.	One-Touch Serial Operation	-	
753 + bin + number + Hold + Name + Hold to store	Store Common Abbreviated Dialing numbers.	Abbreviated Dialing	-	
754 + bin + number + Hold + Name + Hold to store	Store Group Abbreviated Dialing numbers.	Abbreviated Dialing	-	
755 + One Touch key + code	Program a One-Touch Key or Personal Speed Dial.	One-Touch Dialing	-	
756	Answer a call ringing a telephone in your pickup group (except Ring Group calls).	Group Call Pickup	-	
757	Park a call or pick up a parked call at an extension.	Park	-	
759	Retrieve a call from Exclusive Hold at a SLT.	Hold	-	
762	Pick up a call from Group Hold.	Hold	-	
763	Join a Meet Me Conference or Meet Me Page on an Internal Paging Zone (if your extension is in the group called).	Meet Me Conference Meet Me Paging	23 or 32	
764 + zone paged (0 ~ 32)	Join a Meet Me Conference or Meet Me Page if your extension is not in the group paged.	Meet Me Paging	23 or 32	
765 + zone (0 ~ 3)	Join a Meet Me Conference or Meet Me Page on an External Paging Zone.	Meet Me Conference Meet Me Paging	23 or 32	
768 + pickup group (1 ~ 8 or 1 ~ 9 or 01 ~ 64)	Answer a call ringing a telephone in another pickup group (except Ring Group calls).	Group Call Pickup	26 + group	
769	Answer a call ringing a telephone in another pickup group if you do not know the group number (except Ring Group Calls).	Group Call Pickup	25	
770	Cancel a Callback request.	Callback	-	
771 + ext	Cancel Messages Waiting you left at a specific extension.	Message Waiting	-	
773	Cancel all Messages Waiting you have left at other extensions.	Message Waiting	-	
775 + pswd (0000) + place outside call	Temporarily override an extension Toll Restriction.	Toll Restriction Override	-	
776	Clear number saved by Last Number Redial.	Last Number Redial	-	
No Setting + 00 (no tone), 01(general) or 02 (holiday)	Change the Music on Hold Tone.	Music on Hold	-	
782	Route ANI/DNIS to the VRS. It can also be used to transfer to VRS.	Transfer Voice Response Service (VRS)	-	
783	Enable the data communication auto-answer mode.	Data Communications	-	

Dial this Service Code. . . ¹	When you . . .	For this feature. . .	Also see Function Key. . .	Note
¹ Except where indicated, dial Service Code from Intercom dial tone (e.g., press idle Speaker key first).				
785	Clear the number saved by Save Number Redial.	Save Number Redial	-	
790	Use Voice Over after calling a busy extension.	Voice Over	48	
794	Split between two calls on a SLT.	Call Waiting	-	
799	Test Callback operation for a SLT.	Callback	-	

Service Codes by Feature

Table 2-3 Service Codes by Feature

For this feature...	Dial this Service Code... ¹	When you ...	Also see Function Key...	Note
¹ Except where indicated, dial Service Code from intercom dial tone (e.g., press idle Speaker key first).				
Speed Dialing	753 + bin + number + Hold + Name + Hold to store	Store System Speed Dialing numbers.	-	
	754 + bin + number + Hold + Name + Hold to store	Store Group Speed Dialing numbers.	-	
	#2 + bin	Dial a System Speed Dialing number.	27	
	#4 + bin	Dial a Group Speed Dialing number.	28	
	#7 + bin	Use Personal Speed Dialing.	-	
Account Codes	*+ Enter Account code +*	Enter an Account Code.	-	
	Hookflash + ## + Enter account code + Hookflash	Enter an Account Code at an SLT.	-	
Alarm	727 + 1 or 2 + time, or 727 + 1 or 2 + 9999 to cancel	Check, set or cancel an alarm.	-	
Alphanumeric Display	678 + 0 ~ 14	Select the language used on display Multiline Terminals.	-	
Automatic Call Distribution (ACD)	*5	Log out of or in to an ACD Group.	*10	
	655	Log out of or in to an ACD Group from an SLT.	-	
	656	Activate Work Time from an SLT.	*17	
	657	Cancel Work Time from an SLT.	*17	
	658	Activate Rest Mode from an SLT.	*13	
	659	Cancel Rest Mode from an SLT.	*13	
	Hookflash + 660	Use ACD Recording with an SLT.	-	
Automatic Route Selection or Trunk Group Routing	9	Place a call using Trunk Group. Route an Automatic Route Selection.	*02	
Background Music	725	Turn Background Music on or off.	04	

For this feature...	Dial this Service Code... ¹	When you ...	Also see Function Key...	Note
¹ Except where indicated, dial Service Code from intercom dial tone (e.g., press idle Speaker key first).				
Call Forwarding	745	Set/Cancel Call Forwarding(Both Ringing).	-	
	742	Set/Cancel Call Forwarding when Busy.	-	
	744	Set/Cancel Call Forwarding when Busy/No Answer.	-	
	743	Set/Cancel Call Forwarding No Answer.	-	
	746	Set/Cancel Call Forwarding Follow Me.	-	
	741	Set/Cancel Call Forwarding Immediate.	-	
Call Forwarding, Off-Premise Door Box	722	Call off-premise with a Door Box.	54	
Call Forwarding/Do Not Disturb Override	707	Override an extension Call Forward or DND setting.	37	
Call Waiting / Camp-On	794	Split (switch) between calls on an SLT.	-	
	770	Cancel a Callback request.	-	
	799	Test Callback operation for an SLT.	-	
Callback / Camp-On / Trunk Queuing	#	Camp On or leave a Callback for a busy extension or trunk.	35	
	770	Cancel a Callback request.	-	
	799	Test Callback operation for an SLT.	-	
Central Office Calls, Answering / Hold	#9	Use Universal Answer to pick up a call ringing over the paging system.	-	
	672 + Line number (001 ~ 128)	Answer a call on a specific trunk.	-	
	679 + 1 (set) or 0 (cancel)	Change the ability for a second call with DID/DISA/DIL.	-	
Central Office Calls, Placing	#0 + 001 ~ 128	Place a call over a specific trunk.	*01 + trunk (001 ~ 128)	
	645 + trunk # + 1 (block) 645 + trunk # + 0 (enable)	Block/busy out outbound usage on a trunk with Trunk Port Disable.	-	
	704 + trunk group (1 ~ 50)	Place an outside call over a trunk group.	*02 + group	
Class of Service	677	Change the COS of another extension. Must be allowed in PRG 20-13-28.	-	
Conference	Hookflash + #1 + extension + hookflash twice	Activate Conference from a Single Line Terminal.	-	
Data Communications	783	Enable the data connection auto-answer mode.	-	
	684	Disconnect an active data call.	-	
Department Calling	650 + 0 (install) or 1 (remove)	Log in (0) or log out (1) for your Department Calling Group.	46	
Department Step Calling	#	Step Call through a Department Group.	36	

For this feature...	Dial this Service Code... ¹	When you ...	Also see Function Key...	Note
¹ Except where indicated, dial Service Code from intercom dial tone (e.g., press idle Speaker key first).				
Dial Pad Confirmation Tone	724	Enable/disable Dial Pad Confirmation Tone.	-	
Directed Call Pickup	** + ext.	Pick up a call ringing or waiting at an extension.	-	
Do Not Disturb	747 + 0 (Cancel) 1 (Trk calls) 2 (Paging, ICM, Call Forwards, and Transfers) 3 (All calls) 4 (Call Forwards)	Activate Do Not Disturb.	-	
Door Box	702 + Door Box (1 ~ 2)	Place a call to a door Box.	-	
	722	Forward a Door Box off-premise.	-	
E911	786	Turn off the E911 alarm.	-	
Flash	#3	Flash a trunk from an SLT.	-	
Forced Trunk Disconnect	No setting (after #0 + 001 ~ 128 + busy)	Disconnect a call in progress on a trunk.	-	
Group Call Pickup	*#	Pick up a call ringing an extension in your own pickup group (except Ring Group calls).	24	
	768 + pickup group (1~8 or 1~9 or 01~64)	Answer a call ringing a telephone in another pickup group.	26 + group	
	769	Answer a call ringing a telephone in another pickup group if you do not know the group number (except Ring Group calls).	25	
Handsfree Answerback/Forced Intercom Ringing	1 (Off-Hook)	Change the signaling mode of your-outgoing Intercom call.	-	
	721	Enable Handsfree Answerback for incoming Intercom calls.	-	
	723	Enable Forced Ringing for incoming Intercom calls.	-	
Hold	732	Placing a call on Group Hold.	-	
	749	Place a call on Exclusive Hold at an SLT.	-	
	759	Retrieve a call from Exclusive Hold at a Single Line Terminal.	-	
	762	Pick up a call from Group Hold.	-	
Hotel/Motel (Do Not Disturb)	627	Enable DND at a room telephone.	-	
Hotel/Motel (Do Not Disturb)	628	Cancel DND at a room telephone.	-	
Hotel/Motel (Do Not Disturb)	629	Enable DND for another room telephone.	-	
Hotel/Motel (Do Not disturb)	630	Cancel DND at another room telephone.	-	
Hotel/Motel	675	Monitor a room telephone.	-	
Hotel/Motel (Wake Up Call)	631	Set a Wake Up Call for your room telephone.	-	

For this feature...	Dial this Service Code... ¹	When you ...	Also see Function Key...	Note
¹ Except where indicated, dial Service Code from intercom dial tone (e.g., press idle Speaker key first).				
Hotel/Motel (Wake Up Call)	632	Cancel a Wake Up Call for your room telephone.	-	
Hotel/Motel (Wake Up Call)	633	Set a Wake Up Call for another guest room telephone.	-	
Hotel/Motel (Wake Up Call)	634	Cancel a wake Up Call for another guest room telephone.	-	
Hotel/Motel (Room to Room Call Restriction)	635	Enable Room to Room Call Restriction for a guest room telephone.	-	
Hotel/Motel (Room to Room Call Restriction)	636	Disable Room to Room Call Restriction for a guest room	-	
Hotel/Motel (Toll restriction [When Checked In])	637	Change a room telephone Toll Restriction (When Checked In) level.	-	
Hotel/Motel (Room Status)	638	Set a room as checked in.	-	
Hotel/Motel (Room Status)	639	Set room as checked out.	-	
Hotel/Motel (Room Status)	641	Set a room as available (clean) from another telephone.	-	
Hotel/Motel (Room Status Printouts)	642	Request a Room Status Printout.	-	
Last Number Redial	#5	Use Last Number Redial.	-	
	776	Clear number saved by Last Number Redial.	-	
Maintenance	No setting	Back up system data.	-	
	678 + 01 ~ 18	Display the language the telephone is using.	-	
Meet Me Conference Meet Me Paging	763	Join a Meet Me Conference or Meet Me Page on an Internal Paging Zone (if your extension is in the group called).	23 (Meet Me Paging) or 32 (Meet Me Conference)	
	764 + zone paged (00 ~ 50)	Join a Meet Me Conference or Meet Me Page if your extension is not in the group paged.	-	
	765 + zone (1 ~ 3)	Join a Meet Me conference or Meet Me Page on an External Paging Zone.	-	
Message Waiting	0 (Off-Hook)	Leave a Message Waiting at a co-worker's busy or unanswered extension.	38	
	*#	Answer a Message Waiting request.	38	
	771 + ext	Cancel Messages Waiting you have left at a specific extension.	-	
	773	Cancel all Messages Waiting you have left at other extensions.	-	
Music on Hold	No Setting + 00 (no tone), 01 (general) or 02 (holiday)	Change the Music on Hold Tone.	-	

For this feature...	Dial this Service Code... ¹	When you ...	Also see Function Key...	Note
¹ Except where indicated, dial Service Code from intercom dial tone (e.g., press idle Speaker key first).				
Name Storing	700 + enter name + Hold	Program extension names.	55	
Night Service	618	Use Night Mode Switching for other group.	-	
	718 + 1	Activate Day 1 Mode.	09 + 1	
	718 + 2	Activate Night 1 Mode.	09 + 2	
	718 + 3	Activate Midnight 1 Mode.	09 + 3	
	718 + 4	Activate Rest 1 Mode.	09 + 4	
	718 + 5	Activate Day 2 Mode.	09 + 5	
	718 + 6	Activate Night 2 Mode.	09 + 6	
	718 + 7	Activate Midnight 2 Mode.	09 + 7	
	718 + 8	Activate Rest 2 Mode.	09 + 8	
Off-Hook Signaling	* (Off-Hook) or 709	Send off-hook signal tones to a busy extension.	33	
One-Touch Dialing	755 + One-Touch key + code	Program a One-Touch Key or Personal Speed Dial.	-	
Paging, Combined	*1 + Zone (1 ~ 8) *1 + Zone (0)	Make a combined zone page. Make a combined All Call page.	19 + zone 20	
Paging, External	703 + zone (1 ~ 3) 703 + zone (0)	Make an external zone page. Make an external All Call page.	19 + zone 20	
Paging, Internal	701 + zone (01 ~ 50) 701 + zone (0 or 00)	Make an Internal Zone Page. Make an internal All Call Page.	21 + zone or 22	
Park	#6 + orbit (01 ~ 50)	Park a call in a system Park orbit (01 ~ 50).	*04 + orbit	
	*6 + orbit (01 ~ 50)	Pick up a call parked in a system Park orbit (01 ~ 50).	*04 + orbit	
	757	Park a call or pick up a parked call at an extension.	-	
Programmable Function Keys	751 + key + code	Change the function of a programmable key using 751 service code.	-	
	752 + key + code	Change the function of a programmable key using 752 service codes.	-	
Save Number Dialed	715	Save a number (from SLT) or dial a saved number.	30	
	785	Clear the number saved by Save Number Redial number.	-	
Selectable Ring Tones	711 + 1 (ICM) or 2 (Trk) + tone (1 ~ 8)	Listen to the incoming ring choices.	-	
	720 + 1 (ICM) + 2 (Trk) + tone (1 ~ 8)	Change your extension incoming ring tones.	-	
System Programming Password Protection	#* #*	Enter system programming mode.	-	
Station Message Detail Recording	621	Print the SMDR Extension Accumulated printout.	-	
	622	Print the SMDR Group Accumulated printout.	-	
	623	Print the SMDR Account Code Accumulated printout.	-	
Tandem Trunking (Unsupervised Conference)	#8	Set up an Unsupervised Conference.	-	

For this feature...	Dial this Service Code... ¹	When you ...	Also see Function Key...	Note
¹ Except where indicated, dial Service Code from intercom dial tone (e.g., press idle Speaker key first).				
Time and Date Clock/ Calendar Display	728 + hour + minutes	Set the system Time.	-	
Toll Restriction, Dial Block	600 + code + 0	Use Dial Block.	-	
	601 + code + 0	As a supervisor use Dial Block.	-	
Toll Restriction Override	775 + pswd (0000) + place outside call	Temporarily override an extension Toll Restriction.	-	
	663 + digit code + line + telephone number	Override Toll Restriction.	-	
Transfer	733	Set the Automatic Transfer for each trunk line.	-	
	734	Cancel the Automatic Transfer for each trunk line.	-	
	735	Set the Destination for Automatic Trunk Transfer.	-	
	602 + Group number (01 ~ 50)	Set Automatic Transfer Setup for each extension group.	-	
	603 + Group number (01 ~ 50)	Cancel Automatic Transfer Setup	-	
	604 + Group number (01 ~ 50) + mode + extension	Set the destination for Automatic Transfer Setup for each extension group.	-	
	605 + Group number (01 ~ 50)	Set Delayed Transfer for each extension group.	-	
	606 + Group number (01 ~ 50)	Cancel Delayed Transfer.	-	
	607 + Group number (01 ~ 50)	Set up DND for each extension group.	-	
	608 + Group number (01 ~ 50)	Cancel DND for each extension group.	-	
	624 + Extension number	Transfer a call into an existing call.	-	
	782	Transfer a call to the VRS. This can be used also to route ANI/DNIS to the VRS.	-	
Trunk Group Routing or Automatic Route Selection	0	Place a call using Trunk Group Routing or Automatic Route Selection.	*02	
Trunk Queuing	*8	Call your mailbox.	-	
	654	Enable Conversation Record at an SLT.	-	
	# (Off-Hook)	Camp on to or leave a Callback at a busy trunk.	35	
Voice Mail	8 (Off-Hook)	Leave a message in a co-worker's mailbox after callback their busy or unanswered extension.	-	
	*8	Call your mailbox.	-	
	654	Enable Conversation Record at an SLT.	-	
Voice Over	6 (Off-Hook)	Send a Voice Over to a busy extension after hearing Busy/Ring tone.	48	

For this feature...	Dial this Service Code... ¹	When you ...	Also see Function Key...	Note
¹ Except where indicated, dial Service Code from intercom dial tone (e.g., press idle Speaker key first).				
Voice Response System (VRS)	**+ ringing ext.	Pick up a call ringing another extension for Directed Call Pickup or VRS Park and Page.	-	
	616 + 7 + Record message + # + Condition (2, 4, 6 or 7) + Destination + Type (2 or 3) or 616 + 7 + 3 to cancel	Record, listen to or erase a Personal Greeting or Park and Page.	-	
	4 (On-Hook)	Listen to the General Message.	-	
	6 (On-Hook)	Check an extension number.	-	
	8 (On-Hook)	Listen for the time.	-	
	611	Use SLT to listen to the General Message.	-	
	612 + 3 to erase, 5 to listen or 7 to record	Record, listen to or erase the General Message.	-	
	616 + 3 to erase, 5 to listen or 7 to record	Record, listen to or erase a VRS Message.	-	
	750	Camp On to an extension when calling into the system through the VRS.	-	
	782	Transfer a call to the VRS. This can be used also to route ANI/DNIS to the VRS.	-	
Volume Control	729	Check or change ring volume.	-	
Common Canceling Service Code	620	Use Common Canceling Service Code.	-	

Function Key Codes by Feature

Table 2-4 Function Key Codes by Feature

To program a key, press Speaker key, dial 751 (for 3-digit code) or 752 (for 2-digit codes), press the key and enter the code (e.g., 48 for Voice Over).					
For this feature...	Use this key...	When you ...	Key Lamp Status	Also See Srvc Code	Note
Speed Dialing	Code: 27 Operation: Press key + bin + Line or Hold key	Dial a stored System Speed Dialing number.	None	#2 + bin	
	Code: 28 Operation: Press key + bin + Line or Hold key	Dial a stored Group Speed Dialing number.	None	#4 + bin	
Account Codes	Code: 50 Operation: Press key + Dial Account Code	Enter Account Codes.	None	* + Enter Account Code + *	

To program a key, press Speaker key, dial 751 (for 3-digit code) or 752 (for 2-digit codes), press the key and enter the code (e.g., 48 for Voice Over).					
For this feature...	Use this key...	When you ...	Key Lamp Status	Also See Srvc Code	Note
Automatic Call Distribution (ACD)	Code: *10 Operation: Press key to log in Press key + 1 to log out or 0 to cancel	Basic Operation Log in or out of an ACD Group.	On red when logged in Off when logged out	-	
	Code: *13 Operation: Press key	Rest Mode Enable/disable Rest Mode.	On red when Rest Mode enabled Off when Rest Mode disabled	-	
	Code: *17 Operation: Press key	Working Time Enable/disable Work Time.	On when Work Time enabled, Flashing while on a call if Auto Work Time enabled Off when Work Time disabled	-	
	Code: *19 Operation: Press key while on-hook + Vol Up or Vol Down to scroll	Queue Status Check When in an ACD group, check the status of the queue groups.	None	-	
Background Music	Code: 04 Operation: Press key	Turn Background Music on or off.	None	725	
Barge-In	Code: 34 Operation: Call ext + Press key	Barge-In on a co-worker's conversation.	None	710	
Call Arrival (CAR) Key	Code: *03 + ext. Operation: Press key	Place or answer a call to your co-worker's extension.	Slow Flash red when ringing, On red when busy	-	
Call Forwarding, Both Ring	Code: 14 Operation: Press key + Dest. Extension	Call Forward Both Ring to extension.	Slowly flashes red	745	
Call Forwarding, Busy	Code: 11 Operation: Press key + Dest. Extension	Call Forward Busy to extension or Voice Mail.	Slowly flashes red	742	
Call Forwarding, Busy/No Answer	Code: 13 Operation: Press key + Dest. Extension	Call Forward Busy/No Answer to extension or Voice Mail.	Slowly flashes red	744	
Call Forwarding, External by Door Box	Code: 54 Operation: Press key + Dest. Number	Externally Call Forward Door Box calls.	Slowly flashes red	722	
Call Forwarding, Follow Me	Code: 15 Operation: Press key + Dest. Extension	Call Forward Follow Me to extension or Voice Mail.	Slowly flashes red	746	
Call Forwarding, Immediate	Code: 10 Operation: Press key + Dest. Extension	Call Forward Immediate to extension or Voice Mail.	Slowly flashes red	741	
Call Forwarding, No Answer	Code: 12 Operation: Press key + Dest. Extension	Call Forward No Answer to extension or Voice Mail.	Slowly flashes red	743	
Call Forwarding / Do Not Disturb Override	Code: 37 Operation: Call extension + Press key	Override an extension Call Forwarding or Do Not Disturb.	None	-	

To program a key, press Speaker key, dial 751 (for 3-digit code) or 752 (for 2-digit codes), press the key and enter the code (e.g., 48 for Voice Over).					
For this feature...	Use this key...	When you ...	Key Lamp Status	Also See Srvc Code	Note
Callback / Camp-On/ Trunk Queuing	Code: 35 Operation: Call busy extension or access busy trunk + Press key	Leave a Call back request at a busy extension, Camp On to a busy extension, or Queue for a busy trunk.	On red when activated	#	
Call Redirect	Code: 49 + extension or voice mail Operation: Press key	Redirect a ringing call to the predefined destination.	On red when activated	-	
Central Office Calls	Code: *01 + Trunk number (001 ~ 128) Operation: Press key	Press a line key to place or answer a trunk call (where trunks are 001 ~ 128).	On green when seized, on red when in use (by other party), Slow Flash green when ringing, Hold key flash when on Hold	#0	
Conference	Code: 07 Operation: Set up call + Press key + set up call to add + Press key twice	Set up a Conference or a Meet Me Conference.	On red during setup	#1	
Department Calling	Code: 46 Operation: Press Key	Log in or log out of your Department Calling Group.	On when removed, Off when installed	650	
Department Step Calling	Code: 36 Operation: Dial busy ext + Press key	Step Call through a Department Group for an idle member.	None	4	
Direct Station Selection / One-Touch Calling	Code: 01 Operation: Press key + dest. ext. or outside tel. # + Hold	Call an extension or outside number using a DSS key.	Off = extension idle On = extension busy Flashing = DND	-	
Do Not Disturb	Code: 03 Operation: Press key + code (0 ~ 4)	Set your telephone in DND.	DND key on red	747	
Do Not Disturb/ Call Forward Override	Code: 37 Operation: Press key	Call an extension which is in DND or Call Forwarded.	None	-	
Group Call Pickup	Code: 24 Operation: Speaker key + Press key	Answer a call ringing another telephone in your Pickup Group.	None	*#	
	Code: 25 Operation: Speaker key + Press key	Answer a call ringing a telephone in another Pickup Group - if you do not know the group number.	None	769	
	Code: 26 + Pickup Group (01 ~ 50) Operation: Speaker key + Press key + Pickup Group	Answer a call ringing a telephone in a specific Pickup Group.	None	768	
Hotline	Code: 01 + dest. ext Operation: Press key	Place a call to your Hotline partner.	Full BLF (red) for covered ext.	-	
Headset Operation	Code: 05 Operation: Press key	Enable or disable Headset Operation.	On red when activated	688	

To program a key, press Speaker key, dial 751 (for 3-digit code) or 752 (for 2-digit codes), press the key and enter the code (e.g., 48 for Voice Over).					
For this feature...	Use this key...	When you ...	Key Lamp Status	Also See Srv Code	Note
Hold	Code: 44 Operation: Place or answer call + Press key	Put a call on System Hold (if your telephone Hold key is re-assigned).	None	-	
	Code: 45 Operation: Place or answer call + Press key	Put a call on Exclusive Hold.	None	-	
Meet Me Conference (Also see Conference)	Code: 32 Operation: Press key	Join a Meet Me Conference.	None	763 or 764	
Memo Dial	Code: 31 Operation: <u>Store:</u> While on call, press key + number to store <u>Use:</u> Press Key + Call or line <u>Erase:</u> Speaker key + Press key	Store, use or check a Memo dial number.	None	-	
Message Waiting	Code: 38 Operation: Leave message: Call ext + Press key OR Answer message: Press key	Answer/Leave a Message Waiting.	None	*0	
Microphone Cutoff	Code: 02 Operation: Set up call + Press key	Use Microphone Cutoff.	On red when activated	-	
Call Arrival (CAR) Keys	Code: *03 + ext. or dept group Operation: Press key	Place or answer a call to your virtual (phantom) extension.	Slow Flash red when ringing, On red when busy	-	
Name Storing	Code: 55 Operation: Press key + ext ## + name + Hold	Enter a name for the extension to be displayed on telephones.	None	700	
Night Service	Code: 09 + mode (1 ~ 4 or 1 ~ 8) Operation: Press key	Activate the Day/Night Mode.	On red when activated	718 + 0	
Off-Hook Signaling	Code: 33 Operation: Call ext. and receive busy + Press key	Signal a busy extension.	None	*	
Paging, External	Code: 19 + zone (1 ~ 3) Operation: Press Key	Make an external zone page.	On red when activated	703 + zone	
	Code: 20 Operation: Press key	Make an external All Call page.	On red when activated	703 + 0	
Paging, Internal	Code: 21 + zone (01 ~ 50) Operation: Press key	Broadcast to an Internal Paging Zone.	On red when activated	701 + zone	
	Code: 22 Operation: Press key	Broadcast to all Internal Paging zones.	On red when activated	701 + 0 or 00	
Park	Code: *04 + orbit (01 ~ 50) Operation: Place or answer call + Press key	Place a call into or retrieve a call from a Park Orbit.	Fast flash when orbit is busy (green at originator, red at others)	<Park> #6 <Pickup> *6	
Repeat Redial	Code: 29 Operation: Place call and press key	Activate Repeat Redial while on a call.	Fast Flash while system waits to redial	-	

To program a key, press Speaker key, dial 751 (for 3-digit code) or 752 (for 2-digit codes), press the key and enter the code (e.g., 48 for Voice Over).					
For this feature...	Use this key...	When you ...	Key Lamp Status	Also See Srv Code	Note
Reverse Voice Over	Code: 47 + dest. ext. Operation: Press and hold key	Initiate Reverse Voice Over.	Full BLF red	-	
Room Monitor	Code: 39 Operation: Press key at destination & source + ext	Activate Room Monitor.	Dest. Fast Flash red, Source Hold Flash red	-	
Save Number Dialed	Code: 30 Operation: + pswd (0000) + place outside call <u>Save:</u> Place call + Press key <u>Redial:</u> Line or Speaker key + Press key	Save, redial or check saved number.	None	-	
Secretary Call (Buzzer)	Code: 41 + sec. ext Operation: Press key	Call your secretary (using the buzzer).	On red at source Fast Flash red at destination	-	
Secretary Call Pickup	Code: 42 + boss ext Operation: Press key	As a secretary pick up a call ringing your boss's extension.	On red when activated	-	
Selectable Display Messaging	Code: 18 Operation: Press key + additional data if needed	Set up Call Forwarding Off-Premise, Selectable Display Messaging, VRS Park and Page and VRS Personal Greeting.	Flashes red when activated	-	
Serial Call	Code: 43 Operation: Trk call + Hold + Ext + Press key	Place a Serial Call to a co-worker.	None	-	
Step Call	Code: 36 Operation: Press key	Step through a department group.	None	4	
Transfer	Code: 06 Operation: Establish call + Hold + Ext + Press key	Transfer a call.	None	-	
Trunk Group Routing	Code: *05 Operation: Press key	Access a trunk using Trunk Group Routing.	On red when active	9	
Trunk Groups	Code: *02 + TRK group (01 ~ 50) Operation: Press key	Use a trunk group key to access a Trunk Group.	On red when active	704	
Trunk Queuing	Code: 35 Operation: Hear busy tone for Trk + Press key	Camp On or Queue for a trunk.	On red while camped on	-	
Voice Mail	Code: 83 + code (0 ~ 4) Operation: Press key	Use Voice Mail Service.	Flashes slowly when monitoring	-	
	Code: 77 + extension or Message Center number Operation: Press key + pswd (0000) + place outside call	Call Voice Mail or leave a message.	Flashes green on your key for your messages or flashes red for the Message Center	*8 8	
	Code: 78 + 0 Operation: Set up call + Press key	Use Voice Mail Record.	Slow Flash red when active	-	
Voice Over	Code: 48 Operation: Hear Off-Hook Signaling tone + Press key	Initiate or respond to Voice Over.	On red when responding Hold Flash red when listening	6	

Function Key Codes by Number

Table 2-5 Function Key Codes by Number

To program a key, press Speaker key, dial 751 (for 2-digit codes) or 752 (for 3-digit codes), press the key and enter the code (e.g., 48 for Voice Over).					
Use this key...	For this feature...	When you ...	Key Lamp Status	Also see Srvc Code	Note
Code: 01 + dest. ext. or outside tel # + Hold Operation: Press key	Direct Station Selection, Hotline, One-Touch Calling	Call an extension or outside number using a DSS key.	Off = extension idle On = extension busy Flashing = DND	747	
Code: 02 Operation: Set up call + Press key	Microphone Cutoff	Use Microphone Cutoff.	On red when activated	-	
Code: 03 Operation: Press key	Do Not Disturb	Activate DND.	On red when activated	-	
Code: 04 Operation: Press key	Background Music	Turn BGM on or off.	On red when activated	725	
Code: 05 Operation: Press key	Headset Operation	Enable or disable Headset Operation.	On red when activated	-	
Code: 06 Operation: Establish call + Hold + Ext + Press key	Transfer	Transfer a call.	None	-	
Code: 07 Operation: Set up call + Press key + set up call to add + Press key twice	Conference	Set up a conference or a Meet Me Conference.	On red during setup	#1	
Code: 08 Operation: Press key	Incoming Caller ID List	List incoming caller ID to extension.	Flashing when new log created On in call log	-	
Code: 09 + mode (1 ~ 4 or 1 ~ 8) Operation: Press key	Night Service	Activate the Day/Night Mode.	On red when activated	718 + mode (1 ~ 4 or 1 ~ 8)	
Code: 10 Operation: Press key + Dest. Ext.	Call Forwarding, Immediate	Call Forward to extension or Voice Mail.	Slowly flashes red	741	
Code: 11 Operation: Press key + Dest. Ext.	Call Forwarding, Busy	Call Forward to extension or Voice Mail.	Slowly flashes red	742	
Code: 12 Operation: Press key + Dest. Ext.	Call Forwarding, No Answer	Call Forward to extension or Voice Mail.	Slowly flashes red	743	
Code: 13 Operation: Press key + Dest. Ext.	Call Forwarding, Busy/No Answer	Call Forward to extension or Voice Mail.	Slowly flashes red	744	
Code: 14 Operation: Press key + Dest. Ext.	Call Forwarding, Both Ring	Call Forward to extension.	Slowly flashes red	745	
Code: 15 Operation: Press key + Dest. Ext.	Call Forwarding, Follow Me	Call Forward to extension or Voice Mail.	Slowly flashes red	746	

To program a key, press Speaker key, dial 751 (for 2-digit codes) or 752 (for 3-digit codes), press the key and enter the code (e.g., 48 for Voice Over).					
Use this key...	For this feature...	When you ...	Key Lamp Status	Also see Srv Code	Note
Code: 19 + zone (1 ~ 3) Operation: Press key	Paging, External	Broadcast to an External Paging Zone.	On red when activated	703 + zone	
Code: 20 Operation: Press key	Paging, External	Broadcast to all External Paging Zones.	On red when activated	703 + 0	
Code: 21 + zone (01 ~ 50) Operation: Press Key	Paging, Internal	Broadcast to an Internal Paging Zone.	On red when activated	701 + zone	
Code: 22 Operation: Press key	Paging, Internal	Broadcast to all Internal Paging Zone.	On red when activated	701 + 0 or 00	
Code: 23 Operation: Press key	Meet Me Paging	Join a Meet Me Page.	None	763, 764, or 765	
Code: 24 Operation: Speaker key + Press Key	Group Call Pickup	Answer a call ringing another telephone in your Pickup Group.	None	*#	
Code: 25 Operation: Speaker key + Press key	Group Call Pickup	Answer a call ringing a telephone in another Pickup Group - if you do not know the group number.	None	769	
Code: 26 + Pickup Group (1 ~ 32) Operation: Speaker key + Press key + Pickup Group	Group Call Pickup	Answer a call ringing a telephone in a specific Pickup Group.	None	768	
Code: 27 Operation: Press key + bin + Line or Speaker key	Speed Dialing	Dial a stored System Speed Dialing number.	None	#2 + bin	
Code: 28 Operation: Press key + bin + Line or Speaker key		Dial a stored Group Speed Dialing number.	None	#4 + bin	
Code: 29 Operation: Place call + Press key	Repeat Redial	Activate repeat redial while on a call.	Fast Flash while system waits to redial	-	
Code: 30 Operation: <u>Save:</u> Place call + Press key <u>Redial:</u> Line or Speaker key + Press key	Save Number Dialed	Save, redial or check a saved number.	None	715	

To program a key, press Speaker key, dial 751 (for 2-digit codes) or 752 (for 3-digit codes), press the key and enter the code (e.g., 48 for Voice Over).					
Use this key...	For this feature...	When you ...	Key Lamp Status	Also see Srv Code	Note
Code: 31 Operation: <u>Store:</u> While on call, Press key + number to store <u>Use:</u> Press key + Speaker key or line <u>Erase:</u> Speaker key + Press key	Memo Dial	Store, use or check a Memo Dial number.	None	-	
Code: 33 Operation: Call ext. and receive busy + Press key	Off-Hook Signaling	Signal a busy extension.	None	709	
Code: 34 Operation: Call ext + Press key	Barge-In	Barge-In on a co-worker's conversation.	None	710	
Code: 35 Operation: Call busy extension or access busy trunk + Press key	Callback / Camp-On / Trunk Queuing	Leave a Callback request at a busy extension, Camping On to a busy extension, or Queue for a busy trunk.	On red when activated	750	
Code: 36 Operation: Dial busy ext + Press key + pswd (0000) + place outside call	Department Step Calling	Step Call through a Department Group for an idle member.	None	708	
Code: 37 Operation: Call extension + Press key	Call Forwarding / Do Not Disturb Override	Override an extension Call Forwarding or Do Not Disturb.	On red when activated	707	
Code: 38 Operation: Leave message: Call ext + Press key OR Answer message: Press key	Message Waiting	Answer/Leave a Message Waiting.	None	*0 or 0	
Code: 39 Operation: Press key at destination and source + ext	Room Monitor	Activate Room Monitor.	Fast Flash red at destination, Hold Flash red at source	-	
Code: 41 + sec. ext. Operation: Press key	Secretary Call	Call your secretary (using the buzzer).	On red at source Fast Flash red at destination	-	
Code: 42 + boss ext. Operation: Press key		As a secretary pick up a call ringing your boss's extension.	On red when activated	-	
Code: 43 Operation: TRK call + Hold + ext + Press key	Serial Call	Place a Serial Call to a co-worker.	None	-	

To program a key, press Speaker key, dial 751 (for 2-digit codes) or 752 (for 3-digit codes), press the key and enter the code (e.g., 48 for Voice Over).					
Use this key...	For this feature...	When you ...	Key Lamp Status	Also see Srvc Code	Note
Code: 44 Operation: Place or answer call + Press key	Hold	Put a call on Sys-tem Hold (if Hold key is reassigned).	None	-	
Code: 45 Operation: Place or answer call + Press key		Put a call on Exclu-sive Hold.	None	-	
Code: 46 Operation: Press key	Department Calling	Log in or log out of your Department Calling Group.	On when removed, Off when installed	650	
Code: 47 + dest. ext. Operation: Press and hold key	Reverse Voice Over	Initiate Reverse Voice Over.	Full BLF red	-	
Code: 48 Operation: Hear Off-Hook Signaling tones + Press key	Voice Over	Initiate or respond to Voice Over.	On red when respond-ing Hold Flash red when listening	690	
Code: 49 + ext or voice mail number Operation: Press key	Call Redirect	Redirect an incom-ing call to an exten-sion or voice mail.	On red when activated Flashes when in DND/ Call Forward	-	
Code: 50 Operation: Press key	Account Codes	Enter Account Co-des.	None	* or ##	
Code: 55 Operation: Do not Lift the handset + Press key + Enter extension number + Enter name + Press Hold	Name Storing	Change the name displayed on your display telephone.	None	700	
Code: 83 + 0 ~ 4 Operation: Press key	Voice Mail	Use Voice Mail Service.	Flashes slowly when monitoring	-	
Code: 77 + exten-sion or Message Center number Operation: Press key		Call Voice Mail or leave a message.	Flashes green on your key for your messages or flashes red for the Message Center	*8 or 8	
Code: 78 + Con-versation Record Operation: Press key		Use Conversation Record.	Flashes red when re-cording	-	
Code: 79 + ext or pilot number Operation: Press key	Voice Mail	Use Automated At-tendant.	On when setup for All calls. Slow flash when setup for Busy/No answer calls.	-	
Code: 80 + ext number Operation: Press key	Tandem Ringing	Set up Tandem Ringing	On for Master Side. Slow flash for Slave Side.	No Setting	
Code: 81 + trunk line 001 ~ 128 Operation: Press key	Automatic Transfer to Transfer	Set up Automatic Transfer to Transfer	Slow Flash when set.	733	

To program a key, press Speaker key, dial 751 (for 2-digit codes) or 752 (for 3-digit codes), press the key and enter the code (e.g., 48 for Voice Over).					
Use this key...	For this feature...	When you ...	Key Lamp Status	Also see Srv Code	Note
Code: 83 + Function code Operation: Press key	Voice Mail	Select Conversation Recording Function.	On when set.	-	
Code: 86 + Private Call Refuse key Operation: Press key	Private Call Refuse	Use Private Call Refuse	Slow Flash when set.	646	
Code: 87 + Caller ID Refuse key Operation: Press key	Caller ID Refuse	Use Caller ID Refuse	Slow Flash when set.	748	
Code: 88 + table No. 1 ~ 500 at PRG 22-17 Operation: Press key	Dial-In	Change Dial-In Mode	Off: pattern1, pattern5 ~ 8 On: pattern2 Slow flash: pattern3 Fast flash: pattern4	609	
Code: 94 + Call Attendant key Operation: Press key	Call Attendant	Use Call Attendant	Fast flash when setup for No answer calls. Twice blink when set-up for Busy calls. On when setup for Busy/No answer calls.	Busy: 696 No Answer: 697	
Code: 97 + Doorphone 1 ~ 6 Operation: Press key	Doorphone	Use Doorphone access	On when Doorphone Busy. Fast flash when Doorphone Incoming.	702	
Code: #02 + board 2 ~ 12 to cut the telephone power. Operation: Press key	Ecology	Set telephone power cut.	On when set.	731	
Code: #03 + Remote Monitor Permit key Operation: Press key	Security	Set Remote Monitor.	Slow flash when set Remote Monitor	610	
Code: *01 + Trunk number (001 ~ 128) Operation: Press key	Central Office Calls	Press a line key to place or answer a trunk call (where trunks are 001 ~ 128).	On green when seized, on red when in use (by other party), Slow Flash green when ringing, Hold flash when on Hold	#0	
Code: *02 + TRK group (001 ~ 128) Operation: Press key	Trunk Groups	Use a trunk group key to access a Trunk Group.	On red when active	704	
Code: *03 + ext. or department group Operation: Press key	Virtual Extension Keys	Virtual Extension Key: Place or answer a call from your virtual (phantom) extension or Virtual Extension Key: Place or answer a call to your co-worker's extension.	Slow Flash red when ringing, On red when busy	-	

To program a key, press Speaker key, dial 751 (for 2-digit codes) or 752 (for 3-digit codes), press the key and enter the code (e.g., 48 for Voice Over).					
Use this key...	For this feature...	When you ...	Key Lamp Status	Also see Srvc Code	Note
Code: *04 + orbit (01 ~ 50) Operation: Place or answer call + Press key	Park	Place a call into or retrieve a call from a Park Orbit.	Fast Flash when orbit is busy (green at originator, red at others)	<Park> #6 <Pickup> *6	
Code: *10 Operation: Press key to log in Press key + 1 to log out or 0 to cancel	Automatic Call Distribution (ACD)	Basic Operation Log in or out of an ACD Group.	On red when logged in Off when logged out	*5	
Code: *13 Operation: Press key	Automatic Call Distribution (ACD)	Rest Mode Enable/disable Rest Mode.	On red when Rest Mode enabled Off when Rest Mode disabled	-	
Code: *17 Operation:	Automatic Call Distribution (ACD)	Work Time Enable/disable Work Time.	On when Work Time enabled, Flashing (while on a call) if Auto Work time enabled Off when Work Time disabled	-	
Code: *19 Operation: Press key while on-hook + Vol Up or Vol Down to scroll	Automatic Call Distribution (ACD)	Queue Status Check View the ACD Queue Status of each ACD group.	None	-	

Chapter 3. Features Availability by Software Revision

Section 1 FEATURE AVAILABILITY CHART

This chapter provides an alphabetical listing of the features that are available with each software revision.

 The following table provides a breakout of the availability of each feature by revision, refer to [Table 3-1 Feature Availability by Software Revision](#).

S = Supported Feature

E = Supported and Enhanced

N/A = Feature not supported for this software release

Table 3-1 Feature Availability by Software Revision

SL2100 Feature Name	V1.0	V1.5	V1.7
Abbreviated Dialing/Speed Dial	S	S	S
Account Code Forced/Verified/Unverified	S	S	S
Account Code Entry	S	S	S
Alarm	S	S	S
Alarm Reports	S	S	S
Alphanumeric Display	S	S	S
Analog Communications Interface (ACI)	S	S	S
Ancillary Device Connection	S	S	S
Answer Hold/Automatic Hold	S	S	S
AspireNet	S	S	S
Attendant Call Queuing	S	S	S
Automatic Call Distribution (ACD)	S	S	S
Automatic Release	S	S	S
Automatic Route Selection (ARS/F-Route)	S	S	S
Background Music	S	S	S
Barge-In	S	S	S
Battery Backup - System Memory	S	S	S
Battery Backup - System Power	S	S	S
Built-in Auto-Answering	S	S	S
Call Arrival (CAR) Keys	S	S	S
Call Duration Timer	S	S	S
Call Forwarding	S	S	S
Call Forwarding with Follow Me	S	S	S
Call Forwarding, Off-Premise	S	S	S
Call Forwarding/Do Not Disturb Override	S	S	S
Call Monitoring	S	S	S

SL2100 Feature Name	V1.0	V1.5	V1.7
Call Redirect	S	S	S
Call Waiting/Camp-On	S	S	S
Callback	S	S	S
Caller ID Call Return	S	S	S
Caller ID	S	S	S
Caller ID - Manual/Automatic Callback	S	S	S
Caller ID - Flexible Ringing	S	S	S
Central Office Calls, Answering	S	S	S
Central Office Calls, Placing	S	S	S
Class of Service	S	S	S
Clock/Calendar Display/Time and Date	S	S	S
Code Restriction/Toll Restriction	S	S	S
Code Restriction Override/Toll Restriction Override	S	S	S
Code Restriction, Dial Block/Toll Restriction, Dial Block	S	S	S
Conference	S	S	S
Conference, Remote	S	S	S
Conference - Remote Conference Recording	S	S	S
Conference, Voice Call/Privacy Release	S	S	S
Continued Dialing	S	S	S
Data Line Security	S	S	S
Delayed Ringing	S	S	S
Department Calling	S	S	S
Department Step Calling	S	S	S
DHCP Client	S	S	S
Dial Pad Confirmation Tone	S	S	S
Dial Tone Detection	S	S	S
Dialing Number Preview	S	S	S
Digital Trunk Clocking	S	S	S
Direct Inward Dialing (DID)	S	S	S
Direct Inward Line (DIL)	S	S	S
Direct Inward System Access (DISA)	S	S	S
Direct Station Selection (DSS) Console	S	S	S
Directed Call Pickup	S	S	S
Directory Dialing	S	S	S
Distinctive Ringing, Tones and Flash Patterns	S	S	S
Do Not Disturb (DND)	S	S	S
Door Box	S	S	S
Drop Key	S	S	S
DT430 Terminal Connection	S	S	S
Ecology	S	S	S
Flash	S	S	S
Flexible Ring	S	S	S
Flexible System Numbering	S	S	S

SL2100 Feature Name	V1.0	V1.5	V1.7
Flexible Timeouts	S	S	S
Forced Trunk Disconnect	S	S	S
Group Call Pickup	S	S	S
Group Listen	S	S	S
Handset Mute/Handset Cutoff	S	S	S
Handsfree and Monitor	S	S	S
Handsfree Answerback/Forced Intercom Ringing	S	S	S
Headset Operation	S	S	S
Hold	S	S	S
Hotel/Motel	S	S	S
Hotel/Motel - Do Not Disturb	S	S	S
Hotel/Motel - DSS Console Monitoring	S	S	S
Hotel/Motel - Message Waiting	S	S	S
Hotel/Motel - PMS Integration	N/A	S	S
Hotel/Motel - Room Status	S	S	S
Hotel/Motel - Room Status Printout	S	S	S
Hotel/Motel - Room-to-Room Call Restriction	S	S	S
Hotel/Motel - Single Digit Dialing	S	S	S
Hotel/Motel - Toll Restriction (When Checked In)	S	S	S
Hotel/Motel - Wake Up Call	S	S	S
Hot Key-Pad	S	S	S
Hotline	S	S	S
Howler Tone Service	S	S	S
InGuard (Toll Fraud Guard)	S	S	S
InMail	S	S	S
InMail-Auto Setting	S	S	S
InMail-Automatic Access to VM by Caller ID	S	S	S
InMail-Cascade Message Notification	S	S	S
InMail-Email Notification	S	S	S
InMail-Find-Me Follow-Me	S	S	S
InMail - Language Setting	S	S	S
InMail Park and Page	S	S	S
InMail Upload Download Audio	S	S	S
Intercom	S	S	S
InUC Web Client	S	E	S
IP Multiline Station (SIP)	S	S	S
IP Single Line Terminal (SIP)	S	S	S
IP Single Line Telephone (SIP) - PUSH Notification	N/A	N/A	S
IP Trunk - (SIP) Session Initiation Protocol	S	S	S
ISDN Compatibility	S	S	S
Last Number Redial	S	S	S
LCR - Least Cost Routing	S	S	S
Licensing	S	S	S

SL2100 Feature Name	V1.0	V1.5	V1.7
Line Preference	S	S	S
Long Conversation Cutoff	S	S	S
Loop Keys	S	E	S
Maintenance	S	S	S
Maintenance - Auto System Update	S	S	S
Meet Me Conference	S	S	S
Meet Me Paging	S	S	S
Meet Me Paging Transfer	S	S	S
Memo Dial	S	S	S
Message Waiting	S	S	S
Microphone Cutoff	S	S	S
Mobile Extension	S	S	S
Mobile Extension - Callback to Mobile Phone	S	S	S
Multiple Trunk Types	S	S	S
Multi-Device Support	S	S	S
Music on Hold	S	S	S
Name Storing	S	S	S
Navigation Key	S	S	S
Night Service	S	S	S
Off-Hook Signaling	S	E	S
One-Touch Calling	S	S	S
Operator	S	S	S
Paging, External	S	S	S
Paging, External (VRS)	S	S	S
Paging, Internal	S	S	S
Park	S	S	S
PBX Compatibility/Behind PBX	S	S	S
PC Programming	S	S	S
Prime Line Selection	S	S	S
Private Line	S	S	S
Programmable Function Keys	S	S	S
Programming from a Multiline Terminal	S	S	S
Pulse to Tone Conversion	S	S	S
Redial Function	S	S	S
Repeat Redial	S	S	S
Resident System Program	S	S	S
Reverse Voice Over	S	S	S
Ring Groups	S	S	S
Ringdown Extension (Hotline), Internal/External	S	S	S
Room Monitor	S	S	S
Save Number Dialed	S	S	S
Secondary Incoming Extension	S	S	S
Secretary Call (Buzzer)	S	S	S

SL2100 Feature Name	V1.0	V1.5	V1.7
Secretary Call Pickup	S	S	S
Security	S	S	S
Selectable Display Messaging	S	S	S
Selectable Ring Tones	S	S	S
Serial Call	S	S	S
Simple Network Management Protocol (SNMP)	S	S	S
Single Line Terminals	S	S	S
SIP Trunk E.164 CLIP Enhancement	S	S	S
SIP Trunk E.164 Support	S	S	S
Softkeys	S	S	S
Station Hunt	S	S	S
Station Message Detail Recording	S	S	S
Station Name Assignment - User Programmable	S	S	S
Station Relocation	S	S	S
Tandem Ringing	S	S	S
Tandem Trunking (Unsupervised Conference)	S	S	S
TAPI Compatibility	S	S	S
Tone Override	S	S	S
Traffic Reports	S	S	S
Transfer	S	S	S
Trunk Group Routing	S	S	S
Trunk Groups	S	S	S
Trunk Queuing/Camp-On	S	S	S
Unicast/Multicast Paging Mode	S	S	S
Uniform Call Distribution (UCD)	S	S	S
Universal Slot	S	S	S
User Programming Ability	S	S	S
Video Conference with Web RTC	S	S	S
Virtual Extensions	S	S	S
Voice Mail Integration (Analog)	S	S	S
Voice Mail Message Indication on Line Keys	S	S	S
Voice/Melody Ringing by VM	S	S	S
Voice Over	S	S	S
Voice Response System (VRS)	S	S	S
Voice Response System (VRS) Upload Download Audio	S	S	S
Voice Response System (VRS) - Call Forwarding - Park and Page	S	S	S
Volume Controls	S	S	S
Warning Tone for Long Conversation	S	S	S

MEMO

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