

UNIVERGE SV8300

System Manual

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REMARKS

This manual includes description for the commands related to the following features. However, these features are not available for 8300R1 software.

- Attendant Console Features
- WLAN Features

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INTRODUCTION

PURPOSE

This manual explains the system description, the hardware installation and the programming procedure for the UNIVERGE SV8300.

OUTLINE OF THIS MANUAL

This manual consists of three chapters and three appendixes. The following paragraphs summarize Chapters 1 through 3 and Appendixes A, B and C.

CHAPTER 1 GENERAL INFORMATION

This chapter explains the system outline, system conditions and services for the system.

NOTE: *As for the equipment name and function of chassis and circuit blades and system capacity, refer to the System Hardware Manual.*

CHAPTER 2 INSTALLATION

This chapter explains the required equipment and hardware installation procedure such as connecting cables for the system.

CHAPTER 3 SYSTEM DATA PROGRAMMING

This chapter explains the programming procedure of the system data, IP Station setup procedure and IP Station login/logout procedure.

APPENDIX A SYSTEM SPECIFICATIONS

This appendix explains the specifications of the system.

APPENDIX B VOICE QUALITY MEASURES IN VoIPDB

This appendix describes how to reduce echoes in SV8300 and the setup method.

APPENDIX C TCP/UDP/RTP PORT NUMBER CONDITIONS

This appendix explains the default TCP/UDP/RTP port number and range of the available TCP/UDP/RTP port numbers used in SV8300.

TERMS IN THIS MANUAL

PBX System Designation

PBX system is designated as “PBX” or “system” usually.

When we must draw a clear line between the PBX systems, they are designated as follows.

SV8300 : UNIVERGE SV8300

2400 IPX: NEAX 2400 IPX Internet Protocol eXchange

IMX : NEAX 2400 IMS (IMX)/NEAX 7400 ICS M140MX or more/NEAX 7400 IMX M240 or more

Terminal Name

The following terminals are designated as “Multiline Terminal” usually, unless we need to mention the type of terminal in particular.

TERMINAL NAME		PRODUCT NAME		
Multiline Terminal	Digital Multiline Terminal	D ^{term}	D ^{term} 70 (Elite)	
			D ^{term} 75 (Series E)	
			D ^{term} 85 (Series i)	
		DT300 Series	DT310	
			DT330	
	IP Station	IP Multiline Terminal	IP Enabled Digital Multiline Terminal [For North America only]	D ^{term} 75 (Series E) (IP Adapter Type)
				D ^{term} 85 (Series i) (IP Adapter Type)
			D ^{term} IP INASET	
		D ^{term} IP	D ^{term} 85 (Series i) (IP Bundled Type)	
		Soft Phone	D ^{term} SP30	
SIP Multiline Terminal		DT700 Series	DT710	
	DT730			
	DT750			

NOTE: *D^{term}75 (Series E)/D^{term}85 (Series i) terminal can be used as the IP terminal by attaching the IP Adapter (IP Enabled Digital Multiline Terminal). This terminal provides users with all features currently available in IP Station.*

REFERENCE MANUAL

During installation, refer also to the manuals below:

System Hardware Manual:

Contains the installation procedure for the PBX system and the hardware installation procedure for the SV8300.

Command Manual:

Contains the Customer Administration Terminal (CAT) operation, command functions and data required for programming the system and the Resident System Program.

System Data Programming Manual:

Contains the Customer Specifications Sheets and the System Data Programming Sheets.

Programming Manual:

Contains procedure for programming each business, hotel, ISDN, OAI, WCS and WLAN feature.

System Maintenance Manual:

Contains the system maintenance services and the recommended troubleshooting procedure.

Networking Manual:

Contains the system description and the programming procedure for the CCIS, Q-SIG and Remote Unit System.

SMDR/MCI/PMS Interface Specifications:

Contains the interface specifications for Station Message Detail Recording (SMDR), Message Center Interface (MCI), Property Management System (PMS) and the PMS operation.

PC Programming Manual:

Contains the functional description and the installation procedure for the PCPro.

GENERAL INFORMATION

This chapter explains the system outline, system conditions and services for the system.

SYSTEM OUTLINE

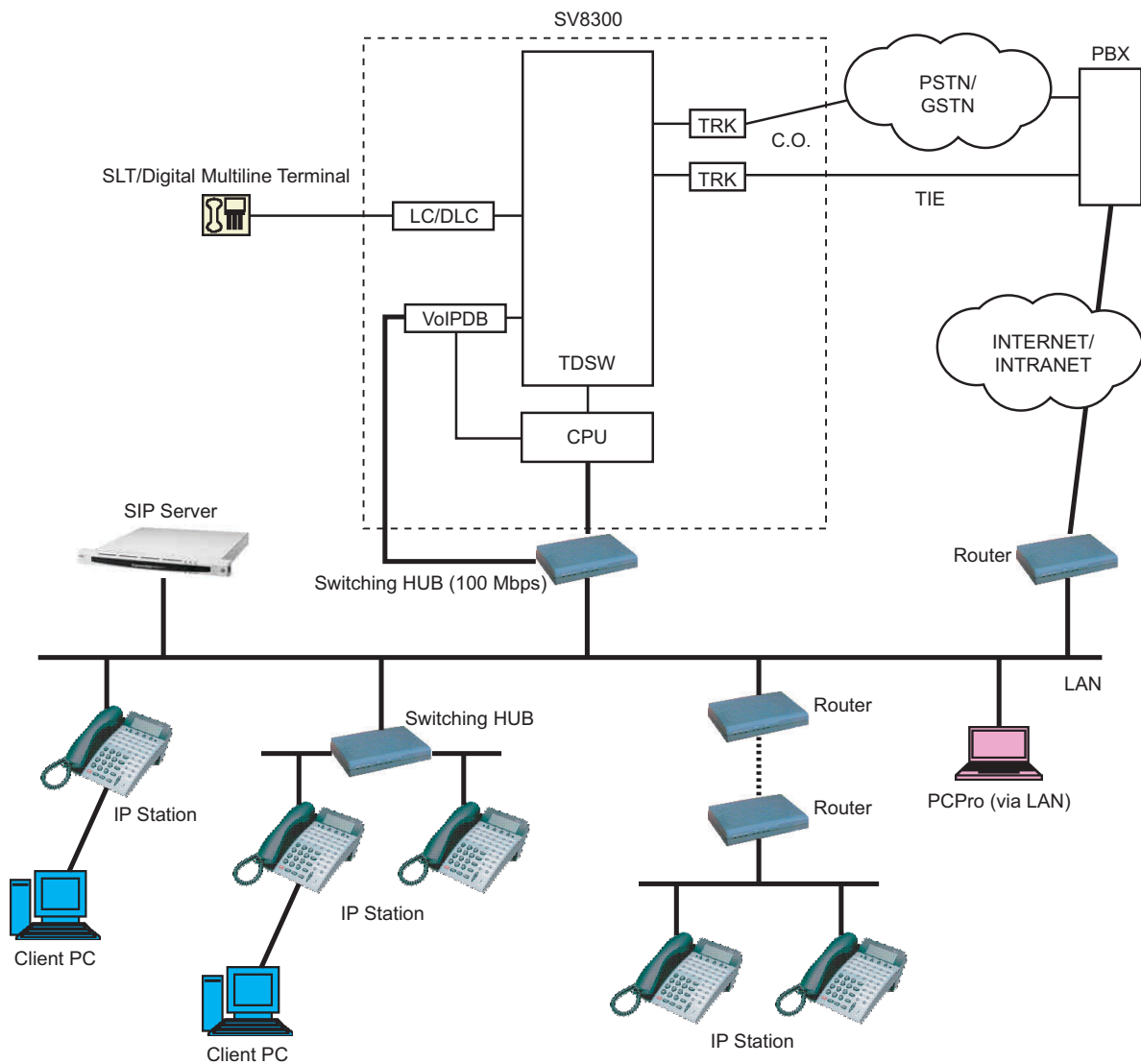
SV8300 is an IP communication system that integrates voice terminals through Peer-to-Peer connection to the IP network.

The system is a hybrid system to accommodate both IP Stations and the Legacy PBX's terminals (Legacy terminal).

Line/Trunk blades and Application Processor blades can be mounted in the system to provide the Legacy PBX features that use the Time Division Switch (TDSW).

The illustration below shows the typical system outline.

System Outline of SV8300



STATION-TO-STATION CONNECTION

Station-to-Station connection is available on the LAN.

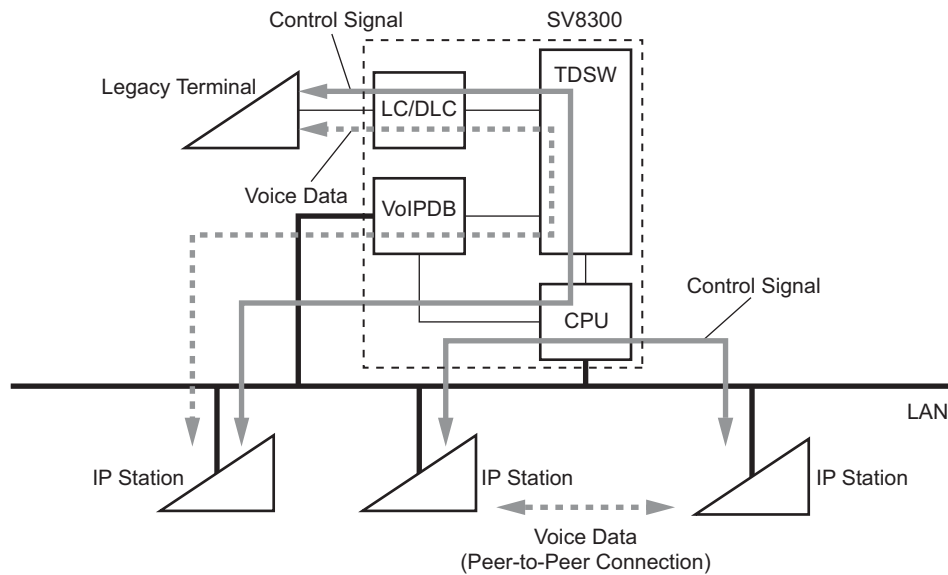
For IP Station-to-IP Station connection (Peer-to-Peer connection), the voice data is transmitted and received directly between IP Stations on the LAN.

For IP Station-to-Legacy terminal connection, the VoIPDB is required to transmit and receive the voice data. This daughter board is used to control and convert the voice data.

The CPU blade manages control signals in both types of connections.

The illustration below shows a system outline of Station-to-Station Connection.

System Outline of Station-to-Station Connection



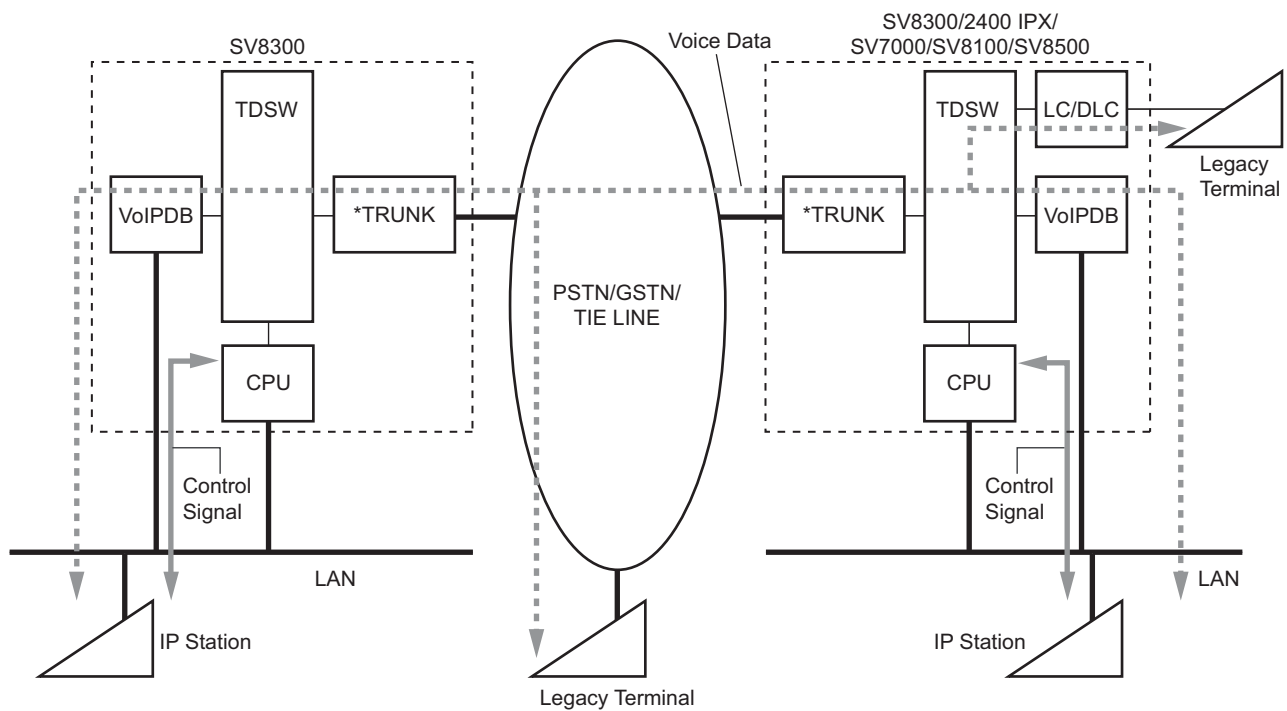
PUBLIC NETWORK/TIE LINE NETWORK CONNECTION

The system can be connected with a Public Network or Tie Line Network.

When the IP Station communicates with the IP Station/Legacy terminal in the destination office via Public Network or Tie Line Network, the VoIPDB and the trunk blade are required to transmit and receive the voice data.

The illustration below shows a system outline of Public Network/Tie Line Network Connection.

System Outline of Public Network/Tie Line Network Connection

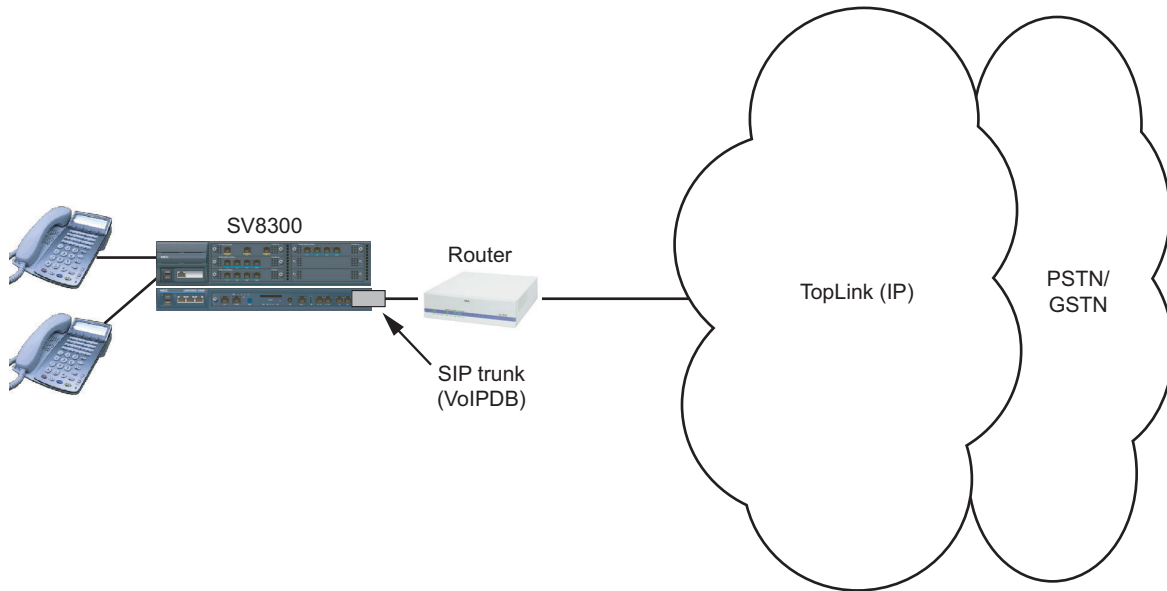


*TRUNK
 For ISDN-PRI : PRT
 For ISDN-BRI : BRT
 For GSTN : COT
 For Tie Line (Digital) : CCT/DTI
 For Tie Line (Analog): LDT/ODT

SIP CONNECTION

The system provides the IP phone service by TopLink via SIP trunk on SV8300.

System Outline of SIP Connection



SYSTEM CONDITIONS

Conditions for Overall System

- When you set or change the system data, the system data backup must be executed by CMEC Y=6>0:0. If the system is turned off or CPU blade is reset without the backup, the data that has been set or changed is cleared.
- System data can be saved to the flash memory on the CPU blade on a daily basis. The data setting to execute the regular system data backup is required.
- While saving the system data to the flash memory, the “SYSD” lamp on the CPU blade flashes. Do not turn off or reset the system while the “SYSD” lamp is flashing.
- The DTMF sender signal width of Multiline Terminal is 112-128 ms.
- When connecting the CPU blade/VoIPDB/IP Station and the switching HUB which Spanning Tree (IEEE 802.1d) is available, communication failures shown below may occur. Set up the Spanning Tree invalid by the switching HUB.
 - IP Station fails to connect to SV8300.
 - IP Station cannot communicate with the IP Station.
 - IP Station cannot communicate with the SLT/Digital Multiline Terminal.
 - Remote Unit cannot change over to the normal mode in the Remote UNIT over IP system.
- When connecting the CPU blade/VoIPDB/IP Station and the switching HUB which LACP (Link Aggregation Control Protocol: IEEE 802.3ad) function is available, communication failures shown below may occur. Set up the LACP function invalid by the switching HUB.
 - Remote Unit cannot change over to the normal mode in the Remote UNIT over IP system.
- For IP-PAD/IPT (P2P CCIS)/SIP trunk, the VoIPDB is required.
- There are the following conditions when setting the data by CM0B.
 - Set the system data to CM0B Y=1XX/2XX when mounting the VoIPDB in SV8300 and using VOIP port. 1XX is associated with setting the system data for Control Signals, and 2XX is associated with setting the system data for Voice Packets (RTP).
 - Set the system data to CM0B Y=0XX when not mounting the VoIPDB in SV8300 and using an Ethernet port.
 - When setting the IP address for Maintenance Port (Y=0XX) and VOIP Port (Y=1XX), set the Subnet Mask (Y=0XX>01, Y=1XX>01) for each using port respectively.
 - Only one Default Gateway Address can be set for the system.
 - Set the Default Gateway Address to the Maintenance port (Y=0XX) when not using VoIPDB.
 - Set the Default Gateway Address to the VOIP port (Y=1XX) when using VoIPDB.

- Up to 96 VoIP channels can be used per unit.

The following shows the number of VoIP channels used in each connection.

Number of VoIP Channels Used in Each Connection

	TDSW	IP MULTILINE TERMINAL	DT700 SERIES	SIP TRUNK	IPT (P2P CCIS)
IP MULTILINE TERMINAL	1	None	None*	2	None
DT700 SERIES	1	None*	None	2	None*
SIP TRUNK	1	2	2	2 (Tandem Connection)	2
IPT (P2P CCIS)	1	None	None*	2	None

*: 1 channel is assigned by SV8300, to sending the DTMF for each connection.

Conditions for IP Station

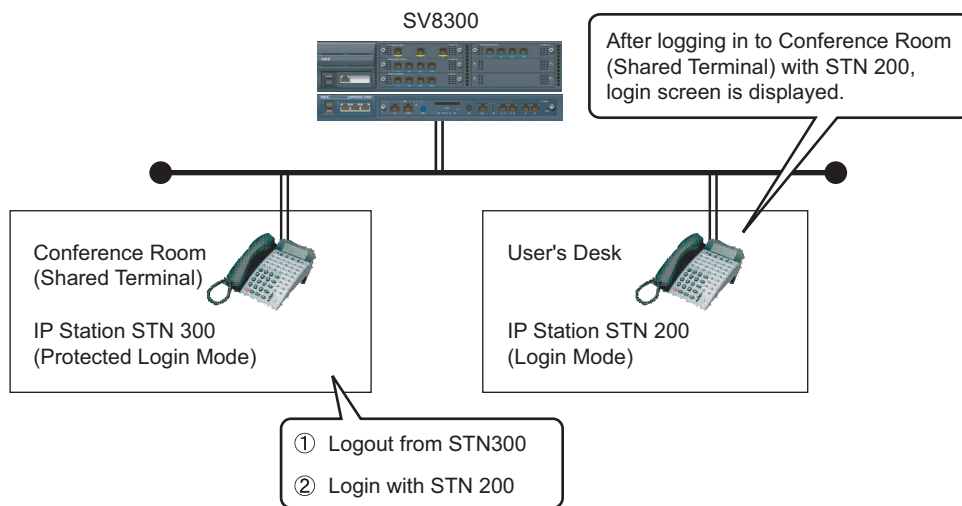
- For the IP Station, an AC-DC adapter or inline power patch panel is required.
 - The hold tone for IP Station is only “Minuet”. The hold tone set by CM48 Y=3 is not effective for IP Station.
 - The Soft Phone can be used as the information desk console that provides the Automatic Call Distribution (ACD) function. When using the Soft Phone as the information desk console with ACD, the Soft Phone that provides the firmware G version 8.0 or later is required.
 - IP Station login.
- (1) For the IP Station login, there are three types of method as shown below.
- Automatic Login Mode (Authentication by MAC Address)
IP Station is registered by MAC Address Authentication.
Used when using other terminals to log in is not necessary.
 - Protected Login Mode
IP Station is registered by Password Authentication.
Used when using other terminals to log in is necessary.
 - Fixed Connection Mode
IP Station is registered by both MAC Address and Password Authentication.
Used when using such as shared terminals (e.g. conference room phone) to log in is necessary.
Automatic Login Mode is used to register IP Station usually, but with this mode, Login Mode can be used to register IP Station if needed.
 - When Call Forwarding-All Calls is set to DT700 Series station, the station receivers RTP instead of the announcement after the station goes off-hook operation.

Examples of Using Fixed Connection Mode

- When a shared IP Station as station number 300 is used in Fixed Connection Mode in a conference room, and also the shared IP Station is used as station number 200 on the user's desk in Login Mode.

STEP1: Logout from the shared IP Station as station number 300.

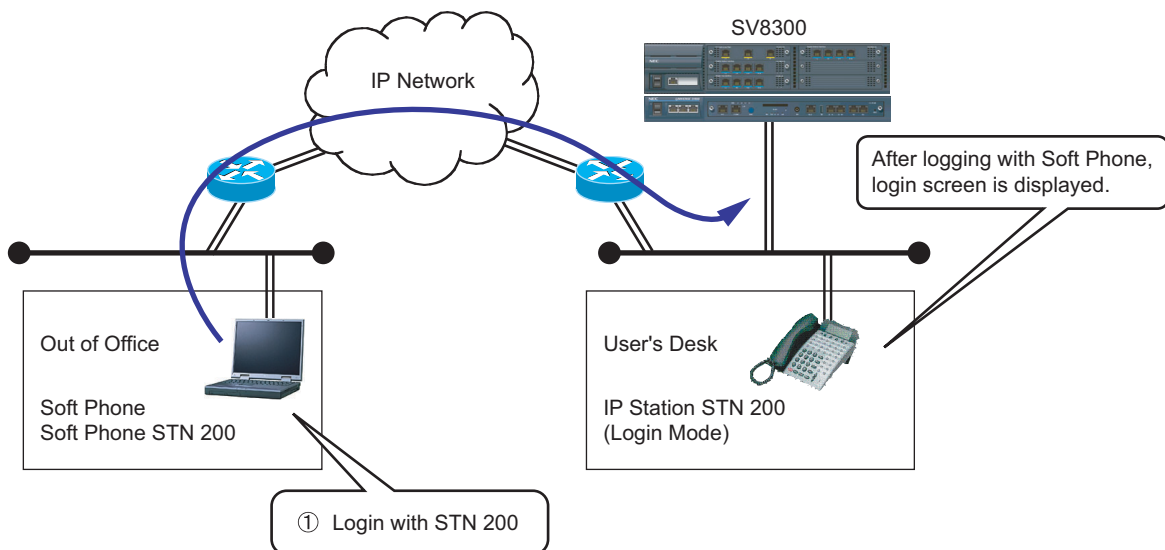
STEP2: Login to the shared IP Station with station number 200 as the user's desk's station number.



NOTE: Logout from the shared IP Station to return to the former status. The shared IP Station is re-connected as station number 300 automatically. The IP Station on the user's desk is needed to login manually.

- When IP Station on the user's desk is used as station number 200 in Fixed Connection Mode, and also Soft Phone out of the office is used as station number 200.

Connect SV8300 from Soft Phone, and login to Soft Phone with station number 200.



NOTE: Logout from the Soft Phone or power off the PC to return to the former status. The IP Station on the user's desk is reconnected as station number 200 automatically.

- (2) For the common conditions of the three types of IP Station login method are shown below.
- Registering Protected Login Mode for Soft Phone by CM15 Y=480 is recommended.
 - When these login methods are used between the units of Remote UNIT over IP, use User Mobility simultaneously. Protected Login Mode and Fixed Connection Mode can be used on User Mobility. The terminal which has registered MAC Address for Fixed Connection Mode can not be registered to other unit.
 - To change login method, do the following operation.
Change from Automatic Login Mode (Authentication by MAC Address) to Protected Login Mode
 1. Change login method by CM15 Y=480.
 2. Logout or clear the MAC Address by CM12 Y=90.
 3. Login again.

Change from Fixed Connection Mode to Automatic Login Mode (Authentication by MAC Address)/Protected Login Mode

1. Clear the MAC Address of Fixed Connection Mode by CM12 Y=92.
2. Change login method by CM15 Y=480.
3. Logout or clear the MAC Address by CM12 Y=90.
4. Login again.

Change from Automatic Login Mode (Authentication by MAC Address)/Protected Login Mode to Fixed Connection Mode

1. Change login method by CM15 Y=480.
2. Clear the MAC Address of Fixed Connection Mode by CM12 Y=92.
3. Restart the terminal.

After changing login method, System Data Backup by CMEC Y=6 is needed. Also, when login method of the terminal in Remote Unit is changed, System Data Copy by CMEC Y=8 is needed.

- When the terminal station number registered as Automatic Login Mode (Authentication by MAC Address)/Fixed Connection Mode is cleared, the registered MAC Address assigned by CM12 Y=90, 92 is cleared. After that, System Data Backup by CMEC Y=6 is needed. Also, if the terminal is in Remote Unit, System Data Copy by CMEC Y=8 is needed.

(3) For the conditions of Fixed Connection Mode are shown below.

- IP Station and Soft Phone (provides the firmware I version 10.2.0.0 (Rev.3.0) or later is required) can be used for Fixed Connection Mode.
- Fixed Connection Mode is not available on the conditions as follows.
 - D^{term}75 (Series E) with IP adapter and D^{term}85 (Series i) with IP adapter
 - 16 One Touch keys terminal and 24 One Touch keys terminal
- There are two ways to register MAC Address as follows.
 - Automatic MAC Address registration by CM12 Y=90: 0
 - Manual MAC Address registration by CM12 Y=92
- The password to login in Fixed Connection Mode is set by CM2B Y=00 (same programming data as Protected Login Mode). Password setting is needed.
- The maximum number of terminals used in Fixed Connection Mode is 256.
- When logging out from the terminal registered to Fixed Connection Mode and logging in to the terminal with other station number, register Protected Login Mode or Fixed Connection Mode. Automatic Login Mode (Authentication by MAC Address) can not be registered.
- When the terminal logged in with Fixed Connection Mode logs out and [Cancel] key + [Exit] key (soft key) are pressed with the login screen displaying, the terminal is reconnected with the registered station number. For Soft Phone, restarting the terminal is required after pressing [Cancel] key (soft key).

- When logging out from the terminal registered to Fixed Connection Mode and operating the following when the terminal is logged in with other station number, the terminal is reconnected with the registered station number. The login screen is not displayed.
 - System Reset
 - IP Station setup
 - Unplugging cable and unplugging terminal detection
 - Logout
- When re-registering the terminal is needed (e.g. terminal failure), do the following operation to register MAC Address.
 - Automatic MAC Address registration by CM12 Y=90
 1. Disconnect the terminal from the network
 2. Clear the MAC Address of the terminal by CM12 Y=92: CCC and then by CM12 Y=90: CCC.
 3. Connect a new terminal to the network and login.
 4. Register a MAC Address for the new terminal by CM12 Y=90: 0.
 5. Execute System Data Backup by CMEC Y=6>0: 0. When the terminal is accommodated in a Remote Unit, execute System Data Copy by CMEC Y=8 to the Remote Unit.
 - Manual MAC Address registration by CM12 Y=92
 1. Disconnect the terminal from the network
 2. Clear the MAC Address of the terminal by CM12 Y=92: CCC and then by CM12 Y=90: CCC.
 3. Register a MAC Address for a new terminal by CM12 Y=92: XXXXXXXXXXXXX.
 4. Execute System Data Backup by CMEC Y=6>0: 0. When the terminal is accommodated in a Remote Unit, execute System Data Copy by CMEC Y=8 to the Remote Unit.
 5. Connect the new terminal to the network.

Conditions for Peer-to-Peer Connection

- For the communication between IP Stations, the voice data is transmitted and received directly, without converting voice packets into PCM and voice compression in the system.

Conditions for Public Network/Tie Line Network Connection

- For the IP Station communication between offices, the VoIPDB is required.
- Peer-to-Peer connection is not available in this connection.

Conditions for CCIS Connection

- In the voice communication via the Internet, the connection and communication delay may occur and the voice quality may deteriorate.
- The IPT (P2P CCIS) does not support Dynamic Host Configuration Protocol (DHCP) service.
- Peer-to-Peer connection between IP Stations via CCIS is available only when the destination office is SV8300 or 2400 IPX.
- Only one IPT (P2P CCIS) can be mounted in this system. Mount IPT (P2P CCIS) in the Unit01.
- The IPT (P2P CCIS) can be connected to a maximum of 127 trunks.
- The IPT (P2P CCIS) provides only Point-to-Multipoint connection.
- When a call over Peer-to-Peer connection via CCIS is put on hold and then answered at the same station, Elapsed Time Display returns to 0: 00: 00.
- Conditions for Link Down Notice for CCIS connection are shown below.
 - Link Down Notice is available only for Digital Multiline Terminal and IP Station accommodated in the SV8300. This is not available for a single line telephone and Attendant Console.
 - For message display, Multiline Terminal with 24-digit or more LCD is recommended. 16-digit LCD may not display all messages properly.
 - Notification message can be displayed regardless of idle or busy state of Multiline Terminal, writing the message over the present display. After six seconds, the display returns to the time display automatically.
 - The system detects a Link Down on the condition that TCP connection between offices is interrupted. The Link Down is notified to the Multiline Terminal at 15-20 seconds later from the system detects the Link Down.
 - Link Down Notice is available only for the CCIS connection via IPT (P2P CCIS). CCIS connection with CCT/DTI blade or DIO/ODT blade is not available.
 - When the link between offices connected by CCIS via IPT (P2P CCIS) is interrupted, the lamp of Multiline Terminal button becomes the state as shown below. Then press the button, the LCD of the Multiline Terminal displays the following.

COLOR AND STATE OF BUTTON		STATE AND OPERATION	LCD DISPLAY
Red/Flashing (Momentarily)	0.125 seconds ON- 0.125 seconds OFF	Link Down occurrence	-
Red/Flashing (Slowly)	0.5 seconds ON- 0.5 seconds OFF	Press the button after Link Down occurrence	Link Down to CCIS
OFF	-	Link restoration	-
OFF	-	Press the button after Link restoration	Normal Condition: CCIS

- When the link between offices recovers, the flashing lamp of the button goes out.

Conditions for VoIPDB

- The VoIPDB is required for the following connections.
 - IP Station-to-Legacy terminal connection
 - IP Station-to-Public Network/Tie Line Network connection
 - External hold tone connection
 - Conference Trunk (CFT) connection
 - Voice Response System (VRS) connection

Conditions for SIP Connection

- SIP trunk (VoIPDB) can be accommodated in the Unit01 (Main Unit) only.
- Only one SIP trunk route can be assigned per unit.
- The type of voice encoding is G.711.
- The number of channels (trunks) for SIP trunk use is restricted up to 64 per system.
- The number of AP port use can be changed with setting the system data programming.
- The total number of voice channel of the following trunk is a maximum of 127.
 - SIP
 - IPT (P2P CCIS)
 - CCIS IPT Port (Point-to-Multi point connection)
- The following is the features to be provided via SIP trunk for IP phone service.
 - Caller ID Display
 - Direct Inward Dialing (DID)
 - Registration Number “+” Addition/Deletion
 - Fault Registration
 - Fragmented IP Packet Receiving
 - Session Timer
- Listed from next page are the services provided by SV8300. Since some of these services are not available depending on the terminal, set the services based on the list.

For the further information, refer to the Programming Manual.

Please note that the manuals above do not cover the following.

- Terminating System (translation method of called number) **NOTE**

(a) Terminated via Tie line

PBX defines the termination destination with Dial Number Development assuming that the called number was originated from Tie line.

- Station/Attendant Console/trunk (at tandem connection) can be specified as a destination.
- When PBX defines to send to station, the last 1 to 8 digits of the number can be handled as the station number.
- When PBX defines to send to trunk, the number can be deleted/added with LCR number development. (Delete: Maximum 10 digits/Add: Maximum 32 digits)

- (b) Terminated via DID
 - The last 1 to 8 digits of the called number is handled as the DID number.
 - The number can be converted into the following Terminating System with DID Number Development.
 - Station
 - TAS
 - Automated Attendant
 - DISA
 - Maximum 1000 DID numbers can be handled.
 - DID number which is not registered is treated as Tie Line termination.
- Method of origination operation
 - PBX originates a call with LCR Number Development.
- Holding/Transferring features
 - Holding/Transferring features are not available with SIP method.
- Setting Ringing Tone
 - The ringing tone for SIP transmission can be set by CM08>649.

NOTE: *All of the types of the called numbers are handled similarly on the PBX. When you want to discriminate between the called numbers which are recognized as representative numbers on such an upper SIP server and the called numbers which are recognized as DID numbers, assign an appropriate terminating system to each called number, e.g. Fragmented IP packet receiving for representative numbers, Direct Inward Dialing (DID) for station terminating.*

List of PBX Services

×: Available –: Not available Δ: Out of Target

SERVICES	DIGITAL MULTILINE TERMINAL	SLT	PHS	IP STATION	SOFT PHONE	REMARKS
Hot Line-OUTSIDE	×	×	×	×	×	
Call Hold	×	×	×	×	×	
Station Speed Dialing	×	×	×	×	×	
System Speed Dialing	×	×	×	×	×	
Last Number Call (Last Number Redial)	×	×	–	×	×	
Toll Restriction	×	×	×	×	×	
Direct Inward Dialing (DID)	×	×	×	×	Δ	
DID Name Display	×	–	×	×	Δ	
Station Camp-On (Camp-On)	×	×	×	×	Δ	
Music on Hold	×	×	Δ	×	Δ	
Group Diversion	×	×	×	×	Δ	
DAY/NIGHT MODE Change by System Clock	×	×	×	×	×	
Queue Limit For TAS	×	×	×	×	×	
Distinctive Ringing	×	Δ	Δ	×	Δ	
Automated Attendant	×	×	×	×	×	
Remote Access to System (Direct Inward System Access)	×	×	×	×	×	
Call Forwarding Set by DISA	×	×	×	×	×	
Day/Night Mode Change by Station Dialing	×	×	×	×	×	
Night Connection-Fixed Night Connection- Flexible	×	×	×	×	×	

Conditions for DRS

DRS=Device Registration Server

- The System-based DRS executes IP Station registration.
The Network-based DRS is not available for the IP Station registration.

Conditions for Legacy Interface (LT/AP)

- All Line/Trunk blades used in SV8300 are available for the system.

Conditions for Maintenance

- PCPro can be used as the maintenance program for SV8300. Direct connection (RS-232C), Modem connection and IP connection are available to connect to the PCPro.
- You can check the condition of LAN cable connection by transmitting the ping packet to the SV8300 from PC on the LAN.
- PCPro is needed to use license data.

SERVICES

Business/Hotel/Data/CCIS/ISDN/WCS

All Business/Hotel/Data/CCIS/ISDN/WCS features are available.

NOTE: *Add-On Module (For North America)/Add-On Module-Digital Multiline Terminal (For other than North America) is not available for IP Station.*

OAI

Built-in OAI is available on the CPU blade, excluding the following interface and facility.

NOTE: *The port number of SV8300 for OAI is 60030 in initially. The port number 1024, 1025, 1039 are available by CM0B Y=001>41.
A maximum of four applications can be connected to the system at the same time, using the port number mentioned above.*

- OAI with RS-232C
- FLF **[For North America]**

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INSTALLATION

This chapter explains the required equipment and hardware installation procedure such as connecting cables for the system.

PRECAUTIONS

Grounding Requirements

The system grounding must have a specific ground resistance and AC noise level, and is to be connected to a predetermined terminal in the PBX. Standard grounding requirements are as shown below:

- Communication grounding : Less than 10 Ω
- Protective ground for Chassis: Less than 10 Ω

NOTE: *The AC ripple on these various grounds should be less than 0.5 Vp-p.*

CAUTION

**Grounding circuit continuity is vital for safe operation of telecommunication equipment.
Never operate this equipment with the grounding conductor disconnected.**

The following specific requirements apply to ground wiring.

Install an equipment-grounding conductor that is at least as large as the ungrounded branch-supply conductors as part of the circuit that supplies the PBX. Bare, covered, or insulated grounding conductors are acceptable. Individually covered or insulated equipment grounding conductors shall have a continuous outer finish that is either green, or green with one or more yellow stripes. The equipment grounding connector is to be connected to ground at the service equipment.

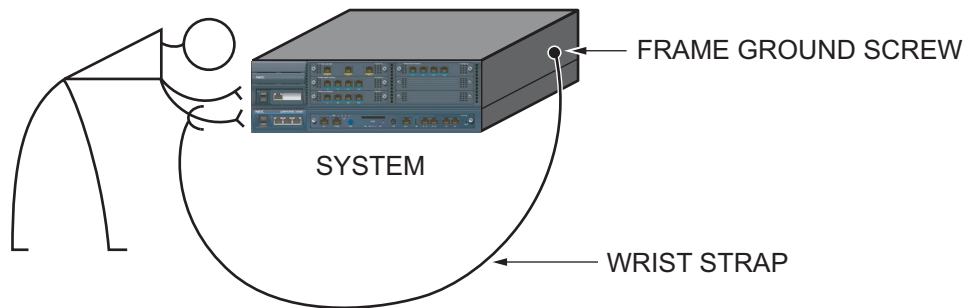
The attachment-plug receptacles near the PBX are all to be of a grounding type, and the equipment grounding conductors serving these receptacles are to be connected to earth ground at the service equipment.

Static Electricity Guard

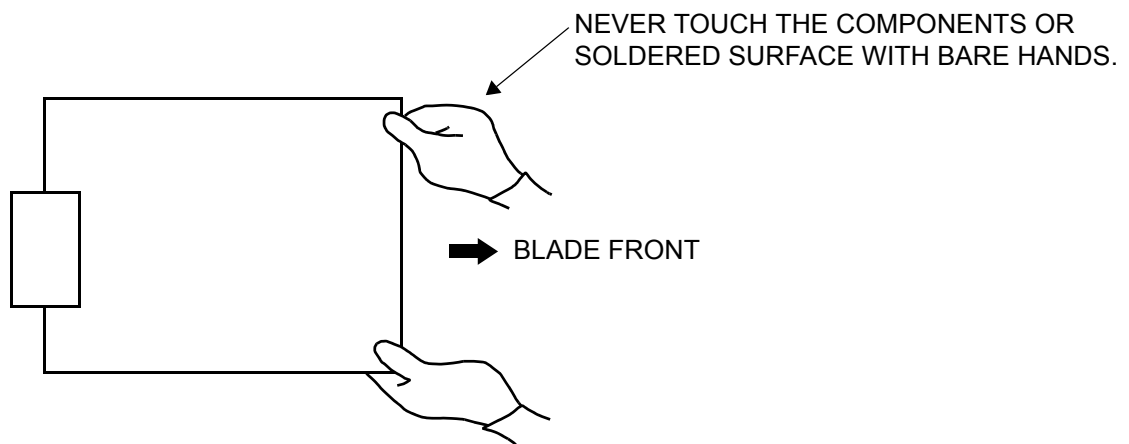
You must wear a grounded wrist strap to protect circuit blades from static electricity.

Static Electricity Guard

- WHEN PLUGGING/UNPLUGGING A CIRCUIT BLADE



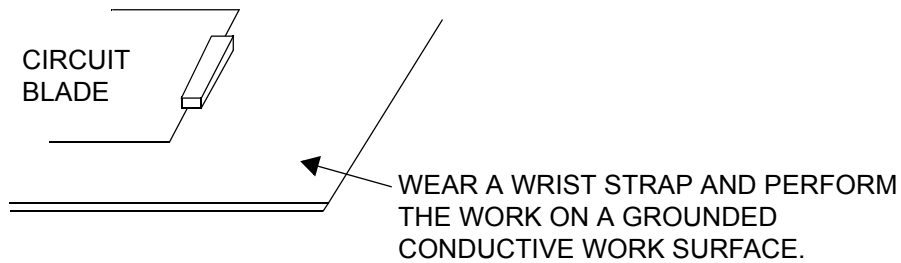
- WHEN HOLDING A CIRCUIT BLADE



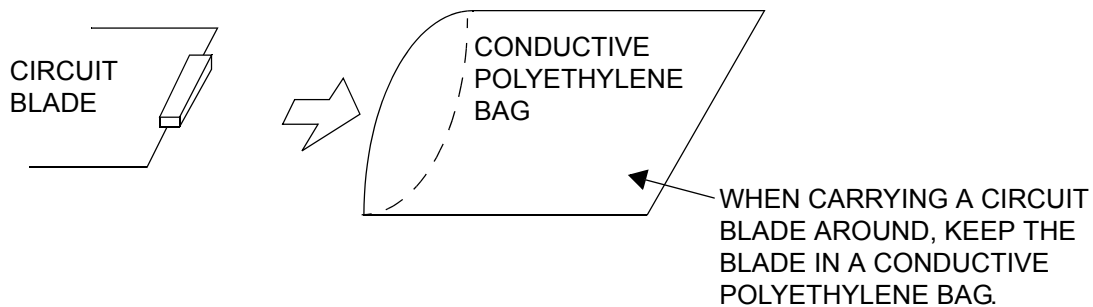
Continued on next page

Static Electricity Guard

- WHEN MAKING A SWITCH SETTING ON A CIRCUIT BLADE



- WHEN CARRYING A CIRCUIT BLADE

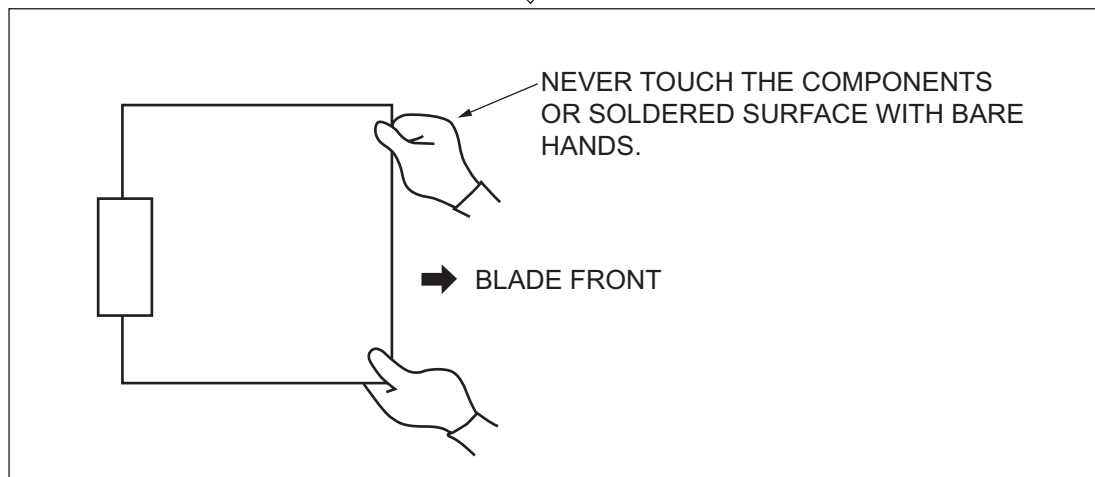
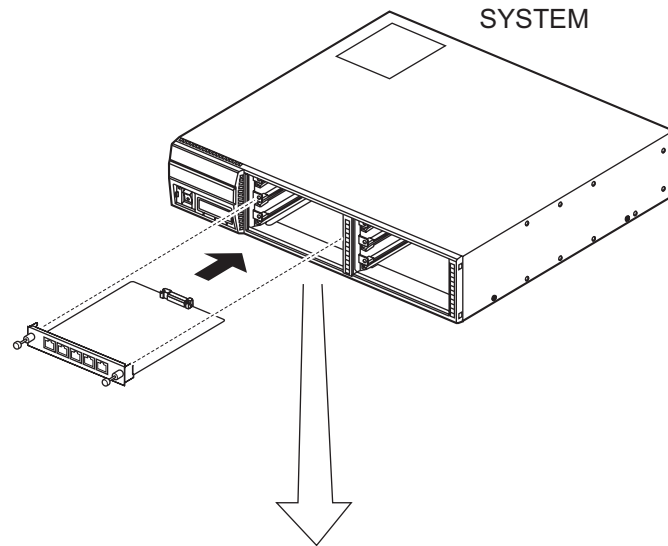


The mark shown below is attached to the sheet for the work in which circuit blades are handled. When engaging in such work, the installer must be careful not to cause damage by static electricity.



CAUTION

1. You must hold the edge of a circuit blade when plugging or unplugging the circuit blade. If you touch another area, you may be exposed to hazardous voltages.



2. You must wait for 30 seconds before plugging the circuit blade again when unplugging the circuit blade while the operating power is being supplied.

Turning Power ON

CAUTION

- 1. Do not plug/unplug the circuit blade into/from its mounting slot when the system is operating.**
- 2. Do not turn the POWER switch of the Unit to OFF when the system is operating.**

- (1) Turn the POWER switches of all the Units to ON.

Turning Power OFF

- (1) Before turning power off, inspect all line/trunk blades' busy lamps to verify that no blades are operating.
- (2) Turn the POWER switches of all the Units to OFF.

REQUIRED EQUIPMENT

This table shows the required equipment.

Required Equipment

EQUIPMENT	DESCRIPTION	QUANTITY	REMARKS
CC-CP00 (CPU)	CPU Blade	1-50	One blade per Unit
<ul style="list-style-type: none"> • 10/100/1000BASE-T Cable (TIA/EIA category 5 or larger)* • 10/100BASE-TX Cable (TIA/EIA category 5)* 	10/100/1000BASE-T Cable (for VOIP port) 10/100BASE-TX Cable (for ETHERNET port) 10/100/1000BASE-T/10/100BASE-TX Cable between the LAN port of the CPU blade and Ethernet	As required	Cable length: Maximum 100m (328 ft.) For using 1000BASE-T, the cable needs to be larger than category 5e.
Router*	NOTE: <i>NEC Router is recommended.</i>	As required	
HUB*	NOTE: <i>Switching HUB is required for the LAN port of the CPU blade.</i>	As required	
IPW-2U UNIT**/ IPW-2UA UNIT**	IP Adapter for D ^{term} 75	1-956	One per D ^{term} 75
IP-R UNIT**/ IP-RA UNIT**	IP Adapter for D ^{term} 85 (Series i)	1-956	One per D ^{term} 85 (Series i)
PZ-64IPLA (VoIPDB)	64-channel VoIPDB	1-50	Mount on CC-CP00 blade One board per CPU
PZ-128IPLA (VoIPDB)	128-channel VoIPDB	1-50	Mount on CC-CP00 blade One board per CPU
LT Blade	Line/Trunk Blade for Legacy Terminal/Interface	As required	288 ports per Unit 1052 ports per system
AP Blade	Application Processor Blade	As required	288 ports per Unit 1052 ports per system

*: Should be provided by customer.

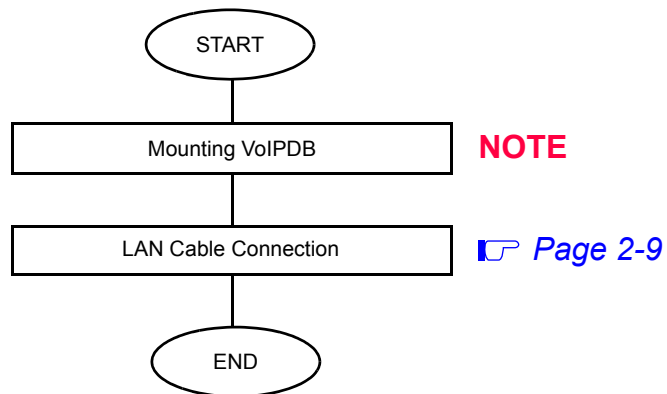
** : AC-DC Adapter or inline power patch panel must be provided.

INSTALLATION PROCEDURE

Install the equipment according to the procedure below.

For chassis and Legacy interface blade installation, refer to the System Hardware Manual.

Installation Procedure



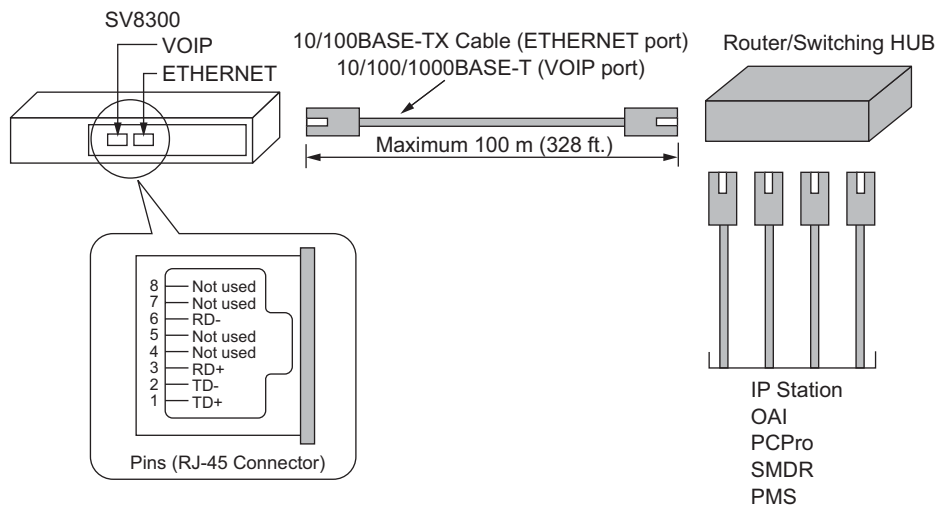
NOTE: *For details, refer to the System Hardware Manual.*

LAN Cable Connection

Connect the LAN (ETHERNET port or VOIP port) connector on the SV8300 and the Router/Switching HUB by using a 10/100BASE-TX (ETHERNET port), 10/100/1000BASE-T (VOIP port) cable.

When the system provides IP Station/OAI terminal/PCPro/SMDR/PMS on the LAN, connect them to the Switching HUB that is connected to the LAN connector on the SV8300.

SV8300-Router/Switching HUB Cable Connection



NOTE: The port number of SV8300 for OAI is 60030 in initially. The port number 1024, 1025, 1039 are available by CM0B Y=001>41.

The port number of SV8300 for PCPro is fixed to 60000.

The port number of SV8300 for SMDR is fixed to 60010.

The port number of SV8300 for PMS is fixed to 60050.

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SYSTEM DATA PROGRAMMING

This chapter explains the programming procedure of the system data, IP Station setup procedure and IP Station login/logout procedure.

HOW TO READ THIS CHAPTER

In the programming procedure, the meanings of (1), (2) and markings are as follows.

(1) : 1st Data

(2) : 2nd Data

◀ : Default

With the system data clear command (CM00, CM01), the data with this marking is automatically assigned for each command.

RESET

: A reset of the CPU blade is required after data setting.
Press RESET switch on the CPU blade.

OFF LINE

: Command with this marking can be used only under Off-Line mode of the CPU blade. To set Off-Line mode,
(1) Set SENSE switch on the CPU blade to “E” or “F”.
(2) Press RESET switch on the CPU blade.

BLADE RESET

: Commands which require a reset of the blade by CME0 Y=3 after data setting.

IPT (P2P CCIS) RESET

: Commands which require a reset of the IPT (P2P CCIS) by CME0 Y=5>01 after data setting.

PRECAUTIONS

System Data Backup

CAUTION

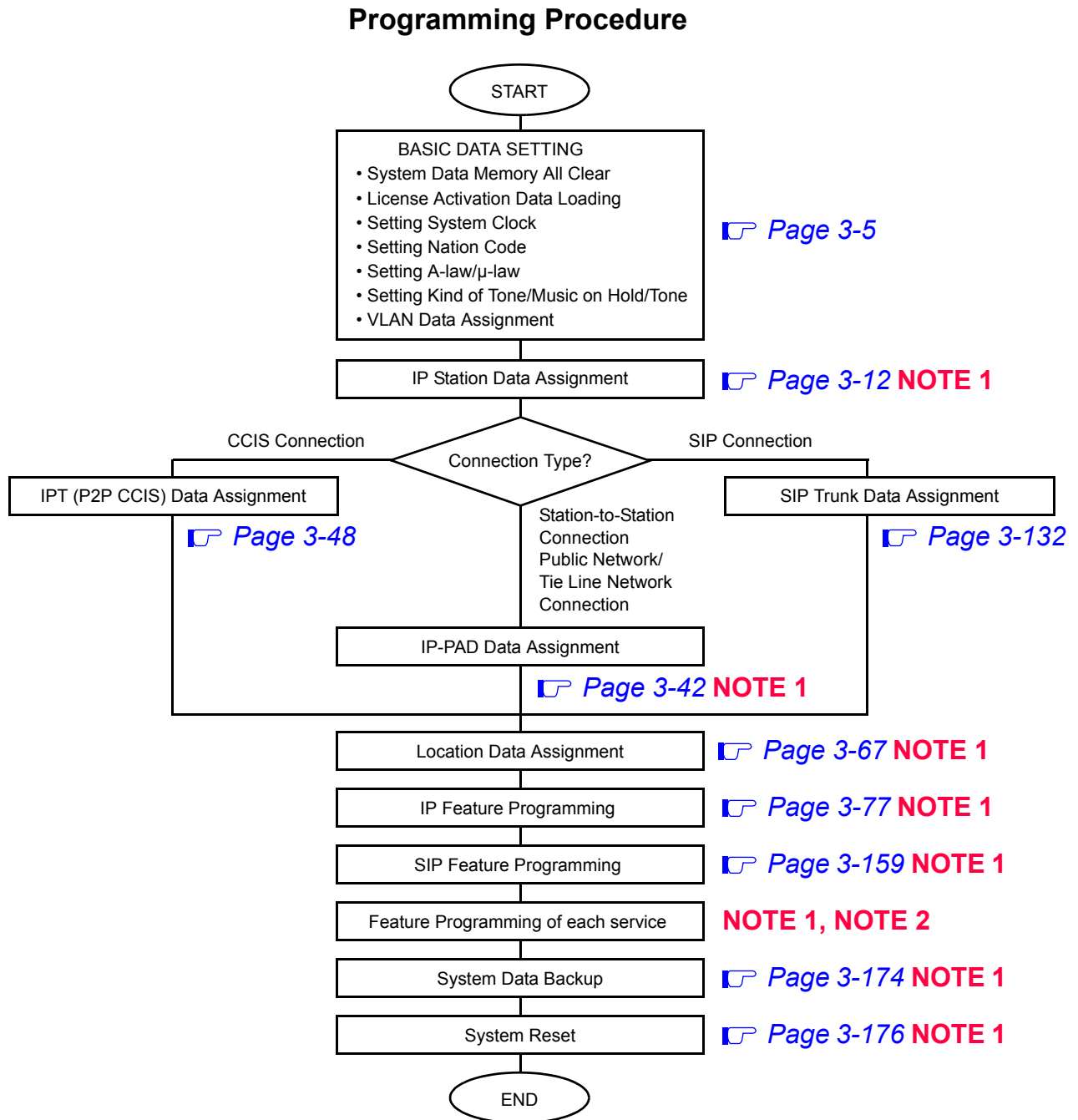
- If you operate as follows without system data backup after system data setting or service memory setting (registration of the features such as “Call Forwarding” and “Speed Dialing” from a station), the data that has been set is invalid.

You must execute the system data backup before the following operations.

- Turning Off the system
 - System Reset (reset of CPU blade)
 - Changing the CPU blade to Off-Line Mode
 - Changing the CPU blade to On-Line Mode after system data setting under Off-Line Mode
- You can execute the system data backup by the following two ways.
 - Executing the system data backup once a day at the time set by CM43 Y=5>00
(If no data is set, the default setting is 3:00 a.m.)
 - Executing the system data backup from PCPro/CAT by CMEC Y=6>0: 0
 - Do not reset the CPU blade while “SYSD” LED on the CPU blade is flashing.

PROGRAMMING PROCEDURE

Program the system data according to the following procedure.



NOTE 1: The data assignment can be executed under Off-Line mode or On-Line mode of the CPU blade. When setting the data under Off-Line mode, system reset is required after data setting.

NOTE 2: For feature programming of each service, refer to the Programming Manual.

BASIC DATA SETTING

For reset system setup, you must execute the following.

- System Data Memory All Clear [☞ Page 3-6](#)
- License Activation Data Loading [☞ Page 3-6](#)
- Setting System Clock [☞ Page 3-6](#)
- Setting Nation Code [☞ Page 3-7](#)
- Setting A-law/ μ -law [☞ Page 3-7](#)
- Setting Kind of Tone/Music on Hold/Tone [☞ Page 3-8](#)
- VLAN Data Assignment [☞ Page 3-10](#)

System Data Memory All Clear

You can select the system memory clear data according to the system configuration.

START	DESCRIPTION	DATA
START | <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM00</div> | END	Clear all system data memory for the TDSW-based PBX system. <div style="text-align: right; border: 1px solid black; border-radius: 10px; padding: 2px; margin-top: 10px;">OFF LINE</div>	(1) 1 (2) CCC

License Activation Data Loading

The License Activation data must be loaded into the CPU blade to activate the system. Refer to the PC Programming Manual for details.

Setting System Clock

START	DESCRIPTION	DATA
START | <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM02</div> | END	Assign the system clock data.	(1) 0: Calendar Year (2) 2007-2099 (Ex. 2008) (1) 1: Date (2) MM DD WW MM : 01-12 (Month) DD : 01-31 (Date) WW : 00 (Sun) 01 (Mon) 02 (Tue) 03 (Wed) 04 (Thu) 05 (Fri) 06 (Sat) (1) 2: Time (2) HH MM SS HH : 00-23 (Hour) MM : 00-59 (Minute) SS : 00-59 (Second)

Setting Nation Code

START	DESCRIPTION	DATA
START | <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM31</div> | END	Specify the nation code. <div style="text-align: right; border: 1px solid black; border-radius: 10px; padding: 2px; margin-top: 10px;">RESET</div>	<ul style="list-style-type: none"> • Y=0 (1) 0 (2) 01 : Australia 03 : North America 04 : Asia/Africa/Europe/Latin America/Middle East/Russia/EU 05 : Austria/Belgium/Denmark/Germany/Italy/South Africa/Spain/Sweden/Switzerland/The Netherlands/UK/Brazil/China/International/Latin America/Asia [For EU] NOTE 2 15 : New Zealand NONE◀: As per CPU blade

NOTE 1: The default of CM31 Y=0>0 depends on each nation code of the CPU program.

For Australia/NZ: 01◀

For North America: 03◀

For Asia/Africa/Europe/Latin America/Middle East/Russia: 04◀

Austria/Belgium/Denmark/Germany/Italy/South Africa/Spain/Sweden/Switzerland/

The Netherlands/UK/Brazil/China/International/Latin America/Asia: 05◀

NOTE 2: In the case of EU, the default of CM31 Y=0>0 is same as North America (nation code 03).

Therefore, you must set the nation code to 05 by this command.

Setting A-law/ μ -law

[For EU]

START	DESCRIPTION	DATA
START | <div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM04</div> | END	Specify the A-law/ μ -law for the Main Unit. <p>NOTE: Set the same value as Remote Unit (CM04 Y=14-59). You cannot set both of A-law and μ-law in the same Remote UNIT over IP system.</p>	<ul style="list-style-type: none"> • Y=10-13 (Unit No. 01-04) (1) 00 (2) 0 : A-law 1 : μ-law 2 : Not used 3◀: A-law/μ-law by Key ROM

Setting Kind of Tone/Music on Hold/Tone

(1) Kind of Tone

Kind of Tone is decided by CM04 Y=00>01, 03 data setting. To select the Kind of Tone for each country, set the data below.

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM04</div>	<p>Set the Kind of Tone for TDM (System-basis).</p> <p>NOTE: <i>Second data "16" to "27" are available only for EU.</i></p>	<ul style="list-style-type: none"> • Y=00 (1) 03 (2) 01 : Japan 02 : North America 03 : Australia 04 : A-law countries 05 : Hong Kong 06 : Malaysia 07 : Singapore 08 : UK 09 : Mexico 10 : Taiwan 11 : New Zealand 13 : China 14 : Thailand 15 : Brazil 16 : Netherlands 17 : Germany 18 : Italy 19 : Austria 20 : Belgium 21 : Spain 22 : Sweden 23 : UK 24 : Denmark 25 : Greece 26 : Switzerland 27 : South Africa 28 : Russia NONE◀: As per CM31 Y=0>0
END		

(2) Music on Hold

To provide Internal Hold Tone source on the CPU blade, set the data below.

NOTE 1: Do not use CM08>183 for music selection in this system. If CM48 Y=0 is set, CM08>183 is disregarded.

NOTE 2: This data setting is effective only for the legacy terminal.
For IP Station, this data setting is not effective. IP Station uses the tone source in IP Adapter (Minuet).

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM48</div>	Set the music for Internal Hold Tone. NOTE: Set CM48 Y=0>00/01/02>1400 after this data setting.	<ul style="list-style-type: none"> • Y=3 (1) 01 (2) 00 : Nocturne 01 : Minuet 02 : Fur Elise 03 : The Maiden's Prayer 04 : When the saints go marching in 06 : Spring (by four seasons) 08 : Ich bin ein Musikante (German folk song) 10 : Amaryllis (French folk song) NONE◀: Minuet
END		

(3) Periodic Time Indication Tone

To provide Periodic Time Indication Tone, set the data below.

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM41</div>	Specify the timing interval for Periodic Time Indication Tone.	<ul style="list-style-type: none"> • Y=0 (1) 09 (2) 01-17: 32-548 seconds (32 seconds increments) If no data is set, the default setting is 192-196 seconds.
END		

VLAN Data Assignment

NOTE 1: The system supports only Tag VLAN.

NOTE 2: Switching HUB that supports VLAN is required to provide the VLAN function.

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin-bottom: 10px;">CM0B</div> <div style="border-left: 1px solid black; border-right: 1px solid black; border-bottom: 1px solid black; height: 500px; margin-left: 10px;"></div> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin-left: 10px; margin-top: 10px;">A</div>	Provide the VLAN with the system. <div style="text-align: right; border: 1px solid black; border-radius: 15px; padding: 2px 10px; display: inline-block;">RESET</div>	<ul style="list-style-type: none"> • Y=0XX (Maintenance Port [0] + Unit No. [01-50]) 1XX (VOIP Port [1] + Unit No. [01-50]) (1) 50 (2) 0 : To provide 1◀: Not provided
	Specify the priority of the VLAN. <div style="text-align: right; border: 1px solid black; border-radius: 15px; padding: 2px 10px; display: inline-block;">RESET</div>	<ul style="list-style-type: none"> • Y=0XX (Maintenance Port [0] + Unit No. [01-50]) 1XX (VOIP Port [1] + Unit No. [01-50]) (1) 51 (2) 0-7◀: Priority 0-7 NOTE
	Assign the VLAN ID to the system. <div style="text-align: right; border: 1px solid black; border-radius: 15px; padding: 2px 10px; display: inline-block;">RESET</div>	<ul style="list-style-type: none"> • Y=0XX (Maintenance Port [0] + Unit No. [01-50]) 1XX (VOIP Port [1] + Unit No. [01-50]) (1) 52 (2) 1-4094 : VLAN ID 1-4094 NOTE 2 NONE◀: No data
	Assign the IP address for the VLAN. <div style="text-align: right; border: 1px solid black; border-radius: 15px; padding: 2px 10px; display: inline-block;">RESET</div>	<ul style="list-style-type: none"> • Y=0XX (Maintenance Port [0] + Unit No. [01-50]) 1XX (VOIP Port [1] + Unit No. [01-50]) (1) 00 (2) XXX.XXX.XXX.XXX: 0.0.0.1-255.255.255.254: IP Address for the VLAN (Maximum 15 digits) NONE◀: No data
	<p>NOTE 1: One VLAN ID can be set per system.</p> <p>NOTE 2: VLAN ID 0 is not available.</p> <p>NOTE 1: This command cannot be assigned by CAT.</p> <p>NOTE 2: Be sure to enter the periods (.) included in the IP address.</p>	

A	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM0B</div>	Assign the Subnet Mask for the VLAN. <div style="text-align: right; border: 1px solid black; border-radius: 10px; padding: 2px 10px; display: inline-block;">RESET</div> <p>NOTE 1: <i>This command cannot be assigned by CAT.</i></p> <p>NOTE 2: <i>Be sure to enter the periods (.) included in the IP address.</i></p> <p>NOTE 3: <i>When setting the IP address for Maintenance Port (Y=0XX) and VOIP Port (Y=1XX), set the Subnet Mask (Y=0XX>01, Y=1XX>01) for each using port respectively.</i></p>	<ul style="list-style-type: none"> • Y=0XX (Maintenance Port [0] + Unit No. [01-50]) 1XX (VOIP Port [1] + Unit No. [01-50]) (1) 01 (2) XXX.XXX.XXX.XXX: 0.0.0.255-255.255.255.252: Subnet Mask for the VLAN (Maximum 15 digits) NONE◀: No data
	Assign the IP address for the VLAN of the VoIPDB (RTP). <div style="text-align: right; border: 1px solid black; border-radius: 10px; padding: 2px 10px; display: inline-block;">RESET</div> <p>NOTE 1: <i>This command cannot be assigned by CAT.</i></p> <p>NOTE 2: <i>Be sure to enter the periods (.) included in the IP address.</i></p> <p>NOTE 3: <i>Maximum of 8 IP addresses can be set as IP address (RTP).</i></p> <p>NOTE 4: <i>Set an IP address (RTP) every 16 voice channels to be used.</i></p>	<ul style="list-style-type: none"> • Y=2XX (VOIP Port [2] + Unit No. [01-50]) (1) 00: IP Address 1 20: IP Address 2 21: IP Address 3 22: IP Address 4 23: IP Address 5 24: IP Address 6 25: IP Address 7 26: IP Address 8 (2) XXX.XXX.XXX.XXX: 0.0.0.1-255.255.255.254: IP Address for the VLAN (Maximum 15 digits) NONE◀: No data

END

IP STATION DATA ASSIGNMENT

IP Station data and IP Station Login/Logout data are shown below.

IP Station Data Assignment

In addition to the system constitution data for IP Station, do the following programming.

START	DESCRIPTION	DATA																													
CM10	Assign the station number of the IP Station to the port number of the IP Station.	<ul style="list-style-type: none"> Y=01 (1) 0000-1499: Virtual Port No. (2) FX-FXXXXXXXXX: Station No. of IP Station X: 0-9, A (*), B (#) NONE◀: No data 																													
CM12	Specify the kind of IP Station. NOTE 1: After changing the second data, pull out and reconnect the modular connector of the IP Station. NOTE 2: Set the second data to "0" (B mode) for Soft Phone.	<ul style="list-style-type: none"> Y=24 (1) X-XXXXXXXXX: Station No. (2) 0 : B mode (See the table below) 7◀: A mode (See the table below) 																													
<table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="2">CM12 Y=24: 7 (A mode)</th> <th colspan="2">CM12 Y=24: 0 (B mode)</th> </tr> <tr> <th>Line/Trunk/Feature Keys</th> <th>One Touch Keys</th> <th>Line/Trunk/Feature Keys</th> <th>One Touch Keys</th> </tr> </thead> <tbody> <tr> <td>DT330/DT730 (12D)</td> <td>12</td> <td>0</td> <td>12</td> <td>0</td> </tr> <tr> <td>DT330/DT730 (24D)</td> <td>18</td> <td>6</td> <td>24</td> <td>0</td> </tr> <tr> <td>DT330/DT730/DT750 (8LD [DESI-LESS])</td> <td>16</td> <td>16</td> <td>24</td> <td>8</td> </tr> <tr> <td>D^{term} Series i/ D^{term}IP/D^{term}75</td> <td>16</td> <td>16</td> <td>24</td> <td>8</td> </tr> </tbody> </table>				CM12 Y=24: 7 (A mode)		CM12 Y=24: 0 (B mode)		Line/Trunk/Feature Keys	One Touch Keys	Line/Trunk/Feature Keys	One Touch Keys	DT330/DT730 (12D)	12	0	12	0	DT330/DT730 (24D)	18	6	24	0	DT330/DT730/DT750 (8LD [DESI-LESS])	16	16	24	8	D ^{term} Series i/ D ^{term} IP/D ^{term} 75	16	16	24	8
	CM12 Y=24: 7 (A mode)			CM12 Y=24: 0 (B mode)																											
	Line/Trunk/Feature Keys	One Touch Keys	Line/Trunk/Feature Keys	One Touch Keys																											
DT330/DT730 (12D)	12	0	12	0																											
DT330/DT730 (24D)	18	6	24	0																											
DT330/DT730/DT750 (8LD [DESI-LESS])	16	16	24	8																											
D ^{term} Series i/ D ^{term} IP/D ^{term} 75	16	16	24	8																											
A																															

A	DESCRIPTION	DATA
CM20	Assign the number of digits for station number.	<ul style="list-style-type: none"> • Y=0-3 Numbering Plan Group 0-3 (1) X-XXXX: Access Code (2) 801: 1 digit Station 802: 2 digits Station 803: 3 digits Station 804: 4 digits Station 805: 5 digits Station 806: 6 digits Station 807: 7 digits Station 808: 8 digits Station
CM90	Assign a My Line key on the IP Station, if required.	<ul style="list-style-type: none"> • Y=00 (1) My Line No. + <input type="text"/> + Key No. (2) X-XXXXXXXX: Station No.
CM93	Assign a Prime Line to the IP Station.	<ul style="list-style-type: none"> (1) X-XXXXXXXX: My Line No. (2) X-XXXXXXXX: Station No.
CM0B	Assign the port number of the UDP port for IP Station (which is NEC original UDP port [PROTIMS port]). <div style="text-align: right; border: 1px solid black; border-radius: 15px; padding: 2px 10px; display: inline-block;">RESET</div>	<ul style="list-style-type: none"> • Y=1XX (VOIP Port [1] + Unit No. [01-50]) (1) 30 (2) 01024-65534: UDP Base Port No. NONE ◀ : 50000 [50000-53071 (3072 ports are used)]
	<p>NOTE 1: Follow the typical default setting.</p> <p>NOTE 2: One UDP port is required to a IP Station. Assign the necessary number of UDP port for the number of IP Stations. And, set the port number that is not used by other purposes.</p>	
	Assign the port number of the Registration Admission Status (RAS) port which is NEC original UDP port for System-based DRS. <div style="text-align: right; border: 1px solid black; border-radius: 15px; padding: 2px 10px; display: inline-block;">RESET</div>	<ul style="list-style-type: none"> • Y=1XX (VOIP Port [1] + Unit No. [01-50]) (1) 31 (2) 01024-65534: UDP Port No. 1024-65534 00000-01023: UDP Port No. 3456 NONE ◀ : UDP Port No. 3456
	<p>NOTE: Follow the typical default setting.</p>	
B		

B	DESCRIPTION	DATA
CM0B	Assign the port number of the UDP port for DT700 Series voice control packet.	<ul style="list-style-type: none">• Y=1XX (VOIP Port [1] + Unit No. [01-50])(1) 32(2) 01024-65534: UDP Port No. 1024-65534NONE◀ : UDP Port No. 5080
<u>END</u>	NOTE: <i>Follow the typical default setting.</i>	

IP Station Login/Logout Data Assignment

(1) For IP Station Login (Automatic Login Mode)

To register the IP Station ID for Automatic Login mode, do the following programming.

START	DESCRIPTION	DATA
CM08	Specify the way of ID registration.	(1) 513 (2) 1◀: As per CM15 Y=480
CM12	Assign Service Restriction Class C to the required stations.	<ul style="list-style-type: none"> Y=07 (1) X-XXXXXXXX: Station No. (2) 00-15◀: Service Restriction Class C
CM15	Assign the way of ID registration to Service Restriction Class C assigned by CM12Y=07. NOTE: <i>This data is effective only when CM08>513 is set to 1.</i>	<ul style="list-style-type: none"> Y=480 (1) 00-15: Service Restriction Class C assigned by CM12 Y=07 (2) 7◀: Automatic Login Mode (Authentication by MAC Address)
CM2B	Assign the Password for reset setup which is used by maintenance personnel for the automatic login mode, if required.	<ul style="list-style-type: none"> Y=10 (1) 00 (2) Z-ZZZZZZZZ: Password for reset setup Z : 0-9, A (*), B (#) NONE◀: No data
CM08	Specify if the system encodes the station number when the IP Stations log into the network.	(1) 514 (2) 0 : To encode by NEC original method 1◀: Not encoded
	Specify if the system encodes the password when the IP Stations log into the network.	(1) 515 (2) 0 : Not encoded 1◀: As per CM08>517
	Specify the encoding method of the password.	(1) 517 (2) 0 : MD5 1◀: NEC original method
	NOTE 1: <i>Do not set the 2nd data 0, when the destination IP Station does not support the MD5 encoding.</i>	
	NOTE 2: <i>This data is effective when CM08>515 is set to 1.</i>	
END		


- When replacing the IP Station which has been set to Automatic Login mode with new one individually, do the following programming before registering the ID of new IP Station.

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM12</div>	<p>Clear the authentication by MAC Address of the IP Station.</p> <p>NOTE 1: <i>Execute the system data backup by CMEC Y=6>0: 0 after this data setting.</i></p> <p>NOTE 2: <i>If you clear the registered IP Station MAC Address while the system is operating, IP Station is reset even though it is connected.</i></p> <p>NOTE 3: <i>You can also clear the authentication by MAC Address of the IP Station by executing the logout operation. For logout operation, see "IP Station Logout".</i> Page 3-41</p>	<ul style="list-style-type: none"> Y=90 (1) X-XXXXXXXX: Station No. (ID) (2) CCC
END		

- When replacing all IP Stations which have been set to Automatic Login mode with new ones, do the following programming.

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CMEC</div>	<p>Clear the authentication by MAC Address of all IP Stations.</p> <p style="text-align: center;">(OFF LINE)</p> <p>NOTE: <i>Execute the system data backup by CMEC Y=6>0: 0 after this data setting.</i></p>	<ul style="list-style-type: none"> Y=7 (1) 00 (2) CCC
END		

- When changing the way of ID registration of an IP Station from Automatic Login mode to Protected Login mode during the system operation, do the following programming.

START	DESCRIPTION	DATA
CM15	Assign the way of ID registration to Service Restriction Class C assigned by CM12 Y=07.	<ul style="list-style-type: none"> • Y=480 (1) 00-15: Service Restriction Class C assigned by CM12 Y=07 (2) 0: Protected Login Mode
	<p>NOTE: <i>This data is effective only when CM08>513 is set to 1.</i></p>	
CM12	Clear the authentication by MAC Address of the IP Station.	<ul style="list-style-type: none"> • Y=90 (1) X-XXXXXXXX: Station No. (ID) (2) CCC
	<p>NOTE 1: <i>Execute the system data backup by CMEC Y=6>0: 0 after this data setting.</i></p>	
	<p>NOTE 2: <i>You can also clear the authentication by MAC Address of the IP Station by executing the logout operation, for logout operation, see “IP Station Logout”.</i></p> <p> Page 3-41</p>	
END		

(2) For IP Station Login (Protected Login Mode)

To register the IP Station ID for Protected Login mode, do the following programming.

NOTE 1: Register the IDs with Protected Login mode to the IP Stations that provide User Mobility feature.

NOTE 2: We recommend the Protected Login mode for the login method of the Soft Phone.

START	DESCRIPTION	DATA
CM08	Specify whether the way of ID registration for all IP Stations in the system is set to protected login mode or determined by CM15 Y=480.	(1) 513 (2) 0 : Protected Login Mode for All IP Stations 1◀: As per CM15 Y=480
CM12	Assign Service Restriction Class C to the required stations.	<ul style="list-style-type: none"> Y=07 (1) X-XXXXXXXX: Station No. (2) 00-15◀: Service Restriction Class C
CM15	Assign the way of ID registration to Service Restriction Class C assigned by CM12 Y=07. NOTE: This data is effective only when CM08>513 is set to 1. Allow the login to the visitor unit in Service Restriction Class C assigned by CM12 Y=07.	<ul style="list-style-type: none"> Y=480 (1) 00-15: Service Restriction Class C assigned by CM12 Y=07 (2) 0: Protected Login Mode <ul style="list-style-type: none"> Y=196 (1) 00-15: Service Restriction Class C assigned by CM12 Y=07 (2) 0 : Allow 1◀: Restricted
CM42	Specify the number of digits for Password.	(1) 73 (2) 01-08 : 1 digit-8 digits NONE◀: 4 digits
CM2B	Assign the Password of the IP Station to the system.	<ul style="list-style-type: none"> Y=00 (1) X-XXXXXXXX: Station No. (2) Z-ZZZZZZZZ: Password Z : 0-9, A (*), B (#) NONE◀: No data
A		

A	DESCRIPTION	DATA
CM08	Specify if the system encodes the station number when the IP Stations log into the network.	(1) 514 (2) 0 : To encode by NEC original method 1◀: Not encoded
	Specify if the system encodes the password when IP Stations log into the network.	(1) 515 (2) 0 : Not encoded 1◀: As per CM08>517
	Specify if the system overrides the IP Stations which have the same ID (station number) when the IP Stations log into the network.	(1) 516 (2) 0 : To override 1◀: Not overridden
	NOTE: <i>Set the second data to 0, when an IP Station user moves to visitor unit without the logout operation in User Mobility feature.</i>	
	Specify the encoding method of the password.	(1) 517 (2) 0 : MD5 1◀: NEC original method
NOTE 1: <i>Do not set the 2nd data 0, when the destination IP Station does not support the MD5 encoding.</i>		
NOTE 2: <i>This data is effective when CM08>515 is set to 1.</i>		
CM20	Assign the access code for Password Change.	<ul style="list-style-type: none"> • Y=0-3 Numbering Plan Group 0-3 (1) X-XXXX: Access Code (2) A231: Password Change
<u>END</u>		

(3) For IP Station Login (Fixed Connection Mode)

To register the IP Station ID for Fixed Connection mode, do the following programming.

START	DESCRIPTION	DATA
CM08	Specify the way of ID registration.	(1) 513 (2) 1◀: As per CM15 Y=480
CM12	Assign Service Restriction Class C to the required stations.	• Y=07 (1) X-XXXXXXXX: Station No. (2) 00-15◀: Service Restriction Class C
CM15	Assign the way of ID registration to Service Restriction Class C assigned by CM12 Y=07.	• Y=480 (1) 00-15: Service Restriction Class C assigned by CM12 Y=07 (2) 1: Fixed Connection Mode
CM42	Specify the number of digits for Password.	(1) 73 (2) 01-08 : 1 digit-8 digits NONE◀: 4 digits
CM2B	Assign the Password of the IP Station to the system.	• Y=00 (1) X-XXXXXXXX: Station No. (2) Z-ZZZZZZZZ: Password Z : 0-9, A (*), B (#) NONE◀: No data
CM08	Specify if the system encodes the station number when the IP Stations log into the network.	(1) 514 (2) 0 : To encode by NEC original method 1◀: Not encoded
	Specify if the system encodes the password when IP Stations log into the network.	(1) 515 (2) 0 : Not encoded 1◀: As per CM08>517
A		

A	DESCRIPTION	DATA
CM08	Specify if the system overrides the IP Stations which have the same ID (station number) when the IP Stations log into the network.	(1) 516 (2) 0 : To override 1◀: Not overridden
	NOTE: <i>Set the second data to 0, when an IP Station user moves to visitor unit without the logout operation in User Mobility feature.</i>	
	Specify the encoding method of the password.	(1) 517 (2) 0 : MD5 1◀: NEC original method
	NOTE 1: <i>Do not set the 2nd data 0, when the destination IP terminal does not support the MD5 encoding.</i>	
	NOTE 2: <i>This data is effective when CM08>515 is set to 1.</i>	
CM20	Assign the access code for Password Change.	<ul style="list-style-type: none"> • Y=0-3 Numbering Plan Group 0-3 (1) X-XXXX: Access Code (2) A231: Password Change
<u>END</u>		

- To register the MAC Address for Fixed Connection Mode automatically, do the following programming after logging in from the terminal.
If this programming is performed after logging in from the terminal, the MAC address of the terminal is registered to the programming data memory of CM12 Y=92 automatically.

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM12</div>	<p>Assign the MAC Address automatic registration in Fixed Connection Mode.</p> <p>NOTE 1: <i>MAC Address automatic registration in Fixed Connection Mode should be executed during the terminal logging in.</i></p> <p>NOTE 2: <i>A maximum of 256 MAC Addresses can be registered in Fixed Connection Mode.</i></p> <p>NOTE 3: <i>This command has to be registered after assigning CM15 Y=480 2nd data "1" and CM2B Y=00 in Fixed Connection Mode. If you do not that, "DATA ERROR" is displayed.</i></p> <p>NOTE 4: <i>Execute the system data backup by CMEC Y=6>0: 0 after this command registered. When changing this data of terminals accommodated in a Remote Unit, execute the system data copy by CMEC Y=8 to the Remote Unit.</i></p> <p>NOTE 5: <i>Confirm the registered MAC Addresses by CM12 Y=92.</i></p>	<ul style="list-style-type: none"> • Y=90 (1) X-XXXXXXXX: Station No. (2) 0 : MAC Address automatic registration in Fixed Connection Mode CCC : Clear NONE◀: No data
<u>END</u>		

- To register the MAC Address for Fixed Connection Mode manually, do the following programming.

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM12</div>	<p>Assign the MAC Address in Fixed Connection Mode.</p>	<ul style="list-style-type: none"> • Y=92 (1) X-XXXXXXXX: Station No. (2) XXXXXXXXXXXXX: MAC Address (12 digits) <p>CCC : Clear NONE◀: No data</p> <p>NOTE 1: A maximum of 256 MAC Addresses can be registered in Fixed Connection Mode.</p> <p>NOTE 2: This command has to be registered after assigning CM15 Y=480 2nd data "1" and CM2B Y=00 in Fixed Connection Mode. If you do not that, "DATA ERROR" is displayed.</p> <p>NOTE 3: When a MAC Address is entered during the terminal logging in wrongly, "DATA ERROR" is displayed. When a MAC Address of the other terminals which is logging in is entered, "WAIT, BUSY NOW" is displayed.</p> <p>NOTE 4: Execute the system data backup by CMEC Y=6>0: 0 after this command registered. When changing this data of terminals accommodated in a Remote Unit, execute the system data copy by CMEC Y=8 to the Remote Unit.</p>
<u>END</u>		

(4) Confirmation of IP Station status and terminal station number

START	DESCRIPTION	DATA
CMFA	<p>Read the IP Station status.</p> <p>NOTE: <i>This command is available for all login methods: Automatic Login Mode (Authentication by MAC Address), Protected Login Mode, and Fixed Connection Mode.</i></p>	<ul style="list-style-type: none"> • Y=02 (1) X-XXXXXXXX: Station No. (2) XX...X Z <ul style="list-style-type: none"> XX...X: IP Address of IP Station Z : IP Station (A/N) A: Busy N: Idle FF : The terminal is not IP Station NONE◀: IP Station is logout status/ IP Station has never been busy
	<p>Read station number of the IP Station registered in Fixed Connection Mode.</p> <p>NOTE 1: <i>This command can read the IP Station status and terminal station number assigned by CM12 Y=92.</i></p>	<ul style="list-style-type: none"> • Y=30 (1) 000-255: Block No. (2) X-XXXXXXXX: Station No. CCC : Clear NONE◀: No data
	<p>NOTE 2: <i>The MAC Address of the relevant terminal set in CM12 Y=92 is cleared by the 2nd data "CCC".</i></p>	
<u>END</u>		

A	DESCRIPTION	DATA
CM9A	Assign the Logout function to the Soft Key of the IP Station.	<ul style="list-style-type: none"> • Y=00-03 Soft Key Pattern No. 0-3 assigned by CM12 Y=23 (1) 01 XX 01 : During dialing (Holding no call) XX: 00-15: Soft Key No. 00-03: Indicated on 1st display 04-07: Indicated on 2nd display 08-11: Indicated on 3rd display 12-15: Indicated on 4th display (2) F0B39: IP Station Logout
	Assign the characters indicated on the IP Station, corresponding to the Soft Key function assigned by CM9A Y=00-03.	<ul style="list-style-type: none"> • Y=10-13 Soft Key Pattern No. 0-3 assigned by CM12 Y=23 (1) Same as CM9A Y=00-03 (2) Soft Key name indicated on LCD (Maximum 12 characters) 4C6F676F7574: Logout
	<p>NOTE 1: <i>The following characters can be registered; Alphabet upper case (A-Z), alphabet lower case (a-z), numeric (0-9), symbol (! " # \$ % & ' () + , ; < = > ? @ [] ^ _ ' { } ~), Space, hyphen (-), period (.), slash (/), colon (:)</i></p>	
	<p>NOTE 2: <i>The character "CCC" cannot be registered.</i></p>	
<u>END</u>		

(6) To assign the Expire value for DT700 Series, do the following programming.

START	DESCRIPTION	DATA
CM41	Assign the Expire value for DT700 Series REGISTER.	<ul style="list-style-type: none"> • Y=0 (1) 130: REGISTER (Day) (2) 00-99: 0-99 days
	<div style="border: 1px solid black; border-radius: 15px; padding: 2px 10px; display: inline-block;">RESET</div>	
	<p>NOTE 1: <i>This data setting is not required.</i></p>	<ul style="list-style-type: none"> (1) 131: REGISTER (Hour) (2) 00-23: 0-23 Hours
	<p>NOTE 2: <i>This data implies the expire value for DT700 Series REGISTER (terminal registration) and is set by the combination of CM41>130-132 (day/hour/minute). When CM41>130-132 (day/hour/minute) are all set to NONE, the expire value "180 seconds" is set as default.</i></p>	<ul style="list-style-type: none"> (1) 132: REGISTER (Minute) (2) 00-59: 0-59 Minutes
	<p>NOTE 3: <i>DT700 Series REGISTER is updated at half interval of the value set by this data.</i></p>	
	<p>NOTE 4: <i>The load to SV8300 increases if small amount of data (such as 1 minute) is set. Therefore, it is recommended to set the value more than 180 seconds.</i></p>	
A		

A	DESCRIPTION	DATA
CM41	Assign the Expire value for DT700 Series SUBSCRIBE for Server. <div style="text-align: right; border: 1px solid black; border-radius: 15px; padding: 2px 10px; display: inline-block;">RESET</div>	<ul style="list-style-type: none"> • Y=0 (1) 133: SUBSCRIBE for Server (Day) (2) 00-99: 0-99 days (1) 134: SUBSCRIBE for Server (Hour) (2) 00-23: 0-23 Hours (1) 135: SUBSCRIBE for Server (Minute) (2) 00-59: 0-59 Minutes
	<p>NOTE 1: <i>This data setting is not required.</i></p>	
	<p>NOTE 2: <i>This data implies the expire value for DT700 Series SUBSCRIBE (terminal control signal from DT700 Series to SV8300) and is set by the combination of CM41>133-135 (day/hour/minute). When CM41>133-135 (day/hour/minute) are all set to NONE, the expire value “3600 seconds” is set as default.</i></p>	
	<p>NOTE 3: <i>DT700 Series SUBSCRIBE is updated at half interval of the value set by this data.</i></p>	
	<p>NOTE 4: <i>The load to SV8300 increases if small amount of data (such as 1 minute) is set. Therefore, it is recommended to set the value more than 1 hour (3600 seconds).</i></p>	
B		

B	DESCRIPTION	DATA
CM41	Assign the Expire value for DT700 Series SUBSCRIBE for Client. <div style="text-align: right; border: 1px solid black; border-radius: 15px; padding: 2px 10px;">RESET</div>	<ul style="list-style-type: none"> • Y=0 (1) 136: SUBSCRIBE for Client (Day) (2) 00-99: 0-99 days (1) 137: SUBSCRIBE for Client (Hour) (2) 00-23: 0-23 Hours (1) 138: SUBSCRIBE for Client (Minute) (2) 00-59: 0-59 Minutes
	<p>NOTE 1: <i>This data setting is not required.</i></p>	
	<p>NOTE 2: <i>This data implies the expire value for DT700 Series SUBSCRIBE (terminal control signal from SV8300 to DT700 Series) and is set by the combination of CM41>136-138 (day/hour/minute). When CM41>136-138 (day/hour/minute) are all set to NONE, the expire value “3600 seconds” is set as default.</i></p>	
	<p>NOTE 3: <i>DT700 Series SUBSCRIBE is updated at half interval of the value set by this data.</i></p>	
	<p>NOTE 4: <i>The load to SV8300 increases if small amount of data (such as 1 minute) is set. Therefore, it is recommended to set the value more than 1 hour (3600 seconds).</i></p>	
<u>END</u>		

SIP Multiline Terminal Protection Mode Data Assignment

SIP Multiline Terminal Protection Mode enables the SIP Multiline Terminal to be locked by pressing Protection key on the terminal. So the terminal operation can be restricted by this service.

(1) For SIP Multiline Terminal Protection (Protection Mode)

To register the Protection Mode for SIP Multiline Terminal, do the following programming.

START	DESCRIPTION	DATA
CM12	Assign Service Restriction Class C to the required stations.	<ul style="list-style-type: none"> • Y=07 (1) X-XXXXXXXX: SIP Multiline Terminal Station No. (2) 00-15◀: Service Restriction Class C
CM15	Allow the Protection Mode for SIP Multiline Terminal.	<ul style="list-style-type: none"> • Y=199 (1) 00-15: Service Restriction Class C assigned by CM12 Y=07 (2) 0 : Allow 1◀: Restricted
CM42	Assign the number of password entries when the Protection Mode is canceled. NOTE: <i>When entering incorrect password for the number of times set by this command, SIP Multiline Terminal will be in password lock state.</i>	<ul style="list-style-type: none"> (1) 194 (2) 00 : No limit 01-99 : 1-99 times NONE◀: 3 times
	Assign the time to lock the SIP Multiline Terminal when the number of password entries exceeded the limit. NOTE: <i>When the SIP Multiline Terminal is in password lock state, a password entry is restricted until the time set by this command is elapsed.</i>	<ul style="list-style-type: none"> (1) 195 (2) 00 : Not unlocked 01-99 : 1-99 minutes NONE◀: 10 minutes
A		

A	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">CM04</div>	<p>Assign the Inquiry number when the password entry function is disabled (password lock state).</p> <p>NOTE 1: <i>The purpose of this data setting is to assign the number for user to make inquiry to the maintenance personnel when DT700 Series is in password lock state.</i></p> <p>NOTE 2: <i>The number set by this data is displayed on the LCD of the DT700 Series when the terminal is in password lock state.</i></p>	<ul style="list-style-type: none"> • Y=00 (1) 04: Inquiry No. (2) XXX...X: Dial information (Maximum 32 digits) <li style="padding-left: 20px;">X : 0-9, A (*), B (#) NONE◀: No data
<div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">END</div>		

- (2) For SIP Multiline Terminal Protection Cancel (Protection Mode Cancel)
To cancel the Protection Mode forcibly for SIP Multiline Terminal, do the following programming.

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">CM12</div>	<p>Cancel the Protection Mode for SIP Multiline Terminal.</p> <p>NOTE: <i>When entering “CCC”, regardless of the result, “OK” is displayed immediately.</i></p>	<ul style="list-style-type: none"> • Y=93 (1) X-XXXXXXXX: SIP Multiline Terminal Station No. (2) CCC: To cancel (forced)
<div style="border: 1px solid black; padding: 2px; width: 40px; margin: 0 auto;">END</div>		

IP STATION SETUP

This section explains the setup procedure for IP Multiline Terminal and SIP Multiline Terminal.

IP Multiline Terminal Setup

Data setting on the IP Multiline Terminal is required in addition to the system data programming when you start-up an IP Multiline Terminal first. Do the following setup after accommodation of IP Multiline Terminal to the LAN and the system data programming.

When the data server (such as System-based DRS, Network-based DRS on the LAN, DHCP Server, FTP/TFTP Server, etc.) is used, the IP Multiline Terminal must be connected to the LAN that accommodates the servers before you follow the procedure below.

WARNING

Do not allow regular (non-NEC trained/authorized) users to set “User Menu” items and “Administrator Menu” items.

IP Multiline Terminal may not work if information on these menus has been changed without network/administrator knowledge.

NOTE 1: *When using Preset Dialing, do the following setup after invalidating the HotDialPAD function once or pulling out the LAN cable from the IP Multiline Terminal.*

NOTE 2: *When you change only the setting on “User Menu” items after the IP Multiline Terminal setup has been completed, do the following STEP 2 through STEP 7, then press **Save** key (soft key). When you change only the setting on “Administrator Menu” items after the IP Multiline Terminal setup has been completed, do the following STEP 2, STEP 8 through STEP 11.*

STEP1: Connect the AC adapter or inline power patch panel to the IP Multiline Terminal.
– You must wait until either “Parameter Missing” or “DRS Connect Time Out” is indicated on the LCD.

STEP2: Press **Hold, Transfer, *, #** keys in that order.
– The “User Menu” appears on the LCD.
At this time, you can use Up and Down soft keys to scroll the menu indication.

STEP3: Press **Hold, #, 0** keys in that order.
– The “Administrator Menu” appears on the LCD.

STEP4: Press **7** key.
– The message of “Factory Value Set?” appears on the LCD.

STEP5: Press **OK** key (soft key).
– The “Administrator Menu” appears on the LCD.

STEP6: Press **Exit** key (soft key).
– The “User Menu” appears on the LCD.

STEP7: Select the setting item by pressing digit keys, and set the required data. Then press **Set** key (soft key). When you press the **Set** key, the LCD returns to the Menu indication. Repeat settings for the required items. The following table shows the setting items on the “User Menu”.

User Menu Items

MENU No.	INDICATION	SETTING DATA	DESCRIPTION
1	DHCP Mode	1: DHCP Disable 2: DHCP Enable	Set when the DHCP is not used. Set when the DHCP is used. Default: 1 (DHCP Disable)
2	DRS Address Primary	XXX.XXX.XXX.XXX	Enter the IP Address of System-based DRS. NOTE 1
3	DRS Address Secondary	XXX.XXX.XXX.XXX	Enter the IP Address of System-based DRS. When no secondary DRS is provided, this setting is not required.
4	IP Address	XXX.XXX.XXX.XXX	Enter the IP Address of the IP Multiline Terminal. When DHCP server is provided for the IP Multiline Terminal, this setting is not required.
5	Default Gateway	XXX.XXX.XXX.XXX	Enter the Default Gateway Address. When the DHCP server gives the address, or when no Gateway (no router) is provided, this setting is not required.
6	Subnet Mask	XXX.XXX.XXX.XXX	Enter the Subnet Mask. When the DHCP server gives the Subnet Mask, or when no Subnet Mask is required, this setting is not required.
7	DNS	1. DNS Address	XXX.XXX.XXX.XXX Enter the IP Address of DNS server when the DNS server is used. NOTE 2
		2. DNS Domain Name	DNS Domain Name Enter the Domain Name of the DNS server when the DNS server is used.
		3. DRS Name	DRS Name Enter the Domain Name of the System-based DRS.

Continued on next page

User Menu Items

MENU No.	INDICATION		SETTING DATA	DESCRIPTION
8	VLAN	1. VLAN Mode	1: Disable 2: Enable	Set when the VLAN is not used. Set when the VLAN is used. NOTE 3
		2. VLAN ID	ID 2-4094 NOTE 4	Enter the VLAN ID. Default: 7
		3. VLAN Priority	Priority 0-7	Enter the Priority of the VLAN. When the HUB has no function to give the priority to the packet, no setting is required. Default: 5
9	System Information		–	Select when displaying the list of current settings.

NOTE 1: In the Remote UNIT over IP system, when an IP Multiline Terminal is accommodated to a Remote Unit, input the IP address of the Remote Unit.

NOTE 2: For the IP Address of the DNS server, ask the network administrator.

NOTE 3: Only Tag VLAN is available.

NOTE 4: Do not set the VLAN ID 0 and 1.

STEP8: After you finish setting “User Menu” items, you can start setting “Administrator Menu” items. To display “Administrator Menu”, stay in the “User Menu” and press **Hold, #, 0** keys in that order.

– The “Administrator Menu” appears on the LCD.

At this time, you can use Up and Down soft keys to scroll the menu indication.

STEP9: Select the setting item by pressing digit keys, and set the required data. Then press **Set** key. When you press the **Set** key, the LCD returns to the Menu indication. Repeat settings for the required items. The following table shows the setting items on the “Administrator Menu”.

Administrator Menu Items

MENU No.	INDICATION	SETTING DATA	DESCRIPTION
1	IP Multiline Terminal	1: Normal 2: Remote	Set when the IP Multiline Terminal is connected to the HUB/Router on the LAN. Set when the IP Multiline Terminal is connected to the HUB/Router via Internet/Intranet. Default: 1 (Normal)
2	Download Address	XXX.XXX.XXX.XXX	Enter the TFTP/FTP Server Address when the server is provided on the LAN.
3	Area ID	0 : Automatic 1 : Japan 2 : America 3 : Australia 4 : Others 5 : Hong Kong 6 : Malaysia 7 : Singapore 8 : England 9 : Mexico 10: Taiwan 11: New Zealand 12: Korea 13: Brazil 14: China 15: Thailand 16: Thailand (EGAT) 17: Srilanka	Enter your country/area ID. Default: 0 (Automatic)
4	Port	1. DRS Mate Port	1-65535 Enter the DRS Mate port number for System-based DRS. Default: 3456 NOTE 1, NOTE 5
		2. DRS Self Port	1024-65535 Enter the DRS Self port number. Default: 3455 NOTE 1, NOTE 3
		3. PROTIMS Self Port	1024-65534 Enter the PROTIMS Self port number. Default: 3458 NOTE 1, NOTE 3
		4. RTP Self Port	1024-65472 Enter the RTP (Real-time Transfer Protocol) Self port number. Default: 3462 NOTE 1, NOTE 2, NOTE 3
		5. Voice Ctrl Self Port	1024-65535 Enter the Voice Control Self port number. Default: 4000 NOTE 1, NOTE 3
		6. H.245 Self Port	0, 1024-65504 Enter the H.245 Self port number. Default: 0 NOTE 1, NOTE 4

Continued on next page

Administrator Menu Items

MENU No.	INDICATION		SETTING DATA	DESCRIPTION
5	Down load	1. Program	File: ramhPtoP. hex (Fixed)	Select TFTP or FTP by soft key, for downloading the IP Multiline Terminal program.
		2. Config	File: config. ini (Fixed)	Select TFTP or FTP by soft key, for downloading the IP Multiline Terminal Configuration file.
		3. InputFile Name	File: XXXXXXXXX	Enter the file name of TFTP/FTP for downloading, and press its soft key.
6	Soft Reset		—	Select for resetting the IP Multiline Terminal software.
7	Factory Value		—	No setting is required.
8	Type of Service		—	No setting is required.
9	Language	NOTE 6	0. English/Japanese 1. Portuguese 2. Spanish 3. French 4. German 5. Italian 6. Dutch 7. Norwegian 8. Danish 9. Swedish	Set the language of the screen. Default: (Automatic)

NOTE 1: Well-Known port (0-1023) cannot be assigned except for the DRS Mate Port.

NOTE 2: Odd port number cannot be assigned for the RTP Self Port.

NOTE 3: Do not assign the same port number for the DRS Self Port, PROTIMS Self Port, RTP Self Port and the Voice Ctrl Port. Also IP Multiline Terminal uses 64 ports from the port that is assigned for the RTP Self Port. For example, when the port number 3462 was assigned for the RTP Self Port, 64 ports (3462-3525) will be used. Do not assign the ports between 3462-3525 for DRS Self Port, PROTIMS Self Port and the Voice Ctrl Port. If you assign the wrong port number, the error message “Port Number Duplicate” will be displayed after the configuration.

NOTE 4: IP Multiline Terminal uses 32 ports from the port that is assigned for the H.245 Self Port.

NOTE 5: The DRS Mate port number for System-based DRS is set by CM0B Y=1XX>31.

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NOTE 6: $D^{term}75$ (Series E) provides the language of 0-3 when used as the IP Multiline Terminal. $D^{term}85$ (Series i) provides the language of 0-9 when used as the IP Multiline Terminal.

STEP10: After setting on the “Administrator Menu”, with displaying that menu, press **Exit** key (soft key).
– The “User Menu” appears on the LCD.

STEP11: Press **Save** key (soft key).
– The data is saved and IP Multiline Terminal is reset.
The LCD returns to normal condition.

End of setup

SIP Multiline Terminal Setup

Data setting on the SIP Multiline Terminal (DT700 Series) is required in addition to the system data programming when you start-up a SIP Multiline Terminal first. Do the following setup after accommodation of SIP Multiline Terminal to the LAN and the system data programming.

STEP1: Connect the AC adapter or inline power patch panel to the SIP Multiline Terminal.

STEP2: Press **Menu** keys in that order.

STEP3: Select “0.Configuration” in Maintenance Mode state.
– The “Login” screen appears on the LCD.

STEP4: Enter the Login name and the Password.
– The “Config” screen appears on the LCD.

STEP5: Set the required data referring to the “Config Items”.
Set the required data on each menu. Then press **Set** key (soft key). When you press the **Set** key, the LCD returns to the Menu indication. Repeat settings for the required items. To change the data, press the **Set** key after \times key. Then enter the data again. The following table shows the setting items on the “Config” screen.

NOTE: *Login the following step when changing/confirming the configuration setting of SIP Multiline Terminal (DT700 Series) while the system is operating.*
Menu key → 0 → Set key (soft key) → Password → OK key (soft key)

Config Items

MENU No.	INDICATION	SETTING DATA	DESCRIPTION
1	Network- ing Setting	1. DHCP Mode	1. Disable 2. Enable Set when the DHCP is not used. Set when the DHCP is used. Set this data according to your network condition.
		2. IP Address	XXX.XXX.XXX.XXX Enter the IP Address of DT700 Series.
		3. Default Gateway	XXX.XXX.XXX.XXX Enter the Default Gateway Address. When the DHCP server gives the address, or when no Gateway (no router) is provided, this setting is not required.
		4. Subnet Mask	XXX.XXX.XXX.XXX Enter the Subnet Mask. When the DHCP server gives the Subnet Mask, or when no Subnet Mask is required, this setting is not required.
2	SIP Setting	1. SIP User	1. User ID 2. Password 3. Incoming Number Do not enter any data here.
		2. Server Address & URI	1st Server Address Enter the IP address of VOIP port of the system.
		SIP Server Port	1st Server Port Enter the UDP port number for DT700 Series. 5080 or 1024-65534 can be set by CM0B Y=1XX>32

NOTE: Do not set any data except for the data mentioned above.

STEP6: Press **Save** key (soft key) on “Config” screen.
– The data is saved and SIP Multiline Terminal is reset.

End of setup

STEP3: Enter the password for reset setup to the second row behind “Passwd :”. **NOTE 4**

NOTE 4: *If no password is set by CM2B Y=10, skip this step.*

STEP4: Press **OK** key (soft key).
– Time and date appears on the LCD.

STEP5: Repeat the above steps on all IP Stations of Automatic Login Mode.

STEP6: Execute the system data backup by CMEC Y=6>0: 0.
– After the first registration, Login operation is not required.

NOTE 5: *If you enter a wrong station number, log out the IP Station using the IP Station Logout key assigned by CM90. After the Login display appears on the LCD, enter the correct station number.*

NOTE 6: *When plural DT700 Series (DESI-Less) log in simultaneously, it takes about 30 sec. to 15 minutes until the Line Key is displayed on the LCD (depends on the number of terminals).*

(2) Protected Login Mode/Fixed Connection Mode
When you start up the IP Station, the following appears on the LCD.

IP Station Display (ID Registration with Password)

L	O	G	I	N	:															
P	a	s	s	w	d	:														
C	a	n	c	e	l		B	K		S	e	t					O	K		

STEP1: Enter the station number of the IP Station to the first row behind “Login :”.

STEP2: Press **Set** key (soft key).

STEP3: Enter the password set by CM2B Y=00 for each IP Station to the second row behind “Passwd :”.

STEP4: Press **OK** key (soft key).
– Time and date appears on the LCD.

IP Station Logout

STEP1: Go off-hook or press Speaker key.

STEP2: Operate either of the following for logout.

- Enter the access code assigned by CM20
- Press the logout key assigned by CM90
- Press the soft key assigned by CM9A

NOTE: *Do not execute the logout operation from the IP Station in Automatic Login mode for normal operation, except when replacing the IP Station or changing the way of ID registration of the IP Station.*

IP-PAD DATA ASSIGNMENT

In addition to the system constitution data for VoIPDB, do the following programming.

The VoIPDB is required for the following connections.

- IP Station-to-Legacy terminal connection
- IP Station-to-Public Network/Tie Line Network connection
- External hold tone connection
- Conference Trunk (CFT) connection
- Voice Response System (VRS) connection

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM0B</div>	Assign the IP address for the VoIPDB. <div style="text-align: right; border: 1px solid black; border-radius: 10px; padding: 2px; display: inline-block;">RESET</div> <p>NOTE 1: <i>This command cannot be assigned by CAT.</i></p> <p>NOTE 2: <i>Be sure to enter the periods (.) included in the IP address.</i></p>	<ul style="list-style-type: none"> • Y=1XX (VOIP Port [1] + Unit No. [01-50]) (1) 00: IP Address (2) XXX.XXX.XXX.XXX: 0.0.0.1-255.255.255.254: IP Address (Maximum 15 digits) NONE◀: No data
	Assign the Subnet Mask for the VoIPDB. <div style="text-align: right; border: 1px solid black; border-radius: 10px; padding: 2px; display: inline-block;">RESET</div> <p>NOTE 1: <i>This command cannot be assigned by CAT.</i></p> <p>NOTE 2: <i>Be sure to enter the periods (.) included in the IP address.</i></p>	<ul style="list-style-type: none"> • Y=1XX (VOIP Port [1] + Unit No. [01-50]) (1) 01 (2) XXX.XXX.XXX.XXX: 0.0.0.255-255.255.255.252: Subnet Mask (Maximum 15 digits) NONE◀: No data
	Assign the Default Gateway Address for the VoIPDB. <div style="text-align: right; border: 1px solid black; border-radius: 10px; padding: 2px; display: inline-block;">RESET</div> <p>NOTE 1: <i>This command cannot be assigned by CAT.</i></p> <p>NOTE 2: <i>Be sure to enter the periods (.) included in the IP address.</i></p>	<ul style="list-style-type: none"> • Y=1XX (VOIP Port [1] + Unit No. [01-50]) (1) 02 (2) XXX.XXX.XXX.XXX: 0.0.0.1-255.255.255.254: Default Gateway Address (Maximum 15 digits) NONE◀: No data
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">A</div>		

A	DESCRIPTION	DATA
CM0B	Assign the IP address (RTP) for the VoIPDB.	<ul style="list-style-type: none"> Y=2XX (VOIP port [2] + Unit No. [01-50])
	RESET	<ul style="list-style-type: none"> (1) 00: IP Address 1 20: IP Address 2 21: IP Address 3 22: IP Address 4 23: IP Address 5 24: IP Address 6 25: IP Address 7 26: IP Address 8 (2) XXX.XXX.XXX.XXX: 0.0.0.1-255.255.255.254: IP Address (Maximum 15 digits) NONE◀: No data
	NOTE 1: <i>This command cannot be assigned by CAT.</i>	
	NOTE 2: <i>Be sure to enter the periods (.) included in the IP address.</i>	
	NOTE 3: <i>Maximum of 8 IP addresses can be set as IP address (RTP).</i>	
	NOTE 4: <i>Set an IP address (RTP) every 16 voice channels to be used.</i>	
	Assign the number of voice channels (RTP) used for the VoIPDB.	<ul style="list-style-type: none"> Y=2XX (VOIP port [2] + Unit No. [01-50])
	RESET	<ul style="list-style-type: none"> (1) 10 (2) 16, 32, 48, 64, 80, 96, 112, 128 (Number of voice channels used) NONE◀: Use all channels of the VoIPDB
	NOTE: <i>Licenses for the number of channels set by this command are used (depends on the blade if no data is set).</i>	NOTE
B		

B	DESCRIPTION	DATA										
CM0B	Assign the RTP port number for the VoIPDB. <div style="text-align: right; border: 1px solid black; border-radius: 10px; padding: 2px 10px;">RESET</div>	<ul style="list-style-type: none"> • Y=2XX (VOIP port [2] + Unit No. [01-50]) (1) 40: RTP Base Port for Voice Packet transmitting/receiving (2) 01024-65534: RTP Base Port No. NONE◀ : 10000 [10000-10254 (128 ports are used)] <p style="text-align: right; color: red; margin-top: 10px;">NOTE 1, NOTE 2, NOTE 3, NOTE 4</p> <p>NOTE 1: Follow the typical default setting.</p> <p>NOTE 2: Set this data when the router or firewall provides the restriction by TCP port.</p> <p>NOTE 3: The port number to be used for transmitting/receiving the RTP packets is used at 2-port intervals from the Base port set by this command for each channel. For the default settings, the following port number is used.</p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center; border-bottom: 1px solid black;">CHANNEL No.</th> <th style="text-align: center; border-bottom: 1px solid black;">RTP PORT No.</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">10000</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">10002</td> </tr> <tr> <td style="text-align: center;">⋮</td> <td style="text-align: center;">⋮</td> </tr> <tr> <td style="text-align: center;">128</td> <td style="text-align: center;">10254</td> </tr> </tbody> </table> <p>NOTE 4: Be sure that the use range of each port assigned by CM0B Y=1XX>36, 37, 38, 39 does not overlap the setting of the RTP Base port for voice packet transmitting/receiving.</p>	CHANNEL No.	RTP PORT No.	1	10000	2	10002	⋮	⋮	128	10254
CHANNEL No.	RTP PORT No.											
1	10000											
2	10002											
⋮	⋮											
128	10254											
C												

C	DESCRIPTION	DATA
CM0B	Assign the UDP port number for the VoIPDB. <div style="text-align: right;">(RESET)</div>	<ul style="list-style-type: none"> • Y=1XX (VOIP port [1] + Unit No. [01-50]) (1) 39: UDP Port for voice control (2) 01024-65534: UDP Port No. NONE◀ : 56000 [56000 (1port is used)] <p style="text-align: right;">NOTE 1, NOTE 2, NOTE 3</p>
	<p>NOTE 1: Follow the typical default setting.</p> <p>NOTE 2: Set this data when the router or fire-wall provides the restriction by TCP port.</p> <p>NOTE 3: Be sure that the use range of each port assigned by CM0B Y=2XX>40, Y=1XX>36, 37, 38 does not overlap the setting of the UDP port for voice control.</p>	
	Assign the TCP port number for the Server of the VoIPDB. <div style="text-align: right;">(RESET)</div>	<ul style="list-style-type: none"> • Y=1XX (VOIP port [1] + Unit No. [01-50]) (1) 37: TCP Port for P2P voice control (for Server) (2) 01024-65534: TCP Base Port No. NONE◀ : 6100 [6100 (1 port is used)] <p style="text-align: right;">NOTE 1, NOTE 2, NOTE 3</p>
	<p>NOTE 1: Follow the typical default setting.</p> <p>NOTE 2: Set this data when the router or fire-wall provides the restriction by TCP port.</p> <p>NOTE 3: Be sure that the use range of each port assigned by CM0B Y=2XX>40, Y=1XX>36, 38, 39 does not overlap the setting of the TCP port for P2P voice control (for Server).</p>	
D		

D	DESCRIPTION	DATA
CM0B	Assign the TCP port number for the Client of the VoIPDB.	<ul style="list-style-type: none"> • Y=1XX (VOIP Port [1] + Unit No. [01-50]) (1) 38: TCP Port for P2P voice control (for Client) (2) 01024-65534: TCP Base Port No. NONE◀ : 6200 [6200-6328 (129 ports are used)]
	RESET	
	NOTE 1: Follow the typical default setting.	
	NOTE 2: Set this data when the router or fire-wall provides the restriction by TCP port.	NOTE 1, NOTE 2, NOTE 3, NOTE 4
	NOTE 3: 129 ports from the Base port are used for P2P voice control. All ports are not used simultaneously. Ports which are not used in the system, are periodically used in the following cases per calls (establish of TCP groups). <ul style="list-style-type: none"> • Starting Peer-to-Peer connection • DTMF signals 	
	NOTE 4: Be sure that the use range of each port assigned by CM0B Y=2XX>40, Y=1XX>36, 37, 39 does not overlap the setting of the TCP port for P2P voice control (for Client).	
	Specify the DTMF sending method for the IP-PAD.	<ul style="list-style-type: none"> • Y=2XX (VOIP Port [2] + Unit No. [01-50]) (1) 121 (2) 0 : Inband mode 1◀: Outband mode (with H.245/RFC2833)
E		

E	DESCRIPTION	DATA
CM41	Assign the DTMF signal width on system basis for the VoIPDB.	<ul style="list-style-type: none"> • Y=0 (1) 106 (2) 04-15 : 64-240 ms. (16 ms. increments) NONE◀: No data
	Assign the DTMF Inter-digit Pause on system basis for the VoIPDB.	<ul style="list-style-type: none"> • Y=0 (1) 107 (2) 01 : 64 ms. 02 : 80 ms. 03 : 96 ms. 04 : 128 ms. 05 : 160 ms. 06 : 192 ms. 07 : 240 ms. NONE◀: No data
<u>END</u>		

Assign the required data to accommodate Legacy Line/Trunk by CM10 Y=00.

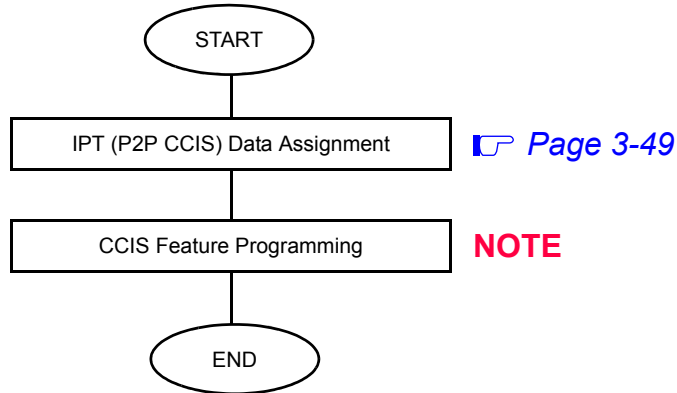
NOTE: *When using the 2-line analog trunk (COT/LDT/ODT) to connect to the IP Station, the PAD data for 2-line analog trunk must be set as follows.
If the following data is not set, the IP Station will receive a big echo during the communication.
CM35 Y=289/290, CM36 Y=1, CM42>190
2nd Data: 19 (3 dB)*

IPT (P2P CCIS) DATA ASSIGNMENT

Programming Procedure for IPT (P2P CCIS)

Program the system data according to the following procedure.

Programming Procedure for IPT (P2P CCIS)



NOTE: *Refer to the Programming Manual.*

IPT (P2P CCIS) Data Assignment

In addition to the system constitution data for IPT (P2P CCIS), do the following programming.

START	DESCRIPTION	DATA
<p>CM10</p>	<p>Assign the trunk number for voice channel and control channel of IPT (P2P CCIS).</p> <p style="text-align: center;">IPT (P2P CCIS) RESET</p>	<ul style="list-style-type: none"> • Y=02 (1) 000-511: Virtual Port No. (2) D000-D511: Trunk No. of IPT (P2P CCIS)
	<p>NOTE: Set the trunk number for control channel of IPT (P2P CCIS) to one of the trunk number of IPT (P2P CCIS) (D000-D511).</p>	<p>NOTE</p>
<p>CM08</p>	<p>Allow C.O. to C.O. transfer by station or attendant.</p>	<p>(1) 028 (2) 0: To allow</p>
	<p>Specify that Ring Transfer for Call Transfer-All Calls to a IPT (P2P CCIS) is available when a station holds another station.</p>	<p>(1) 253 (2) 0: Available</p>
	<p>Send information about Call Forwarding station through IP network.</p>	<p>(1) 373 (2) 0: To send</p>
	<p>Specify the maximum number of dialed digits sent to IP network.</p>	<p>(1) 379 (2) 0 : 24 digits 1◀: 15 digits</p>
<p>CM0B</p>	<p>Assign the IP address for the VoIPDB.</p> <p style="text-align: center;">RESET</p>	<ul style="list-style-type: none"> • Y=1XX (VOIP Port [1] + Unit No. [01-50]) (1) 00 (2) XXX.XXX.XXX.XXX: 0.0.0.1-255.255.255.254: IP Address (Maximum 15 digits) NONE◀: No data
	<p>NOTE 1: This command cannot be assigned by CAT.</p>	
	<p>NOTE 2: Be sure to enter the periods (.) included in the IP address.</p>	
<p>A</p>		

A	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">CM0B</div>	Assign the Subnet Mask for the VoIPDB. <div style="text-align: right; border: 1px solid black; border-radius: 15px; padding: 2px 10px;">RESET</div>	<ul style="list-style-type: none"> • Y=1XX (VOIP Port [1] + Unit No. [01-50]) (1) 01 (2) XXX.XXX.XXX.XXX: 0.0.0.255-255.255.255.252: Subnet Mask (Maximum 15 digits) NONE◀: No data
	<p>NOTE 1: <i>This command cannot be assigned by CAT.</i></p> <p>NOTE 2: <i>Be sure to enter the periods (.) included in the IP address.</i></p>	
	Assign the Default Gateway Address for the VoIPDB. <div style="text-align: right; border: 1px solid black; border-radius: 15px; padding: 2px 10px;">RESET</div>	<ul style="list-style-type: none"> • Y=1XX (VOIP Port [1] + Unit No. [01-50]) (1) 02 (2) XXX.XXX.XXX.XXX: 0.0.0.1-255.255.255.254: Default Gateway Address (Maximum 15 digits) NONE◀: No data
	<p>NOTE 1: <i>This command cannot be assigned by CAT.</i></p> <p>NOTE 2: <i>Be sure to enter the periods (.) included in the IP address.</i></p>	
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">B</div>	Assign the IP address (RTP) for the VoIPDB. <div style="text-align: right; border: 1px solid black; border-radius: 15px; padding: 2px 10px;">RESET</div>	<ul style="list-style-type: none"> • Y=2XX (VOIP port [2] + Unit No. [01-50]) (1) 00: IP Address 1 20: IP Address 2 21: IP Address 3 22: IP Address 4 23: IP Address 5 24: IP Address 6 25: IP Address 7 26: IP Address 8 (2) XXX.XXX.XXX.XXX: 0.0.0.1-255.255.255.254: IP Address (Maximum 15 digits) NONE◀: No data
	<p>NOTE 1: <i>This command cannot be assigned by CAT.</i></p> <p>NOTE 2: <i>Be sure to enter the periods (.) included in the IP address.</i></p> <p>NOTE 3: <i>Maximum of 8 IP addresses can be set as IP address (RTP).</i></p> <p>NOTE 4: <i>Set an IP address (RTP) every 16 voice channels to be used.</i></p>	
	Assign the number of voice channels (RTP) used for the VoIPDB. <div style="text-align: right; border: 1px solid black; border-radius: 15px; padding: 2px 10px;">RESET</div>	<ul style="list-style-type: none"> • Y=2XX (VOIP port [2] + Unit No. [01-50]) (1) 10 (2) 16, 32, 48, 64, 80, 96, 112, 128 (Number of voice channels used) NONE◀: Use all channels of the VoIPDB
		NOTE

B	DESCRIPTION	DATA
CM30	Assign a trunk route number to each trunk number for voice channel of IPT (P2P CCIS). IPT (P2P CCIS) RESET	<ul style="list-style-type: none"> • Y=00 (1) 000-511: Trunk No. assigned by CM10 Y=02 (2) 00-63: Trunk Route No.
	<p>NOTE: <i>Trunk number for control channel of IPT (P2P CCIS) assigned by CM10 Y=02 is not required to set the trunk route number.</i></p>	
	Assign a tenant number to each trunk number. <p>NOTE: <i>When the opposite PBX is the 2400 IPX, assign 01 or more for tenant number.</i></p>	<ul style="list-style-type: none"> • Y=01 (1) 000-511: Trunk No. assigned by CM10 Y=02 (2) 00, 01◀-63: Tenant No.
CM35	Assign the trunk route data for IPT (P2P CCIS) route.	<ul style="list-style-type: none"> • Y=000 (1) 00-63: Trunk Route No. IPT (P2P CCIS) RESET (2) 04: Tie Line
	Specify the incoming connection signal as “Wink Start/CCIS”. IPT (P2P CCIS) RESET	<ul style="list-style-type: none"> • Y=004 (1) 00-63: Trunk Route No. (2) 2: Answer signal arrives
	Specify the outgoing start condition as “Wink Start/CCIS”. IPT (P2P CCIS) RESET	<ul style="list-style-type: none"> • Y=005 (1) 00-63: Trunk Route No. (2) 1◀: Release signal arrives
	Provide the IPT (P2P CCIS) route with No. 7 CCIS facilities. IPT (P2P CCIS) RESET	<ul style="list-style-type: none"> • Y=009 (1) 00-63: Trunk Route No. (2) 03: Wink Start/CCIS
	Provide the IPT (P2P CCIS) route with No. 7 CCIS facilities. IPT (P2P CCIS) RESET	<ul style="list-style-type: none"> • Y=020 (1) 00-63: Trunk Route No. (2) 00: Wink Start/CCIS
	Provide the IPT (P2P CCIS) route with No. 7 CCIS facilities. IPT (P2P CCIS) RESET	<ul style="list-style-type: none"> • Y=090 (1) 00-63: Trunk Route No. (2) 0: No. 7 CCIS
C		

C	DESCRIPTION	DATA
CM35	Assign the IPT number to each IPT (P2P CCIS) route. NOTE: <i>IPT (P2P CCIS) must be on IPT/CCH00.</i>	<ul style="list-style-type: none"> • Y=091 (1) 00-63: Trunk Route No. (2) 00: IPT No.
CM08	Specify the trunk seizure sequence for IPT (P2P CCIS) route.	<ul style="list-style-type: none"> • Y=083 (1) 00-63: Trunk Route No. (2) 0 : As per CM08>078 1◀: By allotter
CM36	Specify the trunk seizure sequence when CM35 Y=083 2nd data is set to 0. Allow Trunk-to-Trunk Connection with IPT (P2P CCIS) route.	<ul style="list-style-type: none"> (1) 078 (2) 0 : Highest available trunk 1◀: Lowest available trunk
CMA7	Allow Trunk-to-Trunk Connection with IPT (P2P CCIS) route. Assign a trunk number of IPT (P2P CCIS) used as control channel to the IPT number.	<ul style="list-style-type: none"> • Y=0 (1) XX ZZ XX: 00-63: Incoming trunk route ZZ : 00-63: Outgoing trunk route (2) 0: Allow <ul style="list-style-type: none"> • Y=00 (1) 00: IPT No. (2) 000-511: Trunk No. for control channel of IPT (P2P CCIS) assigned by CM10 Y=02
D		

D

CMA7

DESCRIPTION

DATA

Assign an Original Point Code (OPC) to IPT number.

RESET

- Y=01
- (1) 00: IPT No.
- (2) 00001-16367: Original Point Code

NOTE 1: *The Originating Point Code is used to designate an originating office in the No. 7 CCIS network. A single OPC should be assigned to IPT No. 0 and all other Virtual IPTs provided in the same office.*

NOTE 2: *Do not change this data while the system is operating. If you do that, the operation of IP Stations will be unstable.*

NOTE 3: *If the own SV8300 connects the opposite 2400 IPX IPT (P2P CCIS) via CCIS when the own SV8300 is Remote UNIT over IP system, assign the Point Code of the own SV8300 larger than the point code of the opposite 2400 IPX. This restriction is not performed when the system is not in Remote UNIT over IP or the network is configured by only SV8300s.*

Example of Point Code assignment

NETWORK CONFIGURATION	POINT CODE	REMARKS
Office A (SV8300)	00100	Remote UNIT over IP
Office B (SV8300)	00110	Remote UNIT over IP
Office C (SV8300)	00120	Remote UNIT over IP
Office D (2400 IPX)	00010	IPT (P2P CCIS) connection via CCIS
Office E (2400 IPX)	00020	IPT (P2P CCIS) connection via CCIS

Assign an originating office number to each IPT number.

- Y=06
- (1) 00: IPT No.
- (2) 0-9999: Originating Office No.

NOTE: *This data must be assigned only when open numbering plan is adopted.*

E

E	DESCRIPTION	DATA
CMA7	<p>Specify the Type of Service (TOS) field precedence for opposite IPT (P2P CCIS) control packets.</p>	<ul style="list-style-type: none"> • Y=44 (1) 00: IPT No. (2) 0-7 : PRECEDENCE 0-7 15◀: PRECEDENCE 0
	<p style="border: 1px solid black; border-radius: 15px; padding: 2px 10px;">IPT (P2P CCIS) RESET</p>	
	<p>NOTE 1: <i>The priority of PRECEDENCE 0-7 is as follows.</i> <i>PRECEDENCE 0: Lowest priority</i> <i>PRECEDENCE 7: Highest priority</i> <i>PRECEDENCE 6 is recommended.</i></p>	
	<p>NOTE 2: <i>By this data setting, the router recognizes the precedence of control packets and controls Weighted Fair Queuing (WFQ).</i></p>	
	<p>NOTE 3: <i>When the router provides DiffServ QoS for the control packet, assign CMA7 Y=50.</i> Page 3-55</p>	
CMA8	<p>Assign the IPT number to the Destination Point Code (DPC).</p>	<ul style="list-style-type: none"> • Y=0 (1) 00001-16367: Destination Point Code (2) 00: IPT No.
	<p>NOTE 1: <i>The Destination Point Code is used to designate a terminating office in the No. 7 CCIS network.</i></p>	
	<p>NOTE 2: <i>Assign the DPC by CM8A Y=5000-5255>168.</i> Page 3-57</p>	
	<p>NOTE 3: <i>IPT (P2P CCIS) must be on IPT/CCH00.</i></p>	
	<p>Assign the IP address of VOIP port to the Destination Point Code (DPC).</p>	<ul style="list-style-type: none"> • Y=1 (1) 00001-16367: Destination Point Code (2) XXXXXXXXXXXXX: 000000000001-255255255254: IP Address (Maximum 12 digits) NONE◀: No data
	<p>NOTE 2: <i>Assign the DPC by CM8A Y=5000-5255>168.</i> Page 3-57</p>	
F		

F	DESCRIPTION	DATA
CMA7	<p>Specify the connection type for IPT (P2P CCIS) in Point-to-Multipoint connection.</p> <p style="text-align: center;">IPT (P2P CCIS) RESET</p>	<ul style="list-style-type: none"> • Y=46 (1) 00: IPT No. (2) 0: Point-to-Multipoint
	<p>Specify the release timer for IPT (P2P CCIS) in Point-to-Multipoint connection.</p>	<ul style="list-style-type: none"> • Y=45 (1) 00: IPT No. (2) 000 : 30 seconds 001-127 : 1-127 minutes (1 minute increment) NONE ◀: Not released
	<p>When the router provides DiffServ QoS, specify the DiffServ code for control packet.</p> <p style="text-align: center;">IPT (P2P CCIS) RESET</p>	<ul style="list-style-type: none"> • Y=50 (1) 00: IPT No. (2) 00-3F: DiffServ code
	<p>NOTE: <i>When this data is set, the TOS field precedence set by CMA7 Y=44 is ineffective.</i> <i>If you want to validate the precedence set by CMA7 Y=44, set "CCC" (data clear) for CMA7 Y=50.</i></p>	
CM20	<p>Assign the first digit of remote office station number to LCR Group 3.</p>	<ul style="list-style-type: none"> • Y=0-3 Numbering Plan Group 0-3 (1) X: 1st digit of remote office station No. (2) A129: LCR Group 3
CM8A	<p>Assign an Area Code Development Pattern number to LCR Group 3.</p>	<ul style="list-style-type: none"> • Y=A000 (1) 3: LCR Group 3 (2) 4000-4007: Area Code Development Pattern No. 0-7
	<p>Assign a Route Pattern number to the first digit of remote office station number for the Area Code Development Pattern number assigned by CM8A Y=A000.</p>	<ul style="list-style-type: none"> • Y=4000-4007 Area Code Development Pattern No. 0-7 (1) X: 1st digit of remote office station No. (2) 0000-0255: Route Pattern No. 000-255
G		

G

CM8A

DESCRIPTION

DATA

Assign the next Route Pattern number to the Route Pattern number assigned by CM8A Y=4000-4007.

NOTE: *This data is required to expand the order of LCR selection that is assigned by CM8A Y=0000-0255. The order of LCR selection can be expand to the maximum seventh.*

Specify the order of LCR selection for the Route Pattern number assigned by CM8A Y=4000-4007.

- Y=0000-0255 Route Pattern No. 000-255
- (1) 0: Designation of next table
- (2) 0000-0255: Next Route Pattern No.000-255

- Y=0000-0255 Route Pattern No. 000-255
- (1) 1-4: Order of LCR selection
 - 1: 1st
 - 2: 2nd
 - 3: 3rd
 - 4: 4th
- (2) XXX ZZ
 - XXX: 000-255: LCR Pattern No. 000-255
 - ZZ : 00-63: Trunk Route No. assigned by CM30 Y=00.

NOTE: *You cannot assign CM8A Y=0000-0255 1st data 0 (Destination of next table) and 1st data 4 (4th LCR selection) simultaneously. The latest data assignment including system data memory clear is effective. The other assigned data is set as NONE.*

Example:

Y	1ST DATA		2ND DATA	ORDER OF LCR SELECTION
0000	0	Destination of next table	0001	
	1	1st LCR selection	00000	1st LCR selection
	2	2nd LCR selection	00101	2nd LCR selection
	3	3rd LCR selection	00202	3rd LCR selection
	4	4th LCR selection	NONE (Unavailable)	
0001	0	Destination of next table	NONE	
	1	1st LCR selection	00303	4th LCR selection
	2	2nd LCR selection	00404	5th LCR selection
	3	3rd LCR selection	00505	6th LCR selection
	4	4th LCR selection	00606	7th LCR selection

H

H	DESCRIPTION	DATA
CM8A	<p>Assign the Destination IP Address Pattern number to the LCR Pattern number.</p> <p>Assign the Destination Point Code (DPC) for IPT (P2P CCIS).</p> <p>NOTE: <i>Do not assign the same DPC to the plural LCR pattern numbers. If the same DPC is assigned to the plural LCR pattern numbers, the CCIS feature such as Outgoing Trunk Queuing-CCIS cannot be used.</i></p> <p>Specify the release timer for each opposite office respectively.</p> <p>NOTE: <i>When setting the release timer to each trunk route, set the second data to "NONE".</i></p>	<ul style="list-style-type: none"> • Y=5000-5255 LCR Pattern No. 000-255 <ol style="list-style-type: none"> (1) 167: Destination IP Address Pattern (2) 000-255: IP Address Pattern No. • Y=5000-5255 LCR Pattern No. 000-255 <ol style="list-style-type: none"> (1) 168: Destination Point Code for IPT (P2P CCIS) (2) 00001-16367: Destination Point Code • Y=5000-5255 LCR Pattern No. 000-255 <ol style="list-style-type: none"> (1) 171: Release Timer for IPT (P2P CCIS) (2) 000 : 30 seconds 001-127 : 1-127 minutes 999 : Not released NONE◀: As per CMA7 Y=45
I		

I

CM5B

DESCRIPTION

DATA

Assign the Destination IP Address.

- Y=01 Destination IP Address for IPT (P2P CCIS)
 - (1) XXX ZZ
 XXX: 000-255: IP Address Pattern No. assigned by CM8A
 Y=5000-5255
 ZZ : 00-07: IP Address No. 0-7 **NOTE 1**
 - (2) XXXXXXXXXXXXX:
 000000000000-255255255254:
 Destination IP Address of opposite IPT (P2P CCIS) (Maximum 12 digits) **NOTE 2**

NOTE 1: IP address number (00-07) is the number for specifying the IP address of opposite office which has plural IP addresses, when the offices are connected with Point-to-Multipoint. If the opposite office has plural IP addresses, set plural IP address numbers. If the opposite office has only one IP address such as SV8300, set one IP address number.

Example: When the opposite office is 2400 IPX which has two IP addresses, set the data as shown below.

	1ST DATA	MEANING	2ND DATA	MEANING
CM5B Y=01	00000	IP Address Pattern No. assigned by CM8A + IP Address No. 00	10010015150	IP Address of opposite 2400 IPX
	00001	IP Address Pattern No. assigned by CM8A + IP Address No. 01	10010015151	IP Address of opposite 2400 IPX

NOTE 2: Destination IP Address of opposite IPT (P2P CCIS) is the IP Address of opposite SV8300 assigned by CM0B Y=0XX/1XX>00 or the IP Address of opposite 2400 IPX.

NOTE 3: This command should be assigned from the leading number of 1st data (IP Address Pattern No. + IP Address No.).

NOTE 4: When providing Alternate Routing for a fault occurrence for the IPT (P2P CCIS), the next IP address number of the last IP address number that failed in the connecting has the first priority to the next call.

J

J	DESCRIPTION	DATA
CM85	<p>Specify the maximum number of digits dialed by the calling party. The maximum number of digits (including the area codes) should be assigned to each area code.</p>	<ul style="list-style-type: none"> • Y=0-7 Area Code Development Pattern No. 0-7 assigned by CM8A Y=A000 (1) X: 1st digit of remote office station No. (2) 01-24◀: 1-24 digits 25-79 : 25-79 digits
CM0B	<p>Assign the port number of the TCP server to the system.</p> <p style="text-align: center;">IPT (P2P CCIS) RESET</p> <p>Assign the TCP Client base port number to the system.</p> <p style="text-align: center;">IPT (P2P CCIS) RESET</p> <p>NOTE: 1024 ports from the base port number you set are assigned as TCP Client port number.</p>	<ul style="list-style-type: none"> • Y=1XX (VOIP Port [1] + Unit No. [01-50]) (1) 34 (2) 01024-65534: TCP Server Port No. 1024-65534 00000-01023: 57000 NONE◀ : 57000 CCC : Clear • Y=1XX (VOIP Port [1] + Unit No. [01-50]) (1) 35 (2) 01024-64512: TCP Client Port No. 1024-64512 00000-01023: Controlled with 58000 64513-65534: Controlled with 58000 NONE◀ : 58000-59023 CCC : Clear
CM08	<p>Provide the Link Reconnect for IP network.</p> <p>Provide the Link Reconnect for IPT (P2P CCIS).</p> <p>NOTE: This command is effective when CM08>606 is set to 1.</p>	<ul style="list-style-type: none"> (1) 606 (2) 0 : Not provided 1◀: To provide (1) 628 (2) 0 : To provide 1◀: Not provided
END		

- To provide the Alternative Routing (another trunk route) for the IPT (P2P CCIS) when an outgoing call via the IPT (P2P CCIS) is not available due to the LAN cable of VoIPDB is pulled out or a fault occurrence, in addition to “IPT (P2P CCIS) Data Assignment” do the following programming.

START	DESCRIPTION	DATA
CM08	Provide the system with the check of the LAN cable of VoIPDB is pulled out.	(1) 723 (2) 0 : To provide 1◀: Not provided
CM35	Provide the voice channel route of IPT (P2P CCIS) with Alternative Routing for a fault occurrence. When the outgoing trunk of the tandem office is IPT (P2P CCIS), provide the incoming trunk route with Alternative Routing for a tandem call.	<ul style="list-style-type: none"> Y=186 (1) 00-63: Trunk Route No. (2) 0 : To provide 1◀: Not provided <ul style="list-style-type: none"> Y=192 (1) 00-63: Trunk Route No. (2) 0 : To provide 1◀: Not provided
CM08	Provide the system with Alternative Routing of CCIS outgoing call when all outgoing trunks of tandem office are busy.	(1) 372 (2) 0 : To provide 1◀: Not provided
CM41	Set the ORT timer when established tandem connection to CCIS.	<ul style="list-style-type: none"> Y=0 (1) 104 (2) 02-99: 2-99 seconds (1 second increments) If no data is set, the default setting is 7 seconds.
CM29	Assign a Numbering Plan Group to each tenant.	(1) 00-63: Tenant No. (2) 710-713 : Numbering Plan Group 0-3 NONE◀: Numbering Plan Group 0
CM20	Assign the access code for LCR Group 0-3.	<ul style="list-style-type: none"> Y=0-3 Numbering Plan Group 0-3 (1) X-XXXX: Access Code (2) A126: LCR Group 0 A127: LCR Group 1 A128: LCR Group 2 A129: LCR Group 3
A		

A	DESCRIPTION	DATA
CM90	Assign a service access key for LCR Group 0-2 to Multiline Terminal, if required.	<ul style="list-style-type: none"> • Y=00 (1) My Line No. + + Key No. (2) F0A26-F0A28: LCR Group 0-2
CM35	Assign the Area Code Development Pattern number for maximum digit analysis to each trunk route.	<ul style="list-style-type: none"> • Y=076 (1) 00-63: Trunk Route No. (2) 05-07: Area Code Development Pattern No. 5-7
CM8A	Assign an Area Code Development Pattern number to each LCR Group.	<ul style="list-style-type: none"> • Y=A000 (1) 0-3: LCR Group 0-3 (2) 4005-4007: Area Code Development Pattern No. 5-7
	Assign a Route Pattern number to each area code for the Area Code Development Pattern number assigned by CM8A Y=A000.	<ul style="list-style-type: none"> • Y=4005-4007 Area Code Development Pattern No. 5-7 (1) X...X: Area Code, Maximum 8 digits (2) 0000-0255: Route Pattern No. 000-255
	Assign a LCR Pattern number to each area code for the Area Code Development Pattern number assigned by CM8A Y=A000.	<ul style="list-style-type: none"> • Y=4005-4007 Area Code Development Pattern No. 5-7 (1) X...X: Area Code, Maximum 8 digits (2) 0000-0255: LCR Pattern No. 000-255
	For area code deletion, designate the digits to be not deleted.	<ul style="list-style-type: none"> • Y=5000-5255 LCR Pattern No. 000-255 (1) 152: Deletion of all digits of the area code assigned by CM8A Y=4005-4007 (2) 1◀: Not deleted
	Assign the next Route Pattern number to the Route Pattern number assigned by CM8A Y=4005-4007.	<ul style="list-style-type: none"> • Y=0000-0255 Route Pattern No. 000-255 (1) 0: Designation of next table (2) 0000-0255: Next Route Pattern No. 000-255
	<p>NOTE: <i>This data is required to expand the order of LCR selection that is assigned by CM8A Y=0000-0255. The order of LCR selection can be expand to the maximum seventh.</i></p>	
B		

B

DESCRIPTION

DATA

CM8A

Specify the order of LCR selection for the Route Pattern number assigned by CM8A Y=4005-4007.

- Y=0000-0255 Route Pattern No. 000-255
- (1) 1-4: Order of LCR Selection
 - 1: 1st
 - 2: 2nd
 - 3: 3rd
 - 4: 4th
- (2) XXX ZZ
 - XXX: 000-255: LCR Pattern No.
 - ZZ : 00-63: Trunk Route No.

NOTE: You cannot assign CM8A Y=0000-0255 1st data 0 (Destination of next table) and 1st data 4 (4th LCR selection) simultaneously. The latest data assignment including system data memory clear is effective. The other assigned data is set as NONE.

Example:

Y	1ST DATA		2ND DATA	ORDER OF LCR SELECTION
0000	0	Destination of next table	0001	
	1	1st LCR selection	00000	1st LCR selection
	2	2nd LCR selection	00101	2nd LCR selection
	3	3rd LCR selection	00202	3rd LCR selection
	4	4th LCR selection	NONE (Unavailable)	
0001	0	Destination of next table	NONE	
	1	1st LCR selection	00303	4th LCR selection
	2	2nd LCR selection	00404	5th LCR selection
	3	3rd LCR selection	00505	6th LCR selection
	4	4th LCR selection	00606	7th LCR selection

CM85

Specify the maximum number of digits to be dialed by calling party. The maximum number of digits including the area codes should be assigned to each area code.

- Y=5-7 Area Code Development Pattern No. 5-7 assigned by CM8A Y=A000
- (1) X-X...X: Area code dialed, Maximum 8 digits
- (2) 01-24◀: 1 digit-24 digits
25-79 : 25 digits-79 digits

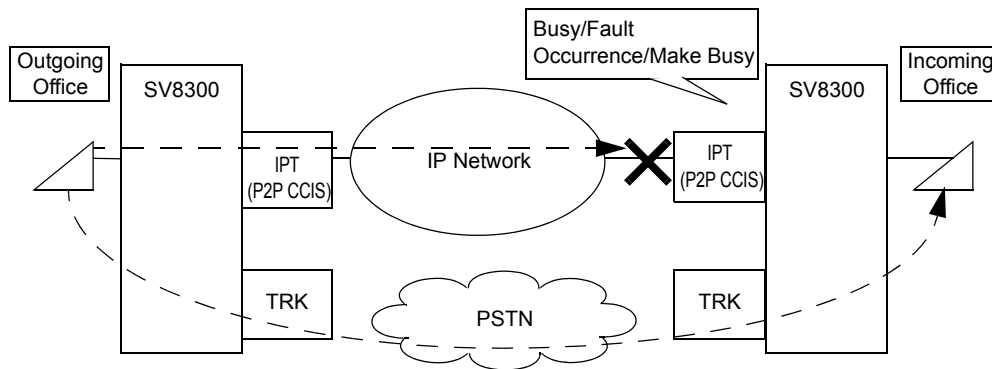
CMA7

Assign an ACM signal waiting timer after sending IAI signal in the outgoing calls via CCIS to IPT number.

- Y=10
- (1) 00: IPT No.
- (2) 00-14: 0-28 seconds (2 seconds increments)
15◀ : 6 seconds

END

- When the offices connected with the CCIS via the IPT (P2P CCIS) and if all outgoing trunks of the incoming office are busy, or LAN cable of VoIPDB is pulled out/all outgoing trunks are make busy condition in the incoming office, or the no answer timer of outgoing call (T1 timer) time-out occurs, the incoming office can send the busy/fault occurrence message to the outgoing office. The outgoing office that the message is received can detour the call via an another trunk route such as CCIS (DTI/ CCT) /ISDN.



To provide this detouring feature for the systems, do the following programming to the incoming office.

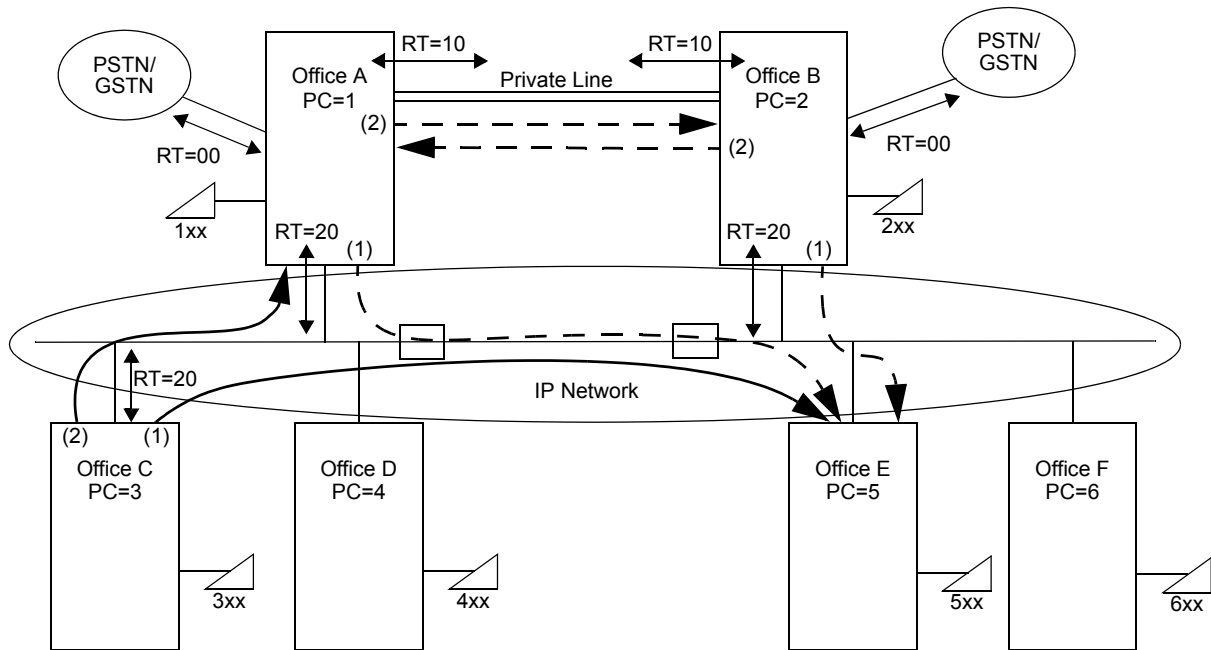
In outgoing office, program the data for providing the Alternative Routing in advance.

START	DESCRIPTION	DATA
CM08	Provide the system with the check of LAN cable of VoIPDB is pulled out.	(1) 723 (2) 0 : To provide 1 ◀: Not provided
	Provide the system with the alternative routing when the LAN cable of VoIPDB is pulled out in incoming office or when all outgoing trunks of incoming office are make busy condition.	(1) 624 (2) 0 : To provide (CGC sending) 1 ◀: Not provided (CFL sending)
	NOTE: <i>The make busy condition means when CME5 Y=1 is set to 0.</i>	
	Provide the system with the alternative routing when the no answer timer of outgoing call (T1 timer) time-out occurs.	(1) 666 (2) 0 : To provide (CGC sending) 1 ◀: Not provided (CFL sending)
END		

Sample Programming of Alternate Routing

In the following network configuration, sample programming of each office A, B, and C to office E is shown below.

In the following network, the terminated call via the private line between office A and office B cannot make a detour through the private line.



Sample Programming of Office C

Data	Meaning
CM20 Y=0>5: A129	Access code for LCR Group (3)
CM8A Y=A000>3: 4000	Area Code Development Pattern No. (0)
CM8A Y=4000>5: 0005	Route Pattern No. (005) for the Area Code Development Pattern No.
CM8A Y=0005>1: 00520	Order of LCR selection (1: 1st) for the Route Pattern No.
CM8A Y=0005>2: 00120	Order of LCR selection (2: 2nd) for the Route Pattern No.
CM8A Y=5001>167: 001	Destination IP Address Pattern No. (001) for the LCR Pattern No.
CM8A Y=5001>168: 00001	DPC of Office A (00001)
CM8A Y=5005>167: 005	Destination IP Address Pattern No. (005) for the LCR Pattern No.
CM8A Y=5005>168: 00005	DPC of Office E (00005)
CM5B Y=01>00100: aaabbbccddd	IP Address of Office A
CM5B Y=01>00500: aaabbbccddd	IP Address of Office E
CM35 Y=186>20: 0	Providing Alternate Routing for the Trunk Route of IPT (P2P CCIS) (20)
CM35 Y=192>20: 0	Providing Alternate Routing for the Trunk Route of IN-side trunk (20)

Sample Programming of Office A

Data	Meaning
CM20 Y=0>5: A129	Access code for LCR Group (3)
CM8A Y=A000>3: 4000	Area Code Development Pattern No. (0)
CM8A Y=4000>5: 0005	Route Pattern No. (005) for the Area Code Development Pattern No.
CM8A Y=0005>1: 00520	Order of LCR selection (1: 1st) for the Route Pattern No.
CM8A Y=0005>2: 00010	Order of LCR selection (2: 2nd) for the Route Pattern No.
CM8A Y=5005>167: 005	Destination IP Address Pattern No. (005) for the LCR Pattern No.
CM8A Y=5005>168: 00005	DPC of Office E (00005)
CM5B Y=01>00500: aaabbbcccddd	IP Address of Office E
CM35 Y=186>00: 1	Not providing Alternate Routing for the Trunk Route of IPT (P2P CCIS) (00)
CM35 Y=186>10: 1	Not providing Alternate Routing for the Trunk Route of IPT (P2P CCIS) (10)
CM35 Y=186>20: 0	Providing Alternate Routing for the Trunk Route of IPT (P2P CCIS) (20)
CM35 Y=192>00:0	Providing Alternate Routing for the Trunk Route of IN-side trunk (00)
CM35 Y=192>10:1	Not providing Alternate Routing for the Trunk Route of IN-side trunk (10)
CM35 Y=192>20:0	Providing Alternate Routing for the Trunk Route of IN-side trunk (20)

Sample Programming of Office B

Data	Meaning
CM20 Y=0>5: A129	Access code for LCR Group (3)
CM8A Y=A000>3: 4000	Area Code Development Pattern No. (0)
CM8A Y=4000>5: 0005	Route Pattern No. (005) for the Area Code Development Pattern No.
CM8A Y=0005>1: 00520	Order of LCR selection (1: 1st) for the Route Pattern No.
CM8A Y=0005>2: 00010	Order of LCR selection (2: 2nd) for the Route Pattern No.
CM8A Y=5005>167: 005	Destination IP Address Pattern No. (005) for the LCR Pattern No.
CM8A Y=5005>168: 00005	DPC of Office E (00005)
CM5B Y=01>00500: aaabbbcccddd	IP Address of Office E
CM35 Y=186>00: 1	Not providing Alternate Routing for the Trunk Route of IPT (P2P CCIS) (00)
CM35 Y=186>10: 1	Not providing Alternate Routing for the Trunk Route of IPT (P2P CCIS) (10)
CM35 Y=186>20: 0	Providing Alternate Routing for the Trunk Route of IPT (P2P CCIS) (20)
CM35 Y=192>00:0	Providing Alternate Routing for the Trunk Route of IN-side trunk (00)
CM35 Y=192>10:1	Not providing Alternate Routing for the Trunk Route of IN-side trunk (10)
CM35 Y=192>20:0	Providing Alternate Routing for the Trunk Route of IN-side trunk (20)

- When the offices connected by CCIS via IPT (P2P CCIS) are disconnected due to a fault occurrence, the link down can be notified to the Multiline Terminals that are connected to the offices. To provide the link down notice with the Multiline Terminals, assign the following data.

START	DESCRIPTION	DATA
CM90	Assign the Event Occurrence Notice button to the Multiline Terminal.	<ul style="list-style-type: none"> Y=00 (1) My Line No. + <input type="text"/> + Key No. (2) F1600-F1663: Event Occurrence Notice button No. 01-64 NONE◀ : No data
CM9B	Assign the link down notice for CCIS to the Event Occurrence Notice button.	<ul style="list-style-type: none"> Y=0 (1) XX ZZ XX: 01-64: Event Occurrence Notice button No. ZZ: 00: Link Down Notice for CCIS (2) 0 : To notify 1◀: Not notified
END		

LOCATION DATA ASSIGNMENT

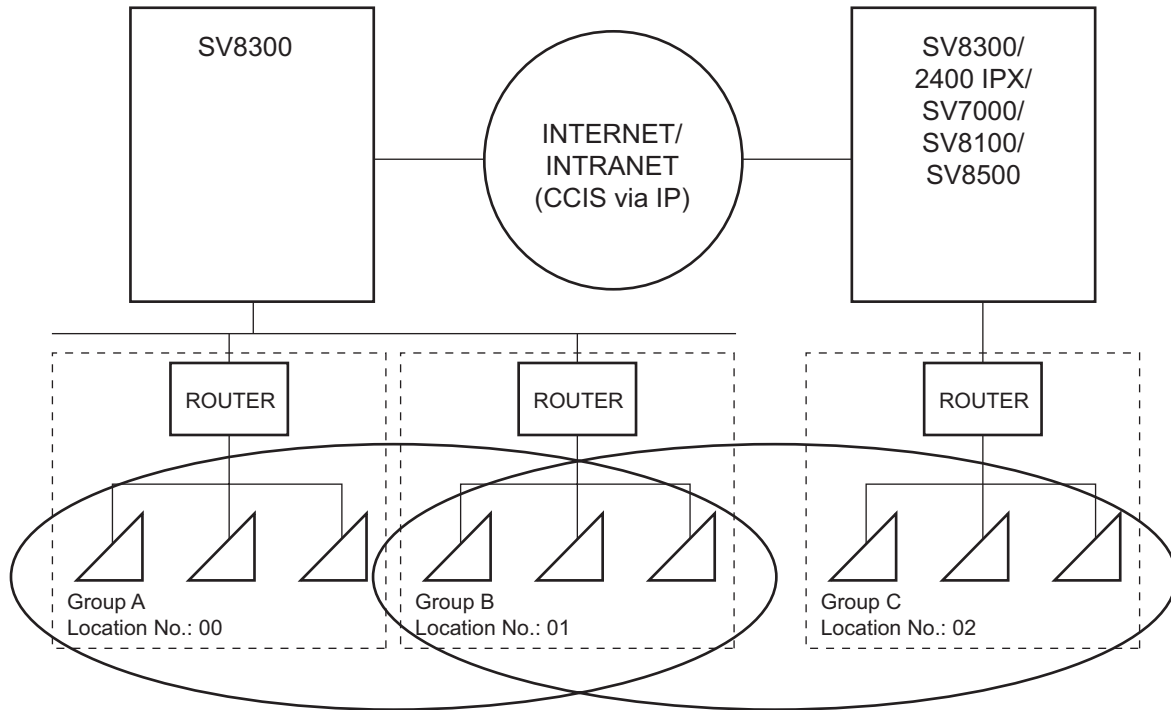
Location number is the data for administration of the group. Location number can differ from the Tenant number, Service class or Trunk route.

For example, setting of the following network condition is possible with the combination of location numbers.

“The communication speed of the groups connected with station-to-station (group A and group B shown in the figure below) is 64 Kbps and the other groups connected via IP network (group B and group C shown in the figure below) is 8 Kbps.”

The figure below shows the sample location data for each group (location).

Sample Locations



Conditions

- Group A and Group B is connected by peer to peer in the system.
- Location number 00/01 has been set to each station in Group A and Group B by CM12 Y=39/50.

Sample Data

COMMAND	Y	FIRST DATA	SECOND DATA
67	00	0001	NONE
67	00	0100	NONE
67	01	0001	NONE
67	01	0100	NONE
67	02	0001	0000
67	02	0100	0000
67	03	0001	01
67	03	0100	01
67	14	00	5
67	14	01	5

Conditions

- Group B and Group C is connected by CCIS via IP.
- Location number 01 has been set to each station in Group B by CM12 Y=39/50.
- Location number 02 has been set to each LCR pattern by CM8A Y=5000-5255.

COMMAND	Y	FIRST DATA	SECOND DATA
67	00	0102	NONE
67	00	0201	NONE
67	01	0102	NONE
67	01	0201	NONE
67	02	0102	0103
67	02	0201	0103
67	03	0102	01
67	03	0201	01
67	14	01	5

NOTE: The first data of CM67 Y=00-06 must be set both on own office and opposite office.

START	DESCRIPTION	DATA
CM12	<p>Assign the location number for local connection where the IP Station belongs, to the station number.</p> <p>Assign the location number for remote connection where the IP Station belongs, to the station number.</p>	<ul style="list-style-type: none"> • Y=39 (1) X-XXXXXXXX: Station No. (2) 00-63 : Location No. 00-63 for Local Connection NONE◀: Location No. 00 • Y=50 (1) X-XXXXXXXX: Station No. (2) 00-63 : Location No. 00-63 for Remote Connection NONE◀: Location No. 00
CM8A	<p>Assign the location number of the location to each LCR pattern number for the IPT (P2P CCIS).</p> <p>Provide the link reconnecting feature between PC and the system for each LCR Pattern number for the IPT (P2P CCIS).</p>	<ul style="list-style-type: none"> • Y=5000-5255 LCR Pattern No. 000-255 (1) 173 (2) 00-63 : Location No. 00-63 NONE◀: Location No. 00 • Y=5000-5255 LCR Pattern No. 000-255 (1) 174 (2) 0 : Not provided 3◀: To provide
CM0B	<p>Assign the location number for all terminals accommodated in the Remote Unit.</p> <p style="text-align: right;">RESET</p> <p>NOTE: <i>The location number set by this data is effective when the location number has not been set by CM12 Y=39, 50.</i></p>	<ul style="list-style-type: none"> • Y=1XX (VOIP Port [1] + Unit No. [01-50]) (1) 10 (2) 00-63 : Location No. 00-63 NONE◀: Location No. 00
A		

A

CM67

DESCRIPTION

Specify the CODEC list which is used to negotiate the CODEC type and payload size between locations to each location number assigned by CM12 Y=39, 50/CM8A Y=5000-5255: 173.

DATA

- Y=00
- (1) XXZZ
XX: 00-63: Location No.
ZZ : 00-63: Location No.
- (2) 0 : Programmable CODEC List 0
(As per CM42>100-103,
110-113)
- 1 : Programmable CODEC List 1
(As per CM42>120-123,
130-133)
- 2 : Programmable CODEC List 2
(As per CM42>140-143,
150-153)
- 3 : Programmable CODEC List 3
(As per CM42>160-163,
170-173)
- 4 : Fixed CODEC List 1
(Prioritize Tone Quality)
See the table below
- 5 : Fixed CODEC List 2
(Prioritize Band Width)
See the table below
- NONE◀: See the table below.

NOTE 1: This data setting is valid for the voice packets that are sent to the location that is set to “ZZ” in the first data from the location that is set to “XX” in the first data.

NOTE 2: The table below shows the setting of Fixed CODEC List1/2.

Priority	CODEC Type		Payload Size	
	Fixed CODEC List 1 (CM67 Y=00: 4)	Fixed CODEC List 2 (CM67 Y=00: 5)	Fixed CODEC List 1 (CM67 Y=00: 4)	Fixed CODEC List 2 (CM67 Y=00: 5)
1	G.722	G.729a	40 ms	40 ms
2	G.711*	G.711*	40 ms	40 ms
3	G.729a	G.722	40 ms	40 ms

*A-law/ μ -law depends on CPU or CM04 Y=10-59.

B

B

DESCRIPTION

DATA

CM67

NOTE 3: The table below shows the default setting of the CODEC List.

Priority	CODEC Type	Payload Size
1	G.711*	40 ms
2	G.729a	40 ms
3	G.723.1	30 ms
4	G.723.1	30 ms

*A-law/ μ -law depends on CPU or CM04 Y=10-59.

NOTE 4: Fixed CODEC List is available only when using DT700 Series and VoIPDB (IP-PAD/IPT [P2P CCIS]/SIP trunk).

NOTE 5: G.722 (Wide Band Codec) is available only when using DT700 Series and VoIPDB (IP-PAD/IPT [P2P CCIS]/SIP trunk).

NOTE 6: G.723.1 is not available when using DT700 Series and VoIPDB (IP-PAD/IPT [P2P CCIS]/SIP trunk).

NOTE 7: The setting of small payload size is effective for the voice quality measures in general, but the used bandwidth become bigger. Set the payload size considering the available bandwidth in the network.

Specify the Type of Service (TOS) field precedence of the control packet and voice packet for the IP Station/IPT (P2P CCIS)/VoIPDB to the location number assigned by CM12 Y=39, 50/CM8A Y=5000-5255: 173.

- Y=01
- (1) XX ZZ
 XX: 00-63: Location No.
 ZZ : 00-63: Location No.
- (2) X Z
 X: 0-7 : PRECEDENCE 0-7 for control packet **NOTE 3**
 Z: 0-7 : PRECEDENCE 0-7 for voice packet **NOTE 3**
 NONE◀: 65

NOTE 1: This data setting is valid to the packets that are sent to the location which is set to "ZZ" in the first data from the location which is set to "XX" in the first data.

NOTE 2: The TOS between IP Stations or IP Station and VoIPDB is determined by this data setting.

NOTE 3: The priority of PRECEDENCE 0-7 is as follows.

PRECEDENCE 0: Lowest priority
 }
 }
 PRECEDENCE 7: Highest priority

NOTE 4: Follow the typical default setting.

NOTE 5: By this data setting, the router recognizes the precedence of control packet and voice packet and controls Weighted Fair Queuing (WFQ).

C

C

CM67

DESCRIPTION	DATA																				
<p>Specify the PAD data between locations to each location number assigned by CM12 Y=39, 50/CM8A Y=5000-5255: 173.</p> <p>NOTE 1: <i>When setting the PAD data for gaining to high value, the echo and howling may occur.</i></p> <p>NOTE 2: <i>This data setting is valid to the location that is set to "XX" in the first data.</i></p>	<ul style="list-style-type: none"> • Y=02 (1) XXZZ XX: 00-63: Location No. ZZ : 00-63: Location No. (2) TTRR TT (Transmit): 00-08, 81-88 RR (Receive) : 00-08, 81-88 NONE◀ : 0000 <p style="text-align: right;">NOTE 1: See below.</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: left;"><u>2nd Data</u></th> <th style="text-align: left;"><u>PAD Data [dB]</u></th> </tr> </thead> <tbody> <tr><td>00</td><td>0 dB</td></tr> <tr><td>01/81</td><td>+2 dB/-2 dB</td></tr> <tr><td>02/82</td><td>+4 dB/-4 dB</td></tr> <tr><td>03/83</td><td>+6 dB/-6 dB</td></tr> <tr><td>04/84</td><td>+8 dB/-8 dB</td></tr> <tr><td>05/85</td><td>+10 dB/-10 dB</td></tr> <tr><td>06/86</td><td>+12 dB/-12 dB</td></tr> <tr><td>07/87</td><td>+14 dB/-14 dB</td></tr> <tr><td>08/88</td><td>+16 dB/-16 dB</td></tr> </tbody> </table> <p style="text-align: right;">+ : Gain - : Loss</p>	<u>2nd Data</u>	<u>PAD Data [dB]</u>	00	0 dB	01/81	+2 dB/-2 dB	02/82	+4 dB/-4 dB	03/83	+6 dB/-6 dB	04/84	+8 dB/-8 dB	05/85	+10 dB/-10 dB	06/86	+12 dB/-12 dB	07/87	+14 dB/-14 dB	08/88	+16 dB/-16 dB
<u>2nd Data</u>	<u>PAD Data [dB]</u>																				
00	0 dB																				
01/81	+2 dB/-2 dB																				
02/82	+4 dB/-4 dB																				
03/83	+6 dB/-6 dB																				
04/84	+8 dB/-8 dB																				
05/85	+10 dB/-10 dB																				
06/86	+12 dB/-12 dB																				
07/87	+14 dB/-14 dB																				
08/88	+16 dB/-16 dB																				
<p>Provide the Echo Canceller between locations with each location number assigned by CM12 Y=39, 50/CM8A Y=5000-5255: 173, if required.</p> <p>NOTE: <i>This data setting is valid to the location that is set to "XX" in the first data.</i></p>	<ul style="list-style-type: none"> • Y=03 (1) XXZZ XX: 00-63: Location No. ZZ : 00-63: Location No. (2) 00 : Echo Canceller OFF 01 : Echo Canceller ON NONE◀: Echo Canceller ON 																				
<p>Specify the minimum value of jitter buffer between locations to each location number assigned by CM12 Y=39, 50/CM8A Y=5000-5255: 173.</p> <p>NOTE 1: <i>Assign the value which does not exceed the maximum value of jitter buffer set by CM67 Y=05.</i></p> <p>NOTE 2: <i>This data setting is valid to the location that is set to "XX" in the first data.</i></p>	<ul style="list-style-type: none"> • Y=04 (1) XX ZZ XX: 00-63: Location No. ZZ : 00-63: Location No. (2) 01-30 : 10 ms.-300 ms. (10 ms. increments) NONE◀: 10 ms. 																				

D

D	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM67</div>	<p>Specify the maximum value of jitter buffer between locations to each location number assigned by CM12 Y=39, 50/CM8A Y=5000-5255: 173.</p> <p>NOTE 1: <i>Assign the value which exceeds the minimum value of jitter buffer set by CM67 Y=04.</i></p> <p>NOTE 2: <i>This data setting is valid to the location that is set to "XX" in the first data.</i></p> <p>Specify the DiffServ Code Point (DSCP) of control packet and voice packet to each location number assigned by CM12 Y=39, 50/CM8A Y=5000-5255: 173.</p> <p>NOTE 1: <i>This data is required when the system is connected to the router that provides the DiffServ type QoS function.</i></p> <p>NOTE 2: <i>This data setting is valid to the packets that are sent to the location which is set to "ZZ" in the first data from the location which is set to "XX" in the first data.</i></p> <p>NOTE 3: <i>The TOS field precedence that is set by CM67 Y=01 is invalid when this data is set. To be valid the TOS field precedence, set CM67 Y=01 again after this data setting.</i></p>	<ul style="list-style-type: none"> • Y=05 (1) XX ZZ XX: 00-63: Location No. ZZ : 00-63: Location No. (2) 01-30 : 10 ms.-300 ms. (10 ms. increments) NONE◀: 300 ms. <ul style="list-style-type: none"> • Y=06 (1) XXZZ XX: 00-63: Location No. ZZ : 00-63: Location No. (2) XXZZ XX : 00-FF: DSCP of control packet ZZ : 00-FF: DSCP of voice packet NONE◀: C0A0
E		

E	DESCRIPTION	DATA
CM67	To set the type of tone for each area/country where the location is set.	<ul style="list-style-type: none"> • Y=13 (1) 00-63: Location No. assigned by CM12 Y=39, 50 (2) 01 : Japan 02 : North America 03 : Australia 04 : A-law countries 05 : Hong Kong 06 : Malaysia 07 : Singapore 08 : UK 09 : Mexico 10 : Taiwan 11 : New Zealand 13 : China 14 : Thailand 15 : Brazil 16 : Netherlands 17 : Germany 18 : Italy 19 : Austria 20 : Belgium 21 : Spain 22 : Sweden 23 : UK 24 : Denmark 25 : Greece 26 : Switzerland 27 : South Africa NONE◀: Depends on Nation Code (CM31 Y=0>0)
F		

F	DESCRIPTION	DATA
CM67	<p>Specify the Type of Service (TOS) field precedence of the control packet for the IP Station-to-system to each location number assigned by CM12 Y=39, 50.</p> <p>NOTE: <i>The TOS between the IP Station and the system is determined by this data setting.</i></p> <p>Specify the DiffServ Code Point (DSCP) of the control packet for IP Stations to each location number assigned by CM12 Y=39, 50.</p> <p>NOTE: <i>The TOS field precedence that is set by CM67 Y=14 is invalid when this data is set.</i></p>	<ul style="list-style-type: none"> • Y=14 <ol style="list-style-type: none"> (1) 00-63: Location No. (2) 0-7 : PRECEDENCE 0-7 for control packet NONE ◀: 6 • Y=15 <ol style="list-style-type: none"> (1) 00-63: Location No. (2) 00-FF : DSCP of control packet for IP Station NONE ◀: C0
G		

G

CM42

DESCRIPTION	DATA
<p>Specify the original CODEC list to the system, if required. To provide the original CODEC list, assign the CODEC type and payload size to CODEC list 0-3.</p>	<p>(1) 100-103: Priority 1-4 in CODEC list 0 120-123: Priority 1-4 in CODEC list 1 140-143: Priority 1-4 in CODEC list 2 160-163: Priority 1-4 in CODEC list 3</p> <p>(2) 01 : G.711 μ-law 64k 02 : G.711 A-law 64k 03 : G.723.1 (5.3/6.3k) NOTE 1 04 : G.729a 07 : G.722 (Wide Band Codec)</p> <p style="text-align: right;">NOTE 2</p> <p>NONE ◀: No data</p> <p>(1) 110-113: Priority 1-4 in CODEC list 0 130-133: Priority 1-4 in CODEC list 1 150-153: Priority 1-4 in CODEC list 2 170-173: Priority 1-4 in CODEC list 3</p> <p>(2) 01-04 : 10 ms.-40 ms. NOTE 3 NONE ◀: No data</p>

NOTE 1: *G.723.1 is not available when using DT700 Series and VoIPDB (IP-PAD/IPT [P2P CCIS]/SIP trunk).*

NOTE 2: *G.722 (Wide Band Codec) is available only when using DT700 Series or VoIPDB (IP-PAD/IPT [P2P CCIS]/SIP trunk).*

NOTE 3: *The following payload size can be assigned for each CODEC type.*

- G.711 : 10 ms./20 ms./30 ms./40 ms.*
- G.722 : 10 ms./20 ms./30 ms./40 ms.*
- G.723.1 : 30 ms fixed*
- G.729a : 10 ms./20 ms./30 ms./40 ms.*

NOTE 4: *When the payload size setting differs from that for the opposite VoIPDB, the shorter size is adopted.*

END

IP FEATURE PROGRAMMING

- Automatic Program Download for IP Station [Page 3-78](#)
- Bandwidth Control [Page 3-86](#)
- Call Forwarding-Logout (IP Multiline Terminal) [Page 3-91](#)
- FAX over IP [Page 3-100](#)
- Modem over IP [Page 3-105](#)
- SNMP [Page 3-110](#)
- Terminal Login via NAT [Page 3-123](#)

Automatic Program Download for IP Station

General Description

This feature provides the method to download the latest firmware program of IP Station from the FTP/TFTP server automatically by system programming. The following three patterns of program download are available.

- Program Download at Appointed Time
At the appointed time set by CM43 Y=6>00, the system reads the firmware version of IP Station automatically and downloads the firmware program to the required IP Station.
- Program Download at Login Time
When the IP Stations log in to the system, the system reads the firmware version of them automatically and downloads the firmware program to the required IP Station.
- Program Download for Designated Terminal
The system reads the firmware version of the designated IP Stations automatically and downloads the firmware program to them if required.

Station Application

D^{term}75 (Series E)/D^{term}85 (Series i) Terminals with LCD equipped for IP Adapter units (Peer-to-Peer version), D^{term}IP, D^{term}IP INASET, D^{term}SP30, DT700 Series.

Service Conditions

1. For program download, the FTP or TFTP server is required.
2. This service is available for the IP Station with Peer-to-Peer connections. Terminals with IPELC connections are not supported.
3. Maximum of four terminals can be downloaded at the same time regardless of the type of download.
4. Firmware version filed in FTP/TFTP server is assigned by the system data (CM0C Y=00-07>02). When the latest firmware version is filed in the server, be sure to update the system data.
5. When the FTP/TFTP server is used for program download, login from the IP Station with a login name "**anonymous**" and password "**SV8300**" (authentication by FTP server is required).
6. Conditions on Program Download at Appointed Time
 - a. Program Download at Appointed Time service is available by the system data assignment (CM15 Y=482) on a station class of service basis.
 - b. By the same command mentioned above, program download can be retried just one time. When the download results in failure two times in succession, the IP Station operates with previous firmware.
 - c. When this service is executed, neither Program Download at Login Time nor Program Download for Designated Terminal can be executed.

- d. PBX system checks the firmware version of each terminal starting from the terminal with the smallest Physical Port No., and execute this service if required.
- e. This service is executed only for the idle terminals. This service is not executed for the terminals in Logout or busy status.
- f. The actual starting time of the Program Download at Appointed Time may be varied with a range of +/-1 minute. When 448 of IP Station have to be upgraded, for example, it takes about 225 minutes to be completed, without retry.
- g. CMFA Y=50>01/02 counts the number of terminals that are successfully downloaded and the number of terminals that result in download failure only when the PBX sends the latest program download message to the terminals. During executing the download, "Downloading..." is displayed on the LCD of a terminal.

After the download is finished (it takes three minutes to download the firmware per terminal), the LCD of a terminal returns to the time display automatically.

- h. Program Download at Appointed Time can be suspended by CMFA Y=50>00:CCC (clear) during executing the download. However, you cannot suspend the download of the terminal with "Downloading..." displayed.

7. Conditions on Program Download at Login Time

- a. Program Download at Login Time service can be assigned on a system basis by CM0C Y=90>02.
- b. When this service is assigned, retry in download failure status is not available.
- c. During executing the download, "Downloading..." is displayed on the LCD of a terminal.
After the download is finished (it takes three minutes to download the firmware per terminal), the LCD of a terminal returns to the time display automatically.
- d. Program Download at Login Time is not supported by DT700 Series.

8. Conditions on Program Download for Designated Terminals

- a. Program Download for Designated Terminals is assigned and executed on the Primary station number basis.
- b. This service is executed only for idle terminals. This service is not executed for the terminals in Logout status.
- c. When this service is assigned, retry in download failure status is not available.
- d. During executing the download, "Downloading..." is displayed on the LCD of a terminal.
After the download is finished (it takes three minutes to download the firmware per terminal), the LCD of a terminal returns to the time display automatically.

Programming

(1) FTP/TFTP Server information setting

START	DESCRIPTION	DATA
CM0C	Specify the firmware in the FTP/TFTP server to update the IP Station's firmware.	<ul style="list-style-type: none"> • Y=00-07 Update Information Profile No. (1) 00: Type of Firmware for Update (2) 00 : D^{term}75 (Series E) (IP Adapter Type) 02 : D^{term} IP INASET 03 : D^{term}85 (Series i) (IP Adapter Type) 05 : D^{term}85 (Series i) (IP Bundled Type) 12 : DT700 Series (DT710) 13 : DT700 Series (DT730/DT730 [DESI-less]) 14 : DT700 Series (DT750) NONE◀: No data
	Specify the file version of the firmware in the FTP/TFTP server.	<ul style="list-style-type: none"> • Y=00-07 Update Information Profile No. (1) 02: Firmware File Version for Update (2) VVWWXXZZ (for SIP Multiline Terminal) VV :00-99 : Integral No. of file version WW: 00-99: First decimal No. of file version XX : 00-99: Second decimal No. of file version ZZ : 00-99: Third decimal No. of file version 0000XXZZ (for IP Multiline Terminal) XX : 00-99: Integral No. of file version ZZ : 00-99: First decimal No. of file version NONE◀: No data
A	NOTE: <i>If no data is set, the system does not update the firmware of IP Stations.</i>	

A

CM0C

DESCRIPTION

DATA

Assign the IP Address for the FTP/TFTP server.

- Y=00-07 Update Information Profile No. 00-07
- (1) 04: IP Address for Server
- (2) XXXXXXXXXXXXX:
000000000000-255255255254:
IP Address for the FTP/TFTP server
(Maximum 12 digits)
NONE◀: No data

Specify the protocol of the server.

- Y=00-07 Update Information Profile No. 00-07
- (1) 05: Protocol of Server
- (2) 0 : FTP
1◀: TFTP

NOTE: When using the TFTP/FTP server, allow the PBX to access the server with anonymity, and set the following information to the TFTP/FTP server if required.

Login Name/Password	TFTP Server	FTP Server
Login Name	anonymous	anonymous
Password		SV8300

And the default directory/default file name for each IP Station is as shown below.
Leave the default directory/default file name as it is.

Type of IP Station	TFTP Server (Default File Name)	FTP Server (Default Directory + Default File Name)
D ^{term} 75 (Series E) (IP adapter Type)	ramhptop.hex	/IPW2U/ramhptop.hex
D ^{term} IP INASET	dpPtoP1E.lnl	/INASET/dpPtoP1E.lnl
D ^{term} 85 (Series i) (IP adapter Type)	ramhp2pr.hex	/IPR/ramhp2pr.hex
D ^{term} 85 (Series i) (IP Bundled Type)	ramhp2pw.out	/IPRU/ramhp2pw.out
DT700 Series (DT710)	itlisipe.tgz	/DT710E/itlisipe.tgz
DT700 Series (DT730/DT730 [DESI-Less])	itlisipv.tgz	/DT730V/itlisipv.tgz
DT700 Series (DT750)	itlisips.tgz	/DT750S/itlisips.tgz

END

(2) Setting for automatic update

(a) To update the firmware of IP Stations automatically at the predetermined time:

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM43</div>	<p>Specify the start time for automatic update.</p> <p>NOTE: <i>This data is recommended to set to have two minutes or longer interval of time from the system clock.</i></p>	<ul style="list-style-type: none"> • Y=6 (1) 00: Start time for automatic update (2) YYYY MM DD HH mm YYYY : 2007-2099 (Year) MM : 01-12 (Month) DD : 01-31 (Date) HH : 00-23 (Hour) mm : 00-59 (Minutes) NONE◀: Not to update the firmware of IP Stations automatically at the predetermined time
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM12</div>	<p>Assign Service Restriction Class C to the required stations.</p>	<ul style="list-style-type: none"> • Y=07 (1) X-XXXXXXXX: Station No. (2) 00-15◀: Service Restriction Class C
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM15</div>	<p>Allow the automatic updating at the predetermined time in Service Restriction Class C assigned by CM12 Y=07, and specify if the system executes the updating again when the system fails to update at the predetermined time.</p>	<ul style="list-style-type: none"> • Y=482 (1) 00-15: Service Restriction Class C assigned by CM12 Y=07 (2) 0 : Allow and to update again 1 : Allow and to update only once 2◀: Restrict
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">END</div>		

- To read the status of the automatic update at the predetermined time:

START	DESCRIPTION	DATA
CMFA	Read the status of the automatic update at the predetermined time.	<ul style="list-style-type: none"> Y=50 (1) 00 (2) 00 : Not started 01 : Now updating 10 : Completed CCC: Interrupt updating/Reset count data
	NOTE: <i>If you type the second data CCC, the count data which can be read by CMFA Y=50>01/02 is cleared.</i>	
	Read the number of terminal that succeeded in updating.	<ul style="list-style-type: none"> Y=50 (1) 01 (2) XXX: Number of terminal that succeeded in updating
	Read the number of terminal that failed in updating.	<ul style="list-style-type: none"> Y=50 (1) 02 (2) XXX: Number of terminal that failed in updating
END		

- (b) To update the firmware of IP Stations automatically when IP Stations log in the system:

START	DESCRIPTION	DATA
CM0C	Provide the automatic update when IP Stations log in the system for the system.	<ul style="list-style-type: none"> Y=90 (1) 02 (2) 0 : To provide 1 ◀: Not provided
	NOTE 1: <i>Set the second data to 1, after the IP Stations firmware is updated.</i>	
	NOTE 2: <i>This data setting is not available for DT700 Series.</i>	
END		

(c) To update the firmware of the IP Station which you specified:

START

DESCRIPTION

DATA

CM0C

Specify the IP Station to be updated, then execute the firmware updating.

- Y=50
- (1) X-XXXXXXXX: Station No.
- (2) 0: Start updating

After setting the first data and second data, PCPro/CAT displays the status of the IP Station. The table below shows the contents of the display and its meaning.

FIRST DATA	IP STATION STATUS		SECOND DATA	IP STATION STATUS	
	DISPLAY	MEANING		DISPLAY	MEANING
X-XXXXXXXX: IP Station No.	VVWW XXZZ	Current firmware version of the IP Station (for SIP Multiline Terminal) VVWWXXZZ: VV : 00-99: Integral No. WW: 00-09: First decimal No. XX : 00-99: Second decimal No. ZZ : 00-99: Third decimal No.	0: Start updating	OK	Start updating
	0000 XXZZ	Current firmware version of the IP Station (for IP Multiline Terminal) 0000XXZZ: XX: 00-99: Integral No. ZZ : 00-99: First decimal No.		DATA NOT FOUND	You cannot update the IP Station's firmware because the FTP/TFTP server information data has not been assigned NOTE 1
	DATA ERROR	The IP Station is logout status/The terminal is not IP terminal		WAIT, BUSY NOW	You cannot update the IP Station's firmware because other four IP Stations in the system are updated now NOTE 2
	WAIT, BUSY NOW	The IP Station is updated now/The IP Station is busy	You cannot update the IP Station's firmware		

NOTE 1: Set this data after setting CM0C Y=00-07>00-05.

NOTE 2: Maximum four IP Stations can be updated at the same time in a system. Set this data after other four IP Stations are updated.

END

Bandwidth Control

General Description

This feature allows to assign an available bandwidth threshold for VoIP traffic within a Location and between Locations, and to restrict outgoing/incoming calls when the VoIP traffic exceeds the threshold.

The Location is a group of VoIP devices (IP Enabled Digital Multiline Terminal, VoIPDB, or Peer-to-Peer IP trunks [built-in IP trunks]), which the same VoIP communications parameters such as codec selection list and ToS field value are assigned.

When the VoIP traffic over CCIS exceeds the threshold, the call can be routed to legacy trunks (TDM network).

Station Application

Not applicable

Service Conditions

1. Two kinds of threshold can be assigned on a Location-to-Location basis by system programming.
 - Limit Threshold : Maximum bandwidth available for VoIP traffic.
 - When the traffic exceeds this threshold, the later calls are restricted within that Location or between those Locations.
 - In case of CCIS calls over IP network, the calls can be routed to the legacy trunks (TDM network).
 - Warning Threshold: This threshold should be assigned lower than the Limit Threshold.
2. Each threshold can be assigned on a Location-to-Location basis.
3. Maximum 65534 Kbps can be assigned for each threshold on a 1 Kbps increment. If no data is assigned, 100 Mbps is assigned (default data).
4. The following parameters can be recorded as peg count on a Location-to-Location basis.
 - a. The number exceeding the Limit Threshold
 - b. The number exceeding the Warning Threshold
 - c. Maximum bandwidth actually used
 - d. The bandwidth currently used
5. The bandwidth managed by this feature is that of voice packets for Peer-to-Peer connections only. The data packets for control signals of IP Enabled Digital Multiline Terminal, CCIS and PCPro are not supported by this feature. The bandwidth of the voice packets for each call is defined by the combination of voice encoding type and payload size as follows.

Bandwidth of voice packets for each call (Both way)

Type of Voice Encoding	Payload Size (ms.)			
	10	20	30	40
G.711 (64 Kbps)	192 Kbps	160 Kbps	147.4 Kbps	144 Kbps
G.729a (8 Kbps)	80 Kbps	48 Kbps	37.4 Kbps	32 Kbps
G.723.1 (6.3/5.3 Kbps)	–	–	34.2 Kbps	–

NOTE: *The bandwidth for G.723.1 is defined by which the voice encoding uses 6.3 Kbps.*

The system counts the bandwidth for each call based on the above table whenever the call is established, and the system deletes the bandwidth when the call is released.

6. When an outgoing/incoming call is attempted, and the voice encoding type and payload size between the Locations is not determined yet, the bandwidth for the call is temporarily determined based on the primary value in the CODEC list in the system. The system counts that temporary bandwidth.
7. When the call is established and the voice encoding type and payload size actually used are informed from the corresponding terminal, the system deletes the temporary bandwidth determined by #6 above and counts the bandwidth based on the voice encoding type and payload size actually used. In case of CCIS calls over IP network with Peer-to-Peer connections, the system maintains the bandwidth determined based on the primary value of the CODEC list in the system, as mentioned #6 above.
8. There are following conditions when the Limit Threshold is exceeded.
 - a. When an outgoing call is attempted and an answering party can be specified, the call is restricted when calling.
 - b. When an outgoing call is attempted but an answering party cannot be specified, the call is restricted after answered.
 - c. The bandwidth for a call on hold is not maintained.
 - d. When a held call is restricted from a different party from the party initiating hold and the Limit Threshold is exceeded, the retrieving the call is restricted and the both parties will receive reorder tone.
 - e. When a call is terminated to a Multiline group, the system will check the bandwidth for My Line only. Therefore, when the call is answered by Sub line and the Limit Threshold is exceeded, the call is restricted and the calling and called party will receive reorder tone.
9. Whether the call is restricted or not, when the Limit Threshold is exceeded, is assigned on a Location-to-Location basis by system programming.
10. When a call is restricted at originating the call, the calling party will hear reorder tone.
11. When a call is restricted at answering the call, both calling and called party will hear reorder tone.
12. When a call is restricted by this feature, no LCD indication is provided such as “RST”.

13. When an incoming CCIS call over IP network is restricted, the calling party will receive reorder tone.
14. When a CCIS call over IP network is restricted, the call can be routed to a legacy trunk route (TDM network).

Programming

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM67</div>	<p>Specify the limit bandwidth for the traffic between locations to each location number assigned by CM12 Y=39, 50/CM8A Y=5000-5255: 173.</p> <p>NOTE 1: <i>Set the bandwidth for voice packets. The available bandwidth minus the bandwidth for control packets (40 Kbps) is the bandwidth for voice packets. If the reflection speed of terminals such as button reflection becomes slower by setting the value above-mentioned, set the bandwidth for voice packets to the value with the bandwidth for control packets supposed as more than 40 Kbps.</i></p> <p>NOTE 2: <i>Assign the value that exceeds the warning bandwidth set by CM67 Y=92.</i></p> <p>Specify the action when the traffic between locations exceeds the limit bandwidth assigned by CM67 Y=90.</p> <p>Specify the warning bandwidth for the traffic between locations to each location number assigned by CM12 Y=39, 50/CM8A Y=5000-5255: 173.</p> <p>NOTE: <i>Assign the value which does not exceed the limit bandwidth set by CM67 Y=90.</i></p>	<ul style="list-style-type: none"> • Y=90 (1) XX ZZ XX: 00-63: Location No. ZZ : 00-63: Location No. (2) 00000-65534: 0 Kbps-65534 Kbps <p style="text-align: right;">NOTE 1</p> <p style="text-align: right;">NONE◀ : 100000 Kbps (100 Mbps)</p> <ul style="list-style-type: none"> • Y=91 (1) XX ZZ XX: 00-63: Location No. ZZ : 00-63: Location No. (2) 0 : Restrict the connection between locations 3◀: Keep the connection between locations <ul style="list-style-type: none"> • Y=92 (1) XX ZZ XX: 00-63: Location No. ZZ: 00-63: Location No. (2) 00000-65534: 0 Kbps-65534 Kbps NONE◀ : 100000 Kbps (100 Mbps)
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">A</div>		

A	DESCRIPTION	DATA
CMEA	Specify if the fault information is stored into the memory, and the external alarm kind.	<ul style="list-style-type: none"> • Y=2 (1) 040: Traffic of IP network exceeded limit bandwidth (Standard data: MJ) 041: Traffic of IP network exceeded warning bandwidth (Standard data: MN) 050: Traffic of IP network returned to normal condition from limit bandwidth excess (Standard data: --) 051: Traffic of IP network returned to normal condition from warning bandwidth excess (Standard data: --) (2) 0 : Fault memory store/No output of external alarm 1 : Fault memory store/External alarm is MN alarm 2 : Fault memory store/External alarm is MJ alarm 3 : Fault memory store/External alarm kind is determined by standard data NONE◀: No fault memory store/No external alarm output
<u>END</u>		

To read/clear the PEG count, do the following programming.

- When reading/clearing the PEG count between locations that exceeded the limit bandwidth
 $\boxed{\text{ST}} + \text{B400} + \boxed{\text{DE}} + 00\text{-}63$ (location number of sending side) +
 $00\text{-}63$ (location number of receiving side) + $\boxed{\text{DE}} + \text{CCC} + \boxed{\text{EXE}}$
- When clearing the PEG counts of all locations that exceeded the limit bandwidth
 $\boxed{\text{ST}} + \text{B400} + \boxed{\text{DE}} + 9999 + \boxed{\text{DE}} + \text{CCC} + \boxed{\text{EXE}}$
- When reading/clearing the PEG count between locations that exceeded the warning bandwidth
 $\boxed{\text{ST}} + \text{B401} + \boxed{\text{DE}} + 00\text{-}63$ (location number of sending side) +
 $00\text{-}63$ (location number of receiving side) + $\boxed{\text{DE}} + \text{CCC} + \boxed{\text{EXE}}$
- When clearing the PEG counts of all locations that exceeded the warning bandwidth
 $\boxed{\text{ST}} + \text{B401} + \boxed{\text{DE}} + 9999 + \boxed{\text{DE}} + \text{CCC} + \boxed{\text{EXE}}$

NOTE: *The PEG count of 0-49999 can be stored to the system. If the PEG count exceeds 49999, the system counts it from 0.*

To read/clear the bandwidth, do the following programming.

- When reading/clearing the maximum bandwidth between locations
 $\boxed{\text{ST}} + \text{B402} + \boxed{\text{DE}} + 00\text{-}63$ (location number of sending side) +
 $00\text{-}63$ (location number of receiving side) + $\boxed{\text{DE}} + \text{CCC} + \boxed{\text{EXE}}$
- When clearing the maximum bandwidth of all locations in the system
 $\boxed{\text{ST}} + \text{B402} + \boxed{\text{DE}} + 9999 + \boxed{\text{DE}} + \text{CCC} + \boxed{\text{EXE}}$
- When reading/clearing the bandwidth that are used now
 $\boxed{\text{ST}} + \text{B403} + \boxed{\text{DE}} + 00\text{-}63$ (location number of sending side) +
 $00\text{-}63$ (location number of receiving side) + $\boxed{\text{DE}} + \text{CCC} + \boxed{\text{EXE}}$
- When clearing all bandwidth that are used now
 $\boxed{\text{ST}} + \text{B403} + \boxed{\text{DE}} + 9999 + \boxed{\text{DE}} + \text{CCC} + \boxed{\text{EXE}}$

NOTE: *The bandwidth of 0-1677721 Kbps can be displayed on PCPro/CAT. Even if the bandwidth exceeds 1677721 Kbps, PCPro/CAT displays the bandwidth 1677721 Kbps.*

Operating Procedure

No manual operation is required.

Call Forwarding-Logout (IP Multiline Terminal)

General Description

This feature allows a call terminated to an IP Station in logout status to be forwarded to a predesignated station, outside number, Attendant Console or Voice Response System (VRS). This feature is also applicable to the IP Stations that the LAN cable is pulled out or the power is off.

Station Application

D^{term}75 (Series E)/D^{term}85 (Series i) Terminals with LCD equipped for IP Adapter units (Peer-to-Peer version), D^{term}IP, D^{term}IP INASET, D^{term}SP30, DT700 Series.

Service Conditions

1. This feature is effective when an IP Station is in the following logout conditions.
 - When the IP Station is logged out by Logout Feature Access Code.
 - When Login Dialog is displayed on the IP Station.
 - When “Connecting.....” is displayed on an IP Station.
 - When the IP Station is in the Configuration mode (When the IP Station is in the Configuration mode for more than two minutes, the IP Station is to be Logout status).
 - When the IP Station is reset by pulling out the LAN cable (When the LAN cable is pulled out for more than two minutes, the IP Station is automatically reset).
 - When the power of the IP Station is OFF.
 - When the PBX system is reset by power failure or other reasons.
2. When an IP Station is in a Logout status, calls cannot be terminated to the sublines on that IP Station.
3. When an IP Station in a Logout status is in a multiline group, a call to that IP Station cannot ring other stations in that multiline group.
4. A call forwarding destination can be a station, a Voice Mail System, an outside number, an Attendant Console, and a Voice Response System (VRS).
5. When the call forwarding destination is a station, an outside number or an Attendant Console, this feature can be set by dialing Call Forwarding-Logout Feature Access/Cancellation Code or data assignment from a PCPro/CAT. Setting by Feature Access Key is not supported.

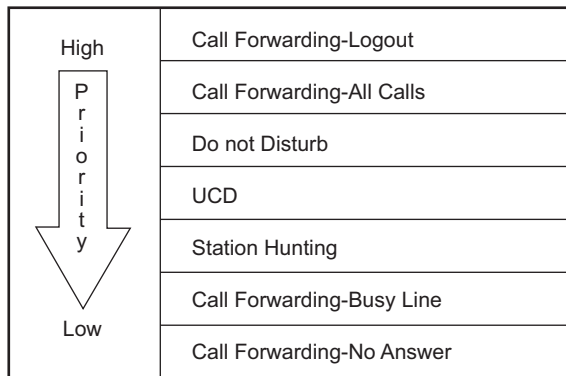
6. When the call forwarding destination is an outside number, there are following conditions.
 - a. When an IP Station in a Logout status receives an incoming trunk call and call forwarding destination is an outside number (tandem connection), the call is forwarded or not in accordance with the restriction data for tandem connections (CM36). When the tandem connection between the incoming trunk route and outgoing trunk route is allowed by system programming, the call is forwarded to the outside number. When it is restricted, the caller will hear ROT.
 - b. A maximum of 250 outside numbers can be assigned as call forwarding destinations (There is no limitation when a station is designated as a call forwarding destination).
 - c. Whether an IP Station is busy or not, the PCPro/CAT can set/change the Call Forwarding-Logout destination.
 - d. When a toll call number is assigned as the call forwarding destination, a calling station that is restricted to make a toll call can be forwarded to that toll call number.
7. When the call forwarding destination is a VRS, this feature can be assigned on a tenant basis by system programming. However, the call forwarding destination assigned by Feature Access Code or PCPro/CAT (station, outside number, Attendant Console) has priority over that assigned by the system data (VRS).

Up to 8 multi-connections are available per VRS. When the connection exceeds 8, the excess connections are restricted and the caller will hear ROT. Secondary callers cannot be connected to the beginning of the message. A message duration for the announcement is assigned by CM41 Y=0>102. When the message duration exceeds the time assigned by the system programming, the caller will hear ROT.
8. When the call forwarding destination is not assigned, a caller will hear ROT or RBT.

If the called IP Station sets Call Forwarding-All Calls, the caller will be forwarded to the destination of Call Forwarding-All Calls. Even if the called IP Station sets any of Call Forwarding-Busy Line, Call Forwarding-No Answer, Don't Disturb and Station Hunting, such service will be ignored and the caller will hear ROT or RBT. ROT or RBT can be selected in station Class of Service assignment.

9. Figure below shows a service priority applied to an IP Station that sets more than one call forwarding or hunting features at the same time are set. Call Forwarding-Logout, Call Forwarding-All Calls, Don't Disturb, Uniform Call Distribution (UCD), Station Hunting, Call Forwarding-Busy Line, Call Forwarding-No Answer are listed in the order of priority. Note that when the IP Station in the logout status does not set both Call Forwarding-Logout and Call Forwarding-All Calls, the caller will not be forwarded by Do Not Disturb, UCD, Station Hunting, Call Forwarding-Busy Line, or Call Forwarding-No Answer and will hear ROT or RBT.

Service Priority in Logout Status



*When neither Call Forwarding-Logout nor Call Forwarding-All Calls is set, the caller will hear ROT/RBT.

10. Call Forwarding-Logout service can be allowed or denied in Class of Service assignment. Also, ROT/RBT, which calling party hears when call forwarding destination is not assigned, can be selected in Class of Service assignment.
11. Multiple Call Forwarding-Logout is available. Multiple Call Forwarding-Logout can be assigned by CM42 Y=14.

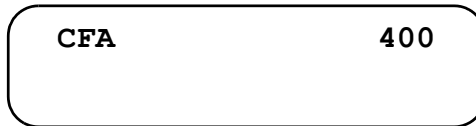
Multiple Call Forwarding-Logout can forward a maximum of five times when the called station sets Call Forwarding-Logout to a station that has set Call Forwarding-Logout, Call Forwarding-All Calls, or Call Forwarding-Busy Line. When Call Forwarding-Logout is repeated more than five times including Call Forwarding-All Calls and Call Forwarding-Busy Line, a calling party hears RBT from that point on.

When the call is forwarded, on the way of Multiple Call Forwarding-Logout feature, to a station that has set Call Forwarding-No Answer, the number of Call Forwardings so far is reset (=0) and Call Forwarding-Logout is carried out from the beginning.

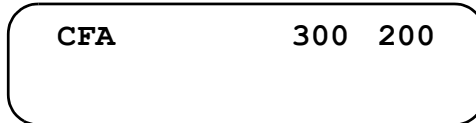
12. LCD displays of both calling party and call forwarding destination in Call Forwarding-Logout feature are illustrated below.

<Example> When Sta. 200 calls to Sta. 300 in Logout status that sets Call Forwarding-Logout to Sta. 400:

- a. LCD display of calling party (Sta. 200)
(Called party: Sta. 300, Call forwarding destination: Sta. 400)



- b. LCD Display of call forwarding destination (Sta. 400)
(Calling party: Sta. 200, Called party: Sta. 300)



Programming

To set a station, Voice Mail System, attendant console or outside party as the Call Forwarding-Logout destination:

NOTE: To set a Voice Mail System as the Call Forwarding-Logout destination, in addition to the following programming, do the programming of VOICE MAIL INTEGRATION.
For the programming of VOICE MAIL INTEGRAION, refer to the Programming Manual.

START	DESCRIPTION	DATA
CM12	Assign Service Restriction Class C to the required stations.	<ul style="list-style-type: none"> Y=07 (1) X-XXXXXXXX: Station No. (2) 00-15◀: Service Restriction Class C
CM15	Allow Call Forwarding-Logout in Service Restriction Class C assigned by CM12 Y=07, and specify the sending tone when Call Forwarding-Logout destination is not set.	<ul style="list-style-type: none"> Y=481 (1) 00-15: Service Restriction Class C assigned by CM12 Y=07 (2) 02 : Allow and send ROT 03◀: Allow and send RBT
CM29	Assign a Numbering Plan Group number to each tenant.	(1) 00-63: Tenant No. (2) 710-713 : Numbering Plan Group 0-3 NONE◀: Numbering Plan Group 0
CM20	Assign the access code for Call Forwarding-Logout, Set and Cancel, respectively.	<ul style="list-style-type: none"> Y=0-3 Numbering Plan Group 0-3 (1) X-XXXX: Access Code (2) A241: Call Forwarding-Logout Set A242: Call Forwarding-Logout Cancel
CM42	Specify the number of times of Call Forwarding for a call.	(1) 14 (2) 01-05 : 1 time-5 times NONE◀: 5 times
CME6	When setting the destination of Call Forwarding-Logout from PCPro/CAT, assign the destination to the required stations.	<ul style="list-style-type: none"> Y=06 (1) X-XXXXXXXX: Station No. (2) Destination No.; X-XXXXXXXX: Station No. E000 : Attendant Console/ YY...Y: Outgoing Trunk Access Code (1-4 digits) + [] + Called No. (Maximum 26 digits)
A		

A	DESCRIPTION	DATA
CM35	To apply this feature to incoming calls, set the trunk route combination for Tandem connection.	<ul style="list-style-type: none"> • Y=005 (1) 00-63: Trunk Route No. (2) 1◀: Release signal arrives
CM36	Allow the connection between Incoming Trunk Route and Outgoing Trunk Route for Tandem connection.	<ul style="list-style-type: none"> • Y=0 (1) Incoming Trunk Route No. + Outgoing Trunk Route No. assigned by CM35 Y=005 (2) 0: Allow
<u>END</u>		

To set the Voice Response System (VRS) as the Call Forwarding-Logout destination:

START	DESCRIPTION	DATA
CM12	Assign Service Restriction Class C to the required stations.	<ul style="list-style-type: none"> Y=07 (1) X-XXXXXXXX: Station No. (2) 00-15◀: Service Restriction Class C
CM15	Allow Call Forwarding-Logout in Service Restriction Class C assigned by CM12 Y=07, and specify the sending tone as ROT when Call Forwarding-Logout destination is not set.	<ul style="list-style-type: none"> Y=481 (1) 00-15: Service Restriction Class C assigned by CM12 Y=07 (2) 02: Allow and send ROT
CM29	Assign a Numbering Plan Group number to each tenant.	(1) 00-63: Tenant No. (2) 710-713 : Numbering Plan Group 0-3 NONE◀: Numbering Plan Group 0
CM20	Assign the access code for Call Forwarding-Logout, Set and Cancel, respectively.	<ul style="list-style-type: none"> Y=0-3 Numbering Plan Group 0-3 (1) X-XXXX: Access Code (2) A241: Call Forwarding-Logout Set A242: Call Forwarding-Logout Cancel
CM42	Specify the number of times of Call Forwarding for a call.	(1) 14 (2) 01-05 : 1 time-5 times NONE◀: 5 times
CM41	Specify the timing which an announcement for Call Forwarding-Logout is sent.	<ul style="list-style-type: none"> Y=0 (1) 102 (2) 01-99: 4-396 seconds (4 seconds increments) If no data is set, the default setting is 116-120 seconds.
CM49	Assign the announcement for Call Forwarding-Logout to each Voice Response System accommodated into the system.	<ul style="list-style-type: none"> Y=00 (1) 000-007: Built-in VRS on CPU blade (2) 21XX: Call Forwarding-Logout XX: Message Group No. (00-63)
	Assign the message group number to the tenant number.	<ul style="list-style-type: none"> Y=14 (1) 00-63: Tenant No. (2) 00-63: Message Group No.
CM51	Assign the Voice Response System as the destination of Call Forwarding-Logout to each tenant.	<ul style="list-style-type: none"> Y=32 (1) 00-63: Tenant No. (2) EB000-007: Built-in VRS on CPU blade NONE◀ : No data
END		

Operating Procedure

Call Forwarding to a station

■ To set Call Forwarding-Logout

1. Press **Speaker** Key and receive dial tone.
2. Dial Call Forwarding-Logout Feature Access Code and receive special dial tone.
3. Dial a desired station number.
4. “Set OK” is displayed and receive service set tone.
5. Press **Speaker** Key.

■ To cancel Call Forwarding-Logout

1. Press **Speaker** Key and receive dial tone.
2. Dial Call Forwarding-Logout Feature Cancellation Code and receive special dial tone.
3. Call forwarding destination is displayed.
4. Press “*”.
5. “Reset OK” is displayed and receive service set tone.
6. Press **Speaker** Key.

Call Forwarding to an outside number

■ To set Call Forwarding-Logout

1. Press **Speaker** Key and receive dial tone.
2. Dial Call Forwarding-Logout Feature Access Code and receive special dial tone.
3. Dial trunk access code and desired outside number.
4. “Set OK” is displayed and receive service set tone.
5. Press **Speaker** Key.

■ To cancel Call Forwarding-Logout

1. Press **Speaker** Key and receive dial tone.
2. Dial Call Forwarding-Logout Feature Cancellation Code and receive special dial tone.
3. Call forwarding destination is displayed.
4. Press “*”.
5. “Reset OK” is displayed and receive service set tone.
6. Press **Speaker** Key.

Call Forwarding to Attendant Console

■ **To set Call Forwarding-Logout**

1. Press **Speaker** Key and receive dial tone.
2. Dial Call Forwarding-Logout Feature Access Code and receive special dial tone.
3. Dial Access Code for Attendant Console.
4. “Set OK” is displayed and receive service set tone.
5. Press **Speaker** Key.

■ **To cancel Call Forwarding-Logout**

1. Press **Speaker** Key and receive dial tone.
2. Dial Call Forwarding-Logout Feature Cancellation Code and receive special dial tone.
3. Attendant Console for Call forwarding destination is displayed.
4. Press “*”.
5. “Reset OK” is displayed and receive service set tone.
6. Press **Speaker** Key.

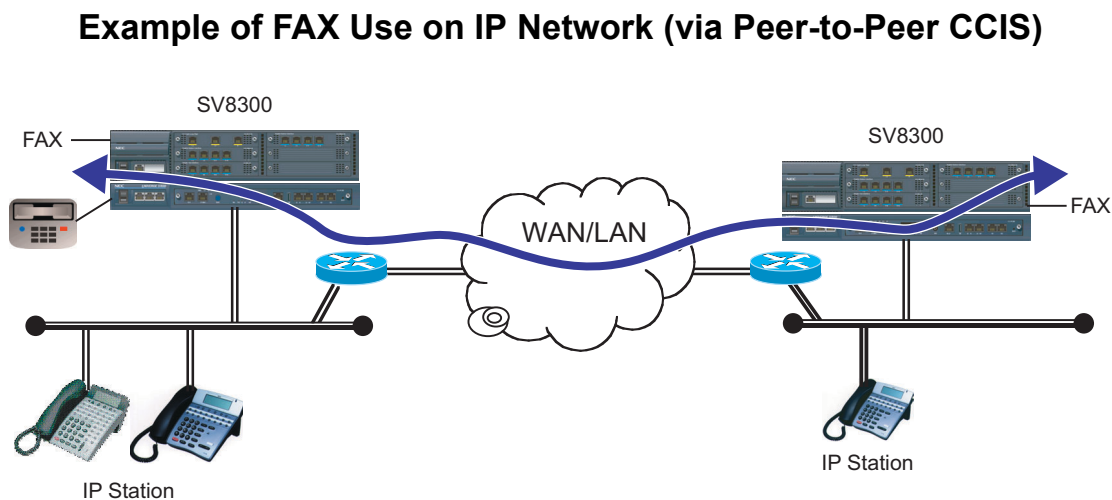
FAX over IP

General Description

This feature allows the system to transmit facsimile communications over IP network, via Local Area Networks (LAN) and corporate Wide Area Network (WAN).

Since PBX regards facsimile equipment as one of ordinary telephones, IP Packet Assembler/Disassembler (VoIPDB) is required for facsimile uses over IP network same as legacy stations. The facsimile transmission procedure (G.711/G.726 pass-through) is supported with VoIPDB.

The following figure shows a typical configuration of facsimile use on Peer-to-Peer CCIS network.



Station Application

G3 facsimile stations

Service Conditions

1. VoIPDB is required for facsimile use on Peer-to-Peer CCIS network or Remote UNIT over IP function.
2. VoIPDB support FAX over IP with the following FAX protocol.
 - G.711 Pass-through
 - G.726 Pass-through
3. The analog Media Converter used by 2400 IPX cannot be accommodated in SV8300. It is possible to connect facsimiles between 2400 IPX and SV8300.
4. A problem may occur such as “expected transmission speed is not obtained” or “not connectable”, depending on a facsimile model.
5. If a Super G3 facsimile is used, the transmission speed will be equivalent to G3.

6. When the answering using facsimile is required, provide the FAX stations with reverse signal sending by CM13 Y=18. In this case, restrict the Call Waiting Answer of called side by CM15 Y=044 because the system does not provide the FAX station with the call waiting feature.
7. Connectable combinations between facsimile stations are shown below.

Connectable Combinations			Remarks
Source	Via	Destination	
SV8300 FAX station	Local	SV8300 FAX station	Station-to-Station connection
SV8300 FAX station	Peer-to-Peer CCIS	SV8300 FAX station	
SV8300 FAX station	Peer-to-Peer CCIS	2400 IPX FAX station	
SV8300 FAX station	Peer-to-Peer CCIS	2400 IPX MC FAX station	

8. Required bandwidth for FAX connection (default setting) are shown below.

Connection Conditions	Required Bandwidth (One-way)
G711, Payload=40 ms.	
G729a, Payload=40 ms., Communication speed=14.4 Kbps (No IP Header compression in Router)	23.6 Kbps (FAX Payload=78 byte)
G729a, Payload=40 ms., Communication speed=14.4 Kbps (with IP Header compression in Router)	16.6 Kbps (FAX Payload=78 byte)

* This data does not include MAC Header.

9. FAX communication mode of VoIPDB is G.711 in default. To set the voice pass-through mode, FAX related data setting is required in system data programming.

Programming

(1) FAX station setting

START	DESCRIPTION	DATA
CM05	Assign the Unit number and Slot number for the LC blade. <div style="text-align: center; border: 1px solid black; border-radius: 10px; padding: 2px;">BLADE RESET</div>	<ul style="list-style-type: none"> • Y=0 (1) XX ZZ XX: 01-50: Unit No. ZZ : 01-18: Slot No. (2) 20 : LC blade NONE◀: No data
CM10	Assign the station number for the FAX communication to the required Physical Port number.	<ul style="list-style-type: none"> • Y=00 (1) XX YY ZZ: Physical Port No. XX: 01-50: Unit No. YY: 01-18: Slot No. ZZ : 01-32: Circuit No. (2) X-XXXXXXXX: Station No. NONE◀: No data
CM13	Define the station number assigned by CM10 Y=00 as the FAX station number.	<ul style="list-style-type: none"> • Y=07 (1) X-XXXXXXXX: Station No. (2) 0 : FAX Station 1◀: Ordinary Station
CM12	To provide the FAX station with the answering feature, assign Service Restriction Class A to the required FAX station number.	<ul style="list-style-type: none"> • Y=02 (1) X-XXXXXXXX: Station No. (2) 00-15◀: Service Restriction Class A
CM15	Restrict the Call Waiting Answer-Called side in Service Restriction Class A assigned by CM12 Y=02.	<ul style="list-style-type: none"> • Y=044 (1) 00-15: Service Restriction Class A assigned by CM12 Y=02 (2) 0 : Restricted 1◀: Allow
CM13	To provide the FAX station with the answering feature, set the Reverse signal sending to be effective. NOTE: <i>When providing the FAX station with answering feature, set the second data of CM13 Y=18 to "0" and use CD-8LCA blade (LC with reverse function is required).</i>	<ul style="list-style-type: none"> • Y=18 (1) X-XXXXXXXX: Station No. (2) 0 : Effective 1◀: Ineffective
END		

(2) FAX Protocol, FAX Payload size, Jitter Buffer settings for location

To provide each location with the FAX over IP feature, in addition to the “LOCATION DATA ASSIGNMENT”, do the following programming.

START

DESCRIPTION

DATA

CM67

Assign the FAX control information list to each location number assigned by CM8A Y=5000-5255: 173.

NOTE: Follow the typical default setting.

- Y=20
- (1) XXZZ
XX: 00-63: Location No.
ZZ : 00-63: Location No.
- (2) 1 : Fixed list 1 (See the table below)
- 2 : Fixed list 2 (See the table below)
- 4-7 : Programmable list 4-7 (depends on the setting of CM67 Y=21-24)
- NONE◀: Fixed list 1 (See the table below)

	Fixed list 1	Fixed list 2
FAX Protocol	G.711	G.726
FAX Payload Size	40 ms.	40 ms.
Minimum Jitter Buffer	120 ms.	120 ms.
Maximum Jitter Buffer	120 ms.	120 ms.

Assign the FAX protocol for the programmable list 4-7.

NOTE 1: Follow the typical default setting.

NOTE 2: To avoid the false detection, set the second data to 00 when the locations (between locations) does not provide FAX over IP feature.

- Y=21/22/23/24
- (1) 00: FAX Protocol Pattern No.
- (2) 00 : Not detect the FAX protocol
- 01 : G.711 μ -law
- 02 : G.711 A-law
- 03 : G.726
- NONE◀: No data

NOTE 2

*A-law/ μ -law depends on CM04 Y=10-59

Assign the FAX payload size for the programmable list 4-7.

NOTE: Follow the typical default setting.

- Y=21/22/23/24
- (1) 01: FAX Payload Size Pattern No.
- (2) 01-04 : 10 ms.-40 ms.
(10 ms. increments)
- NONE◀: No data

A

A	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM67</div>	<p>Specify the minimum value of jitter buffer for the programmable list 4-7.</p> <p>NOTE 1: <i>Follow the typical default setting.</i></p> <p>NOTE 2: <i>Assign the value which does not exceed the maximum value of jitter buffer set by CM67 Y=21/22/23/24>09.</i></p>	<ul style="list-style-type: none"> • Y=21/22/23/24 (1) 08 (2) 01-30 : 10 ms.-300 ms. (10 ms. increments) NONE◀: No data
	<p>Specify the maximum value of jitter buffer for the programmable list 4-7.</p> <p>NOTE 1: <i>Follow the typical default setting.</i></p> <p>NOTE 2: <i>Assign the value which exceeds the minimum value of jitter buffer set by CM67 Y=21/22/23/24>08.</i></p> <p>NOTE 3: <i>Assign the value which is multiple of the payload size set by CM67 Y=21/22/23/24>01. If the setting value of the second data is not multiple of the payload size, the value remaining is omitted and assigned to the location number automatically.</i></p>	<ul style="list-style-type: none"> • Y=21/22/23/24 (1) 09 (2) 01-30 : 10 ms.-300 ms. (10 ms. increments) NONE◀: No data
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">END</div>		

Operating Procedure

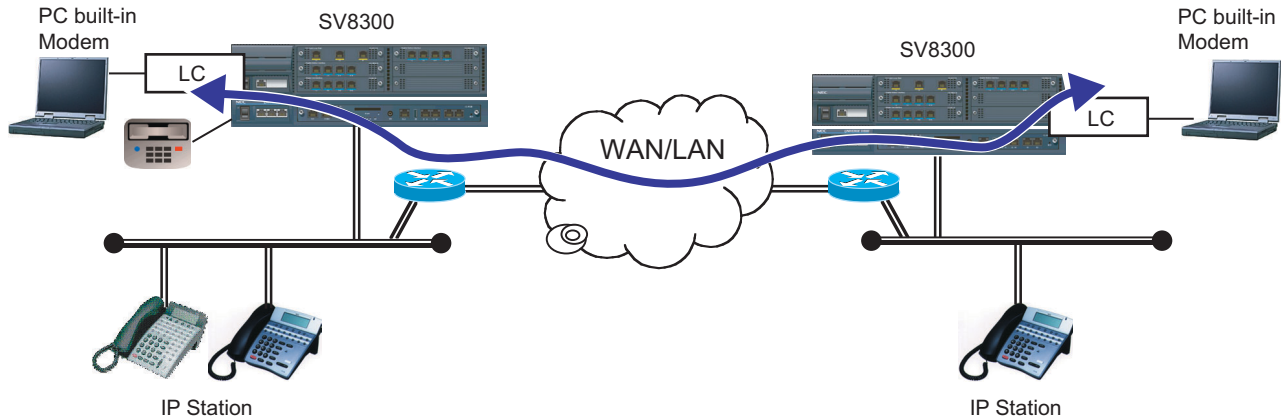
No manual operation is required.

Modem over IP

This feature allows the system to transmit modem communications over IP network, via Local Area Networks (LAN) and corporate Wide Area Network (WAN).

The following figure shows a typical configuration of modem use on Peer-to-Peer CCIS network.

Example of the PC built-in modem Use on IP Network (via Peer-to-Peer CCIS)



Station Application

Analog stations (modem)

Service Conditions

1. VoIPDB is required for Modem over IP use on Peer-to-Peer network or Remote UNIT over IP function.
2. Connectable combinations between modem stations are shown below.

Connectable Combinations			Remarks
Source	Via	Destination	
SV8300 MODEM station	Peer-to-Peer CCIS Local/Peer-to-Peer CCIS	SV8300 MODEM station	Peer-to-Peer CCIS Local (Remote UNIT over IP) Peer-to-Peer CCIS for stand alone system

3. The target value of the connection speed of modem communications over IP in SV8300 is shown in the table below.

NOTE: *The SV8300 does not guarantee the connection speed in the table that is a reference value. The actual speed varies depending on the connection configuration between modem, the conditions of network such as the number of hybrid circuits in the connection route, the quality of lines, or the type of modems. An evaluation test for the connectivity and the effective speed should be performed before actual operation.*

Connection Speed

Modem Protocol	Connection Speed
G.711 pass-through	14.4-24 Kbps
G.726 pass-through	9.6-14.4 Kbps

4. VoIPDB supports Modem over IP with the following modem protocol.
- G.711 Pass-through
 - G.726 Pass-through
5. Required bandwidth for modem connection (default setting) are shown below.

Connection Conditions	Required Bandwidth (One-way)
G.711 pass-through, Payload=40 ms. (No IP Header compression in Router)	72 Kbps (MODEM Payload=320 byte)
G.711 pass-through, Payload=40 ms. (with IP Header compression in Router)	65 Kbps (MODEM Payload=320 byte)
G.726 pass-through, Payload=40 ms. (No IP Header compression in Router)	40 Kbps (MODEM Payload=160 byte)
G.726 pass-through, Payload=40 ms. (with IP Header compression in Router)	33 Kbps (MODEM Payload=160 byte)

* This data does not include MAC Header.

Programming

(1) Modem station setting

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM05</div>	Assign the Unit number and Slot number for the LC blade. <div style="text-align: right; border: 1px solid black; border-radius: 10px; padding: 2px; margin-top: 10px;">BLADE RESET</div>	<ul style="list-style-type: none"> • Y=0 (1) XX ZZ XX: 01-50: Unit No. ZZ : 01-18: Slot No. (2) 20 : LC blade NONE◀: No data
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM10</div>	Assign the station number for the MODEM communication to the required Physical Port number.	<ul style="list-style-type: none"> • Y=00 (1) XX YY ZZ: Physical Port No. XX: 01-50: Unit No. YY: 01-18: Slot No. ZZ : 01-32: Circuit No. (2) X-XXXXXXXX: Station No. NONE◀: No data
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">END</div>		

- (2) Modem Protocol, Modem Payload size, Jitter Buffer settings for location
To provide each location with the Modem over IP feature, in addition to the “LOCATION DATA ASSIGNMENT”, do the following programming.

START

DESCRIPTION

DATA

CM67

Assign the Modem control information list to each location number assigned by CM8A
Y=5000-5255: 173.

NOTE: Follow the typical default setting.

- Y=20
- (1) XXZZ
XX: 00-63: Location No.
ZZ : 00-63: Location No.
- (2) 1 : Fixed list 1 (See the table below)
- 2 : Fixed list 2 (See the table below)
- 4-7 : Programmable list 4-7 (depends on the setting of CM67 Y=21-24)
- NONE◀: Fixed list 1 (See the table below)

	Fixed list 1	Fixed list 2
MODEM Protocol	G.711	G.726
MODEM Payload Size	40 ms.	40 ms.
Minimum Jitter Buffer	120 ms.	120 ms.
Maximum Jitter Buffer	120 ms.	120 ms.

Assign the MODEM protocol for the programmable list 4-7.

NOTE 1: Follow the typical default setting.

NOTE 2: To avoid the false detection, set the second data 00 when the locations (between locations) do not provide Modem over IP feature.

- Y=21/22/23/24
- (1) 00: Modem Protocol Pattern No.
- (2) 00: Not detect the Modem protocol
- 01 : G.711 μ -law
- 02 : G.711 A-law
- 03 : G.726
- NONE◀: No data

NOTE 2

*A-law/ μ -law depends on CM04 Y=10-59

Assign the Modem payload size for the programmable list 4-7.

NOTE: Follow the typical default setting.

- YY=21/22/23/24
- (1) 01: Modem Payload Size Pattern No.
- (2) 01-04 : 10 ms.-40 ms.
(10 ms. increments)
- NONE◀: No data

A

A	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM67</div>	<p>Specify the minimum value of jitter buffer for the programmable list 4-7.</p> <p>NOTE 1: <i>Follow the typical default setting.</i></p> <p>NOTE 2: <i>Assign the value which does not exceed the maximum value of jitter buffer set by CM67 Y=21/22/23/24>09.</i></p>	<ul style="list-style-type: none"> • Y=21/22/23/24 (1) 08 (2) 01-30 : 10 ms.-300 ms. (10 ms. increments) NONE◀: No data
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">END</div>	<p>Specify the maximum value of jitter buffer for the programmable list 4-7.</p> <p>NOTE 1: <i>Follow the typical default setting.</i></p> <p>NOTE 2: <i>Assign the value which exceeds the minimum value of jitter buffer set by CM67 Y=21/22/23/24>08.</i></p> <p>NOTE 3: <i>Assign the value which is multiple of the payload size set by CM67 Y=21/22/23/24>01. If the setting value of the second data is not multiple of the payload size, the value remaining is omitted and assigned to the location number automatically.</i></p>	<ul style="list-style-type: none"> • Y=21/22/23/24 (1) 09 (2) 01-30 : 10 ms.-300 ms. (10 ms. increments) NONE◀: No data

Operating Procedure

No manual operation is required.

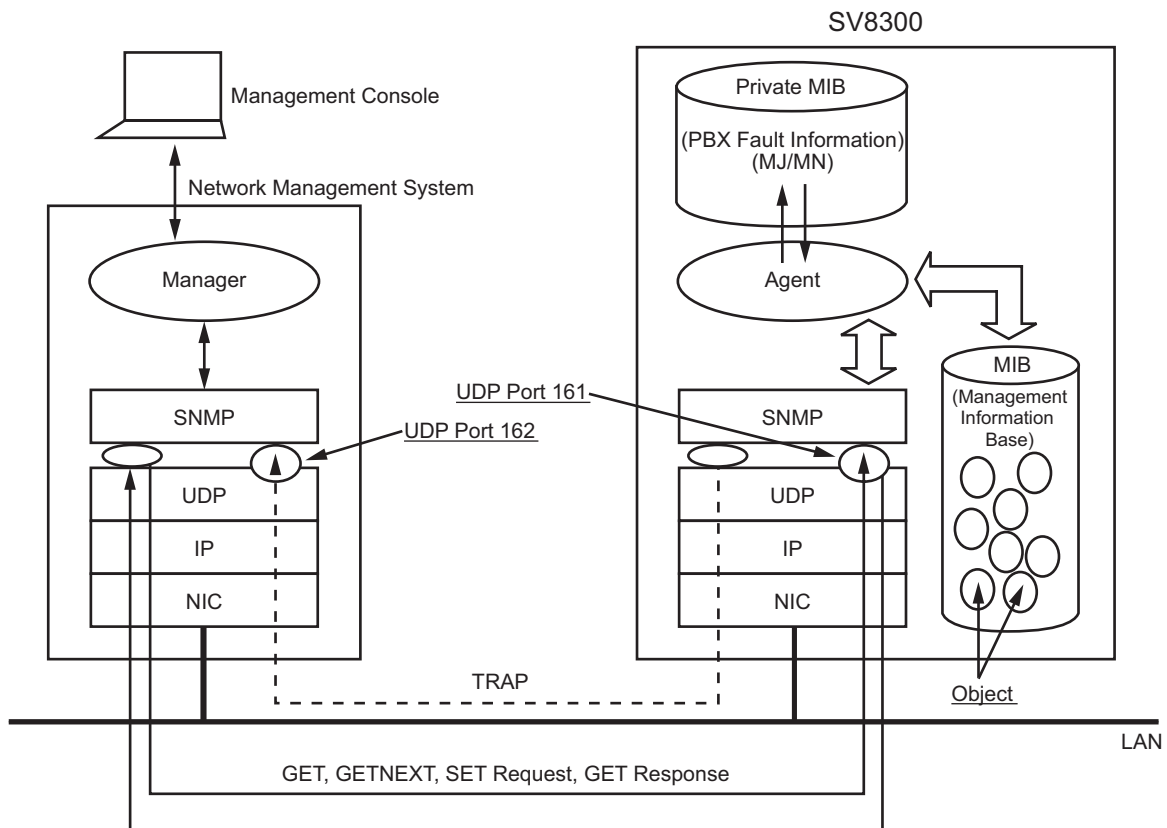
SNMP

General Description

Simple Network Management Protocol (SNMP) is a standard protocol for TCP/IP network management, which enables a network management application software to query a management agent (network device such as router, PC host, and hub) using a supported MIB (Management Information Base). The MIB is a database of network performance information that is stored on the network devices. The SV8300 can support the SNMP standard MIB (MIB-II, defined in IETF RFC 1213), private MIB, and TRAP.

The SV8300 is also possible to correspond to the SNMP via the NAT.

SNMP System Configuration



Station Application

Not Applicable

Service Conditions

1. The SV8300 supports SNMP V1 and SNMP V2C.
2. The SV8300 supports the following standard MIB (standard MIB-II defined in IETF RFC 1213).
 - System Group
 - Interfaces Group
 - IP Group
 - ICMP Group
 - TCP Group
 - UDP Group
 - SNMP Group
3. There are following conditions to access the standard MIB information from the SNMP manager.
 - a) When “public” is assigned as a community name, the SNMP manager can always access all MIB information as “read-only”.
 - b) When “admin” is assigned as the community name, the SNMP manager can access the MIB information only when the PBX system data is assigned to allow using “admin”. In this case, the SNMP manager can read all MIB information, and write the following MIB information.
 - sysContact, sysName, sysLocation
 - c) When the community name uses a string with any character, the SNMP manager can read all MIB information.
4. Private MIB Extensions and Trap command are supported. The SV8300 provides alarm (MJ/MN) and fault information of the system as the MIB information and automatically sends the fault information to the SNMP manager by Trap command.
5. Management via Network Address Translation (NAT) is available when the IP address of Trap source is set in system data programming.
6. Maximum four IP addresses of SNMP managers can be set in system data programming, to restrict access from any other addresses. The number of accessible SNMP managers can be expanded in system data programming. By masking one IP address with Subnet Mask, access to the system is allowed to all managers in the same network.
7. The SV8300 can only provide the MIB information on the Maintenance port/VOIP port of the Unit No. 01. The MIB information which can be obtained are as follows.
 - a) For standard MIB: Only the MIB information of Unit No. 01 can be obtained (for details, refer to the Service Conditions “11”).
 - b) For Private MIB extensions: the fault information of all the Units can be obtained (for details, refer to the Service Conditions “12”).
8. This service can be operated on UDP/IP.
9. The UDP port number of the SV8300 for SNMP is 161 (fixed/standard).

10. The following MIB objects in the System group are assigned as follows:

MIB object	Description	Value
sysDescr	System Information	Set from PCPro is available
sysObjectID	System object ID	Fixed as "1.3.6.1.4.1.119.1.76.3"
sysContact	Contact person for the System with information on how to contact this person	Assigned by ASCII characters (0-255 characters) from PCPro/SNMP manager.
sysName	System name Administratively-assigned name for the system	Assigned by ASCII characters (0-255 characters) from PCPro/SNMP manager.
sysLocation	Physical location of the system	Assigned by ASCII characters (0-255 characters) from PCPro/SNMP manager.

NOTE 1: *Maximum of 64 characters can be assigned for each of MIB object "sysContact", "sysName", "sysLocation" from the PCPro. The MIB objects can be overwritten from the SNMP manager with maximum of 255 characters after they are set by PCPro.*

Be sure to execute the system data backup after the MIB objects are changed.

NOTE 2: *To register the MIB objects to the SV8300 from the SNMP manager, be sure to set the community name "admin" (CM0B Y=0XX>101) or optional community name (CM0B Y=0XX>110) beforehand.*

NOTE 3: *The above MIB objects are stored in the CPU as system data. Therefore, when the SNMP manager changes the MIB information after saving the system data by PCPro, verify error will occur between the saved system data and the system data in the CPU.*

There is no problem for the SV8300 even if the verify error occurs.

11. The following PBX information (Unit No. 01) can be read from the MIB information.

- (1) The total number of packets through Maintenance port or VOIP port.
- (2) The number of error message packets per each protocol. **NOTE**
- (3) The number of packets per each protocol. **NOTE**
- (4) The number of packets disposed by PBX inside reason per each protocol. **NOTE**

NOTE: *The relationship between each protocol and PBX functions are as follows:*

- *SNMP (SNMP communication)..... Application Layer*
- *TCP (PCPro, OAI communication) Transport Layer*
- *UDP (for control and authentication of IP Station)..... Transport Layer*
- *ICMP (for internet control, not related to PBX functions) Network Layer*
- *IP (above SNMP, TCP, UDP, ICMP communication)..... Network Layer*

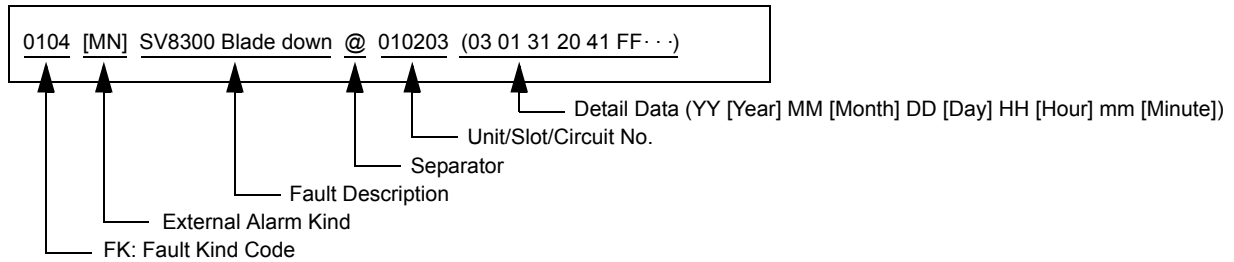
12. The following private MIB objects are provided:

SNMP Command Name	MIB Object/ID	Notified Information	Access to Object
GET/SET	IpsLampStatusClear/ 1.3.6.1.4.1.119.2.3.76.3.1.1	PBX Lamp status 1: MJ/MN Lamp Off 2: Either MJ or MN Lamp On	Read/Write NOTE
GET	IpsMajorLampStatus/ 1.3.6.1.4.1.119.2.3.76.3.1.2	PBX MJ Lamp status 1: MJ Lamp Off 2: MJ Lamp On	Read only
GET	IpsMinorLampStatus/ 1.3.6.1.4.1.119.2.3.76.3.1.3	PBX MN Lamp status 1: MN Lamp Off 2: MN Lamp On	Read only
–	IpsSystemMessageData/ 1.3.6.1.4.1.119.2.3.76.3.2.1	Contents of fault message (Trap) Fault message notification (Trap) Stored up to 255 bytes of alphanumeric characters (ASCII code) (See condition 13.) - FK: Fault Kind Code (4 characters) - External Alarm Kind: 0/1/2=[-]/[MN]/[MJ] - Fault Description (Max.197characters) - Unit/Slot/Circuit No. (5 characters) - Detail Data (43 characters)	Not accessible
TRAP	IpsSystemMessage/ 1.3.6.1.4.1.119.2.3.76.3.2.2		Not accessible

NOTE: When Set-Request is operated for this MIB object, all lamps on PBX are cleared.

13. SNMP-Trap Message Format

Fault message format of SNMP-Trap is as follows.



The table below shows the list of “Fault Kind Code” and “Fault Description”. For details, refer to Fault Display in PCPro.

Fault Kind Code	Fault Description
001	System reset
012	CS/ZT fault
016	It is a day for periodic maintenance
017	Activation Code error occurred during the License Activation (Center Activation)
021	ISDN D-channel link connection failure
022	CCIS link connection failure
025	Number of lockout stations was more than predetermined number
026	DLC blade down
02B	CS/ZT fault occurred
02C	LAN application fault occurred
031	ISDN D-channel link connection returned to normal condition
032	CCIS link connection returned to normal condition
035	Number of lockout stations restored to less than predetermined number
036	DLC blade returned to normal condition
03B	CS/ZT returned to normal condition
03C	LAN application returned to normal condition
040	Traffic of IP network exceeded limit bandwidth
041	Traffic of IP network exceeded warning bandwidth
042	Communication error occurrence between Main Unit and Remote Unit
043	SIP trunk failure
048	Remote System Upgrade
04A	Long call duration
050	Traffic of IP network returned to normal condition from limit bandwidth excess

Continued on next page

Fault Kind Code	Fault Description
051	Traffic of IP network returned to normal condition from warning bandwidth excess
052	Communication error restoration between Main Unit and Remote Unit
053	SIP trunk returned to normal condition
100	Power failure
101	Power failure returned to normal condition
102	DTI line failure
103	DTI line returned to normal condition
104	SV8300 blade down
105	SV8300 blade returned to normal condition
106	SV8300 blade reset with CME03
107	Lack of option value
108	Lack of Highway Channel

14. In following conditions, fault messages output by Trap might disappear. This is because SNMP is operated on UDP and communication is made without establishing the connection. Besides, since UDP does not resend messages, abandoned data cannot be retrieved again.
- SNMP manager is not started
 - Network traffic is congested
 - Fault occurs on the line between PBX and SNMP manager
15. When entering data with characters, the following characters can be registered;
Alphabet upper case (A-Z), alphabet lower case (a-z), numeric (0-9), symbol (! “ # \$ % & ’ () + , ; = > ? @ [] ^ _ ‘ { } ~), Space, hyphen (-), period (.), slash (/), colon (:)

NOTE: *The character “CCC” can not be registered.*

Programming

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 5px; text-align: center;">CM0B</div> <div style="border-left: 1px solid black; border-right: 1px solid black; border-bottom: 1px solid black; height: 400px; margin-top: 10px; text-align: center; vertical-align: bottom; padding: 5px;">A</div>	<p>To register the MIB system information from SNMP manager to the system, open the SNMP port of the system.</p>	<ul style="list-style-type: none"> • Y=001 (Maintenance Port [0] + Unit No. [01]) (1) 100 (2) 0 : Open SNMP port 1◀: Not open SNMP port
	<p>NOTE: <i>To avoid the unauthorized access to the network, keep the 2nd data to 1 except when registering the MIB system information.</i></p>	
	<p>Allow the use of community name “admin”.</p>	<ul style="list-style-type: none"> • Y=001 (Maintenance Port [0] + Unit No. [01]) (1) 101 (2) 0 : Allow (admin) 1◀: Restrict (public)
<p>NOTE: <i>Restrict the use of community name “admin” (set the community name to “public”) except the system construction.</i></p>	<p>Set the community name with 1-32 characters.</p>	<ul style="list-style-type: none"> • Y=001 (Maintenance Port [0] + Unit No. [01]) (1) 110: 1-32 characters (2) A-Z, 0-9 : Character (Maximum 32 characters) NONE◀: No data

A	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">CM0B</div>	Assign the required IP Address for the SNMP manager (first place to fourth place). <div style="text-align: right; border: 1px solid black; border-radius: 15px; padding: 2px 10px;">RESET</div>	<ul style="list-style-type: none"> • Y=001 (Maintenance Port [0] + Unit No. [01]) (1) 124: First place 125: Second place 126: Third place 127: Fourth place (2) XXX.XXX.XXX.XXX: 0.0.0.1-255.255.255.254: IP Address for the SNMP manager (Maximum 15 digits) NONE◀: No data NOTE
	<p>NOTE 1: <i>This command cannot be assigned by CAT.</i></p> <p>NOTE 2: <i>Be sure to enter the periods (.) included in the IP address.</i></p> <p>NOTE 3: <i>The system allows the access only from the IP address that is set by this command. But if no IP address for the SNMP manager (first place to fourth place) are set, the access to the system is allowed to all SNMP managers.</i> <i>To avoid the unauthorized access to the system, this data setting is required.</i></p>	
	To check the IP address of SNMP manager from the network address, define the IP address of SNMP manager (fourth place) as the Subnet mask of the IP address for the SNMP manager (first place). <div style="text-align: right; border: 1px solid black; border-radius: 15px; padding: 2px 10px;">RESET</div>	<ul style="list-style-type: none"> • Y=001 (Maintenance Port [0] + Unit No. [01]) (1) 103 (2) 0 : Subnet Mask of the IP address for the SNMP manager (first place) 1◀: IP address for the SNMP manager (fourth place)
	Set the system information (sysDescr) with 1-128 characters. <div style="text-align: right; border: 1px solid black; border-radius: 15px; padding: 2px 10px;">RESET</div>	<ul style="list-style-type: none"> • Y=001 (Maintenance Port [0] + Unit No. [01]) (1) 111: 1-128 characters (2) A-Z, 0-9 : Character (Maximum 128 characters) NONE◀: No data
	Set the system contact (sysContact) with 1-64 characters. <div style="text-align: right; border: 1px solid black; border-radius: 15px; padding: 2px 10px;">RESET</div>	<ul style="list-style-type: none"> • Y=001 (Maintenance Port [0] + Unit No. [01]) (1) 112: 1-64 characters (2) A-Z, 0-9 : Character (Maximum 64 characters) NONE◀: No data
B		

B	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM0B</div>	Set the system name (sysName) with 1-64 characters. <div style="text-align: right; border: 1px solid black; border-radius: 15px; padding: 2px 10px; display: inline-block;">RESET</div>	<ul style="list-style-type: none"> • Y=001 (Maintenance Port [0] + Unit No. [01]) <ol style="list-style-type: none"> (1) 113: 1-64 characters (2) A-Z, 0-9 : Character (Maximum 64 characters) NONE◀: No data
	Set the location of system (sysLocation) with 1-64 characters. <div style="text-align: right; border: 1px solid black; border-radius: 15px; padding: 2px 10px; display: inline-block;">RESET</div>	<ul style="list-style-type: none"> • Y=001 (Maintenance Port [0] + Unit No. [01]) <ol style="list-style-type: none"> (1) 114: 1-64 characters (2) A-Z, 0-9 : Character (Maximum 64 characters) NONE◀: No data
	Specify whether the trap is sent to the SNMP manager. <div style="text-align: right; border: 1px solid black; border-radius: 15px; padding: 2px 10px; display: inline-block;">RESET</div>	<ul style="list-style-type: none"> • Y=001 (Maintenance Port [0] + Unit No. [01]) <ol style="list-style-type: none"> (1) 102 (2) 0 : To send 1◀: Not sent
	Specify whether the specific, object ID in the trap message is changed, or not. <div style="text-align: right; border: 1px solid black; border-radius: 15px; padding: 2px 10px; display: inline-block;">RESET</div>	<ul style="list-style-type: none"> • Y=001 (Maintenance Port [0] + Unit No. [01]) <ol style="list-style-type: none"> (1) 104 (2) 0 : Changed by Alarm kind 1◀: Fixed
	Assign the required IP Address for the destination of trap (first place to fourth place). <div style="text-align: right; border: 1px solid black; border-radius: 15px; padding: 2px 10px; display: inline-block;">RESET</div>	<ul style="list-style-type: none"> • Y=001 (Maintenance Port [0] + Unit No. [01]) <ol style="list-style-type: none"> (1) 120: First place 121: Second place 122: Third place 123: Fourth place (2) XXX.XXX.XXX.XXX: 0.0.0.1-255.255.255.254: IP Address for the destination of trap (Maximum 15 digits) NONE◀: No data
	<p>NOTE 1: <i>This command cannot be assigned by CAT.</i></p> <p>NOTE 1: <i>Be sure to enter the periods (.) included in the IP address.</i></p>	

C

C	DESCRIPTION	DATA
CM0B	Assign the community name for the destination of trap (first place) with 1-25 characters. RESET	<ul style="list-style-type: none"> • Y=001 (Maintenance Port [0] + Unit No. [01]) (1) 115: 1-25 characters (2) A-Z, 0-9 : Character (Maximum 25 characters) NONE◀: No data
	Assign the community name for the destination of trap (second place) with 1-25 character. RESET	<ul style="list-style-type: none"> • Y=001 (Maintenance Port [0] + Unit No. [01]) (1) 116: 1-25 characters (2) A-Z, 0-9 : Character (Maximum 25 characters) NONE◀: No data
	Assign the community name for the destination of trap (third place) with 1-25 characters. RESET	<ul style="list-style-type: none"> • Y=001 (Maintenance Port [0] + Unit No. [01]) (1) 117: 1-25 characters (2) A-Z, 0-9 : Character (Maximum 25 characters) NONE◀: No data
	Assign the community name for the destination of trap (fourth place) with 1-25 characters. RESET	<ul style="list-style-type: none"> • Y=001 (Maintenance Port [0] + Unit No. [01]) (1) 118: 1-25 characters (2) A-Z, 0-9 : Character (Maximum 25 characters) NONE◀: No data
	When using the NAT, assign the IP Address for the trap source. RESET	<ul style="list-style-type: none"> • Y=001 (Maintenance Port [0] + Unit No. [01]) (1) 129 (2) XXX.XXX.XXX.XXX: 0.0.0.1-255.255.255.254: IP Address for the trap source (Maximum 15 digits) NONE◀: No data

NOTE 1: *This command cannot be assigned by CAT.*

NOTE 2: *Be sure to enter the periods (.) included in the IP address.*

NOTE 3: *The IP address assigned by this data is set to the Agent address in “SNMP TRAP PDU”, and the system sends the IP address to the IP network. Wherever the system is located on the LAN, system administrator can manage it easily by setting of the convenient IP address.*

END

Operating Procedure

To make available the SNMP for SV8300, register the following SNMP data to the SV8300 using the PCPro or SNMP manager.

Once SNMP data is registered, the operation of SV8300 is not required.

Also, a part of MIB system information can be changed from the SNMP manager.

(1) PCPro Operation

STEP1: Open the SNMP port of the system by CM0B Y=001>100.

STEP2: Set the community name (for system password) by CM0B Y=001>110.

There are three community names as follows.

“public”: SNMP manager can read All MIB information

“admin”: SNMP manager can read All MIB information, and can write a part of MIB information.

“Optional community name”: SNMP manager can read/write the MIB information such as a general SNMP

Usually, set the “Optional community name” by CM0B Y=001>110.

Community name “public” is always available.

To avoid the unauthorized access to the network, use the community name “admin” only for the system construction (CM0B Y=001>101).

STEP3: Set the IP address for SNMP manager by CM0B Y=001>124-127.

STEP4: Set the system information (sysDescr) by CM0B Y=001>111.

STEP5: Set the system contact (sysContact) by CM0B Y=001>112.

STEP6: Set the system name (sysName) by CM0B Y=001>113.

STEP7: Set the system location (sysLocation) by CM0B Y=001>114.

STEP8: Specify whether the trap is sent or not by CM0B Y=001>102.

STEP9: Set the IP address for the destination of trap by CM0B Y=001>120-123.

STEP10: Set the community name for the destination of trap by CM0B Y=001>115-118.

STEP11: When using the NAT, set the IP address for the trap source by CM0B Y=001>129.

STEP12: Execute the system data backup by CMEC Y=6>0: 0.

STEP13: Press the RESET switch of CPU blade.

(2) SNMP Manager Operation

The following MIB system information can be changed from the SNMP manager.

When the following information is set from the PCPro, SNMP manager can overwrite them.

- System Contact (sysContact)
- System Name (sysName)
- System Location (sysLocation)

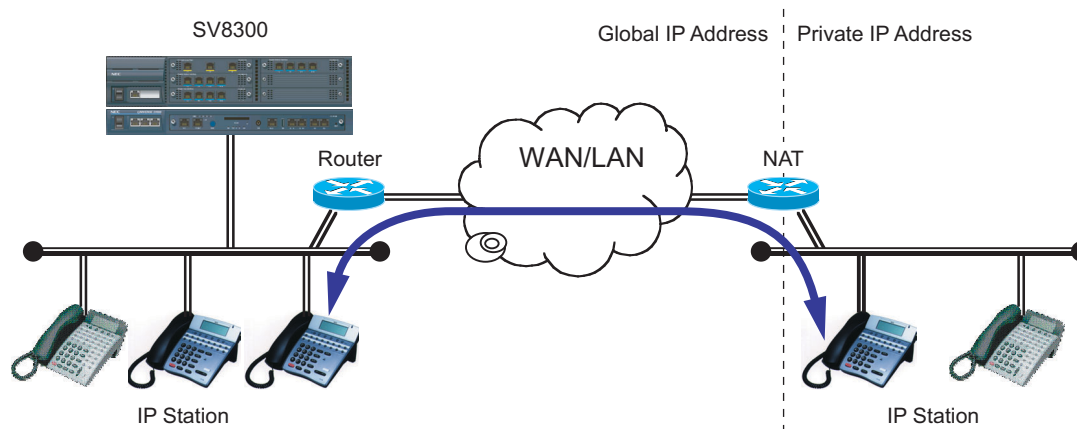
NOTE: *When the above information is overwritten by the SNMP manager, be sure to execute the system data backup from the PCPro.*

Terminal Login via NAT

This feature allows the system to transmit Network Address Translation (NAT) over IP network, via Local Area Networks (LAN) and corporate Wide Area Network (WAN).

The following figure shows a typical configuration of NAT use on IP network.

Example of NAT Use on IP Network



Station Application

Not Applicable

Service Conditions

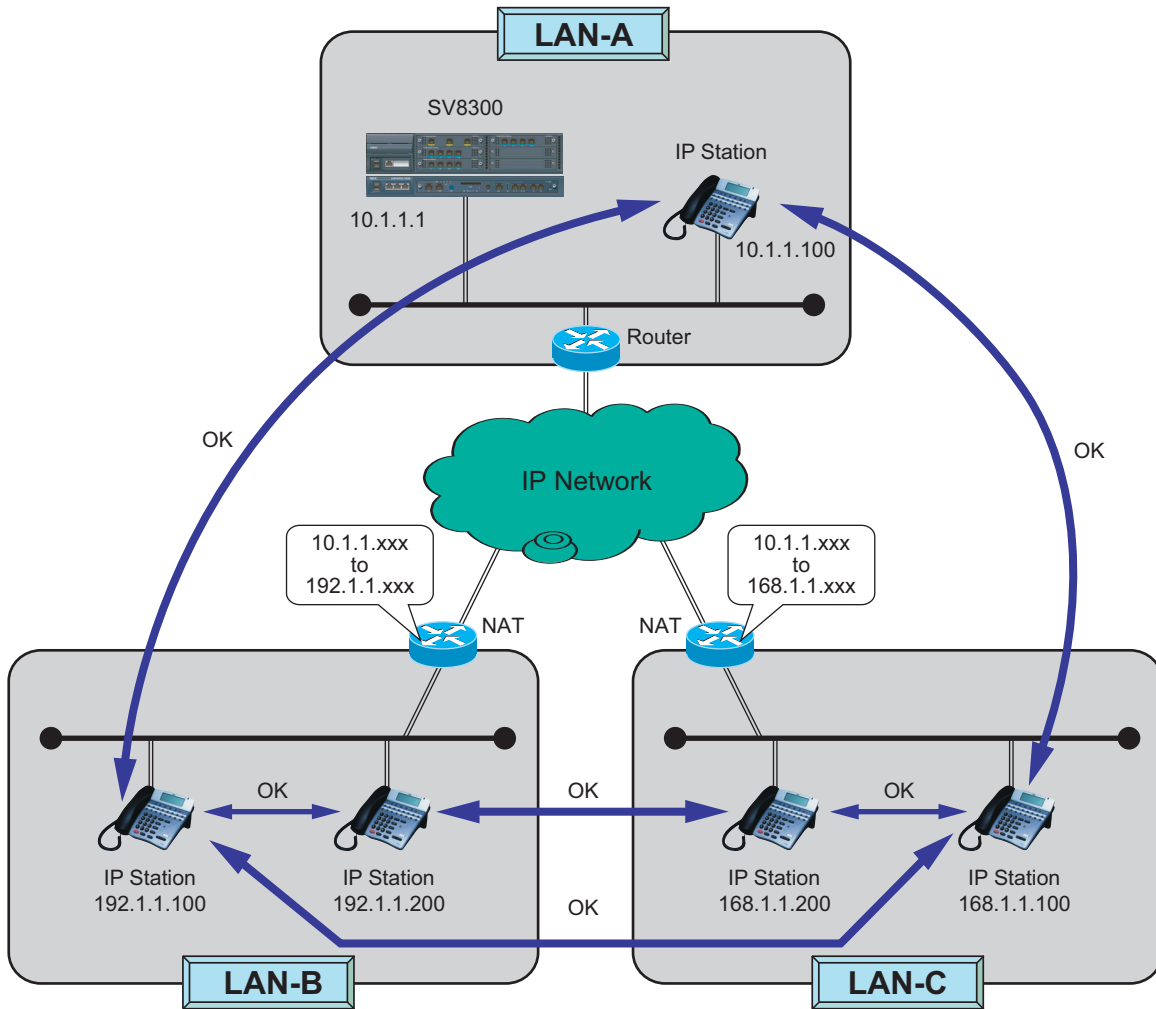
Conditions on Overall System

1. As an address translation method, Basic NAT is used. NAPT (IP masquerade) is not supported.
2. Global IP address is assigned to an IP Station/VoIPDB placed in stand-alone system or Main Unit for Remote UNIT over IP when NAT is performed. Only single Private IP address can be translated to single Global IP address. Private IP address can be assigned to IP Stations under the NAT only.
3. Global IP address that is assigned to IP Station does not change when the terminal has logged in.
4. Equipments that support NAT are as follows. (All the equipments that are related to communications and supporting NAT are required. If there is equipment that does not support NAT, one-way speech or no tone might occur.)

EQUIPMENT		Available : × Not available: -
Terminals	D ^{term} 85 (Series i) (IP Adapter Type)	×
	D ^{term} 85 (Series i) (IP Bundled Type)	×
	D ^{term} IP INASET (ITR-240G-1)	-
	Soft Phone	×
	D ^{term} 75 (Series E) (IP Adapter Type)	-
	D ^{term} IP INASET (ITR-LC-1)	-
Daughter Board	VoIPDB	×

Conditions on IP Station

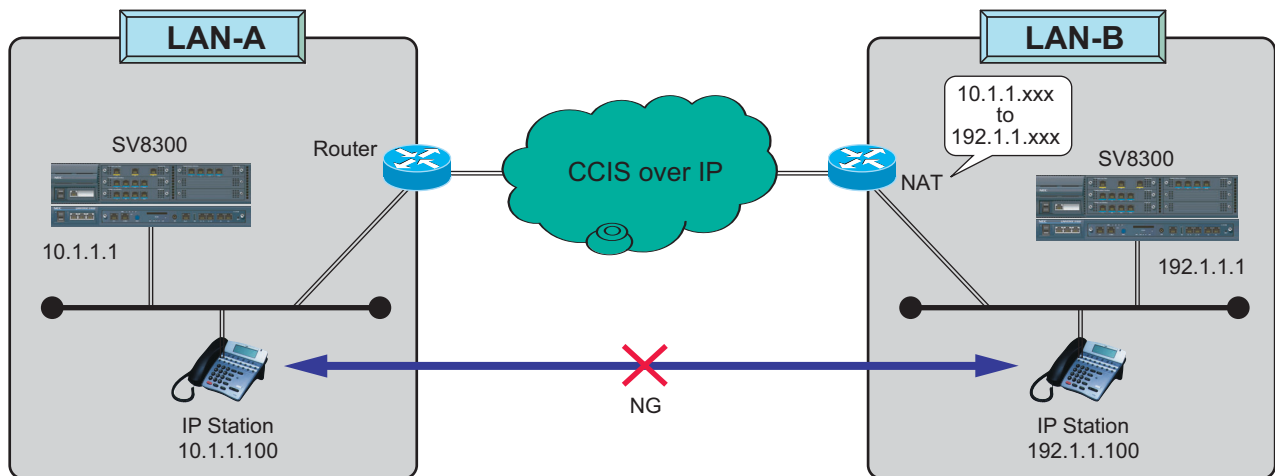
1. IP Station can be installed at remote location from SV8300 via NAT.
 - IP Station can communicate each other under the same NAT.
 - IP Station can communicate each other under different NATs.
 - IP Station cannot be connected via multiple NATs.



2. IP Stations used between networks via NAT can be set different location numbers since it is necessary to specify the connection status of NAT between locations in system data programming (CM67 Y=08).
3. Be sure to set NAT, as the assigned IP address at login of IP Station is not changed before logout.

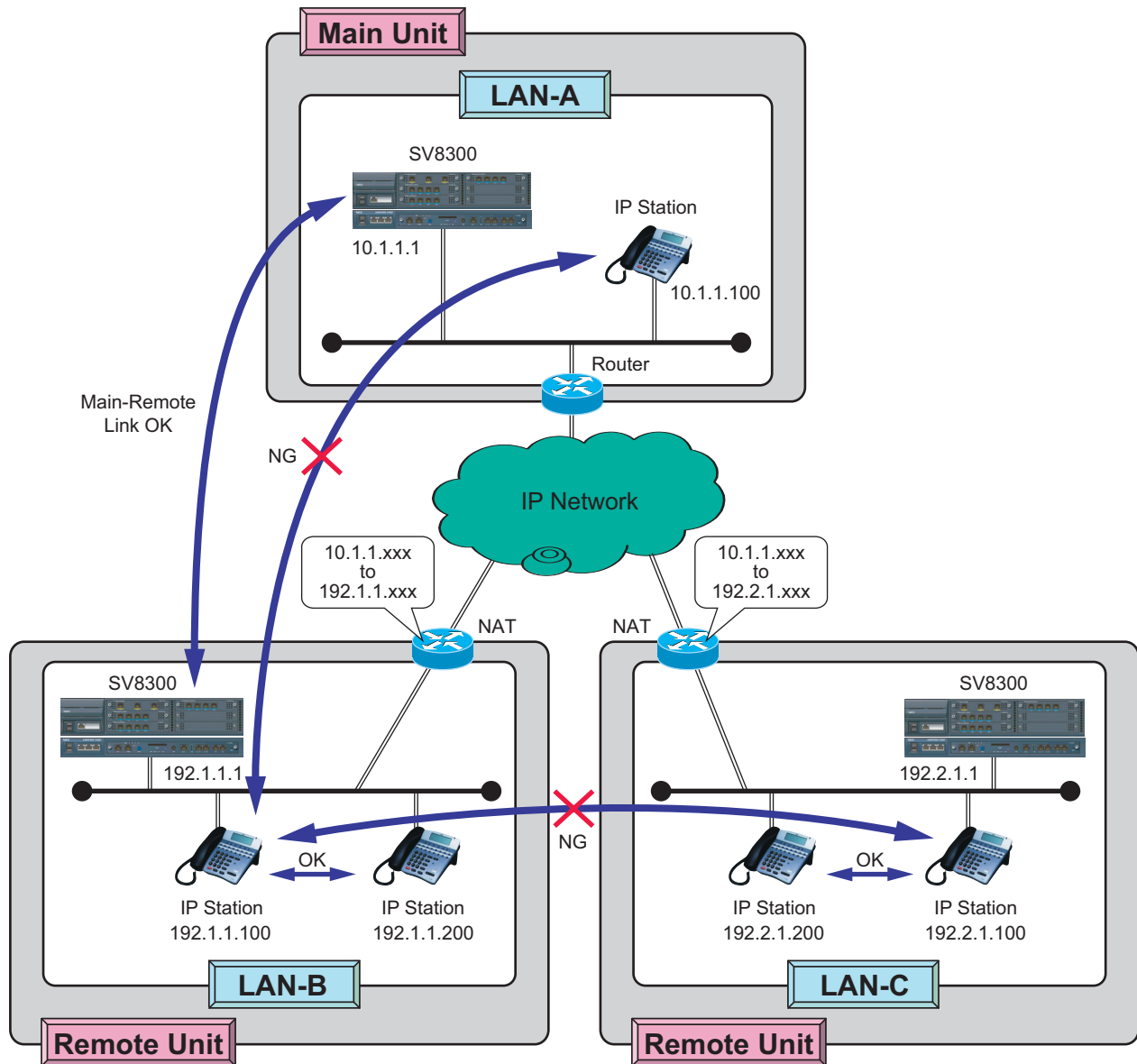
Conditions on CCIS Connection (Peer to Peer Connection)

1. Communication in CCIS connection via NAT is not available.
 - IP Stations accommodated in the same office can communicate each other.
 - IP Stations accommodated in the different offices via NAT cannot communicate each other.



Conditions on Remote UNIT over IP

1. Remote Unit can operate in normal remote mode, which is subordinate operation to the Main Unit, when NAT is used between the Main Unit and Remote Unit.
 - IP Stations accommodated in the same unit can communicate each other. This condition is applied to normal remote operation and survival operation.
 - IP Stations accommodated in the different units via NAT cannot communicate each other.



2. Be sure to set NAT, as the assigned IP address for the unit that is not changed during normal operation mode.

Conditions on VoIPDB

- When the VoIPDB is connected via NAT, a Global IP address is assigned to the VoIPDB of Remote Unit for Remote UNIT over IP by system data (CM0B Y=0XX/1XX>70). Therefore, in NAT setting, the IP address of VoIPDB should be assigned statically.

Programming

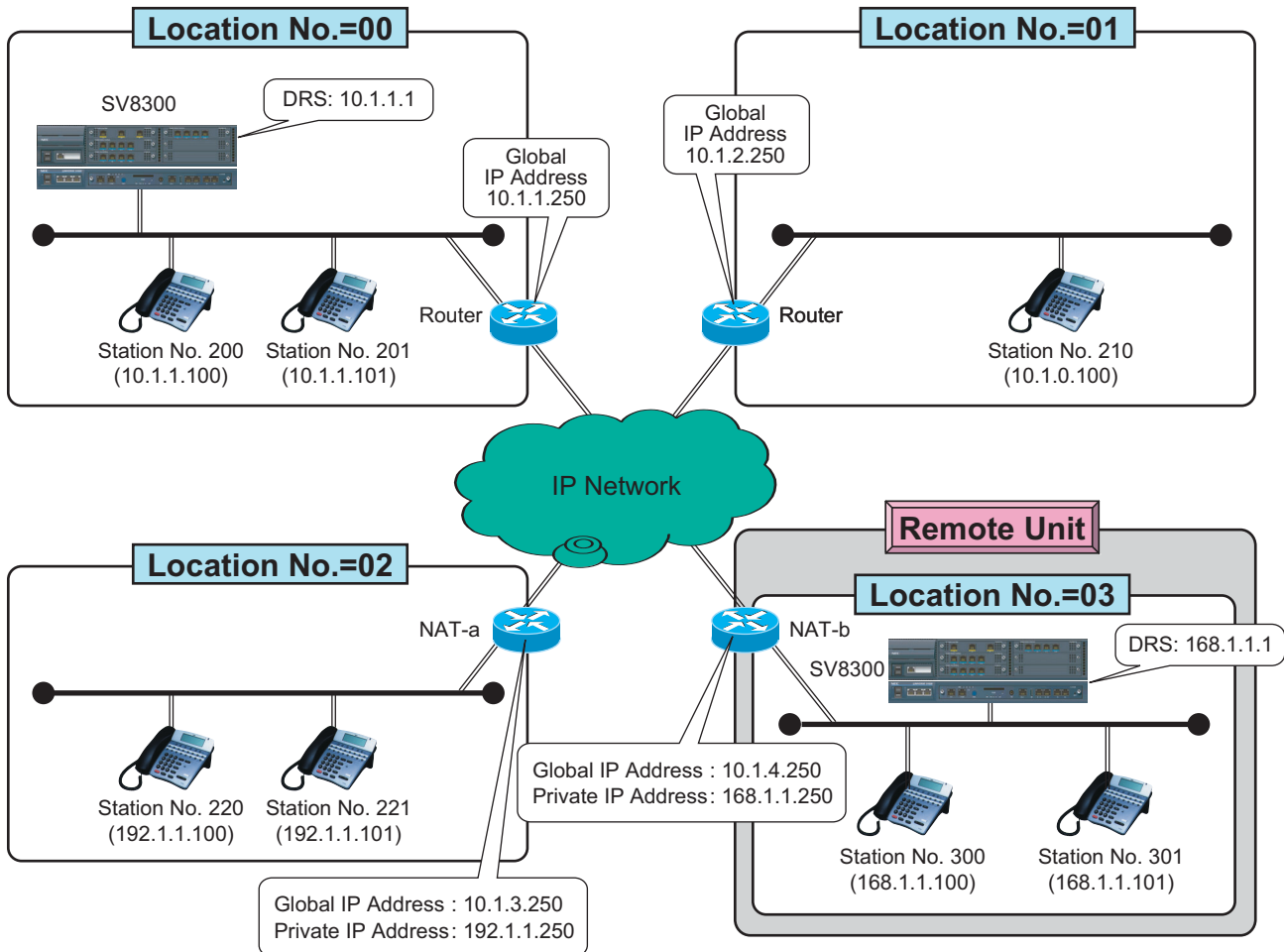
START	DESCRIPTION	DATA
CM67	Specify whether the IP Station at Remote Unit location from IPS via NAT can communicate each other under the same NAT or not.	<ul style="list-style-type: none"> • Y=07 (1) XX ZZ XX: 00-63: Location No. ZZ : 00-63: Location No. (2) 0 : Under the same NAT 1◀: Under the different NAT or Not used NAT
	<p>NOTE: <i>The same location number must not be assigned to IP Station that is not accommodated under the same NAT. However, multiple location numbers can be assigned to IP Station that is accommodated under the same NAT.</i></p>	
	Specify whether the connection between locations is restricted or not.	<ul style="list-style-type: none"> • Y=08 (1) XX ZZ XX: 00-63: Location No. ZZ : 00-63: Location No. (2) 0 : To restrict 1◀: Not restricted
	<p>NOTE: <i>Restrict the following connection by this command when NAT is used.</i></p> <ul style="list-style-type: none"> - Connection via CCIS (Peer to Peer connection) - Connection between Main Unit and Remote Units - Connection between locations that are restricted the communications 	
CM0B	Assign the Global IP address for VoIPDB of Remote Unit of Remote UNIT over IP when VoIPDB is controlled by NAT.	<ul style="list-style-type: none"> • Y=1XX (VOIP Port [1] + Unit No. [01-50]) (1) 70 (2) XXX.XXX.XXX.XXX: 0.0.0.1-255.255.255.254: Global IP Address for VoIPDB (Maximum 15 digits) NONE◀: No data
	<p>NOTE 1: <i>This command cannot be assigned by CAT.</i></p> <p>NOTE 2: <i>Be sure to enter the periods (.) included in the IP address.</i></p>	
END		

Example of Programming for Terminal Login via NAT

The following shows example of data programming for Terminal Login via NAT.

– Network configuration

Network Configuration



– Programming of Terminal Login via NAT

Programming of Terminal Login via NAT

COMMAND	Y	FIRST DATA	SECOND DATA
67	07	0202	0
67	07	0303	0
67	08	0003	0
67	08	0300	0
67	08	0103	0
67	08	0301	0
67	08	0203	0
67	08	0302	0

– Programming of IP Station

Programming of IP Station

STATION NUMBER	IP ADDRESS	DRS	GATEWAY ADDRESS
200	10.1.1.100 (Global IP Address)	10.1.1.1	10.1.1.250 (Global IP Address)
201	10.1.1.101 (Global IP Address)	10.1.1.1	10.1.1.250 (Global IP Address)
210	10.1.2.100 (Global IP Address)	10.1.1.1	10.1.2.250 (Global IP Address)
220	192.1.1.100 (Private IP Address)	10.1.1.1	192.1.1.250 (Private IP Address)
221	192.1.1.101 (Private IP Address)	10.1.1.1	192.1.1.250 (Private IP Address)
300	168.1.1.100 (Private IP Address)	168.1.1.1	192.1.1.250 (Private IP Address)
301	168.1.1.101 (Private IP Address)	168.1.1.1	192.1.1.250 (Private IP Address)

– Setting of Router (NAT-a [Cisco router])

- > ip nat pool POOL1 10.1.3.1 10.1.3.15 netmask 255.255.255.240
[Register the range of Global IP address 10.1.3.1-10.1.3.15 for NAT as POOL1.]
* Set the number of Global IP address to exceed the number of IP Station.
- > access-list 1 permit any
[Register all packets of private network as list 1.]
- > ip nat inside source list 1 pool POOL1
[Find the matched packets to list 1 in private network and translate within range of POOL1.]
- > interface Ethernet0
[Port of LAN side]
- >> ip nat inside
[Designate private network of NAT]
- > interface Ethernet1
[Port of WAN side]
- >> ip nat outside
[Designate global network of NAT]

Communication Availability

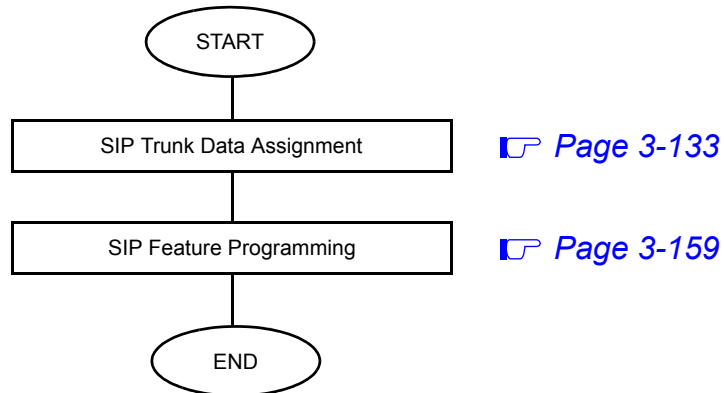
STATION NUMBER	Available : × Not available: -
200-201	×
200-210	×
200-220	×
200-300	-
210-220	×
220-221	×
220-300	-
300-301	×

SIP TRUNK DATA ASSIGNMENT

Programming Procedure for SIP Trunk

Program the system data according to the following procedure.

Programming Procedure for SIP Trunk



SIP Trunk Data Assignment

NOTE 1: When entering data with characters, the following characters can be registered;
Alphabet upper case (A-Z), alphabet lower case (a-z), numeric (0-9), symbol (! “ # \$ % & ’ ()
+ , ; < = > ? @ [] ^ _ ‘ { } ~), Space, hyphen (-), period (.), slash (/), colon (:)

NOTE 2: The character “CCC” cannot be registered.

START	DESCRIPTION	DATA
CM10	Assign a trunk number to Virtual Port number of the SIP trunk.	<ul style="list-style-type: none"> • Y=03 (1) XX ZZZ: Virtual Port No. XX : 01: Unit No. ZZZ: 000: Port No. for control channel 001-095: Port No. for voice channel (2) D000-D511: Trunk No.
	RESET	
CM08	Allow C.O. to C.O. transfer by station or attendant.	<ul style="list-style-type: none"> (1) 028 (2) 0 : To allow 1◀: Not allowed
	Specify the trunk seizure sequence when CM35 Y=083 2nd data is set to 0.	<ul style="list-style-type: none"> (1) 078 (2) 0 : Highest available trunk 1◀: Lowest available trunk
	NOTE: We recommend that the 2nd data is set to “1” (Lowest available trunk).	
	Specify that Ring Transfer for Call Transfer-All Calls to a SIP is available when a station holds another station.	<ul style="list-style-type: none"> (1) 253 (2) 0 : Available 1◀: Not available
A		

A	DESCRIPTION	DATA
CM0B	Assign the IP address for the SIP trunk.	<ul style="list-style-type: none"> • Y=101 (VOIP Port [1] + Unit No. [01]) (1) 00: IP Address for the SIP trunk (2) XXX.XXX.XXX.XXX: 0.0.0.1-255.255.255.254: IP Address for the SIP trunk (Maximum 15 digits) NONE◀: No data
	NOTE 1: <i>This command cannot be assigned by CAT.</i>	
	NOTE 2: <i>Be sure to enter the periods (.) included in the IP address.</i>	
	Assign the Subnet Mask for the SIP trunk.	<ul style="list-style-type: none"> • Y=101 (VOIP Port [1] + Unit No. [01]) (1) 01 (2) XXX.XXX.XXX.XXX: 0.0.0.255-255.255.255.252: Subnet Mask for the SIP trunk (Maximum 15 digits) NONE◀: No data
	RESET	
	NOTE 1: <i>This command cannot be assigned by CAT.</i>	
	NOTE 2: <i>Be sure to enter the periods (.) included in the IP address.</i>	
	Assign the Default Gateway Address for the SIP trunk.	<ul style="list-style-type: none"> • Y=101 (VOIP Port [1] + Unit No. [01]) (1) 02 (2) XXX.XXX.XXX.XXX: 0.0.0.1-255.255.255.254: Default Gateway Address for the SIP trunk (Maximum 15 digits) NONE◀: No data
	RESET	
	NOTE 1: <i>This command cannot be assigned by CAT.</i>	
	NOTE 2: <i>Be sure to enter the periods (.) included in the IP address.</i>	
B		

B	DESCRIPTION	DATA
CM0B	Assign the IP address (RTP) for the VoIPDB.	<ul style="list-style-type: none"> Y=2XX (VOIP port [2] + Unit No. [01])
	RESET	(1) 00: IP Address 1 20: IP Address 2 21: IP Address 3 22: IP Address 4 23: IP Address 5 24: IP Address 6 25: IP Address 7 26: IP Address 8
	NOTE 1: <i>This command cannot be assigned by CAT.</i>	
	NOTE 2: <i>Be sure to enter the periods (.) included in the IP address.</i>	
	NOTE 3: <i>Maximum of 8 IP addresses can be set as IP address (RTP).</i>	(2) XXX.XXX.XXX.XXX: 0.0.0.1-255.255.255.254: IP Address (Maximum 15 digits) NONE◀: No data
	NOTE 4: <i>Set an IP address (RTP) every 16 voice channels to be used.</i>	
	Assign the number of voice channels used for the SIP trunk.	<ul style="list-style-type: none"> Y=201 (VOIP Port [2] + Unit No. [01])
	RESET	(1) 10 (2) 16, 32, 48, 64, 80, 96, 112, 128 (Number of voice channels used)
		NONE◀: Use all channels of the VoIPDB
		NOTE
C		

C	DESCRIPTION	DATA										
CM0B	<p>Assign the RTP port number for the SIP trunk.</p> <p style="text-align: right;">RESET</p>	<ul style="list-style-type: none"> • Y=201 (VOIP port [2] + Unit No. [01]) (1) 40: RTP Base Port for Voice Packet transmitting/receiving (2) 01024-65534: RTP Base Port No. NONE◀ : 10000 <p style="text-align: right;">NOTE 1, NOTE 2, NOTE 3, NOTE 4</p> <p>NOTE 1: Follow the typical default setting.</p> <p>NOTE 2: Set this data when the router or firewall provides the restriction by TCP port.</p> <p>NOTE 3: The port number to be used for transmitting/receiving the RTP packets is used at 2-port intervals from the Base port set by this command for each channel. For the default settings, a maximum of 96 ports is used from among the following ports.</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;"><u>CHANNEL No.</u></th> <th style="text-align: center;"><u>PORT No.</u></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">10000</td> </tr> <tr> <td style="text-align: center;">2</td> <td style="text-align: center;">10002</td> </tr> <tr> <td style="text-align: center;">⋮</td> <td style="text-align: center;">⋮</td> </tr> <tr> <td style="text-align: center;">128</td> <td style="text-align: center;">10254</td> </tr> </tbody> </table> <p>NOTE 4: Be sure that the use range of each port assigned by CM0B Y=101>36, 37, 38, 39 does not overlap the setting of the RTP Base port for voice packet transmitting/receiving.</p>	<u>CHANNEL No.</u>	<u>PORT No.</u>	1	10000	2	10002	⋮	⋮	128	10254
<u>CHANNEL No.</u>	<u>PORT No.</u>											
1	10000											
2	10002											
⋮	⋮											
128	10254											
	<p>Assign the UDP port number for the SIP trunk.</p> <p style="text-align: right;">RESET</p>	<ul style="list-style-type: none"> • Y=101 (VOIP Port [1] + Unit No. [01]) (1) 36: UDP Port for SIP control packet (2) 01024-65534: UDP No. NONE◀ : 05060 [56000 (1port is used)] <p style="text-align: right;">NOTE 1, NOTE 2, NOTE 3</p> <p>NOTE 1: Follow the typical default setting.</p> <p>NOTE 2: Set this data when the router or firewall provides the restriction by TCP port.</p> <p>NOTE 3: Be sure that the use range of each port assigned by CM0B Y=101>37, 38, 39, Y=201>40 does not overlap the setting of the UDP port for SIP control packet.</p>										
D												

D	DESCRIPTION	DATA
CM0B	Assign the Primary IP address for DNS server. <div style="text-align: right;">(RESET)</div>	<ul style="list-style-type: none"> • Y=101 (VOIP Port [1] + Unit No. [01]) (1) 60 (2) XXX.XXX.XXX.XXX: 0.0.0.1-255.255.255.254: IP Address for the DNS server (Maximum 15 digits) NONE◀: No data
	<p>NOTE 1: <i>This command cannot be assigned by CAT.</i></p> <p>NOTE 2: <i>Be sure to enter the periods (.) included in the IP address.</i></p>	
CM30	Assign the Secondary IP address for DNS server. <div style="text-align: right;">(RESET)</div>	<ul style="list-style-type: none"> • Y=101 (VOIP Port [1] + Unit No. [01]) (1) 61 (2) XXX.XXX.XXX.XXX: 0.0.0.1-255.255.255.254: IP Address for the DNS server (Maximum 15 digits) NONE◀: No data
	<p>NOTE 1: <i>This command cannot be assigned by CAT.</i></p> <p>NOTE 2: <i>Be sure to enter the periods (.) included in the IP address.</i></p> <p>NOTE 3: <i>Set the IP address of DNS server only when using the domain name to describe URL.</i></p>	
	Assign a trunk route number to each trunk number for voice channel of SIP trunk. <div style="text-align: right;">(RESET)</div>	<ul style="list-style-type: none"> • Y=00 (1) 000-511: Trunk No. assigned by CM10 (2) 00-63: Trunk Route No.
CM35	Assign a tenant number to each trunk number. NOTE: <i>When the opposite PBX is the 2400 IPX, assign 01 or more for tenant number.</i>	<ul style="list-style-type: none"> • Y=01 (1) 000-511: Trunk No. assigned by CM10 (2) 00, 01◀-63: Tenant No.
	Provide the voice channel route with SIP trunk facilities. <div style="text-align: right;">(RESET)</div>	<ul style="list-style-type: none"> • Y=090 (1) 00-63: Trunk Route No. (2) 0 : SIP trunk 7◀: Not used
E	Assign the SIP number to each voice channel trunk route. <div style="text-align: right;">(RESET)</div>	<ul style="list-style-type: none"> • Y=091 (1) 00-63: Trunk Route No. (2) 0-15 : SIP trunk No. NONE◀: No data

E	DESCRIPTION	DATA
CM30	Assign a Circuit Identification Code (CIC) to each trunk number for voice channel of SIP trunk route.	<ul style="list-style-type: none"> • Y=35 (1) 000-511: Trunk No. assigned by CM10 (2) 001-127: CIC
	RESET	
	<p>NOTE: <i>The Circuit Identification Code (CIC) represents a circuit number to designate a trunk (of each trunk route) used as a voice channel in the No. 7 CCIS network. Assign this data after setting CM35 Y=090, 091.</i></p>	
CM35	Assign the trunk route data for voice channel of SIP trunk route.	<ul style="list-style-type: none"> • Y=000 (1) 00-63: Trunk Route No. (2) 00: C.O. line 04: Tie Line
	RESET	
	Assign the answer signal for voice channel of SIP trunk route.	<ul style="list-style-type: none"> • Y=004 (1) 00-63: Trunk Route No. (2) 2: Answer signal arrives
	Assign the trunk route data for voice channel of SIP trunk route.	<ul style="list-style-type: none"> • Y=005 (1) 00-63: Trunk Route No. (2) 1◀: Release signal arrives
	Specify the incoming connection signal for voice channel of SIP trunk route.	<ul style="list-style-type: none"> • Y=009 (1) 00-63: Trunk Route No. (2) 03: SIP
	RESET	
	Assign the PAD data for the connection from a trunk to a station.	<ul style="list-style-type: none"> • Y=289 (1) 00-63: Trunk Route No. (2) 01-31 : PAD data <ul style="list-style-type: none"> 01: -15 dB ∧ (1 dB increment) 15: -1 dB 16: 0 dB 17: +1 dB ∧ (1 dB increment) 31: +15 dB NONE◀: 0 dB (+: Gain, -: Loss)
F		

F	DESCRIPTION	DATA
CM35	Assign the PAD data for the connection from a station to a trunk.	<ul style="list-style-type: none"> • Y=290 (1) 00-63: Trunk Route No. (2) 01-31 : PAD data <ul style="list-style-type: none"> 01: -15 dB ∩ (1 dB increment) 15: -1 dB 16: 0 dB 17: +1 dB ∩ (1 dB increment) 31: +15 dB NONE◀: 0 dB (+: Gain, -: Loss)
CM36	Assign the PAD data for the tandem connection.	<ul style="list-style-type: none"> • Y=1 (1) XX ZZ <ul style="list-style-type: none"> XX: 00-63: Incoming Trunk Route ZZ : 00-63: Outgoing Trunk Route (2) XX ZZ <ul style="list-style-type: none"> XX : 00-31: PAD data from an Incoming Trunk Route to an Outgoing Trunk Route ZZ : 00-31: PAD data from an Outgoing Trunk Route to an Incoming Trunk Route XX, ZZ: PAD data <ul style="list-style-type: none"> 01: -15 dB ∩ (1 dB increment) 15: -1 dB 16: 0 dB 17: +1 dB ∩ (1 dB increment) 31: +15 dB NONE◀: 0 dB/0 dB (+: Gain, -: Loss)
G		

G	DESCRIPTION	DATA
CM42	Specify the PAD data for a station-to-station call.	(1) 190 (2) 01-31 : PAD data (Transmitter/Receiver) 01: -15 dB/-15 dB ∩ (1 dB increment) 15: -1 dB/-1 dB 16: 0 dB/0 dB 17: +1 dB/+1 dB ∩ (1 dB increment) 31: +15 dB/+15 dB NONE◀: -6 dB/-6 dB (+: Gain, -: Loss)
	Specify the PAD data for a station/trunk-to-conference trunk.	(1) 191 (2) 00-63 : PAD data 00: -45 dB ∩ (1 dB increment) 44: -1 dB 45: 0 dB 46: +1 dB ∩ (1 dB increment) 63: +18 dB NONE◀: -10 dB (+: Gain, -: Loss)
H		

H	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM35</div>	Specify the outgoing start condition for voice channel of SIP trunk route.	<ul style="list-style-type: none"> • Y=020 (1) 00-63: Trunk Route No. (2) 00: SIP
	RESET	
	Specify the trunk seizure sequence for voice channel of SIP trunk route.	<ul style="list-style-type: none"> • Y=083 (1) 00-63: Trunk Route No. (2) 0 : As per CM08>078 1◀: By allotter
	Specify the Type of Service (TOS) field precedence for SIP trunk voice packet.	<ul style="list-style-type: none"> • Y=134 (1) 00-63: Trunk Route No. (2) 00-07: PRECEDENCE 0-7 15◀: PRECEDENCE 0
	<p>NOTE 1: <i>The priority of PRECEDENCE 0-7 is as follows.</i></p> <p style="margin-left: 40px;"><i>PRECEDENCE 0: Lowest priority</i></p> <p style="margin-left: 80px;">}</p> <p style="margin-left: 80px;">}</p> <p style="margin-left: 40px;"><i>PRECEDENCE 7: Highest priority</i></p> <p style="margin-left: 40px;"><i>PRECEDENCE 5 is recommended.</i></p>	
	<p>NOTE 2: <i>By this data setting, the router recognizes the precedence of voice packets and controls Weighted Fair Queuing (WFQ).</i></p>	
When the router provides DiffServ QoS, specify the DS code point for SIP trunk voice packet.	<ul style="list-style-type: none"> • Y=161 (1) 00-63: Trunk Route No. (2) 00-3F: DS code point 	
<p>NOTE: <i>When this data is set, the TOS field precedence set by CM35 Y=134 is ineffective. If you want to validate the precedence set by CM35 Y=134, set "CCC" (data clear) for CM35 Y=161.</i></p>		
Set the echo canceller for each voice channel of SIP trunk route.	<ul style="list-style-type: none"> • Y=163 (1) 00-63: Trunk Route No. (2) 0 : Echo canceller OFF 1◀: Echo canceller ON 	
I		

I	DESCRIPTION	DATA
CM41	Assign the ORT timer when establishing tandem connection to CCIS.	<ul style="list-style-type: none"> • Y=0 (1) 104: ORT timer (2) 02-99 : 2-99 seconds (1 second increments) NONE◀: 7 seconds
CMA7	Assign the trunk number of SIP trunk used as control channel to the SIP trunk number.	<ul style="list-style-type: none"> • Y=00 (1) 00-15: SIP trunk No. (2) 000-511: Trunk No. for control channel assigned by CM10 Y=03
	Assign an Originating Point Code (OPC) to each SIP trunk number.	<ul style="list-style-type: none"> • Y=01 (1) 00-15: SIP trunk No. (2) 00001-16367: Originating Point Code
	RESET	
	NOTE 1: OPC is not informed to SIP servers.	
	NOTE 2: The Originating Point Code is used to designate an originating office in the No. 7 CCIS network. A single OPC should be assigned to all SIP trunk numbers provided in the same system.	
	Assign a Destination Point Code (DPC) to each SIP trunk number.	<ul style="list-style-type: none"> • Y=02 (1) 00-15: SIP trunk No. (2) 00001-16367: Destination Point Code
	NOTE 1: DPC is not informed to SIP servers.	
	NOTE 2: The Destination Point Code is used to designate a terminating office in the No. 7 CCIS network. Usually a different DPC is assigned to each SIP trunk number in the same system.	
	Assign the Profile number for control packet to each SIP trunk number.	<ul style="list-style-type: none"> • Y=71 (1) 00-15: SIP trunk No. (2) 00-31: Profile No. for control packet
J		

J	DESCRIPTION	DATA
CMA8	<p>Assign the SIP number to the Destination Point Code (DPC) for SIP assigned by CMA7 Y=02.</p> <p>Assign the IP address of VOIP port to the Destination Point Code (DPC).</p> <p>NOTE 1: <i>The Destination Point Code is used to designate a terminating office in the No. 7 CCIS network.</i></p> <p>NOTE 2: <i>Assign the DPC by CM8A Y=5000-5255>168. Page 3-57</i></p>	<ul style="list-style-type: none"> • Y=0 (1) 00001-16367: Destination Point Code assigned by CMA7 Y=02 (2) 00-15: SIP trunk No. <ul style="list-style-type: none"> • Y=1 (1) 00001-16367: Destination Point Code (2) XXXXXXXXXXXXX: 000000000000-255255255254: IP Address (Maximum 12 digits) NONE◀: No data
CMBA	<p>Specify the Type of Service (TOS) field precedence for SIP trunk control packet.</p> <p style="text-align: right;">RESET</p> <p>NOTE 1: <i>The priority of PRECEDENCE 0-7 is as follows.</i> <i>PRECEDENCE 0: Lowest priority</i> <i>PRECEDENCE 7: Highest priority</i> <i>PRECEDENCE 6 is recommended.</i></p> <p>NOTE 2: <i>By this data setting, the router recognizes the precedence of control packets and controls Weighted Fair Queuing (WFQ).</i></p>	<ul style="list-style-type: none"> • Y=04 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) 00-07: PRECEDENCE 0-7 15◀: PRECEDENCE 0
K	<p>When the route provides DiffServ QoS, specify the TOS field Precedence for SIP trunk control packet.</p> <p style="text-align: right;">RESET</p> <p>NOTE: <i>When this data is set, the TOS field precedence set by CMBA Y=04 is ineffective. If you want to validate the precedence set by CMBA Y=04, set "CCC" (data clear) for CMBA Y=10.</i></p>	<ul style="list-style-type: none"> • Y=10 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) 00-3F: TOS field Precedence

K	DESCRIPTION	DATA
CMBA	<p>Specify whether to query a DNS server to get the IP address or not.</p> <p>NOTE: <i>When the second data is set to “0”, only the IP address replied from to a DNS server is used. When the second data is set to “1”, the SIP server IP address assigned by CMBA Y=30 is used.</i></p> <p>Assign the IP Address for the SIP server.</p> <p style="text-align: right;">RESET</p> <p>Assign the Port number for the SIP Server.</p> <p style="text-align: right;">RESET</p> <p>NOTE: <i>The common Port number is 05060.</i></p> <p>Assign Registration number (Representative number) for the SIP trunk.</p> <p>Assign the SIP AoR user name with character.</p> <p>NOTE: <i>You can also confirm the SIP AoR user name set by CMBA Y=46/47/54 with this command.</i></p>	<ul style="list-style-type: none"> • Y=25 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) 0 : To provide 1◀: Not provided <ul style="list-style-type: none"> • Y=30 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) XXXXXXXXXXXXX: 000000000000-255255255254: SIP Server IP Address (Maximum 12 digits) NONE◀: No data <ul style="list-style-type: none"> • Y=31 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) 00000-65534: SIP Server Port No. NONE◀ : No data <ul style="list-style-type: none"> • Y=32 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) X-XX...XX: Registration No. (Representative No.) (Maximum 24 digits) X: 0-9, A (*), B (#) NONE◀: No data <ul style="list-style-type: none"> • Y=45 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) X-XX...XX: SIP AoR user name (Maximum 32 characters) NONE◀: No data
L		

L	DESCRIPTION	DATA
CMBA	Assign the SIP AoR user name with character code (First 12 characters).	<ul style="list-style-type: none"> • Y=46 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) XXX...X: SIP AoR user name (Maximum 24 digits: 12 characters fixed) See Character Code Table. Page 3-158 NONE◀: No data
	Assign the SIP AoR user name with character code (Middle 12 characters).	<ul style="list-style-type: none"> • Y=47 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) XXX...X: SIP AoR user name (Maximum 24 digits: 12 characters fixed) See Character Code Table. Page 3-158 NONE◀: No data
	Assign the SIP AoR user name with character code (Last 8 characters).	<ul style="list-style-type: none"> • Y=54 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) XXX...X: SIP AoR user name (Maximum 16 digits: 8 characters fixed) See Character Code Table. Page 3-158 NONE◀: No data
	Specify the SIP trunk identity header.	<ul style="list-style-type: none"> • Y=55 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) 0 : SIP-URL + tel-URL 1 : SIP-URL 2 : tel-URL 3 : SIP-URL + tel-URL only when the calling number is not informed 4 : SIP-URL only when the calling number is not informed 5 : tel-URL only when the calling number is not informed 7◀: No identity header
M		

M	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CMBA</div>	<p>Specify the SIP trunk registration method to the SIP server.</p> <p>NOTE 1: <i>SIP trunk is re-registered half the time set by CMBA Y=71 to SIP server periodically when the second data is set to “0”.</i></p> <p>NOTE 2: <i>When setting the second data to 1, SIP trunk is re-registered to SIP server for half the period of the specified time when registration time is specified from SIP server.</i></p>	<ul style="list-style-type: none"> • Y=70 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) 0 : To register the time set by CMBA Y=71 1 : To register no limitation for the time 3◀: Not registered
	<p>Assign the SIP trunk registration expiry time to the SIP server.</p> <p>NOTE 1: <i>This data setting is effective only when CMBA Y=70 is set to “0”.</i></p> <p>NOTE 2: <i>Set the time to cancel the registration after registering SIP trunk with this command to SIP server.</i></p> <p>NOTE 3: <i>When the registration has been canceled by SIP server, re-register to SIP server for half the period of time set by this command (in case of 3600 seconds, set 1800 seconds).</i></p> <p>NOTE 4: <i>When re-registration from SIP server is not executed during the period of time set by this command after the registration has been canceled by SIP server, call reception from the network to SIP is restricted.</i></p>	<ul style="list-style-type: none"> • Y=71 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) 1-4294967294: 1 second- 4294967294 seconds NONE◀ : 3600 seconds (1 hour)
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">N</div>	<p>Assign the Authentication user name when registering to/receiving from the SIP server with character code.</p>	<ul style="list-style-type: none"> • Y=72 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) X-XX...XX: User name (Maximum 32 digits) NONE◀: No data

N	DESCRIPTION	DATA
CMBA	Assign the Authentication user name when registering to/sending from the SIP server with character code (First 12 characters).	<ul style="list-style-type: none"> • Y=73 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) XXX...X: User name (24 digits, 12 characters fixed) See Character Code Table. Page 3-158 NONE◀: No data
	<p>NOTE 1: <i>When the character code to be set is less than the number of digits necessary, add the character code FF.</i></p>	
	<p>NOTE 2: <i>You can confirm the user name set by this command with CMBA Y=72.</i></p>	
	Assign the Authentication user name when registering to/sending from the SIP server with character code (Middle 12 characters).	<ul style="list-style-type: none"> • Y=100 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) XXX...X: User name (24 digits, 12 characters fixed) See Character Code Table. Page 3-158 NONE◀: No data
	<p>NOTE 1: <i>When the character code to be set is less than the number of digits necessary, add the character code FF.</i></p>	
	<p>NOTE 2: <i>You can confirm the user name set by this command with CMBA Y=72.</i></p>	
	Assign the Authentication user name when registering to/sending from the SIP server with character code (Last 8 characters).	<ul style="list-style-type: none"> • Y=101 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) XXX...X: User name (16 digits, 8 characters fixed) See Character Code Table. Page 3-158 NONE◀: No data
	<p>NOTE 1: <i>When the character code to be set is less than the number of digits necessary, add the character code FF.</i></p>	
	<p>NOTE 2: <i>You can confirm the user name set by this command with CMBA Y=72.</i></p>	
	Assign the Authentication password when registering to/sending from the SIP server with character code.	<ul style="list-style-type: none"> • Y=74 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) XXX...X: Password (Maximum 32 digits) NONE◀: No data
O		

O	DESCRIPTION	DATA
CMBA	<p>Assign the Authentication password when registering to/sending from the SIP server with character code (First 12 characters).</p>	<ul style="list-style-type: none"> • Y=75 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) XXX...X: Password (24 digits, 12 characters fixed) See Character Code Table. Page 3-158 <p>NONE◀: No data</p>
	<p>NOTE 1: <i>When the character code to be set is less than the number of digits necessary, add the character code FF.</i></p>	
	<p>NOTE 2: <i>You can confirm the password set by this command with CMBA Y=74.</i></p>	
	<p>Assign the Authentication password when registering to/sending from the SIP server with character code (Middle 12 characters).</p>	<ul style="list-style-type: none"> • Y=102 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) XXX...X: Password (24 digits, 12 characters fixed) See Character Code Table. Page 3-158 <p>NONE◀: No data</p>
	<p>NOTE 1: <i>When the character code to be set is less than the number of digits necessary, add the character code FF.</i></p>	
	<p>NOTE 2: <i>You can confirm the password set by this command with CMBA Y=74.</i></p>	
<p>Assign the Authentication password when registering to/sending from the SIP server with character code (Last 12 characters).</p>	<ul style="list-style-type: none"> • Y=103 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) XXX...X: Password (16 digits, 8 characters fixed) See Character Code Table. Page 3-158 <p>NONE◀: No data</p>	
<p>NOTE 1: <i>When the character code to be set is less than the number of digits necessary, add the character code FF.</i></p>		
<p>NOTE 2: <i>You can confirm the password set by this command with CMBA Y=74.</i></p>		
<p>Assign the SIP trunk domain name for SIP-URI with character.</p>	<ul style="list-style-type: none"> • Y=76 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) X-XX...XX: Domain name (Maximum 32 characters) <p>NONE◀: No data</p>	
<p>NOTE: <i>You can also confirm the domain names set by CMBA Y=77-79 with this command.</i></p>		
P		

P	DESCRIPTION	DATA
CMBA	Setting of SIP trunk domain name for SIP-URI with character code (First 12 characters).	<ul style="list-style-type: none"> • Y=77 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) XXX...X: Domain name (24 digits, 12 characters fixed) See Character Code Table. Page 3-158 NONE◀: No data
	<p>NOTE 1: <i>Concatenated characters assigned by CMBA Y=77, 78, and 79 are used as domain name.</i></p> <p>NOTE 2: <i>When setting a character code to be set is less than the number of digits necessary, add the character code FF.</i></p> <p>NOTE 3: <i>You can confirm the domain name set by this command with CMBA Y=76.</i></p>	
	Assign the SIP trunk domain name for SIP-URI with character code (Middle 12 characters).	<ul style="list-style-type: none"> • Y=78 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) XXX...X: Domain name (24 digits, 12 characters fixed) See Character Code Table. Page 3-158 NONE◀: No data
	<p>NOTE 1: <i>Concatenated characters assigned by CMBA Y=77, 78, and 79 are used as domain name.</i></p> <p>NOTE 2: <i>When setting a character code to be set is less than the number of digits necessary, add the character code FF.</i></p> <p>NOTE 3: <i>You can confirm the domain name set by this command with CMBA Y=76.</i></p>	
Q		

Q	DESCRIPTION	DATA
CMBA	Assign the SIP trunk domain name for SIP-URI with character code (Last 8 characters).	<ul style="list-style-type: none"> • Y=79 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) XXX...X: Domain name (16 digits, 8 characters fixed) See Character Code Table. Page 3-158 NONE◀: No data
	NOTE 1: <i>Concatenated characters assigned by CMBA Y=77, 78, and 79 are used as domain name.</i>	
	NOTE 2: <i>When setting a character code to be set is less than the number of digits necessary, add the character code FF.</i>	
	NOTE 3: <i>You can confirm the domain name set by this command with CMBA Y=76.</i>	
	Specify the SIP TRK identity header.	<ul style="list-style-type: none"> • Y=86 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) 0 : P-Asserted-Identity 1◀: P-Preferred-Identity
	Specify the response waiting timer when a call is originated (INVITE transaction time-out timer).	<ul style="list-style-type: none"> • Y=90 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) 00 : No Time Out 01-30: 1 second-60 seconds (2 seconds increments) 31◀ : 32 seconds
	NOTE 1: <i>Set the timer until the response is received from the communicated terminal/office for a calling. If the time-out occurs, the system regards it as the network fault occurrence, and executes the alternative routing by fault occurrence (only when the alternative routing feature is provided to the system).</i>	
	NOTE 2: <i>Do not set the 2nd data to 30 (60 seconds), when the system provides the alternative routing feature.</i>	
	NOTE 3: <i>Set the 2nd data to the value that does not exceed the value of ORT timer assigned by CM41 Y=0>104, when providing the tandem route with the alternative routing feature.</i>	
R		

R	DESCRIPTION	DATA
CMBA	Specify the provisional response code when the system receives the incoming call and starts to call the stations.	<ul style="list-style-type: none"> • Y=91 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) 0 : 183 Session Progress (with SDP) 1 : 180 Ringing (with SDP) 7◀: 180 Ringing (without SDP)
	Specify the display name/user name for From Header.	<ul style="list-style-type: none"> • Y=92 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) 0 : Display name: SIP AoR User Description following CMBA Y=45 : User name: SIP AoR User Description following CMBA Y=45 2 : Display name: Caller ID following CMBA Y=44 : User name: SIP AoR User Description following CMBA Y=45 3◀: Display name: Caller ID following CMBA Y=44 : User name: Caller ID following CMBA Y=44
	Assign the Fully Qualified Domain Name (FQDN) for SIP server with character.	<ul style="list-style-type: none"> • Y=93 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) X-XX...XX: Domain name (Maximum 32 characters) NONE◀: No data
	NOTE 1: <i>You can also confirm the domain name set by CMBA Y=94-96 with this command.</i>	
	NOTE 2: <i>When the setting of this command is changed, reset the DNS cache table should be cleared by CMBA Y=99.</i>	

S

S	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CMBA</div>	Assign the Fully Qualified Domain Name (FQDN) for SIP server with character code (First 12 characters). <div style="text-align: right; border: 1px solid black; border-radius: 15px; padding: 2px 10px; display: inline-block;">RESET</div>	<ul style="list-style-type: none"> • Y=94 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) XXX...X: Domain name (24 digits, 12 characters fixed) See Character Code Table. Page 3-158 NONE◀: To use SIP Server IP Address set by CMBA Y=30
	<p>NOTE 1: Concatenated characters assigned by CMBA Y=94, 95, and 96 are used as domain name.</p> <p>NOTE 2: When the character code to be set is less than the number of digits necessary, add the character code FF.</p> <p>NOTE 3: You can confirm the domain name set by this command with CMBA Y=93.</p> <p>NOTE 4: When the setting of this command is changed, the DNS cache table should be cleared by CMBA Y=99.</p>	
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">T</div>	Assign the Fully Qualified Domain Name (FQDN) for SIP server with character code (Middle 12 characters). <div style="text-align: right; border: 1px solid black; border-radius: 15px; padding: 2px 10px; display: inline-block;">RESET</div>	<ul style="list-style-type: none"> • Y=95 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) XXX...X: Domain name (24 digits, 12 characters fixed) See Character Code Table. Page 3-158 NONE◀: To use SIP Server IP Address set by CMBA Y=30
	<p>NOTE 1: Concatenated characters assigned by CMBA Y=94, 95, and 96 are used as domain name.</p> <p>NOTE 2: When the character code to be set is less than the number of digits necessary, add the character code FF.</p> <p>NOTE 3: You can confirm the domain name set by this command with CMBA Y=93.</p> <p>NOTE 4: When the setting of this command is changed, the DNS cache table should be cleared by CMBA Y=99.</p>	

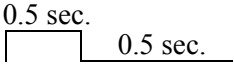
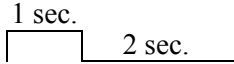
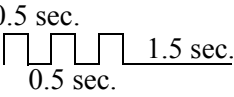
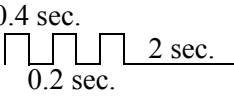
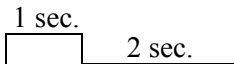
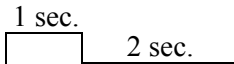
T	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CMBA</div>	Assign the Fully Qualified Domain Name (FQDN) for SIP server with character code (Last 8 characters). <div style="text-align: right; border: 1px solid black; border-radius: 10px; padding: 2px 10px; display: inline-block;">RESET</div>	<ul style="list-style-type: none"> • Y=96 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) XXX...X: Domain name (16 digits, 8 characters fixed) See Character Code Table. Page 3-158 NONE◀: To use SIP Server IP Address set by CMBA Y=30 <p>NOTE 1: Concatenated characters assigned by CMBA Y=94, 95, and 96 are used as domain name.</p> <p>NOTE 2: When the character code to be set is less than the number of digits necessary, add the character code FF.</p> <p>NOTE 3: You can confirm the domain name set by this command with CMBA Y=93.</p> <p>NOTE 4: When the setting of this command is changed, the DNS cache table should be cleared by CMBA Y=99.</p>
	Specify the error response code when all incoming SIP trunks are busy. <div style="text-align: right; border: 1px solid black; border-radius: 10px; padding: 2px 10px; display: inline-block;">RESET</div>	<ul style="list-style-type: none"> • Y=97 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) 0 : 480 Temporarily Unavailable 1 : 486 Busy Here 7◀: 503 Service Unavailable
	Assign the Unit number to query the DNS server.	<ul style="list-style-type: none"> • Y=98 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) 01: Unit No. 01 <p>NOTE 1: Set Unit number to query the domain name of SIP server assigned by CMBA Y=94-96.</p> <p>NOTE 2: For the Unit number set by the second data, the IP Address of DNS server for CM0B Y=1XX>60, 61 should be set.</p> <p>NOTE 3: When the setting of this command is changed, the DNS cache table should be cleared by CMBA Y=99.</p>
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">U</div>		

U	DESCRIPTION	DATA
CMBA	<p>Clear the cache table.</p> <p>NOTE: <i>The IP addresses which were cached for the second data are displayed when the IP addresses were cached on DSN cache table.</i></p> <p>Specify whether to request provisional responses with reliability (100rel) when sending from SIP trunk.</p> <p>Specify whether to perform registration periodically when also receiving “subscriber error” or “authentication error” during the registration.</p> <p>Specify whether to send a signal to require a deletion during a reset setting registration.</p>	<ul style="list-style-type: none"> • Y=99 (1) 00-31: Profile No. assigned by CMA7 Y=50 (2) CCC: DNS cache table clearance <ul style="list-style-type: none"> • Y=105 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) 0 : Available (Supported header and Require header) 1 : Available (Supported header) 3◀: Not available <ul style="list-style-type: none"> • Y=108 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) 0 : To provide 1◀: Not provided <ul style="list-style-type: none"> • Y=110 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) 0 : To provide 1◀: Not provided
CM0B	<p>Specify whether to provide Tone Disabler of SIP trunk for FAX communication.</p> <p style="text-align: center;">RESET</p> <p>NOTE: <i>Tone Disabler is a feature to improve FAX communication rate. When detecting V.25 tone (2100Hz) with phase inversion, Echo Canceller/NLP (Non Liner Processor) is set to OFF. When detecting V.25 tone (2100Hz) without phase inversion, Echo Canceller/NLP (Non Liner Processor) is set as same as voice setting.</i></p>	<ul style="list-style-type: none"> • Y=201 (VOIP Port [2] + Unit No. [01]) (1) 120 (2) 0 : Available 1◀: Not available
END		

Ringling Tone

To specify the interval of ringing tones and the ringer tone pattern to each DID number:

START	DESCRIPTION	DATA
CM08	Provide Ringer Tone Pattern for SIP incoming call.	(1) 649 (2) 0: To provide
CM76	Specify the interval of ringing tones on DID calls. For this assignment, do not set CM76 Y=22 to 3 (As per CM35 Y=033 (Multiline Terminal or SLT)).	<ul style="list-style-type: none"> • Y=22 (1) 000-999: Number Conversion Block No. assigned by CM76 Y=90 (2) See the table below.

CM76 Y=22	Multiline Terminal	SLT
0		
1		
2		
3◀	As per CM35 Y=033	As per CM35 Y=033

Specify the Ringer Tone Pattern of the Multiline Terminal on DID calls.
For this assignment, do not set CM76 Y=23 to 7 (As per CM35 Y=034).

- Y=23
- (1) 000-999: Number Conversion Block No. assigned by CM76 Y=90
- (2) 0 : Ringer Tone Pattern 0
1 : Ringer Tone Pattern 1
2 : Ringer Tone Pattern 2
3 : Ringer Tone Pattern 3
4 : Ringer Tone Pattern 4
5 : Ringer Tone Pattern 5
6 : Ringer Tone Pattern 6
7◀: As per CM35 Y=034/164

END

To specify the interval of ringing tones and the ringer tone pattern to each trunk route:

START	DESCRIPTION	DATA															
CM08	Provide Ringer Tone Pattern for SIP incoming call.	(1) 649 (2) 0: To provide															
CM35	Specify the interval of ringing tones to an incoming call for voice channel of SIP trunk route.	<ul style="list-style-type: none"> • Y=033 (1) 00-63: Trunk Route No. 00-63 (2) 0 : 0.4 seconds ON-0.2 seconds OFF-0.4 seconds ON-2 seconds OFF 1 : 0.4 seconds ON-0.2 seconds OFF-0.4 seconds ON-2 seconds OFF 2 : 1 second ON-2 seconds OFF 3◀: 2 seconds ON-4 seconds OFF															
	Specify the Ringer Tone Pattern to each voice channel trunk route.	<ul style="list-style-type: none"> • Y=034 • Y=164 (1) 00-63: Trunk Route No. 00-63 (2) See the table below.															
<table border="1"> <thead> <tr> <th>CM35 Y=034</th> <th>CM35 Y=164: 0</th> <th>CM35 Y=164: 1◀</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>Ringer Tone Pattern 3</td> <td>Ringer Tone Pattern 0</td> </tr> <tr> <td>1</td> <td>Ringer Tone Pattern 6</td> <td>Ringer Tone Pattern 1</td> </tr> <tr> <td>2</td> <td>Ringer Tone Pattern 5</td> <td>Ringer Tone Pattern 2</td> </tr> <tr> <td>3◀</td> <td>Ringer Tone Pattern 4</td> <td>Ringer Tone Pattern 7</td> </tr> </tbody> </table>			CM35 Y=034	CM35 Y=164: 0	CM35 Y=164: 1◀	0	Ringer Tone Pattern 3	Ringer Tone Pattern 0	1	Ringer Tone Pattern 6	Ringer Tone Pattern 1	2	Ringer Tone Pattern 5	Ringer Tone Pattern 2	3◀	Ringer Tone Pattern 4	Ringer Tone Pattern 7
CM35 Y=034	CM35 Y=164: 0	CM35 Y=164: 1◀															
0	Ringer Tone Pattern 3	Ringer Tone Pattern 0															
1	Ringer Tone Pattern 6	Ringer Tone Pattern 1															
2	Ringer Tone Pattern 5	Ringer Tone Pattern 2															
3◀	Ringer Tone Pattern 4	Ringer Tone Pattern 7															
A																	

A

CM76

DESCRIPTION

DATA

Specify the interval of ringing tones on DID calls.

- Y=22
- (1) 000-999: Number Conversion Block No. assigned by CM76 Y=90
- (2) 3◀: As per CM35 Y=033

CM76 Y=22	Multiline Terminal	SLT
0		
1		
2		
3◀	As per CM35 Y=033	As per CM35 Y=033

Specify the Ringer Tone Pattern of the Multi-line Terminal on DID calls.

- Y=23
- (1) 000-999: Number Conversion Block No. assigned by CM76 Y=90
- (2) 7◀: As per CM35 Y=034/164

END

Character Code Table

X: Upper digit Y: Lower digit

Y \ X	2	3	4	5	6	7
0		0	@	P	\	p
1	!	1	A	Q	a	q
2	”	2	B	R	b	r
3	#	3	C	S	c	s
4	\$	4	D	T	d	t
5	%	5	E	U	e	u
6	&	6	F	V	f	v
7	'	7	G	W	g	w
8	(	8	H	X	h	x
9	)	9	I	Y	i	y
A	*	:	J	Z	j	z
B	+	;	K	[	k	{
C	,	<	L	¥	l	|
D	-	=	M	]	m	}
E	.	>	N	^	n	~
F	/	?	O	_	o	←

SIP FEATURE PROGRAMMING

- Caller ID Display [Page 3-160](#)
- Direct Inward Dialing (DID) [Page 3-165](#)
- Registration Number “+” Addition/Deletion [Page 3-167](#)
- Fault Registration [Page 3-168](#)
- Fragmented IP Packet Receiving [Page 3-168](#)
- Session Timer [Page 3-169](#)
- NAT Support in SIP Trunk [Page 3-170](#)
- Out-band DTMF [Page 3-171](#)

Caller ID Display

General Description

This feature provides Caller ID Display to the called station.

The number of the dial number to possess and display is the number of the dial number which is contracted when Direct Inward Dialing (DID) is contracted.

Only the pilot number can be displayed when pilot number connection is contracted.

This feature provides displaying a caller number informed from the network on the LCD of Multiline Terminal.

Service Conditions

1. Optional number or pilot number is sent to the called station.
2. SIP message with the following header is sent for Caller ID Display.
E.G. Caller number + 0123456
From : "+0123456" <sip:+0123456@195.2.174.100:5060>;tag=XXXXXXXXXXXXXXXX-X
Contact: <sip:+0123456@221.186.89.197:5060>
3. Only 0-9, *, # can be displayed. The calling number is not informed when alphabet is informed.
However, 0-9, *, # is displayed with converting by the function of PBX.
4. Set CM08>379 to "0".

Programming

START	DESCRIPTION	DATA
CM08	Provide the system with Caller ID Display service.	<ul style="list-style-type: none"> (1) 379 (2) 0: To provide
CM12	Assign the ISDN/SIP Subscriber number 1. NOTE: <i>This command is used for ISDN transmission. Set CM12 Y=46, 47 for SIP transmission to use both ISDN and SIP transmission on a system.</i>	<ul style="list-style-type: none"> • Y=12 (1) X-XXXXXXXX: Station No. (2) X-XXXX: ISDN/SIP Subscriber No. (Indial No.) NONE◀: No data
	Assign the ISDN/SIP Local Office Code Table number 1. NOTE: <i>This command is used for ISDN transmission. Set CM12 Y=46, 47 for SIP transmission to use both ISDN and SIP transmission on a system.</i>	<ul style="list-style-type: none"> • Y=13 (1) X-XXXXXXXX: Station No. (2) 00-14: ISDN/SIP Local Office Code Table number 00-14 15◀: No data
	Assign the SIP Subscriber number 2.	<ul style="list-style-type: none"> • Y=46 (1) X-XXXXXXXX: Station No. (2) X-XXXX: SIP Subscriber No. (Indial No.) NONE◀: No data
	Assign the SIP Local Office Code Table number 2.	<ul style="list-style-type: none"> • Y=47 (1) X-XXXXXXXX: Station No. (2) 00-14: SIP Local Office Code Table number 00-14 15◀: No data
CM50	Assign the ISDN/SIP Local Office Code Table 2.	<ul style="list-style-type: none"> • Y=05 (1) 00-14: ISDN/SIP Local Office Code Table number 00-14 (2) X-XXXXXXXXXXXXX: ISDN/SIP Local Office Code NONE◀: No data
A		

A	DESCRIPTION	DATA
CMA7	Provide each SIP number with Caller ID Display feature.	<ul style="list-style-type: none"> • Y=26 (1) 00-15: SIP Trunk No. 00-15 (2) 00: To provide
	Provide the SIP number with Calling Party Information transferring service.	<ul style="list-style-type: none"> • Y=28 (1) 00-15: SIP Trunk No. 00-15 (2) 00: To provide
CM8A	Specify Calling party number sent from SIP Trunk.	<ul style="list-style-type: none"> • Y=5000-5255 LCR Pattern No. 000-255 (1) 176 (2) 00 : Calling party number is not sent 01 : To send ISDN/SIP subscriber number assigned by CM12 Y=12/13 (when no data is set to CM12 Y=12/13, the calling party number is not sent) 02 : To send SIP subscriber number assigned by CM12 Y=46/47 (when no data is set to CM12 Y=46/47, the calling party number is not sent) 08 : To send representative number 14 : To send the station number without Originating Office number 15◀: To send station number
B		

B

CMBA

DESCRIPTION

DATA

Assign Registration number (Representative number) (Change the calling number to Registration number [Representative number]).

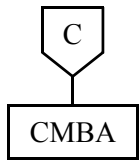
- Y=44
- (1) 00-31: Profile number 00-31
- (2) 00 : Provide Registration No. (Representative No.)
- 01 : Provide Registration No. (Representative No.) when the calling number is not set/Not provide Registration No. (Representative No.) when the calling number is sent
- 02 : When the calling number is sent from the trunk, the number is used as the calling number
- 03 : No calling number/ When the calling number is sent from the trunk, the number is used as the calling number
- 15◀: Registration No. (Representative No.) is not provided

NOTE: A caller number is informed with the combination of the setting of CM8A Y=5XXX>176 and CMBA Y=44 as follows:

Caller Number Information

CM8A Y=5XXX>176	CMBA Y=44			REMARKS
	00	01	15	
00	Representative Number	Representative Number	Not informed	
01	Representative Number	DID Number	DID Number	Subscriber number set to CM12 Y=12
	Representative Number	Representative Number	Station Number	No Subscriber number set to CM12 Y=12
02	Representative Number	DID Number	DID Number	Subscriber number set to CM12 Y=46
	Representative Number	Representative Number	Station Number	No Subscriber number set to CM12 Y=46
08	Representative Number	Representative Number	Representative Number	
14	Station Number	Station Number	Station Number	
15	Station Number	Station Number	Station Number	

C

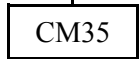


DESCRIPTION

DATA

For Tandem Connection

INCOMING CALLING NUMBER	CMBA Y=44				
	00	01	02	03	15
Not informed	Representative Number by CMBA Y=32	Representative Number by CMBA Y=32	Representative Number by CMBA Y=32	Representative Number by CMBA Y=32	Not informed
Informed	Representative Number by CMBA Y=32	DID Number/ Station Number	Representative Number by CMBA Y=32	Representative Number by CMBA Y=32	DID Number/ Station Number



Set Calling Name information transfer to ISDN on tandem call from CCIS for voice channel of SIP trunk route.

- Y=145
- (1) 00-63: Trunk Route No. 00-63
- (2) 0 : To provide
- 1◀: Not provided

END

Direct Inward Dialing (DID)

General Description

This feature provide incoming calls with Direct Inward Dialing (DID) number.

However, DID Digit Conversion is required when the DID numbers differ from the station numbers set on PBX.

Service Conditions

1. The number of digits to be developed on DID number can be specified 1-8 digits by CM35 Y=171.
2. The maximum number to be developed is 1000 set by CM76 Y=90.
3. 0-9, *, # can be used for DID Digit Conversion.
4. Set the DID number before conversion to Intra-office termination by CM20/CM8A.

Programming

START	DESCRIPTION	DATA
CM35	Provide DID Digit Conversion to the voice channel trunk route number assigned by CM30 Y=00.	<ul style="list-style-type: none"> • Y=018 (1) 00-63: Trunk Route No. (2) 0 : To provide 1◀: Not provided
	Specify the Development Table for DID Digit Conversion for voice channel of trunk route. NOTE: <i>Development Table 1 is available for SIP trunk.</i>	<ul style="list-style-type: none"> • Y=170 (1) 00-63: Trunk Route No. (2) 0 : Development Table 1 3◀: Development Table 0
CM76	Specify the number of digits to be converted on DID for Development Table 1 for voice channel of trunk route.	<ul style="list-style-type: none"> • Y=171 (1) 00-63: Trunk Route No. (2) 01-08: 1-8 digits 15◀ : 4 digits
	Assign the Number Conversion Block number for Development Table 1.	<ul style="list-style-type: none"> • Y=90 (1) X-XXXXXXXX: DID No. (2) 000-999 : Number Conversion Block No. NONE◀: No data
A		

A	DESCRIPTION	DATA
CM76	Assign the data for interpreting the digits received.	<ul style="list-style-type: none"> • Y=01 Day Mode • Y=02 Night Mode • Y=03 Mode A • Y=04 Mode B (1) 000-999 : Number Conversion Block No. assigned by CM76 Y=90 (2) X-XXXXXXXXX: Station No. to be terminated DXX: Change Terminating System to: D09: Automated Attendant D10: Attendant Console + TAS D14: Attendant Console D16: Remote Access to System (DISA)
CM20	Assign the number of digits for DID number and Numbering Plan Group.	<ul style="list-style-type: none"> • Y=0-3 Numbering Plan Group 0-3 (1) X-XXXX: Access Code (2) 804: 4 digits Station
CM8A	Assign a Route Pattern number to each area code for the Area Code Development Pattern number assigned by CM8A Y=A000.	<ul style="list-style-type: none"> • Y=4000-4007 Area Code Development Pattern No. 0-7 (1) X-XXXXXXXXX: Area Code (1-8 digits) (2) 8000: Intra-office termination
<u>END</u>		

Registration Number “+” Addition/Deletion

General Description

This feature provides call originating with “+” number addition and call terminating with “+” number deletion.

Service Conditions

1. All the SIP message header numbers are added “+”.
 - <Before setting the system data>
INVITE sip: 987654@195.2.174.100:5060 sip/2.0
From : “123456” <sip:123456@195.2.174.100:5060>;tag=34e442234a970-63
To : <sip:987654@195.2.174.100:5060>
Contact : <sip:123456@221.186.89.197:5060>
 - <After setting the system data>
INVITE sip: +987654@195.2.174.100:5060 sip/2.0
From : “+123456” <sip:123456@195.2.174.100:5060>;tag=34e442234a970-63
To : <sip:+987654@195.2.174.100:5060>
Contact : <sip:+123456@221.186.89.197:5060>
2. The number on From header display name following “+” is informed as the calling number when a call is originated.
3. The number is not informed when the number on From header display name following “+” is not 0-9, *, #.

Fault Registration

General Description

This feature provides fault occurrence date, time, and fault content registration on CPU blade when SIP trunk fails.

And also, inform fault occurrence to the external alarm.

Service Conditions

1. The contents to register are as follows:
 - PBX internal fault: SIP trunk reset occurrence/System reset occurrence
 - Line failure : Link failure/Registration failure/DNS inquiry failure
 - Call failure : Out of session timer

Programming

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">CM08</div>	Enable the fault information storage feature.	(1) 450 (2) 0 : Not stored 1 ◀: To store
END		

Fragmented IP Packet Receiving

General Description

This feature provides receiving a fragmented IP packet.

Service Conditions

1. The data size of fragmented IP packet is a maximum of 2000 bytes.
2. The data size 2000 bytes is a total of bytes only in the IP packet data field.

Session Timer

General Description

This feature confirms whether the call status between the originating terminal and the communicated terminal is normal or not by sending/receiving a signal at a constant interval.

Service Conditions

1. The session timer method is decided by the receiving SIP message from the communicated terminal set by CMBA Y=56.
2. Session timer does not start when the following definitions are not contained in SIP message (200OK or INVITE).
 - Require : timer
 - Supported: timer

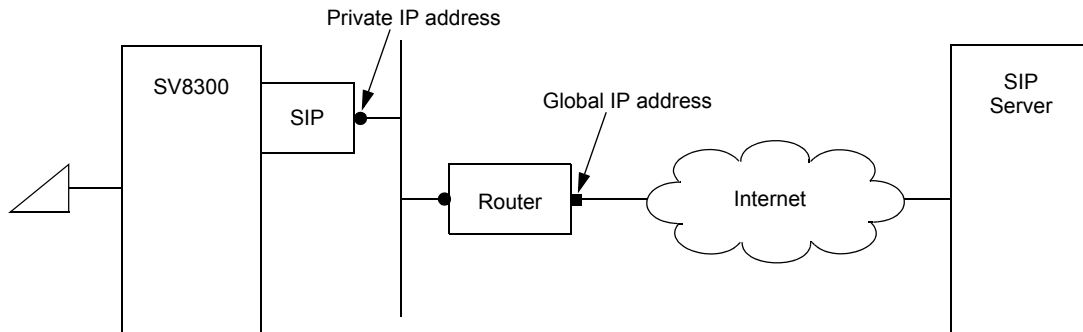
Programming

START	DESCRIPTION	DATA
CMBA	Specify the session timer refresher.	<ul style="list-style-type: none"> • Y=29 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) 0 : uas 1◀: uac
	Specify the session timer method.	<ul style="list-style-type: none"> • Y=56 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) 0 : Update 1 : Invite 3◀: Auto
	NOTE: <i>When the second data is set to 3, the session timer method is decided by the receiving message from the communicated terminal.</i>	
	Specify whether to provide the session timer or not.	<ul style="list-style-type: none"> • Y=83 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) 1◀: To provide
	Specify the session timer value.	<ul style="list-style-type: none"> • Y=88 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) 1-4294967294: Session timer value (seconds) NONE◀ : 1800 seconds
END		

NAT Support in SIP Trunk

General Description

This feature provides the connection to the Internet with the NAT/NAPT functions of a router.



Service Conditions

1. This feature is only available for Point-to-Point connection (not available for Point-to-Multipoint connection).
2. DHCP cannot be used because the private IP address of the router side must be fixed.
3. VLAN and this feature cannot be used at the same time.
4. A router must be capable of NAT/NAPT processing and band processing to be used in accordance with the number of accommodated channels of a SIP.

Programming

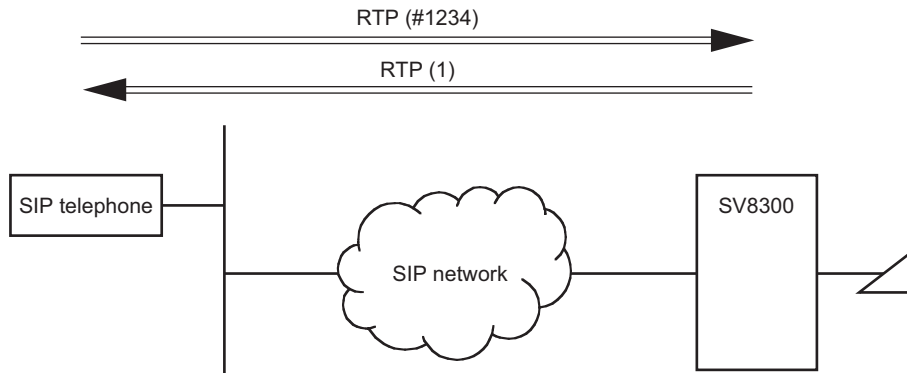
START	DESCRIPTION	DATA
CM0B	Assign the Global IP address of NAT for the SIP. RESET	<ul style="list-style-type: none"> • Y=101 (VOIP Port [1] + Unit No. [01]) (1) 70: Global IP Address (2) XXX.XXX.XXX.XXX: 0.0.0.1-255.255.255.254: Global IP Address (Maximum 15 digits) NONE◀: No data
	NOTE 1: This command cannot be assigned by CAT.	
	NOTE 2: Be sure to enter the periods (.) included in the IP address.	
	NOTE 3: Set the private IP address for the SIP with CM0B Y=101>00, 01, 02.	
END		

Out-band DTMF

General Description

This feature provides the out-band DTMF relay supports RFC 2833 in SIP network.

When receiving a DTMF signal from the SIP network, the SV8300 retrieve the DTMF information from RTP and send to the terminal under the SV8300. When sending the DTMF signal from the terminal under the SV8300 to the network, the SV8300 analyze the DTMF signal, and send out on RTP.



Service Conditions

- The following DTMF relay method can be used in the SIP network (set by CMBA Y=52).
 - Out-band DTMF (RFC2833)
 - In-band DTMF (Voice pass through)
- The same DTMF relay method should be set within the SIP network. If the DTMF relay method of own office (CMBA Y=52) is different from the DTMF relay method of opposite office, the DTMF relay method set is as shown in table below.

SETTING OF OWN OFFICE \ SETTING OF OPPOSITE OFFICE	RFC2833 METHOD		IN-BAND METHOD	
	RECEIVING AT OWN OFFICE	RECEIVING AT OPPOSITE OFFICE	RECEIVING AT OWN OFFICE	RECEIVING AT OPPOSITE OFFICE
RFC2833 method	RFC2833	RFC2833	In-band	In-band
In-band method	In-band	In-band	In-band	In-band

3. Although DTMF is sent only by the specified DTMF relay method (CMBA Y=52), it could be received and regenerated by method other than the specified one. The table below shows DTMF relay methods that can be regenerated depending on the DTMF relay method settings.

×: Available –: Not available

RECEIVING DTMF SETTING OF DTMF RELAY METHOD	OUT-BAND DTMF (RFC2833)	IN-BAND DTMF
RFC2833 method	×	×
In-band method	–	×

4. For out-band DTMF (RFC2833), DTMF that can be sent/received are “0-9”, *, and “#”. “A”, “B”, “C” and “D” are not supported.

KINDS OF DTMF	NOTATION IN RTP MESSAGE
0-9	0, 1, 2, 3, 4, 5, 6, 7, 8, 9
*	10
#	11

5. For out-band DTMF (RFC2833), the generation times of DTMF to be sent to SIP network is specified in the system data (CM41 Y=0>106, Default: 160 ms).
6. If payload type is unknown for out-band DTMF (RFC2833) received from the opposite office, it operates with “In-band”.

Programming

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CMBA</div>	<p>Assign the DTMF relay method.</p>	<ul style="list-style-type: none"> • Y=52 (1) 00-31: Profile No. assigned by CMA7 Y=71 (2) 03 : Out-band DTMF (RFC2833) NONE◀: In-band DTMF (Voice pass through)
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM41</div>	<p>Assign the DTMF sending timer of Out-band DTMF (RFC2833).</p> <p>NOTE: <i>Follow the typical default setting.</i></p>	<ul style="list-style-type: none"> • Y=0 (1) 106: DTMF Sending Timer of Out-band DTMF (RFC2833) (2) 04 : 64 ms 05 : 80 ms 06 : 96 ms 07 : 112 ms 08 : 128 ms 09 : 144 ms 10 : 160 ms 11 : 176 ms 12 : 192 ms 13 : 208 ms 14 : 224 ms 15 : 240 ms NONE◀: 160 ms
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">END</div>		

SYSTEM DATA BACKUP

CAUTION

- If you operate as follows without system data backup after system data setting or service memory setting (registration of the features such as “Call Forwarding” and “Speed Dialing” from a station), the data that has been set is invalid.

You must execute the system data backup before the following operations.

- Turning Off the system
- System Reset (reset of CPU blade)
- Changing the CPU blade to Off-Line Mode
- Changing the CPU blade to On-Line Mode after system data setting under Off-Line Mode
- You can execute the system data backup by the following two ways.
 - Executing the system data backup once a day at the time set by CM43 Y=5>00
(If no data is set, the default setting is 3:00 a.m.)
 - Executing the system data backup from PCPro/CAT by CMEC Y=6>0: 0
- Do not reset the CPU blade while “SYSD” LED on the CPU blade is flashing.

(1) Regular system data backup

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">CM43</div>	Assign the time for saving the system data once a day.	<ul style="list-style-type: none"> • Y=5 (1) 00: Regular Backup Time (2) HH MM <ul style="list-style-type: none"> HH : 00-23 (Hour) MM : 00-59 (Minute) NONE◀: 0300 (3:00 a.m.)
<u>END</u>		

(2) Manual system data backup

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">CMEC</div>	<p>Save the system data for backup to flash memory on the CPU blade.</p> <p>Backup takes about 5 minutes on On-line/ Off-line mode.</p> <p>While saving the system data to flash memory, "SYSD" LED on the CPU blade flashes.</p>	<ul style="list-style-type: none"> • Y=6 (1) 0: System Data Backup (2) 0: Start save <ul style="list-style-type: none"> 1: Now saving 3: Stand by <p>NOTE: "1" is displayed while the system data is being saved.</p>
<u>END</u>		

SYSTEM RESET

When you set the system data under Off-Line mode, system reset is required after data setting.

- (1) Set the SENSE switch to “0”-“4” (On Line) position and press the RESET switch on the CPU blade.
- (2) The lamps light in the following order.
 - “RUN” LED lights momentarily.
 - “S1” LED flashes while copying the CPU program from the Flash Memory to the SDRAM.
 - “S1” LED goes off.
 - “SYSD” LED lights while copying the system data from the Flash Memory to the SDRAM.
 - “S2” LED flashes while DSP on CPU blade is running.
 - “S2” LED goes off.
 - “SYSD” LED goes off.
 - “RUN” LED flashes.
- (3) The operating mode has been changed to On-Line mode.
The backup data has been restored to the system.

SYSTEM SPECIFICATIONS

This appendix explains the specifications of the system.

Appendix

A

SYSTEM SPECIFICATIONS

System Specifications

ITEM	SPECIFICATIONS	REMARKS
Available Terminals	IP Station Soft Phone All Legacy Terminals Digital Multiline Terminal Single line telephone DSS/BLF Console SN7xx ATTCON/DESKCON	
Number of Terminals	Maximum 1500 total IP Station : 1024 Legacy terminal: 1296	IP Station + Legacy terminal \leq 1500
Available Line/ Trunk Blade	All LT blades used in SV8300	288 ports per unit 1500 ports per system
OAI	Built-in OAI of CPU blade (LAN connection)	RS-232C connection is not available for OAI terminal.
SMDR	CPU built-in SMDR on RS-232C CPU built-in SMDR on IP	
PCPro	Direct Connection (RS-232C) Modem Connection IP Connection	Direct connection and IP connection are available for System Upgrade.
Chassis	SN1617 PIMMD/SN1663 PIMMG is used. SN1174 PIMA-A is not available as SV8300 chassis. SN1480 PIMAF is available as SV8300 chassis by replacing Front Cover.	

IP SPECIFICATIONS

IP Specifications

ITEM	SPECIFICATIONS	REMARKS
Voice Encoding	G.711 G.722 G.723.1 (5.3k/6.3k) G.729a	64 Kbps PCM 7/16 kHz UEMCLIP CPU-MLQ/ACELP 8 Kbps CS-ACELP
VoIPDB	64 × 128 channels per blade Automatically seized per call	
FAX Communication Feature	G.711 pass-through G.726 pass-through	VoIPDB
MODEM Communication Feature	G.711 pass-through G.726 pass-through	VoIPDB
DTMF Signal	H.245	VoIPDB/IP Station
Inter-office/Intra-office Signaling	H.245	IP Station-to-IP Station connection IP Station-to-VoIPDB connection
	PROTIMS over IP	IP Station-to-SV8300 connection
	CCIS over IP	Point-to-Multipoint connection
Jitter Control	Dynamic Jitter Buffer	
Quality of Service (QoS)	<ul style="list-style-type: none"> • TOS, IP Precedence • DiffServ 	
LAN Interface	10/100BASE-TX (ETHERNET port) (TIA/EIA category 5) 10/100/1000BASE-T (VOIP port) (TIA/EIA category 5 or larger)	Auto Negotiation is available. 100BASE-TX is recommended. For using 1000BASE-T, the cable needs to be larger than category 5e.
Echo Cancellor (VoIPDB)	G.168 (64 ms.)	

Continued on next page

IP Specifications

ITEM		SPECIFICATIONS	REMARKS
Payload Size	IP Station/ IPT (P2P CCIS)	10 ms.-40 ms. (G.723.1: 30 ms. fixed)	
	SIP Trunk	40 ms. (G.711 only)	

VOICE QUALITY MEASURES IN VoIPDB

This appendix describes how to reduce echoes in SV8300 and the setup method.

In SV8300, the VoIPDB is used to relay the voice data on the IP network (on the IP packet) to the signals (PCM data) on TDM. The VoIPDB is equipped with an echo canceller circuit to suppress the echoes that influence calls. However, the echo canceller by itself cannot diminish echoes completely in some hardware configuration that contains lines on the TDM side.

This appendix describes how to reduce echoes in SV8300 and the setup method.

COUNTERMEASURES FOR ECHO

VoIPDB Channel Automatic Selection Procedure

(1) About VoIPDB Channel Automatic Selection

The echo canceller installed in the VoIPDB has a function that automatically learns (trains) the characteristics of echoes that were generated, corrects the echoes, and stores the information. However, one to two seconds are required for training and when the “actual call status” and “the echo characteristics that were stored” do not match, echoes may occur for one to two seconds from the start of a call. SV8300 reduces echoes by “storing the status of the echo characteristics and using the result as the key for selecting the next channel” for each VoIPDB channel, using the echo canceller circuit function.

In practice, the system classifies echo canceller training results into the models (levels) as indicated STEP2 of “(2) Setting Up Procedure for VoIPDB Channel Automatic Selection” according to the “connection destination on the TDM side” and stores the information for each VoIPDB channel. These levels are organized in the sequence starting from the level with the characteristics closest to those of the channel.

The level of each VoIPDB channel that has been stored is maintained even if the system or the VoIPDB is reset.

After the levels of all the VoIPDB channels are set, the VoIPDB channel storing the level matching with that of the connection destination is used in subsequent connection processing. If there is an VoIPDB channel whose level has not been set, the channel is captured first and trained.

(2) Setting Up Procedure for VoIPDB Channel Automatic Selection

[Cautions and Reference Information]

- When the setup described in this section is not carried out or the channel setting distribution ratio is incorrectly set, customers may experience echoes for 1 to 2 seconds until all the VoIPDB channels are used. However, by continuing the operation, the value is set to the optimum value automatically under the customer's use environment (Actually, if the number of VoIPDB channels is greater, the level matching probability increases so that the number of channels also influences the echo occurrence frequency).
- Once training is performed, the echo control information that has been stored is maintained even if the system or the VoIPDB is reset.

- The training does not become valid unless the caller carries out a conversation.
- If a digital trunk such as ISDN is used for the main trunk line, the influence of the echo is less than that of the analog trunk.

Carry out training together with the VoIPDB canalization test at the final stage of construction.

STEP1: Determine the total number of VoIPDB channel.

STEP2: Assume the connection ratio (number of channels allocated) of IP telephones and Virtual IP trunk to terminals that communicate via TDSW (Multiline Terminal, single line telephones, ATTCON, COT, ODT/LDT/DID etc.). Match this total value and the total value that was determined in STEP1.

Level	Destination Terminal/Trunk (via TDSW)	Connection Ratio	Number of VoIPDB Channel
7	COT/LDT/DIT/ODT	%	
6	Single line telephone (including LLC connection)	%	
5	PRT/BRT	%	
4	DTI	%	
3	PS	%	
2	Multiline Terminal/In-Skin UMS/Paging equipment/ATTCON (SN708/709/712/741) /SN716 DESKCON	%	
1	External music source/CFT/VRS	%	
0	None	%	
17	Fixed allocation to specific Trunk Route/Service Restriction Class NOTE	%	
16	Fixed allocation to specific Trunk Route/Service Restriction Class NOTE	%	
15	Fixed allocation to specific Trunk Route/Service Restriction Class NOTE	%	
14	Fixed allocation to specific Trunk Route/Service Restriction Class NOTE	%	
13	Fixed allocation to specific Trunk Route/Service Restriction Class NOTE	%	
12	Fixed allocation to specific Trunk Route/Service Restriction Class NOTE	%	
11	Fixed allocation to specific Trunk Route/Service Restriction Class NOTE	%	
10	Fixed allocation to specific Trunk Route/Service Restriction Class NOTE	%	
	Total (total number of VoIPDB channel determined by STEP1)	100%	

NOTE: For characteristic levels 10 to 17, since channels with other levels that are set are not captured even if channels become inadequate, assign the necessary number of channels when there is an adequate number of channels.

STEP3: Press the RESET switch on the CPU blade.

STEP4: Carry out “calls” with the call destination of each level as many times as the number of channels that were allocated.

NOTE: *Connection with a line that sends a voice announcement, music, or tones continuously from the call destination such as time information and weather information from a main trunk line is ineffective. The call destination could be silent. A call of several seconds is sufficient.*

PAD Adjustment

To achieve good echo erase characteristics, it is necessary to prevent the voice level in the trunk from exceeding the saturation point, even if the originator and the incoming call responder talked simultaneously. To achieve this, enter PAD of 3dB for both transmission and reception of the 2W analog trunk line such as COT, ODT and LDT. By this setting, the call levels of both transmission and reception drop by 3dB, however, this hardly influences the call.

[Data setting]

Set the following data to the trunk route of an analog trunk line.

CM35 Y=289/290, CM36 Y=1

2nd Data: 19: 3dB

NOTE: *Since level dial setting becomes extremely important in digital trunks also such as ISDN trunk and DTI trunk, make sure that the value is set to the standard value described in the manual or adjust the value to the optimum value.*

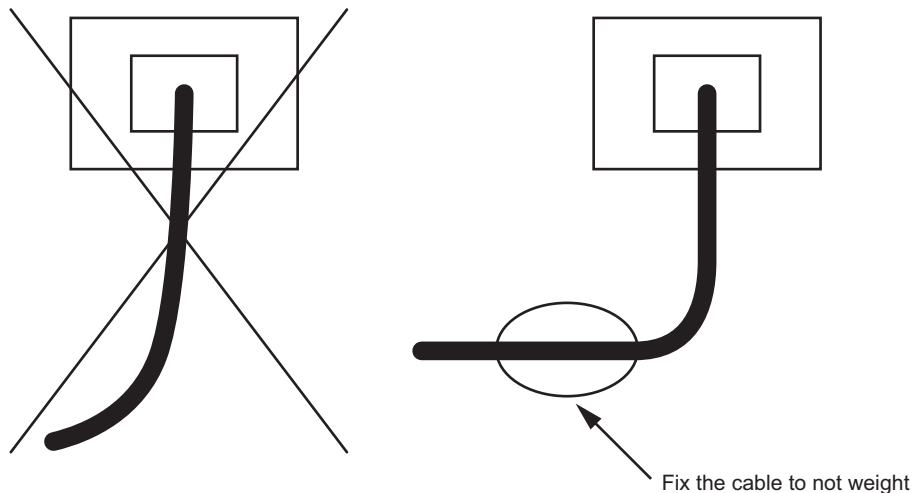
COUNTERMEASURES FOR OTHERS

Mixed Use of Voice and Data

When voice and data exist in the same LAN in mixed mode, the transmission priority order of the voice packet must be increased on the LAN to transmit a voice packet such as QoS setting and fragment certainly. See the related manual and router instruction manual for the setting method. Otherwise, voice may be interrupted or the voice quality deteriorates.

Connection with Hubs

Since the category 5 cable that is used for LAN is heavy and the cable sags if it simply inserted in a modular jack under its own weight, a load is applied to the modular jack, causing a contact fault. Fix the cable to prevent the weight from being applied to the modular jack directly.



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TCP/UDP/RTP PORT NUMBER CONDI- TIONS

This appendix explains the default TCP/UDP/RTP port number and range of the available TCP/UDP/RTP port numbers used in SV8300.

TCP/UDP/RTP PORT NUMBER CONDITIONS

Tables below show the default TCP/UDP/RTP port number and range of the available TCP/UDP/RTP port numbers used in SV8300.

For IP Station

PORT TYPE	DESTINATION	DEFAULT PORT No.	REMARKS	NUMBER OF PORT USED	REFERENCE PAGE
Port for Login to DRS (UDP)	SV8300 (CPU Built-in DRS of Main Unit)	3456	1024-65534 Assigned by CM0B Y=1XX>31	1	Page 3-13
	SV8300 (CPU Built-in DRS of Remote Unit)	3456	Fixed	1	—
	IP Multiline Terminal	3455	1024-65535 Assigned by IP Station set up (Administrator Menu)	1	Page 3-35
	VoIPDB (IP-PAD)		Not available (VoIPDB cannot use DRS)	—	—
Port for PRO-TIMS (UDP)	SV8300	50000 + Port No. of SV8300	Base Port: 1024-65534 Assigned by CM0B Y=1XX>30 (Default: 50000 + 3072)	1/terminal	Page 3-13
	IP Multiline Terminal	3458	1024-65534 Assigned by IP Station set up (Administrator Menu)	1	Page 3-35
	VoIPDB (IP-PAD)		Not available	—	—

For IPT (P2P CCIS)

PORT TYPE	DESTINATION	DEFAULT PORT No.	REMARKS	NUMBER OF PORT USED	REFERENCE PAGE
TCP Server Port	VoIPDB (IPT [P2P CCIS])	57000	1024-65534 Assigned by CM0B Y=1XX>34	1	Page 3-59
TCP Client Port (TCP)	VoIPDB (IPT [P2P CCIS])	58000-59023	Base Port: 1024-65534 Assigned by CM0B Y=1XX>35 Select by Round Robin method (Use from the lowest in blank port)	1024	Page 3-59

For Voice Control/Voice Packet

PORT TYPE	DESTINATION	DEFAULT PORT No.	REMARKS	NUMBER OF PORT USED	REFERENCE PAGE
Port for Voice Control (UDP)	IP Multiline Terminal	4000	1024-65535 Assigned by IP Station Set up (Administrator Menu)	1	Page 3-35
	SIP Multiline Terminal	5080	1024-65534 Assigned by IP Station Set up (Maintenance Mode) or Assigned by CM0B Y=1XX>32	1	Page 3-38 or Page 3-14
	VoIPDB (IP-PAD)	56000	1024-65534 Assigned by CM0B Y=1XX>39	1	Page 3-45

Continued on next page

For Voice Control/Voice Packet

PORT TYPE	DESTINATION	DEFAULT PORT No.	REMARKS	NUMBER OF PORT USED	REFERENCE PAGE
Port for P2P Voice Control (TCP)	IP Multiline Terminal	1024-65535	1024-65535 Assigned by Round Robin method (Use from the lowest in blank port) Change by configuration	1	Page 3-35
	VoIPDB (IP-PAD)	6100 (For Server)	1024-65534 Assigned by CM0B Y=1XX>37	1	Page 3-45
		6200-6328 (For Client)	1024-65534 Use 129 ports in Round Robin method assigned by CM0B Y=1XX>38	129	Page 3-46
Port for Voice Packet (RTP)	IP Multiline Terminal	3462-3525	1024-65535 Assigned by Round Robin method (Use from the lowest in blank port)	64	Page 3-35
	VoIPDB (IP-PAD)	10000-10254	Base Port:1024-65534 Assigned by CM0B Y=2XX>40	128 (2/channel)	Page 3-44
	VoIPDB (SIP Trunk)	10000-10254	Base Port:1024-65534 Assigned by CM0B Y=2XX>40	96 (2/channel)	Page 3-136

For SIP Trunk

PORT TYPE	DESTINATION	DEFAULT PORT No.	REMARKS	NUMBER OF PORT USED	REFERENCE PAGE
Port for SIP control (UDP)	VoIPDB (SIP Trunk)	5060	1024-65534 Assigned by CM0B Y=101>36	1	<i>Page 3-136</i>

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