UNIVERGE

NEC

NEAX 2000 IPS
INTERNET PROTOCOL SERVER

CCIS System Manual

NWA-008853-001
ISSUE 4.0

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INTRODUCTION

PURPOSE

This manual explains the hardware installation and the programming procedure for providing Common Channel Inter-Office Signaling (CCIS) system to the NEAX 2000 IPS System.

OUTLINE OF THIS MANUAL

This manual consists of five chapters. The following paragraphs summarize Chapters 1 through 5.

CHAPTER 1 GENERAL INFORMATION

This chapter explains the system outline, the name and functions of circuit cards required, system capacity, time slot assignment condition, system specifications, available service features with No. 7 CCIS, and network structure considerations for CCIS system.

CHAPTER 2 INSTALLATION

This chapter explains the required equipment and the hardware installation procedure to provide CCIS system.

CHAPTER 3 SYSTEM DATA PROGRAMMING

This chapter explains the programming procedure for providing CCIS to the system, and also explains the general description, programming procedure, operating procedure, and hardware requirement of each service feature.

CHAPTER 4 CIRCUIT CARD INFORMATION

This chapter explains the mounting location, the meaning of lamp indications, and the switch settings of each CCIS circuit card.

CHAPTER 5 OPERATION TEST

This chapter explains inter-office test procedure for basic DTI/CCT functions.

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.

2000 IPS : NEAX 2000 IPS INTERNET PROTOCOL SERVER
2400 IPX: NEAX 2400 IPX Internet Protocol eXchange

NOTE 1: *In regard to the China market, we have not released NEAX 2000 IPS INTERNET PROTOCOL SERVER but NEAX 2000 is released.*

NOTE 2: *In regard to the China market, we have not released NEAX 2400 IPX Internet Protocol eXchange but NEAX 2400 is released.*

REFERENCE MANUAL

During installation, refer also to the manuals below:

System Manual:
Contains the system description, hardware installation procedure and the programming procedure for the NEAX 2000 IPS System.

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

Feature Programming Manual:
Contains procedure for programming each business and hotel feature.

Office Data Programming Manual:
Contains the Customer Specifications Sheets and the Office Data Programming Sheets.

Maintenance Manual:
Contains maintenance service features and the recommended troubleshooting procedure.

Installation Procedure Manual:
Contains the installation procedure for the PBX system.

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CHAPTER 1

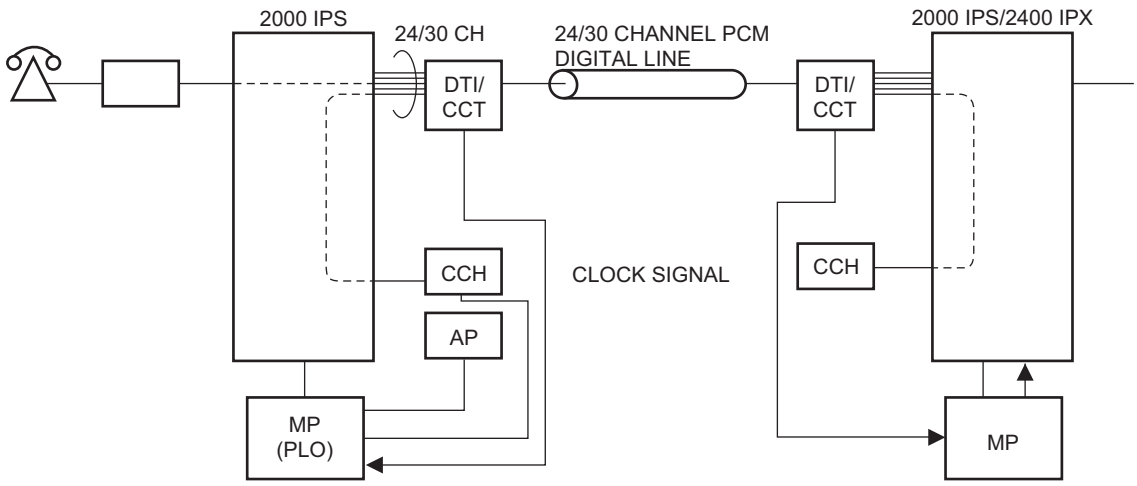
GENERAL INFORMATION

This chapter explains the system outline, the name and functions of circuit cards required, system capacity, time slot assignment condition, system specifications, available service features with No. 7 CCIS, and network structure considerations for CCIS system.

SYSTEM OUTLINE

This system can be interfaced with a Public Network or Tie Line Network by No. 7 CCIS Signaling. The system is configured with the 24/30 channel Digital Trunk Interface (DTI) for digital network or Loop Dial Trunk (LDT)/2 wire E&M or 4 wire E&M Trunk (ODT) for analog network via MODEM, a Phase Locked Oscillator (PLO) for digital network synchronization, and a Common Channel Handler (CCH) for receiving/transmitting common signaling data from/to the distant office. The CCIS trunk (CCT) is also available, which provides 24/30 channel Digital Trunk Interface and a built-in CCH.
The system can provide a variety of inter-office service features such as Centralized Billing.
To add the Centralized Billing function, an Application Processor (AP) or Built-in SMDR of MP card (for Local Office only) is required.
This figure shows the system outline of No. 7 CCIS.

System Outline of No. 7 CCIS



AP : Application Processor for Centralized Billing
CCH: Common Channel Handler
CCT: CCIS Trunk
PLO : Phase Locked Oscillator

DTI

The Digital Trunk Interface (DTI) interfaces the 2000 IPS directly to a 24/30-channel PCM transmission line. The DTI has the following functions.

For 24DTI:

- Unipolar/Bipolar Conversion (AMI Format/B8ZS Format)
- Alarm Detection/Insertion
- Digital PAD on Voice Signal Transmission
- Loopback Test (Local/Remote Loopback)
- Cyclic Redundancy Checking (based on ITU-T Rec. G704)

For 30DTI:

- Unipolar/Bipolar Conversion (HDB3 Format)
- Alarm Detection/Insertion
- Digital PAD on Voice Signal Transmission
- Loopback Test (Local/Remote Loopback)
- Cyclic Redundancy Checking (based on ITU-T Rec. G704)

For connection of a 24DTI and transmission line, twisted-pair cables are used, and for connection of a 30DTI and transmission line, twisted-pair cables or coaxial cables are used.

CCH

The Common Channel Handler (CCH) card provides a common channel signaling through the DTI to a No. 7 CCIS network, and it is responsible for signaling between the PBX and the No. 7 CCIS network under control of the MP.

CCT

The CCIS trunk (CCT) provides a 24/30-channel Digital Trunk Interface (DTI) and a built-in CCH with the functions described above.

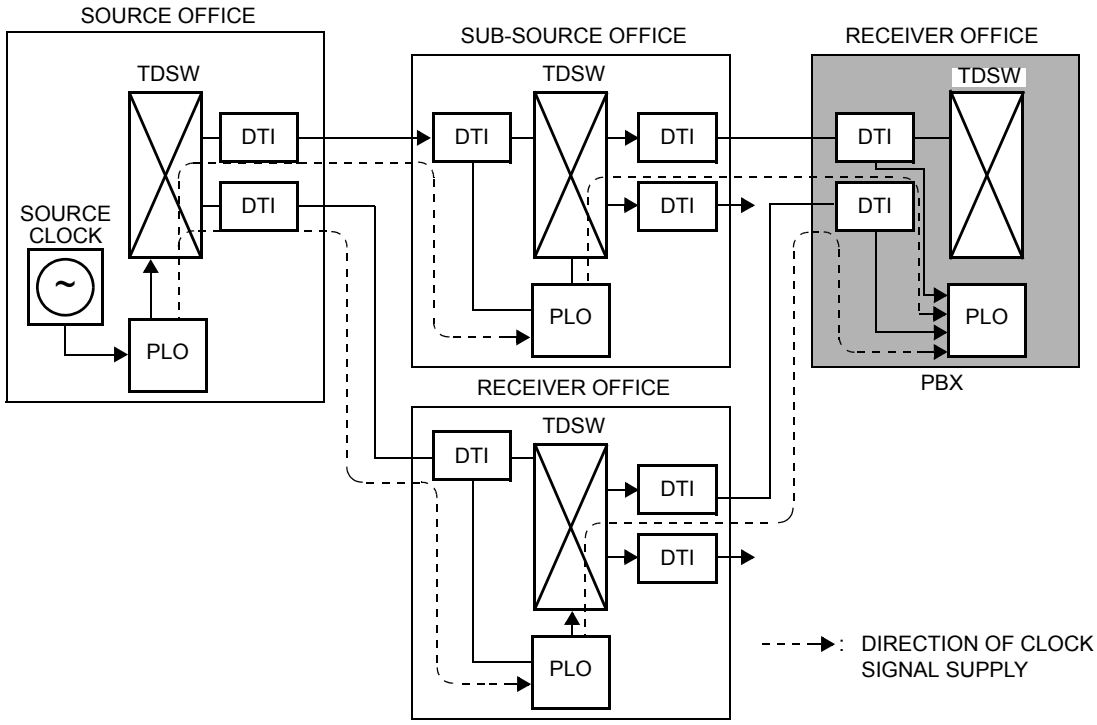
PLO

The Phase Locked Oscillator (PLO) equipped on the MP card is responsible to synchronize the system and to the clock signals from the another office.

When the PBX is a clock receiver office, the PLO generates the clock signals according to the source clocks received from the source office within the network.
The source clock signals are extracted at DTI/CCT cards and supplied to the PLO.
Two clock routes are available; one is the route 0 from the source office, and the other is a standby route 1 from a sub-source office. When no clock signals come from either the route 0 or route 1, due to a transmission line failure, the PLO keeps generating the clock signals at the frequency of the last source clock. The PLO can receive different frequency of source clocks from the route 0 and route 1.

This figure shows an example of clock supply route configuration.

Clock Supply Route



NOTE: *DTI0/CCT0 and DTI1/CCT1 must be mounted in PIM0.*

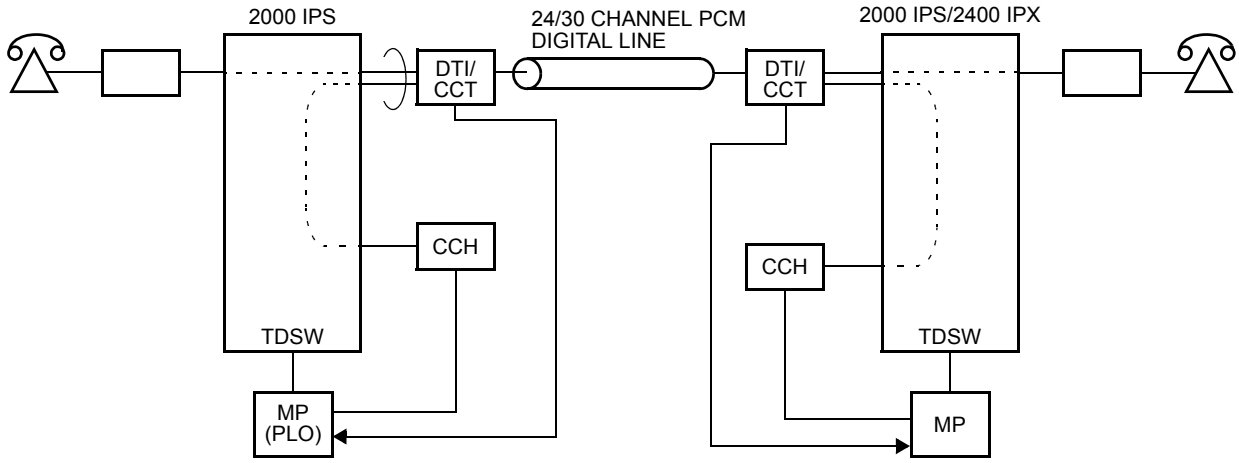
No. 7 CCIS

The PBX can provide No. 7 CCIS via either a digital network or an analog network. Regardless of the digital network or analog network, CCH (Common Channel Handler) to control the common signaling channel is required.

Digital Network

When No. 7 CCIS is provided via a digital network, the CCH is connected to the DTI by a fixed path in the TDSW and transmits/receives common signaling data to/from the distant office through a predetermined channel. Voice signals are transmitted/received on each line basis through other channels.
This figure shows the system configuration of No. 7 CCIS provided via digital network.

No. 7 CCIS with DTI



DTI : 24/30 Channel Digital Trunk Interface
CCH: Common Channel Handler
CCT : CCIS Trunk
PLO : Phase Locked Oscillator

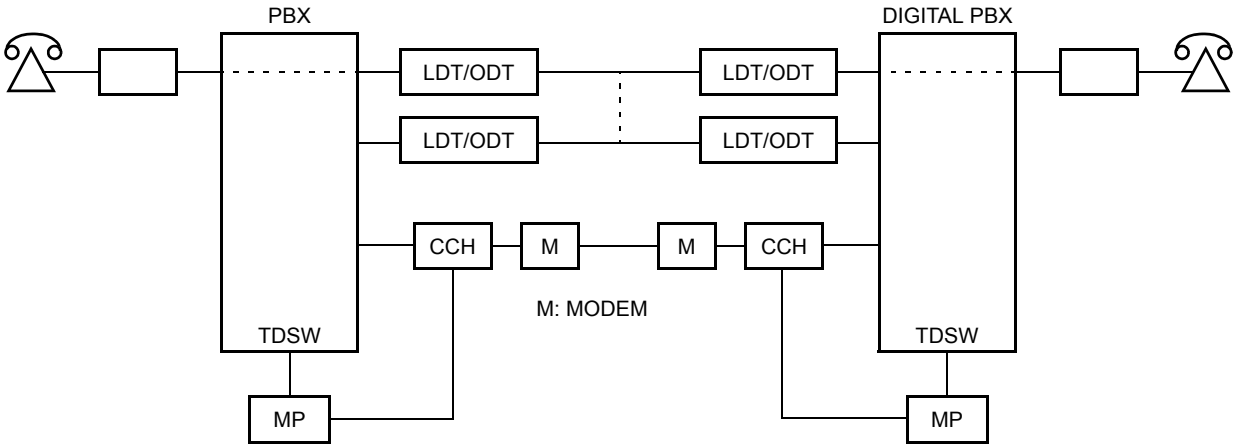
Analog Network

When No. 7 CCIS is provided via an analog network, the CCH is connected to the Common Signaling Channel Controller in the distant office via MODEMs, directly. Voice signals are transmitted/received through analog trunks (LDT/ODT).

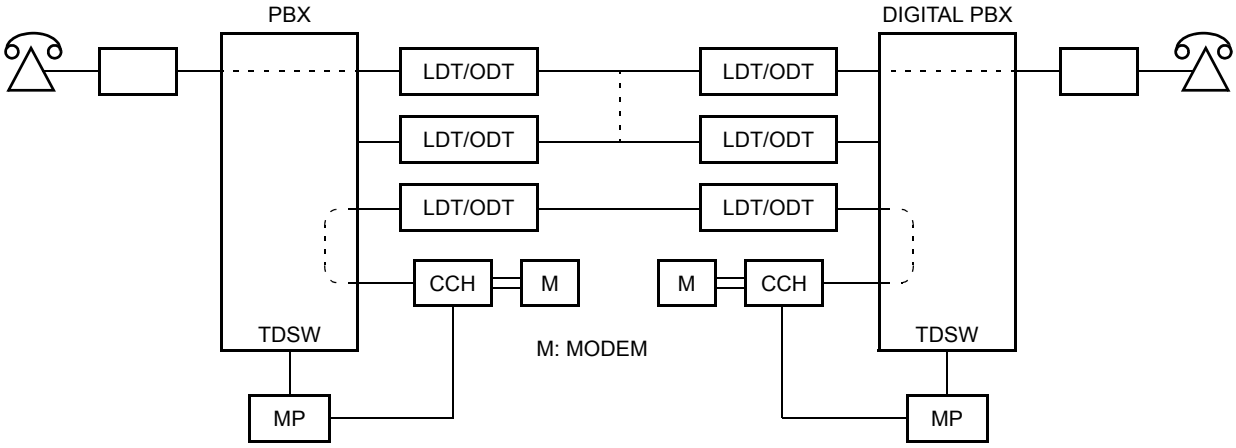
The following figure shows the system configuration of No. 7 CCIS provided via analog network.

No. 7 CCIS with LDT/ODT

• Common Signaling Data Link via MODEM



• Common Signaling Data Link via LDT/ODT



Centralized Billing

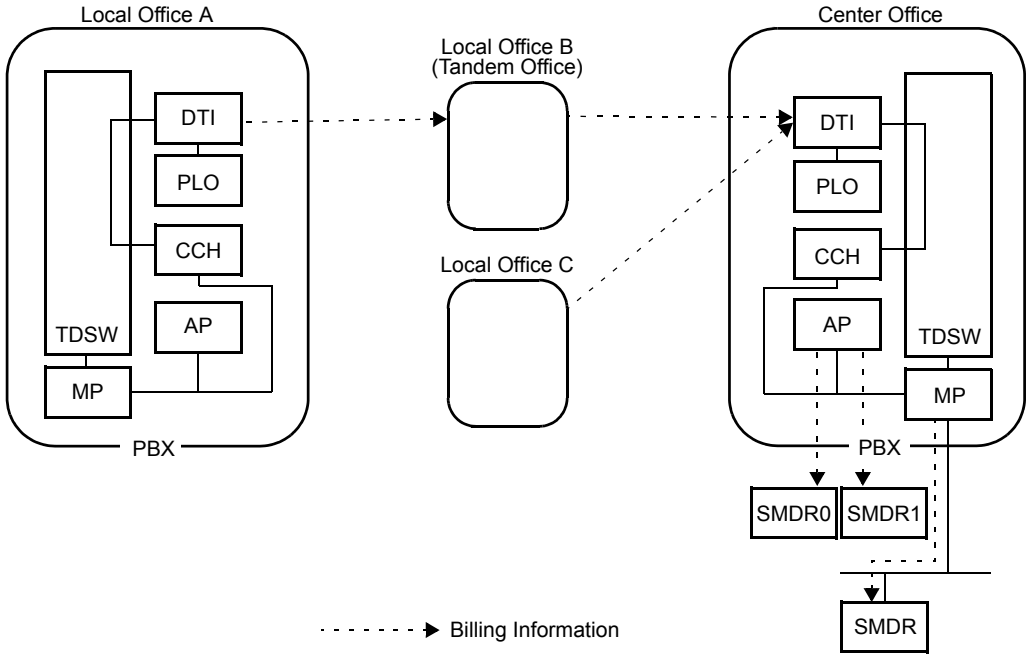
Centralized Billing is a function that transmits billing information at each office to the center office within the same network through the common signaling channels of No. 7 CCIS.

To transmit the own billing information of the local office to center office, or transfer the billing information from other local offices to the center office, AP00 or MP built-in SMDR is required for each office. The AP00 or MP in the center office can send out the billing information to SMDR terminal with the following SMDR function.

- SMDR with AP00 (AP00 with AP00 program)
- SMDR with AP00 (AP00 with MRCA program)
- MP built-in SMDR on IP

The following figure shows the system outline of the Centralized Billing.

System Outline of Centralized Billing



Service Conditions for Centralized Billing

If all the PBXs within the network are the 2000 IPS, the PBX can be a center billing office. In this case, there are the following conditions:

Conditions for Center Office;

- The available combination between SMDR and the output format is as follows. One type of SMDR is available among the following SMDR in center office.

SMDR	Former NEAX 2400 IMS format	Extended NEAX 2400 IMS format
SMDR with AP00 (PN-AP00-B with AP00 program)	Available	Not Available
SMDR with AP00 (PN-AP00-B/PN-AP00-D with MRCA program)	Available	Available **[Series 3400 software or later]** **NOTE**
MP built-in SMDR on RS-232C	Not Available	Not Available
MP built-in SMDR on IP	Available **[Series 3400 software or later]**	Available **[Series 3400 software or later]**

NOTE: *The extended NEAX 2400 IMS format is available by using SC-3168 MRCA program issue 2 or later.*

- When the center office supports extended NEAX 2400 IMS format, the billing information received from each local office can be output with either extended NEAX 2400 IMS format or former NEAX 2400 IMS format. When the center office does not support extended NEAX 2400 IMS format (Series 3300 or earlier), the billing information from each local office can output with only former NEAX 2400 IMS format.
- Maximum of eight local offices can be accommodated.
- Maximum of 3600 calls per hour can be received from local office. If exceeds 3600 calls per hour, the billing information is stored in the local office.

- The billing information of own office (center office) and the billing information from local office/tandem office can be stored as follows.

SMDR	Center Office	Local/Tandem Office
SMDR with AP00 (PN-AP00-B with AP00 program)	800 calls (without expansion memory) 27000 calls (with expansion memory)	512 calls
SMDR with AP00 (PN-AP00-B with MRCA program)	1310 calls (without expansion memory) 22270 calls (with expansion memory)	512 calls
SMDR with AP00 (PN-AP00-D with MRCA program)	22270 calls	512 calls
MP built-in SMDR on IP	1024 calls NOTE	Not stored

NOTE: *When the memory of the MP overflows, new billing information is cancelled. The call records will be cleared by the power off or system reset.*

- If the billing information is not sent to the SMDR terminal due to such as a failure of the SMDR terminal, the billing information is stored in center office. Moreover, if the memory is filled, the billing information is stored in the local office.
- The maximum number of SMDR terminal that can be connected is as follows.
  SMDR with AP00 (PN-AP00-B with AP00 program) : 2
  SMDR with AP00 (PN-AP00-B/PN-AP00-D with MRCA program): 2
  MP built-in SMDR on IP : 1

Conditions for Local Office;

- The available combination between SMDR and the output format is as follows. One type of SMDR is available among the following SMDR in local office.

SMDR	Former NEAX 2400 IMS format	Extended NEAX 2400 IMS format
SMDR with AP00 (AP00 with AP00 program)	Available	Not Available
SMDR with AP00 (AP00 with MRCA program)	Available	Not Available
MP built-in SMDR on RS-232C	Available	Available **[Series 3400 software or later]**
MP built-in SMDR on IP	Not Available	Not Available

- The AP00 cannot be used when MP built-in SMDR is provided in local office (CM08>800: 0).
- The MP built-in SMDR cannot be used when the AP00 is provided in local office (CM05 Y=0: 04).
- In case of using AP00, the billing information of local office can be sent to the SMDR terminal of the local office.
- In case of using MP built-in SMDR, the billing information of local office cannot be sent to the SMDR terminal of the local office.
- In case of using AP00, if the link between local office and center office is shut down due to such as a failure of center office, the billing information is stored in the local office. In this case, the billing information will not be cleared by the MP reset or power off.
- In case of using MP built-in SMDR, if the link between local office and center office is shut down due to such as a failure of center office, the billing information is stored in the local office. In this case, the billing information will be cleared by the MP reset or power off.
- Maximum of 3600 calls per hour can be sent to center office/tandem office.

- The billing information of local office can be stored as follows.

SMDR		Memory Capacity
SMDR with AP00 (PN-AP00-B with AP00 program)	without expansion memory	1600 calls
	with expansion memory	27000 calls (When CMD003>28 is set to 0) 26000 calls (When CMD003>28 is set to other than 0)
SMDR with AP00 (PN-AP00-B with MRCA program)	without expansion memory	2620 calls
	with expansion memory	23580 calls
SMDR with AP00 (PN-AP00-D with MRCA program)		23580 calls
MP built-in SMDR on RS-232C		1024 calls

Conditions for Tandem Office;
- One center office and maximum of seven local offices can be accommodated.
- Maximum of 3600 calls per hour can be received from local office. If exceeds 3600 calls per hour, the billing information is stored in the local office.
- Maximum of 3600 calls per hour can be sent to center office.
- Other conditions are the same as Conditions for Local Office.

Inter-Office Digital Data Transmission through No. 7 CCIS

The PBX can provide Inter-Office Digital Data Transmission through No. 7 CCIS.

When the PBX is an end office in the Inter-Office Digital Data Transmission through No. 7 CCIS with Digital Interface, the digital signal is transmitted directly. A maximum of 64 Kbps digital data transmission is available for the direct digital transmission.

When the PBX is a tandem office in the Inter-Office Digital Data Transmission through No. 7 CCIS, data transparency is provided, and a maximum of 64 Kbps digital data transmission is available.

For details, refer to the Data Interface System Manual.

CARD NAME AND FUNCTION

This table shows the circuit card name and function for No. 7 CCIS.

Card Name and Function

EQUIPMENT NAME	FUNCTIONAL NAME	FUNCTION
PN-AP00-B	AP00	Application Processor Card Provides four RS-232C ports, and is used for SMDR, Hotel Printer, CIS, PMS, MCI functions. (For PMS function, PN-AP00-B with MRCA program is not available.) One card per system.
PN-AP00-D	AP00	Application Processor Card Provides four RS-232C ports, and is used for SMDR, Hotel Printer, CIS, MCI functions. One card per system.
PN-24CCTA	CCT	CCIS (1.5 Mbps) Trunk Card Provides a built-in Common Channel Handler (CCH) of No. 7 CCIS.
PN-30CCTA	CCT	CCIS (2 Mbps) Trunk Card Provides a built-in Common Channel Handler (CCH) of No. 7 CCIS.
PN-DTA	CCT	CCIS (1.5 Mbps/2 Mbps) Trunk Card Provides a built-in Common Channel Handler (CCH) of No. 7 CCIS.
PN-DTB	CCT	CCIS (1.5 Mbps/2 Mbps) Trunk Card Provides a built-in Common Channel Handler (CCH) of No. 7 CCIS.
PN-24DTA-C	DTI	T1 Digital Trunk Interface (1.5 Mbps) Card Accommodates 24-channel PCM digital lines.
PN-30DTC-C	DTI	E1 Digital Trunk Interface (2 Mbps) Card Accommodates 30-channel PCM digital lines.

Continued on next page

Card Name and Function

EQUIPMENT NAME	FUNCTIONAL NAME	FUNCTION
PN-SC00	CCH	Common Channel Handler Card Transmits/receives signals on the common signaling channel of No. 7 CCIS.
PN-2LDTA	LDT	2-line Loop Dial Trunk Card Loop resistance: Maximum 2500 Ω (including internal resistance of the distant office equipment) Equipped with –48V DC-DC on-board power supply.
PN-4LDTA	LDT	4-line Loop Dial Trunk Card Loop resistance: Maximum 3000 Ω (including internal resistance of the distant office equipment) PZ-PW122 is required.
PN-M10	M10	Optical Fiber Interface Card Provides optical fiber interface for T1/E1 Digital Trunk Interface (1.5 M/2 Mbps) or Remote PIM. Line length : 10 km (6.2 miles) or less Line coding : CMI
PN-2ODTA	ODT	2-line Out Band Dialling Trunk Card Used as either a 2-wire E&M trunk or a 4-wire E&M trunk. Equipped with –48 V DC-DC on-board power supply. Both No. 0 and No. 1 circuits must be set to the same purpose (2-wire or 4-wire) in one card.
PN-2ODTB **[For New Zealand/UK]**	ODT	2-line Out Band Dialling Trunk Card Used as either a 2-wire E&M trunk or a 4-wire E&M trunk. Equipped with –48 V DC-DC on-board power supply. Both No. 0 and No. 1 circuits must be set to the same purpose (2-wire or 4-wire) in one card.

Continued on next page

Card Name and Function

<table>
<tr><th>EQUIPMENT NAME</th><th>FUNCTIONAL NAME</th><th>FUNCTION</th></tr>
<tr><td>PZ-M537</td><td>EXPMEM</td><td>Memory Expansion Card for AP00 Card
The system capacity is expanded when PZ-M537 is mounted on PN-AP00-B (AP00) card.
PZ-M537 cannot be mounted on PN-AP00-D (AP00) card.
Memory Expansion for AP00 is shown in the table below.
• PN-AP00-B with AP00 program
<table>
<tr><th>System Capacity</th><th colspan="2">No EXPMEM</th><th colspan="2">With EXPMEM</th></tr>
<tr><td rowspan="2">SMDR call record</td><td>Local Office of Centralized Billing-CCIS/ Stand-alone</td><td>Center Office of Centralized Billing-CCIS</td><td>Local Office of Centralized Billing-CCIS/ Stand-alone</td><td>Center Office of Centralized Billing-CCIS</td></tr>
<tr><td>1600</td><td>800</td><td colspan="2">27000: Call Record for CIS is not provided
26000: Call Record for CIS is provided</td></tr>
</table>
• PN-AP00-B with MRCA program
<table>
<tr><th>System Capacity</th><th colspan="2">No EXPMEM</th><th colspan="2">With EXPMEM</th></tr>
<tr><td rowspan="2">SMDR call record</td><td>Local Office of Centralized Billing-CCIS/ Stand-alone</td><td>Center Office of Centralized Billing-CCIS</td><td>Local Office of Centralized Billing-CCIS/ Stand-alone</td><td>Center Office of Centralized Billing-CCIS</td></tr>
<tr><td>2620</td><td>1965</td><td>23580</td><td>22925</td></tr>
</table></td></tr>
<tr><td>PZ-M542</td><td>CONN</td><td>Coaxial Cable Connection Card
Used to connect a coaxial cable for the Digital Trunk Interface.
Maximum two cards can be connected to LTC connector of each PIM.</td></tr>
<tr><td>PZ-M557
[For Australia]</td><td>CONN</td><td>Coaxial Cable Connection Card
Used to connect a coaxial cable for the Digital Trunk Interface.
Maximum two cards can be connected to LTC connector of each PIM.</td></tr>
</table>

SYSTEM CAPACITY

The table below shows the system capacity of NEAX 2000 IPS, when you use the NEAX IPS^{DM}/IPS^{DMR}, refer to "NEAX IPS^{DM} Hardware Installation Guide".

CCIS with Digital Interface

System Capacity for CCIS with Digital Interface

DESCRIPTION	CAPACITY			
	24DTI	30DTI	24CCT	30CCT
DTI Card	8	8	—	—
CCH Card	8	8	—	—
AP00 Card (for Centralized Billing)	1	1	1	1
Trunks for DTI	192	248	—	—
CCIS Routes	8	8	8	8
Trunks per DTI Card	24	31	—	—
CCT Card	—	—	8	8
Trunks for CCT	—	—	200	248
Trunks per CCT Card	—	—	25	32
M10 Card	4	4	4	4

CCIS with Analog Interface

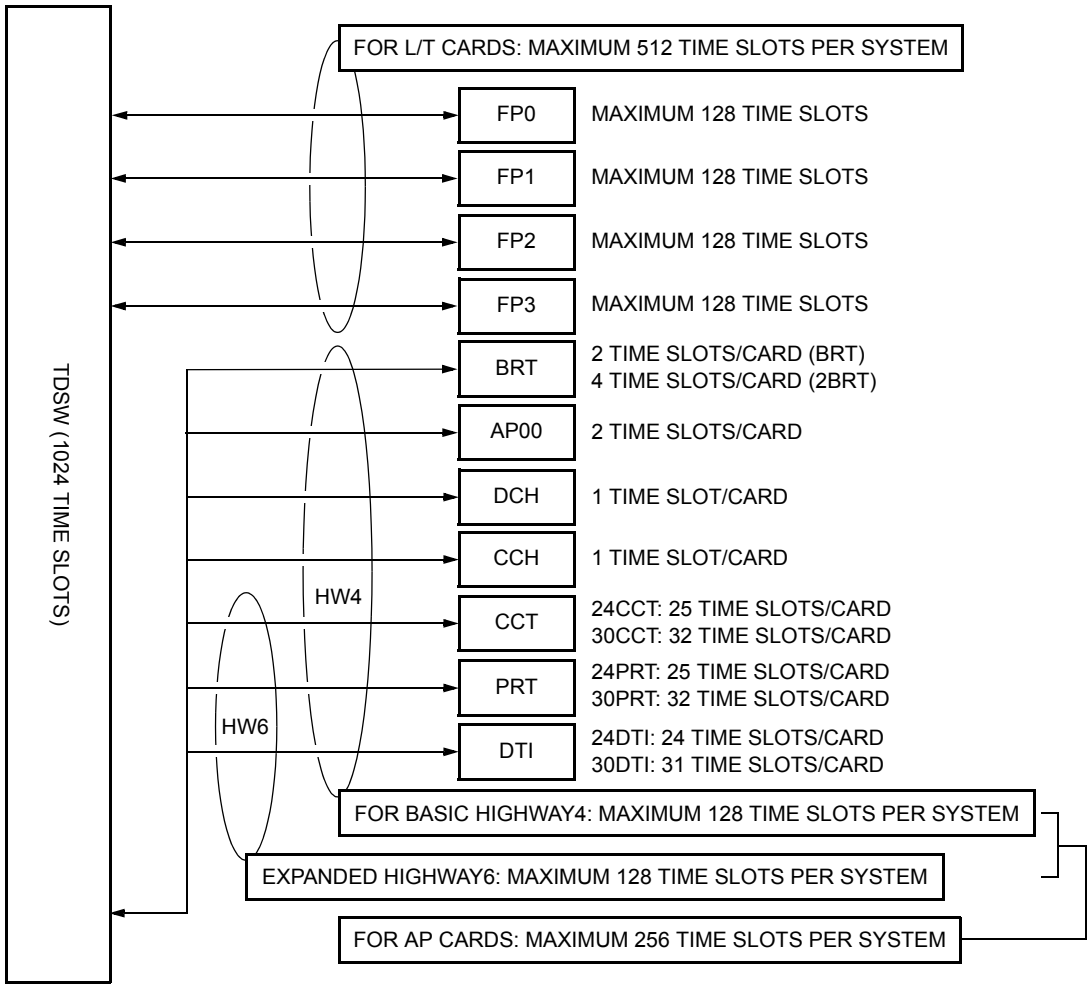
System Capacity for CCIS with Analog Interface

DESCRIPTION	CAPACITY
CCH Card	8
AP00 Card (for Centralized Billing)	1
LDT (2LDT)/ODT Card	128
LDT (4LDT) Card	64
LDT/ODT Trunks	254

TIME SLOT ASSIGNMENT CONDITION

As shown below, the CCH cards use the time slots on the basic highway 4.
Therefore, the total number of time slots for all CCH cards must be 128 time slots or less including all other application processor (AP) cards, which use the highway 4.
The 24DTI/30DTI/CCT cards can use the time slot on both the basic and expanded highway 4 and 6.
Therefore, the total number of time slots for all 24DTI/30DTI/CCT cards must be 256 time slots or less including all other application processor cards, which use the highway 4 and 6.

Accommodation of DTI/CCH into TDSW

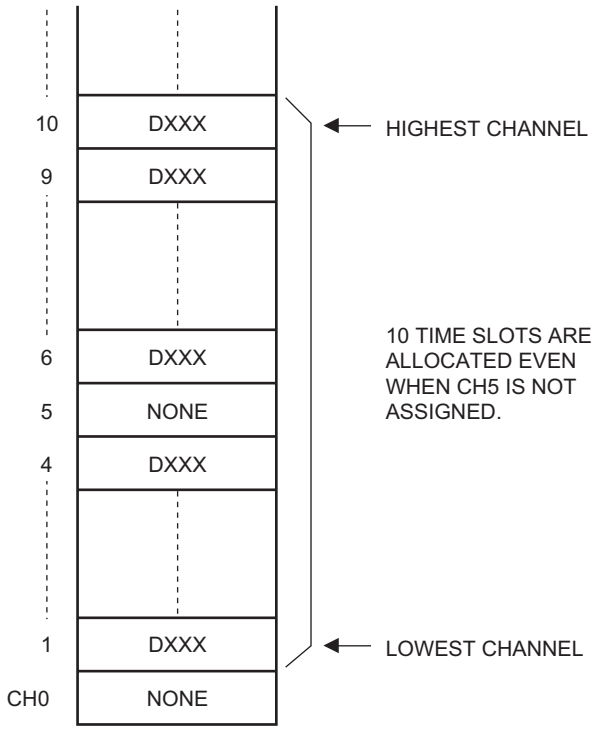


Time Slot Allocation for DTI Card

On each DTI card, the system recognizes the lowest and highest channel numbers to which trunk numbers are assigned, and allocates time slots to all the channels between them. If trunk numbers are assigned to nonconsecutive channels, the system also allocates time slots to channels not assigned.

For example, as shown below, when Channel 1 through Channel 10 have been assigned by system data programming (CM07 Y=01) except Channel 5, the system allocates a total of 10 time slots for all ten channels. Therefore, to avoid allocation of unnecessary time slots, it is recommended that consecutive channels be assigned on each DTI card.

Time Slot Allocation for DTI



Number of Time Slots Required for DTI/CCH Card

(1) When the system is serving as a Lower Hierarchy Office within the network, 1 time slot is allocated for setting up a fixed path between the DTI/ODT and the CCH as the common signaling channel.

(2) When the system is serving as a High Hierarchy Office within the network, 1 time slot is allocated to the distant Main Office and distant Local Office for the common signaling channel.

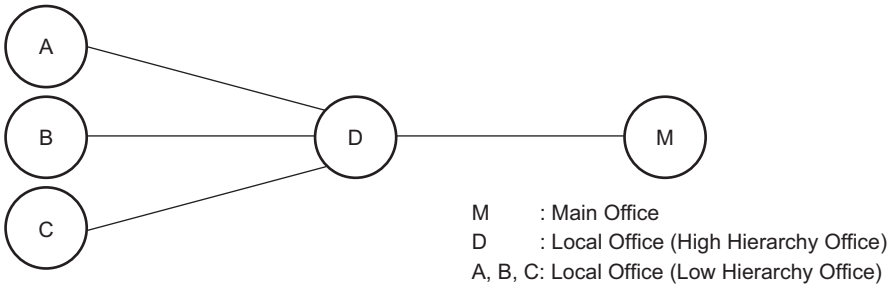
NOTE 1: *A billing information from distant Local Office is transferred as follows.*
AP00→MP→CCH

NOTE 2: *When a common signaling data link is provided via a MODEM, the time slot for the common signaling channel is not required.*

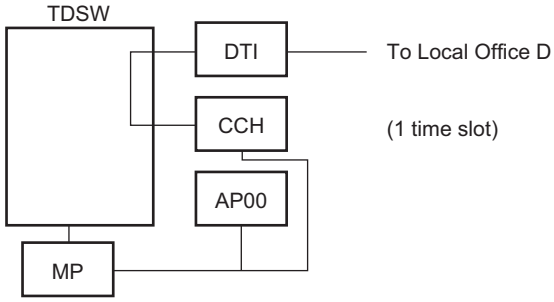
The following figures show the CCH time slot assignment for CCIS with Digital Interface.

CCH Time Slot Assignment (for No. 7 CCIS with Digital Interface)

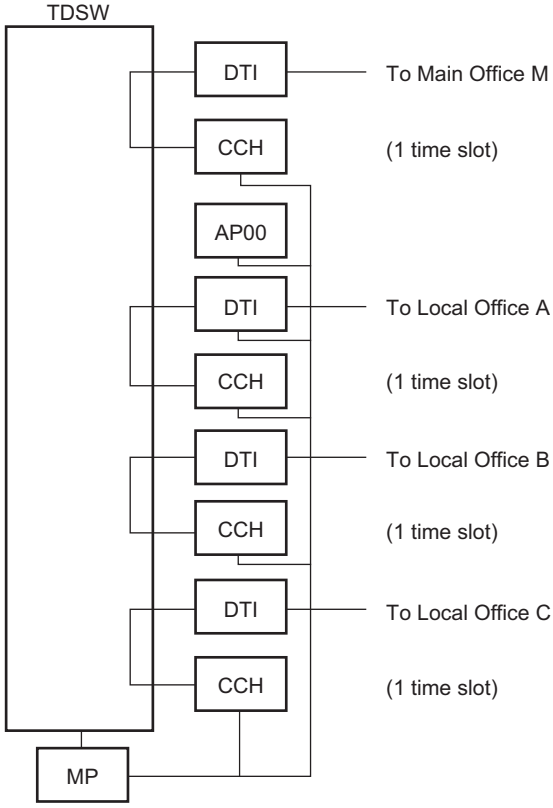
- Network Configuration:



- When the System locates at A, B, or C (Low Hierarchy Office) in the above network:



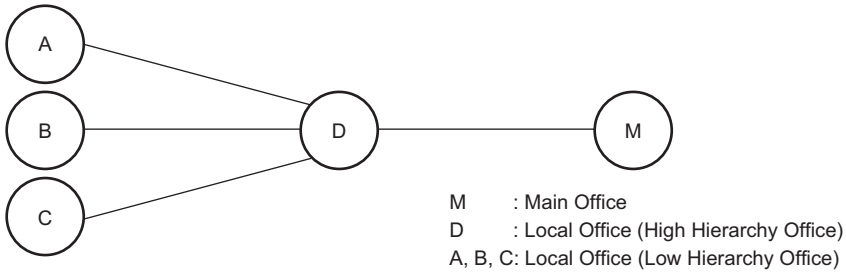
- When the System locates at D (High Hierarchy Office) in the above network:



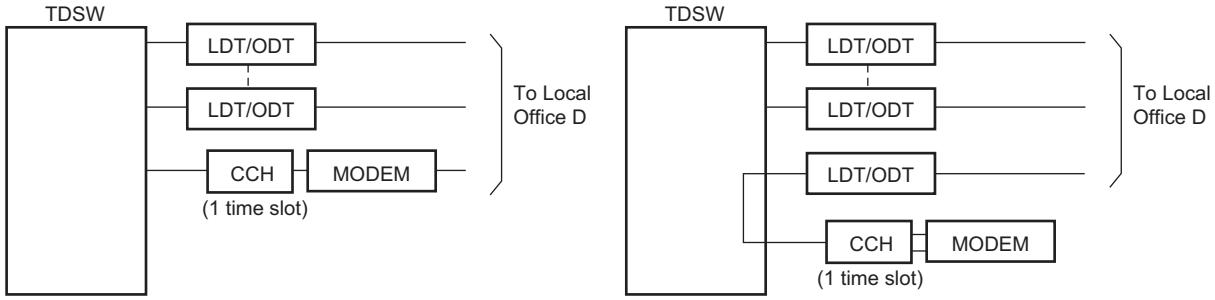
The following figures show the CCH time slot assignment for No. 7 CCIS with Analog Interface.

CCH Time Slot Assignment (for No. 7 CCIS with Analog Interface)

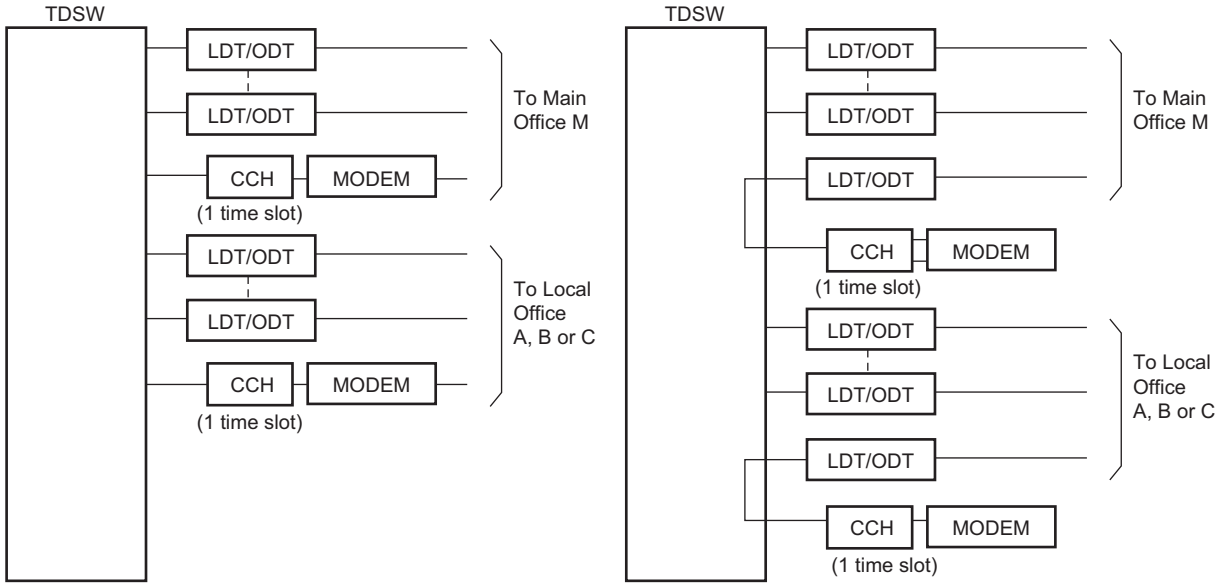
- Network Configuration:



- When the System locates at A, B, or C (Low Hierarchy Office) in the above network:



- When the System locates at D (High Hierarchy Office) in the above network:



This table shows the number of time slots for each of the cards required for No. 7 CCIS with Digital Interface and next page shows the number of time slots for each of the cards required for No. 7 CCIS with Analog Interface.

Number of Time Slots Required per DTI/CCH/CCT/AP00 Card (for No. 7 CCIS with Digital Interface)

CARD	NUMBER OF TIME SLOTS PER CARD	REMARKS
PN-24DTA-C	1-24	• Number of CCIS channels (the number of CCH) + number of trunks assigned
PN-30DTC-C	1-31	
PN-SC00	1	• For a distant Main Office – Common Signaling Channel: 1 time slot
	1	• For a distant Local Office – Common Signaling Channel: 1 time slot
PN-24CCTA	1-25	• Number of CCIS channels (the number of CCH) + number of trunks assigned
PN-30CCTA	1-32	
PN-DTA/ PN-DTB	1-32	
PN-AP00-B/ PN-AP00-D	2	

Number of Time Slots Required per CCH/AP00 Card (for No. 7 CCIS with Analog Interface)

CARD	NUMBER OF TIME SLOTS PER CARD	REMARKS
PN-SC00	1	• For a distant Main Office – Common Signaling Channel: 1 time slot
	1	• For a distant Local Office – Common Signaling Channel: 1 time slot
PN-AP00-B/ PN-AP00-D	2	

DTI SPECIFICATIONS

Transmission Characteristics

Transmission Characteristics

CHARACTERISTICS	24-CHANNEL	30-CHANNEL
(1) Output		
• Line Rate	1.544 Mbps ±50 ppm	2.048 Mbps ±50 ppm
• Line Code	AMI with ZCS/B8ZS*	High Density Bipolar 3 (HDB3)
• Line Impedance	100 Ω	75 Ω (Coaxial Cable) 120 Ω (Twisted-Pair Cable)
• Pulse Amplitude (Base to Peak)	3 volts ±0.6 volts	2.37 volts nominal (Coaxial Cable) 3 volts nominal (Twisted-Pair Cable)
• Pulse Width	324 ns ±30 ns	244 ns nominal
(2) Input		
• Line Rate	1.544 Mbps ±200 bps (130 ppm)	2.048 Mbps ±50 ppm
• Pulse Amplitude (Base to Peak)	1.5 volts – 3 volts	1.5 volts – 2.7 volts (Coaxial Cable) 1.5 volts – 3.3 volts (Twisted-Pair Cable)
• Frame Synchronization Pattern	100011011100	
• Input Jitter	ITU-T Fig. 1/G743	ITU-T Fig. 1/G743
• Wander	+138UI, –193UI or –138UI, +193UI	ITU-T G823
• Cable Length from PBX to MDF or External Equipment	Maximum 200 m (Maximum 656.2 ft.) [with 0.65 ϕ (22 ABAM) twisted-pair cable]	Maximum 400 m (Maximum 1312.4 ft.) [with 0.65 ϕ (22 ABAM) twisted-pair cable]

* AMI: Alternate Mark Inversion
ZCS: Zero Code Suppression
B8ZS: Bipolar Eight Zero Substitution

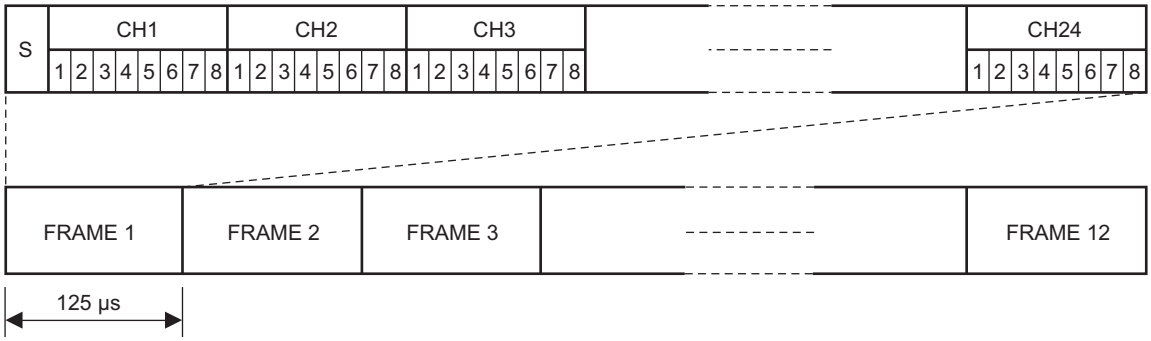
Frame Configuration of 24DTI

According to the AT&T Specifications for 24-channel transmission, there are two types of frame configurations: 12-Multi Frame (D4) and 24-Multi Frame (ESF).

(1) 12-Multi Frame (D4)

The frame has 12-Multi Frames, and each Multi frame has a 24-channel PCM signal (8 bits/channel) and an S bit (Super Frame Bit). This figure shows the frame configuration, and table in next page shows frame bit assignment.

Frame Configuration of 24DTI (12-Multi Frame)



S: SUPERFRAME BIT

12-Multi Frame Bit Assignment

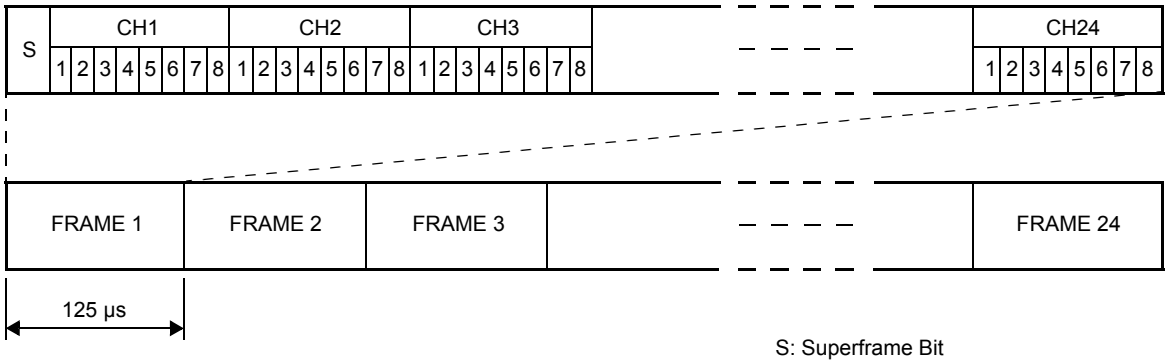
FRAME No.	S BIT	
	TERMINAL SYNCHRONIZATION (FT)	SIGNAL SYNCHRONIZATION (FS)
1	1	
2		0
3	0	
4		0
5	1	
6		1
7	0	
8		1
9	1	
10		1
11	0	
12		0

* The S-bit is the first bit in each frame.
* Frames are repeated in the order shown above.

(2) 24-Multi Frame (Extended Super Frame <ESF>)

This frame has 24-Multi Frames and each Multi frame has a 24-Channel PCM signal (8 bits/channel) and an S bit (Super Frame Bit). This figure shows the frame configuration, and table on next page shows frame bit assignment.

Frame Configuration of 24DTI (24-Multi Frame)



S: Superframe Bit

24-Multi Frame Bit Assignment

FRAME No.	S BIT		
	FRAME SYNCHRONI-ZATION	4 Kbps DATA LINK	CRC
1		m	
2			CB1
3		m	
4	0		
5		m	
6			CB2
7		m	
8	0		
9		m	
10			CB3
11		m	
12	1		
13		m	
14			CB4
15		m	
16	0		
17		m	
18			CB5
19		m	
20	1		
21		m	
22			CB6
23		m	
24	1		

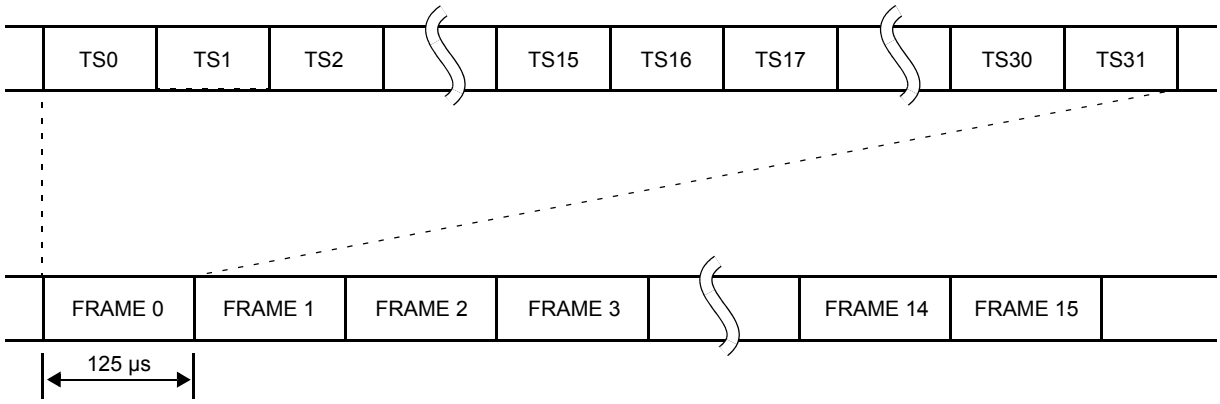
* The S-bit is the first bit in each frame.
* Frames are repeated in the order shown above.
* “m” in the “4 Kbps Data Link” column means that the frame is usually assigned to 1.

Frame Configuration of 30DTI

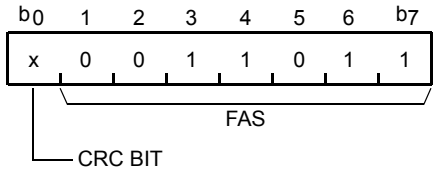
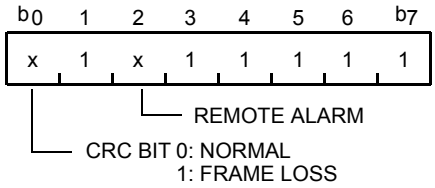
Based on 30-channel transmission method of ITU-T Specification, the frame configuration consists of 16-multi frame, each frame having 32 time slots.

This figure shows the frame configuration, and table on next page shows the details of time slot assignment.

Frame Configuration of 30DTI



Time Slot Assignment of 30DTI

TIME SLOT No.	EVEN No. FRAME	ODD No. FRAME
TS0	Frame Alignment Signal (FAS) 	
TS1-TS15	Voice Channel CH1-CH15	
TS16	• No. 7 CCIS: To be used as a Common Signaling Data Channel	
TS17-TS31	Voice Channel CH17-CH31	

MODEM Specifications

The MODEM specifications required for No. 7 CCIS with Analog Interface are shown below.

- Synchronization : Synchronous
- Data speed : 1200 bps-9600 bps
- Transmission Mode : Full Duplex
- Line : 2/4 wire (Common Signaling Data Link via MODEM)
- Connection Type : Leased
- Interface Condition : ITU-T V24 and V28

SERVICE FEATURES

List of CCIS Service Features

SERVICE FEATURES	REMARKS
Attendant Camp-On with Tone Indication-CCIS	
Attendant Controlled Conference-CCIS	NOTE 1
Automatic Recall-CCIS	
Brokerage-Hot Line-CCIS	
Busy Lamp Field (BLF)-CCIS	NOTE 6
Busy Verification-CCIS	
Call Back-CCIS	NOTE 2
Call Forwarding-All Calls-CCIS	
Call Forwarding-Busy Line-CCIS	
Call Forwarding-Don't Answer-CCIS	
Call Forwarding-Intercept-CCIS	
Call Forwarding-Override-CCIS	
Call Processing Indication-CCIS	
Call Transfer-All Calls-CCIS	
Call Transfer-Attendant-CCIS	
Called Station Status Display-CCIS	
Calling Name Display-CCIS	
Calling Number Display-CCIS	
CCIS Networking via IP	NOTE 5
Centralized Billing-CCIS	
Centralized Day/Night Mode Change-CCIS	NOTE 3
Centralized E911-CCIS	
Centralized MAT-CCIS	NOTE 3
Consultation Hold-All Calls-CCIS	
Data Line Security-CCIS	
Deluxe Traveling Class Mark-CCIS	

Continued on next page

List of CCIS Service Features

SERVICE FEATURES	REMARKS
Dial Access to Attendant-CCIS	
Digital Display-Station-CCIS	
Digital Display-Trunk-CCIS	
Direct-In Termination-CCIS	
Distinctive Ringing-CCIS	
Do Not Disturb-CCIS	
Dual Hold-CCIS	
Elapsed Time Display-CCIS	
Flexible Numbering of Stations-CCIS	
Hands-Free Answerback-CCIS	
Hot Line-CCIS	
House Phone-CCIS	
Incoming Call Identification-CCIS	
Individual Attendant Access-CCIS	NOTE 4
LDN Night Connection-CCIS	
Link Alarm Display-CCIS	
Link Reconnect-CCIS	
Message Waiting Lamp Setting-Attendant-CCIS	NOTE 3
Message Waiting Lamp Setting-Station-CCIS	NOTE 3
Miscellaneous Trunk Access-CCIS	
Miscellaneous Trunk Restriction-CCIS	
Multiple Call Forwarding-All Calls-CCIS	
Multiple Call Forwarding-Busy Line-CCIS	
Multiple Call Forwarding-Don't Answer-CCIS	
Multiple Console Operation-CCIS	
Network Station Number-CCIS (FCCS)	NOTE 3
Night Connection-Fixed-CCIS	
Night Connection-Flexible-CCIS	

Continued on next page

List of CCIS Service Features

SERVICE FEATURES	REMARKS
Outgoing Trunk Queuing-CCIS	
Paging Access-CCIS	
Restriction from Outgoing Calls-CCIS	
Service Display-CCIS	
Single-Digit Station Calling-CCIS	
Station-Controlled Conference-CCIS	NOTE 1
Station-to-Station Calling-CCIS	
Station-to-Station Calling-Operator Assistance-CCIS	
Toll Restriction-3/6 Digits-CCIS	
Trunk Answer from Any Station-CCIS	
Trunk-to-Trunk Restriction-CCIS	
Uniform Numbering Plan-CCIS	
Voice Call-CCIS	
Voice Mail Integration-CCIS	
Voice Mail Live Record-CCIS	
Voice Mail Private Password-CCIS	

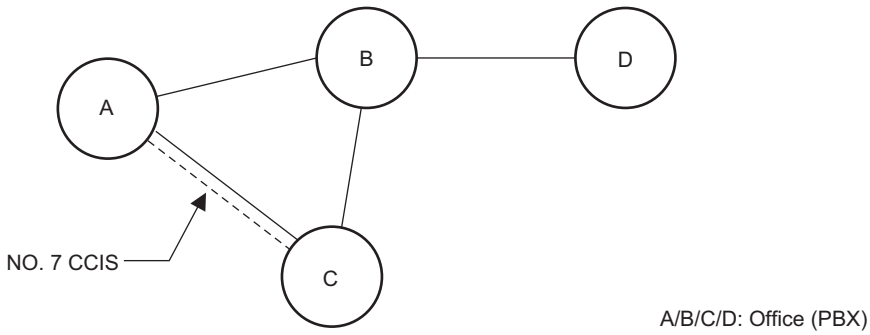
NOTE 1: *An attendant/extension of the 2400 IPX must be a conference leader.*
NOTE 2: *This service is available by the closed numbering plan.*
NOTE 3: *As a Local Office, this feature is available on the 2000 IPS.*
NOTE 4: *This service is available when the Attendant Console is provided at the 2400 IPX on the network.*
NOTE 5: *Refer to the NEAX 2000 IPS System Manual.*
NOTE 6: *This service is available only for the 2000 IPS network, not available for the network including the 2400 IPX.*

NETWORK STRUCTURE CONSIDERATIONS

Determining System Configuration

The configuration of the network and the number of lines (channels) should be determined, and is dependent on the traffic between each office (PBX). For example, when the traffic between Office A and Office C is high (as shown in the network of the following figure), Office A and Office C should be connected by No. 7 CCIS directly.

Network Structuring



Determining Number of No. 7 CCIS Routes

When the system is a Main Office or a Tandem Office, two or more routes to other offices are required.

- The maximum number of No. 7 CCIS routes is 8 per system.

Determining Type of Transmission Lines

The type of transmission lines available with the PBX are:

- Digital Interface (24DTI/30DTI)
- Analog Interface (LDT/ODT)

The Analog Interface is not suitable for a high-traffic network because the transmission speed of the control signal is limited to a maximum of 9.6 Kbits per second (bps). A Digital Interface can transmit control signals at up to 56 Kbps.

Determining Which PBX Should Be Main Office

When using No. 7 CCIS, the following features require establishing a clear relationship between the Main and Satellite offices:

- Centralized Attendant Service (CAS)

  – Attendant Camp-On with Tone Indication-CCIS
  – Busy Verification-CCIS
  – Centralized Day/Night Mode Change-CCIS
  For Centralized Day/Night Mode Change Service, the Main Office must be the 2400 IPX. This feature can be set only from the Main Office 2400 IPX: The 2000 IPS's Attendant Console cannot set this feature. The 2000 IPS provides the feature when instructed by the Main Office.

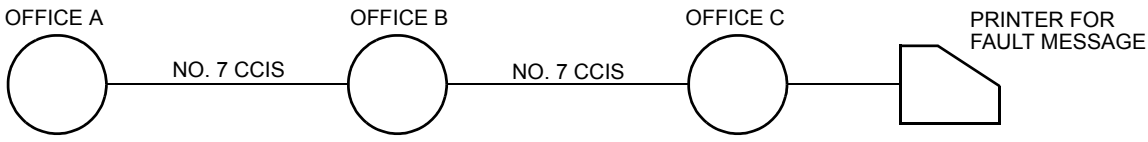
- Centralized Billing-CCIS

- Centralized Fault Message
  Main office: 2400 IPX only
  The 2000 IPS can pass information, but cannot generate alarm information and send over CCIS.

- Centralized MAT-CCIS
  Main office: 2400 IPX only

- Network Station Number-CCIS (FCCS)
  Main office: 2400 IPX only

For Centralized Fault Message, the 2000 IPS cannot generate its own fault message. It can only relay a fault message from one office to another office.



When Office A and Office C are 2400 IPX and Office B is 2000 IPS, a fault message from Office A can be printed out at the printer located in Office C.

Determining Point Code

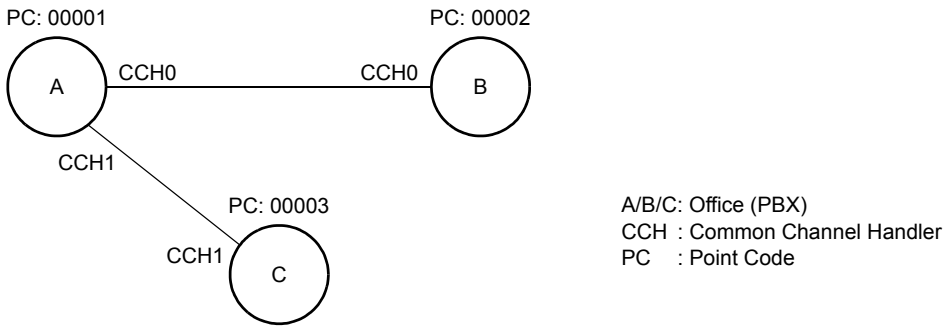
Point Codes are used to distinguish an originating office and destination office in the No. 7 CCIS network. A Point Code is assigned in each office in the No. 7 CCIS network. The following considerations are required when deciding the Point Code.

(1) The same Point Code cannot be assigned to more than one office.

(2) A single Point Code must not be assigned to each CCIS channel in the same system. When a system has two or more CCH, the same Point Code (originating) has to be assigned to all CCH in a system.

(3) The maximum number of Point Codes is 256. (Only 256 offices can be connected in the same network.)

Example: Point Code Assignment



- Data Assignment of Office A

Command Code	1st Data	2nd Data	Remarks
CMA7 Y=01	0	00001	Assign the Originating Point Code and the Destination Point Code for CCH0.
CMA7 Y=02	0	00002	
CMA7 Y=01	1	00001	Assign the Originating Point Code and the Destination Point Code for CCH1.
CMA7 Y=02	1	00003	

- Data Assignment of Office B

Command Code	1st Data	2nd Data	Remarks
CMA7 Y=01	0	00002	Assign the Originating Point Code and the Destination Point Code for CCH0.
CMA7 Y=02	0	00001	

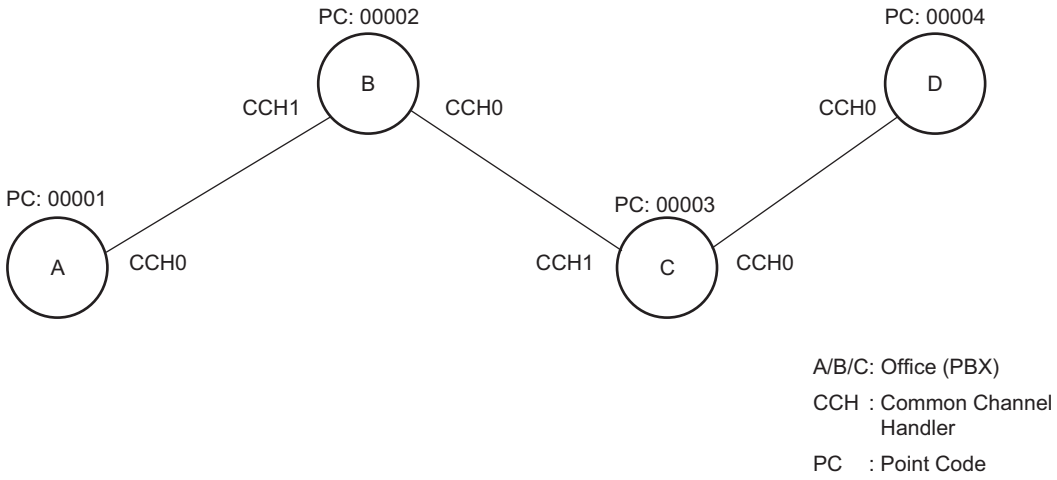
- Data Assignment of Office C

Command Code	1st Data	2nd Data	Remarks
CMA7 Y=01	0	00003	Assign the Originating Point Code and the Destination Point Code for CCH0.
	0	00001	

Determining CCH Link to Send Messages

Each system MP must be programmed with the proper information indicating to which CCH (in its own system) every other office in the network is connected. This is required for providing inter-office services such as Attendant Camp-On, Call Back, and Busy Verification when using CCIS. In each system, CMA8 is used to inform the local MP which system is connected through which CCH. This is extremely important, not only for where two switches are connected to each other, but also for networks in which tandem signaling is used.

Example 1:



- Data Assignment of Office A

Command Code	1st Data	2nd Data	Remarks
CMA8	00002	0	Assign the data to make a CCH link with Office B via CCH0.
	00003	0	
	00004	0	

- Data Assignment of Office B

Command Code	1st Data	2nd Data	Remarks
CMA8	00001	1	Assign the data to make a CCH link with Office C via CCH0, and make a CCH link with Office A via CCH1.
	00003	0	
	00004	0	

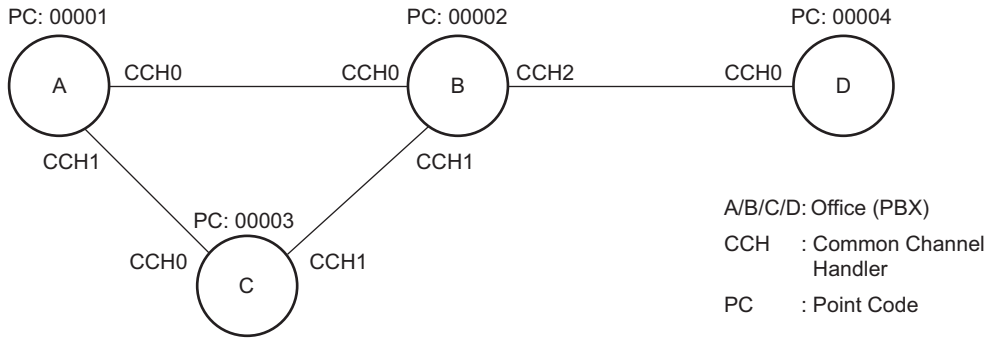
- Data Assignment of Office C

Command Code	1st Data	2nd Data	Remarks
CMA8	00001	1	Assign the data to make a CCH link with Office D via CCH0, and make a CCH link with Office B via CCH1.
	00002	1	
	00004	0	

- Data Assignment of Office D

Command Code	1st Data	2nd Data	Remarks
CMA8	00001	0	Assign the data to make a CCH link with Office C via CCH0.
	00002	0	
	00003	0	

Example 2:



In this example, there are two connection patterns from Office A to Office D, A-B-D and A-C-B-D. Office A's first choice route in the Least-Cost Routing (LCR) Route Pattern Table would be CCH0 (whatever route the voice channel is assigned to).

The second choice would be to the voice route associated with CCH1, which is connected to Office C. At Office C the programming is set up to call and signal Office B, which then routes the call to Office D.

- Data Assignment of Office A

Command Code	1st Data	2nd Data	Remarks
CMA8	00002	0	Assign the data to make a CCH link with Office B via CCH0 and make a CCH link with Office C via CCH1.
	00003	1	
	00004	0	

- Data Assignment of Office B

Command Code	1st Data	2nd Data	Remarks
CMA8	00001	0	Assign the data to make a CCH link with Office A via CCH0 make a CCH link with Office C via CCH1 and make a CCH link with Office D via CCH2
	00003	1	
	00004	2	

- Data Assignment of Office C

Command Code	1st Data	2nd Data	Remarks
CMA8	00001	0	Assign the data to make a CCH link with Office A via CCH0 and make a CCH link with Office B via CCH1.
	00002	1	
	00004	0	

- Data Assignment of Office D

Command Code	1st Data	2nd Data	Remarks
CMA8	00001	0	Assign the data to make a CCH link with Office B via CCH0.
	00002	0	
	00003	0	

Determining Numbering Plan

The Uniform Numbering Plan is used for the numbering plan in the No. 7 CCIS network. The Uniform Numbering Plan is provided by the Least-Cost Routing (LCR) feature, and there are two types of plans described below.

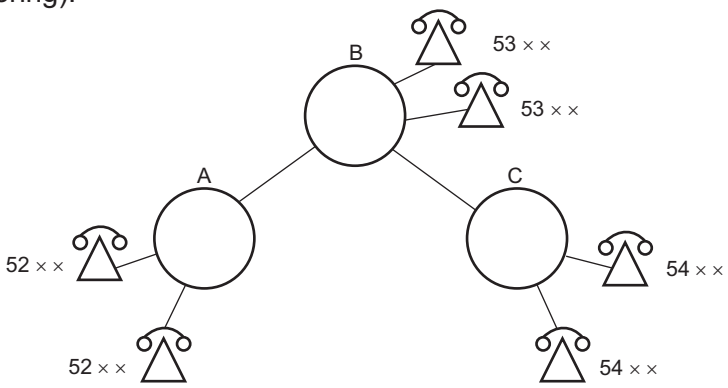
- Station Number (Closed Numbering)
- Office Code and Station Number (Open Numbering)

When an outgoing call is placed through a CCIS link, an originating station number (Office Code and Station Number) and a terminating Station Number are transmitted across the link to the destination office. The originating station number consists of the office number assigned in CMA7 Y=06 and the station number assigned in CM10/CM14 for the station time slot. The terminating station number consists of the dialed number and the data assigned in CM8A (any LCR changes to the number dialed).

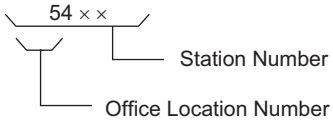
Next page shows an example of the Station Number (Closed Numbering) and Office Code and Station Number (Open Numbering) respectively.

Example of Station Number (Closed Numbering)

Station Numbering
(Closed Numbering):

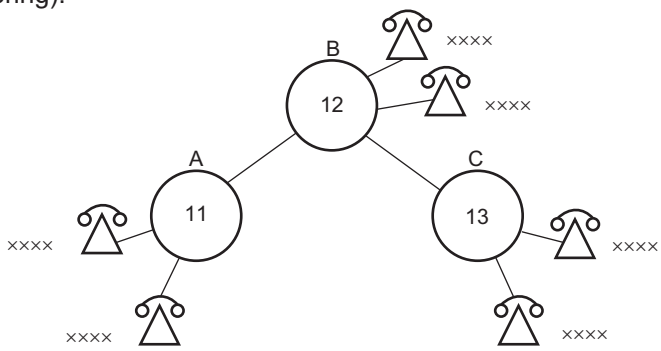


- When originating a call from Office A to Office C

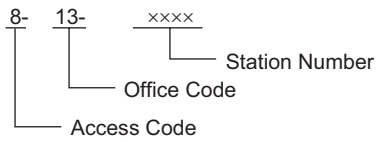


Example of Office Code and Station Number (Open Numbering)

Office Code and Station Number
(Open Numbering):



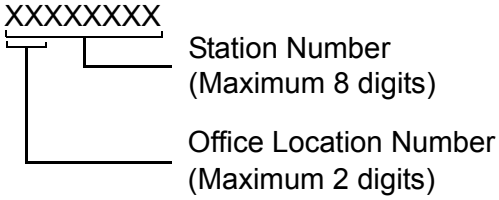
- When originating a call from Office A to Office C



Limitations on developing the Uniform Numbering Plan are as follows:

(1) Station Number (Closed Numbering)

- The dialing number must be formed as follows:

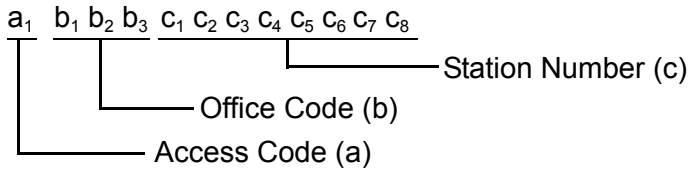


- When providing 3-digit or 4-digit station numbering within the No. 7 CCIS network, the data assignment of the Originating Office Number (CMA7 Y=06) is not necessary because the Originating Office Number is included in the originating station number.

- LCR Group 3 (CM20>A129) must be used for assigning an LCR access code.

(2) Office Code and Station Number (Open Numbering)

- The dialing number must be formed as follows.



(a) ≦ 4 digits
(a) + (b) ≦ 4 digits
(c) ≦ 8 digits
a1 ≠ c1

- LCR Groups 0-3 (CM20>A126-A129) can be used for assigning an LCR access code.

- When providing a pseudo dial tone to alter the dialing access code, LCR Groups 0-2 (CM20>A126-A128) must be used.

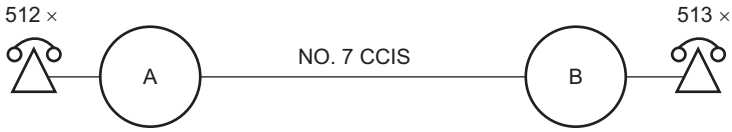
Example 1: Station Number (Closed Numbering)

- When the office location number is distinguished by the 1st or 2nd digit of the dialed station number:

- Data Assignment of Office A

Command Code	1st Data	2nd Data	Remarks
CM20 Y=0	51	804	4-digit station
CM20 Y=0	52	A129	LCR Group 3
CM8A Y=A000	3	4005	Area code Development Pattern No. 5
CM8A Y=4005	52	0000	Route Pattern 000
CM8A Y=0000	1	00000	Route 00 access by dialing 52XX
CM8A Y=5000	100	CCC	No digit addition
CM8A Y=5000	153	CCC	No digit deletion
CM10/CM14	XXX/ XXXXX	51XX	Originating station number
CMA7 Y=06	0	NONE	No originating office number
CM85 Y=5	52	04	Maximum number of digits dialed “4”

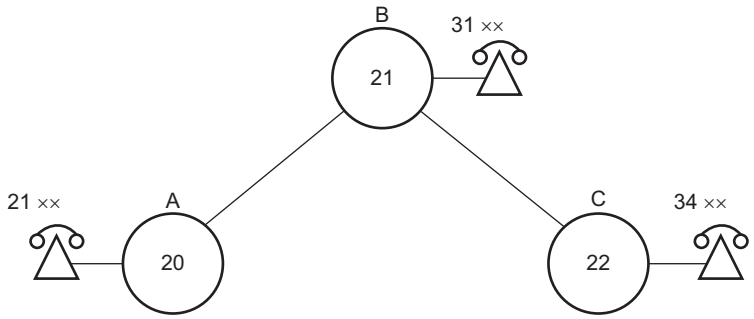
- When the office location number is distinguished by the 3rd digit of the dialed station number:



- Data Assignment of Office A

Command Code	1st Data	2nd Data	Remarks
CM20 Y=0	5	A129	LCR Group 3
CM8A Y=A000	3	4005	Area Code Development Pattern No. 5
CM8A Y=4005	512	8004	4-digit Intra-Office Station
CM8A Y=4005	513	0000	Route Pattern 000
CM8A Y=0000	1	00000	Route 00 access by dialing 52XX
CM8A Y=5000	100	CCC	No digit addition
CM8A Y=5000	153	CCC	No digit deletion
CM10/CM14	XXX/ XXXXX	512X	Originating station number
CMA7 Y=06	0	NONE	No originating office number
CM85 Y=5	513	04	Maximum number of digits dialed “4”

Example 2: Office Code and Station Number (Open Numbering)



Access Code: 8
Office Code : 20 (Office A)
21 (Office B)
22 (Office C)

- Data Assignment of Office A
  Pattern 1 (Used when receiving pseudo dial tone after dialing access code.)

Command Code	1st Data	2nd Data	Remarks
CM20 Y=0	8	A126	LCR Group 00
CM8A Y=A000	0	4005	Area Code Development Pattern No. 5
CM8A Y=4005	20	8000	Intra Office Termination
CM8A Y=4005	21	0000	Route Pattern No. 000
CM8A Y=4005	22	0000	Route Pattern No. 000
CM8A Y=0000	1	00000	Route 00 access by dialing 31XX/34XX
CM8A Y=5000	100	00	Digit Addition Pattern No. 00
CM8A Y=5000	153	CCC	No digit deletion
CM8A Y=9000	0	8	Addition of digit “8”
CMA7 Y=06	0	820	Originating office number
CM10/CM14	XXX/ XXXXX	21XX	Originating station number
CM85 Y=5	21	07	Maximum number of digits dialed “7”
	22	07	

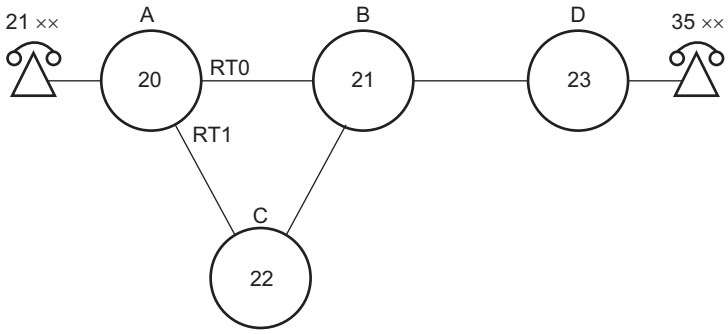
Pattern 2 (Used when not receiving pseudo dial tone.)

Command Code	1st Data	2nd Data	Remarks
CM20 Y=0	8	A129	LCR Group 3
CM8A Y=A000	3	4005	Area Code Development Pattern No. 5
CM8A Y=4005	820	8000	Intra Office Termination
CM8A Y=4005	821	0000	Route Pattern No. 000
CM8A Y=4005	822	0000	Route Pattern No. 000
CM8A Y=0000	1	00000	Route 00 access by dialing 31XX/34XX
CM8A Y=5000	100	CCC	No digit addition
CM8A Y=5000	153	CCC	No digit deletion
CMA7 Y=06	0	820	Originating office number
CM10/CM14	XXX/ XXXXX	21XX	Originating station number
CM85 Y=5	821	07	Maximum number of digits dialed “7”
	822	07	

Determining Route Advance

In a No. 7 CCIS network, the system can automatically route outgoing calls over an alternate facility.

Example 1: When the number of tie line routes is two or more:



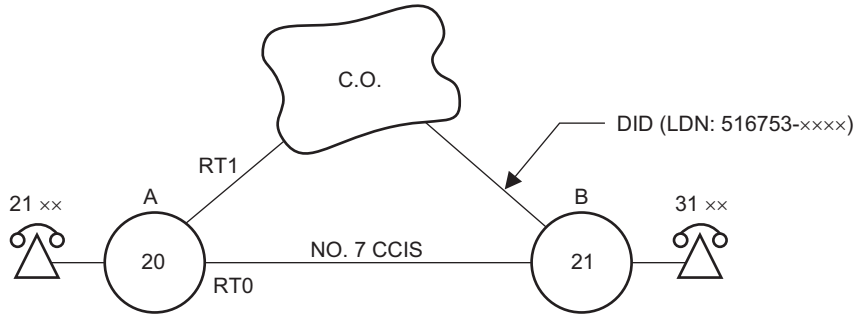
CONDITIONS:

- Office Code and Station Number (Open Numbering)
- Access Code: 8
- Office Code : 20 (Office A)
  21 (Office B)
  22 (Office C)
  23 (Office D)
- Connection Pattern from A to D
  1st Choice : A→B→D
  2nd Choice : A→C→B→D

Data Assignment of Office A:

Command Code	1st Data	2nd Data	Remarks
CM20 Y=0	8	A129	LCR Group 3
CM8A Y=A000	3	4005	Area Code Development Pattern No. 5
CM8A Y=4005	823	0000	Route Pattern 000
CM8A Y=0000	1	00000	LCR Pattern 000, Route 00
CM8A Y=0000	2	00001	LCR Pattern 000, Route 01
CM8A Y=5000	100	CCC	No digit addition
CM8A Y=5000	153	CCC	No digit deletion
CMA7 Y=06	0	820	Originating office number (to Route 0)
CMA7 Y=06	1	820	Originating office number (to Route 1)
CM10/CM14	XXX/ XXXXX	21XX	Originating station number
CM85 Y=5	823	07	Maximum number of digits dialed “7”

Example 2: When route advance to C.O. is required because the desired tie lines are all busy:



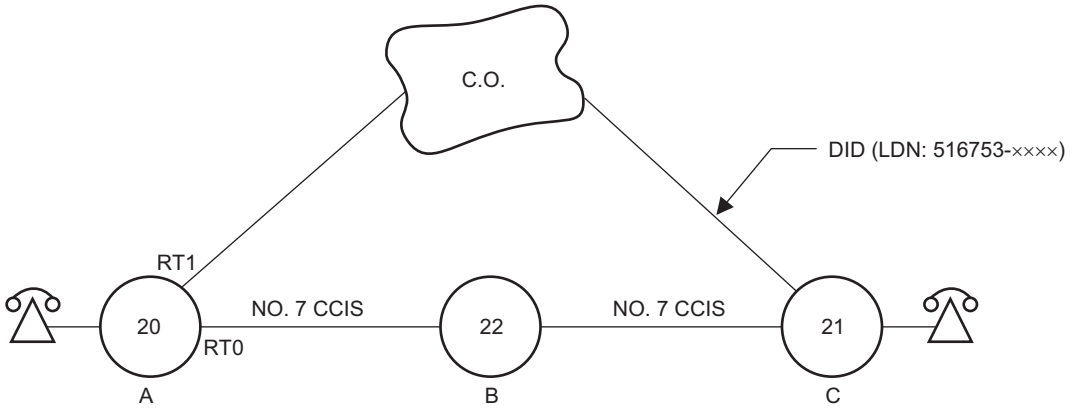
CONDITIONS:

- Office Code and Station Number (Open Numbering)
- Access Code: 8
- Office Code : 20 (Office A)
  21 (Office B)
- Connection Pattern from A to B
  1st Choice : via No.7 CCIS
  2nd Choice : via C.O. line

Data Assignment of Office A:

Command Code	1st Data	2nd Data	Remarks
CM20 Y=0	8	A129	LCR Group 3
CM8A Y=A000	3	4005	Area Code Development Pattern No. 5
CM8A Y=4005	821	0000	Route Pattern 000
CM8A Y=0000	1	00000	LCR Pattern 000, Route 00
CM8A Y=0000	2	00101	LCR Pattern 001, Route 01
CM8A Y=5000	100	CCC	No digit addition
CM8A Y=5000	153	CCC	No digit deletion
CM8A Y=5001	100	00	Digit Addition Pattern No. 00
CM8A Y=5001	153	03	Reading 3 digits deletion
CM8A Y=9000	0	516753	Digit code to be added: 516753
CMA7 Y=06	0	821	Originating office number (to Route 0)
CM10/CM14	XXX/ XXXXX	21XX	Originating station number
CM85 Y=5	821	07	Maximum number of digits dialed “7” (to Route 0)
CM85 Y=5	516753	10	Maximum number of digits dialed “10” (to Route 1)

Example 3: When route advance to one's own office C.O. is required and the tie line route of the tandem office connected through CCIS are all busy:



CONDITIONS:

- Tie Line between A and B: Idle
- Tie Line between B and C: Busy
- The other conditions are same as Example 2.

Data Assignment of Office A:

Command Code	1st Data	2nd Data	Remarks
CM08	372	0	

The other data assignments are the same as Example 2.

Network Construction with 2400 IPX

The Tenant Number and the Trunk Restriction Class are different between the 2000 IPS and the 2400 IPX as indicated below.

	2000 IPS	2400 IPX
• Tenant No.	00-63 (CM12 Y=04, CM30 Y=01)	01-255
• Trunk Restriction class	1-8 (CM12 Y=01)	1-15

Based on these differences, care must be taken to insure that proper programming is completed to accommodate the differences between the 2000 IPS and the 2400 IPX.

(1) In the 2000 IPS, station and trunk assignment to tenants must be to a tenant number equal to 01 or higher. (Do not use Tenant 00.)

(2) For Attendant Console calls, the tenant number transmitted to the destination 2000 IPS is equal to the Attendant Group (0-3) to which the attendant is assigned in CM60 Y=00. Remember that Tenant 00 is not available in the 2400 IPX, so an Attendant Group of 1-3 must be used.

(3) For ensuring proper restriction classes throughout the network, programming in the 2000 IPS allows equating the restriction classes of the 2000 IPS with the restriction classes available in the 2400 IPX. For details, refer to "DELUXE TRAVELING CLASS MARK-CCIS". ☞ *Page 258*

When an Attendant Console operator in the 2000 IPS originates a call through the CCIS network, the 2000 IPS transmits a restriction class of zero (RSC=0) to the distant office.

CHAPTER 2

INSTALLATION

This chapter explains the required equipment and the hardware installation procedure to provide CCIS system.

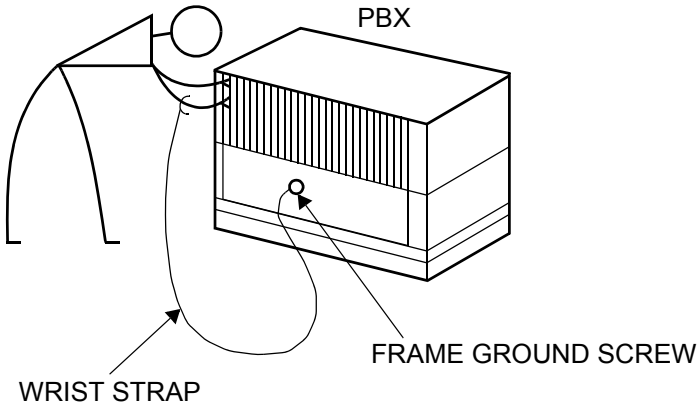
PRECAUTIONS

Static Electricity Guard

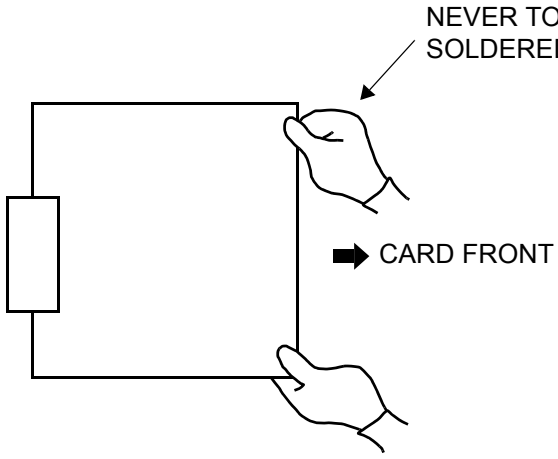
You must wear a grounded wrist strap to protect circuit cards from static electricity.

Static Electricity Guard

- WHEN PLUGGING/UNPLUGGING A CIRCUIT CARD



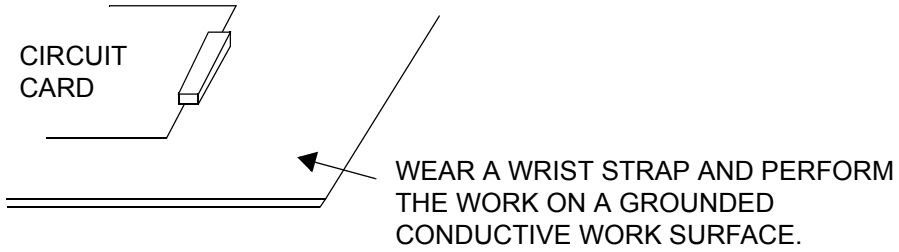
- WHEN HOLDING A CIRCUIT CARD



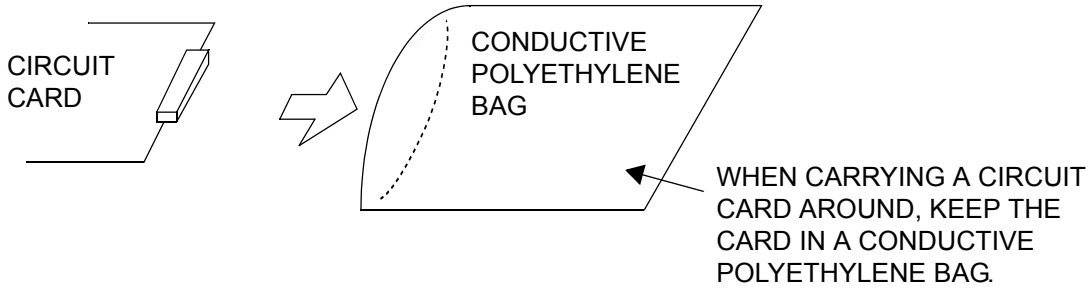
Continued on next page

Static Electricity Guard

- WHEN MAKING A SWITCH SETTING ON A CIRCUIT CARD



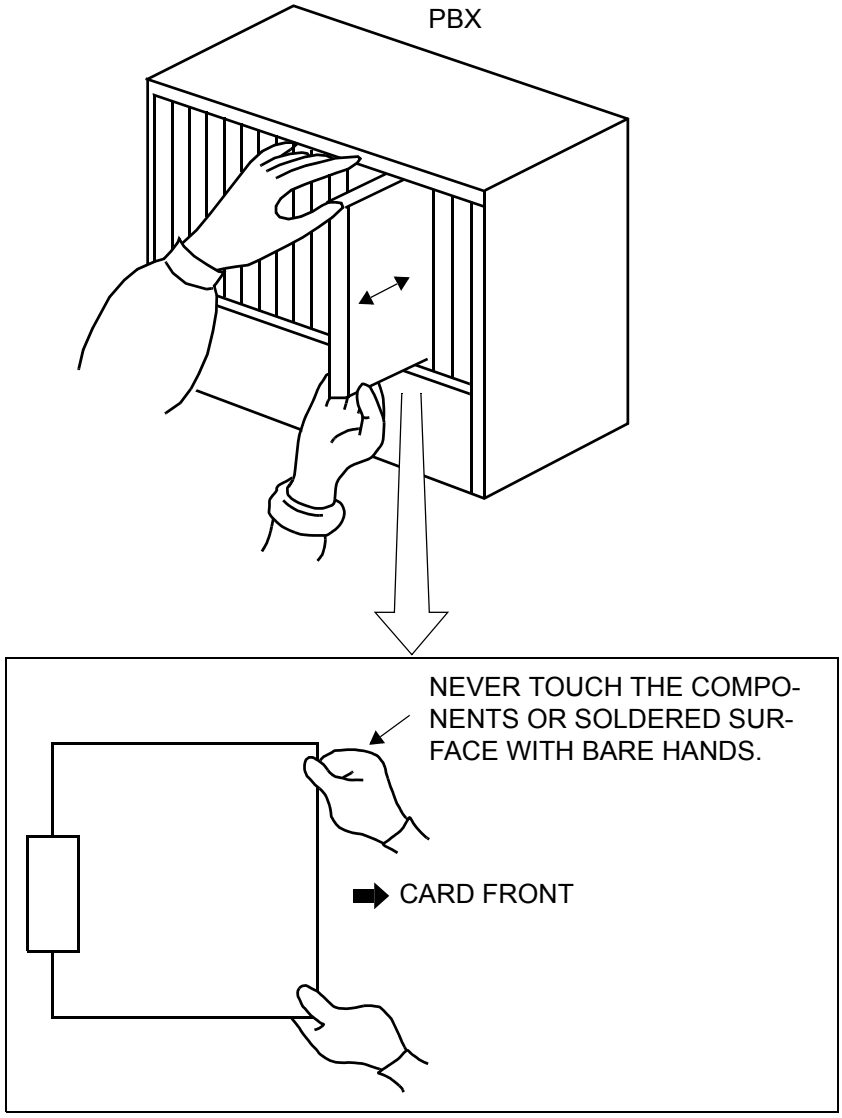
- WHEN CARRYING A CIRCUIT CARD



The mark shown below is attached to the sheet for the work in which circuit cards 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 card when plugging or unplugging the circuit card. If you touch another area, you may be exposed to hazard voltages.**



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

REQUIRED EQUIPMENT

This table shows the equipment required when providing No. 7 CCIS with digital interface to the system.

Required Equipment for Digital CCIS

EQUIPMENT	DESCRIPTION	QUANTITY	REMARKS
PN-24DTA-C (24DTI)	24-channel DTI Card	1-8	
PN-30DTC-C (30DTI)	30-channel DTI Card	1-8	
PZ-M542/ PZ-M557 (CONN)	Connection Card for Coaxial Cable	As required	1 DTI/card, 1 CCT/ card Maximum 2 cards/ PIM
PN-M10 (M10)	Optical Fiber Interface Card	As required	2 DTIs/card 2 CCTs/card
PN-SC00 (CCH)	Common Channel Handler Card	1-8	1 card/DTI **NOTE**
PN-24CCTA (24CCT)	24-channel CCT Card	1-8	
PN-30CCTA (30CCT)	30-channel CCT Card	1-8	
PN-DTA/ PN-DTB (24/30CCT)	24/30-channel CCT Card	1-8	
PN-AP00-B (AP00)	Application Processor Card for Centralized Billing	1	For center office

NOTE: *When the CCT card is used, the CCH card is not required.*

Continued on next page

Required Equipment for Digital CCIS

EQUIPMENT	DESCRIPTION	QUANTITY	REMARKS
PN-AP00-D (AP00)	Application Processor Card for Centralized Billing	1	For center office
PZ-M537 (EXPMEM)	Expansion Memory Card for AP00-B	1	For Call Record expansion ☞ Page 19

This table shows the equipment and cables required when providing No. 7 CCIS with analog interface.

Required Equipment for Analog CCIS

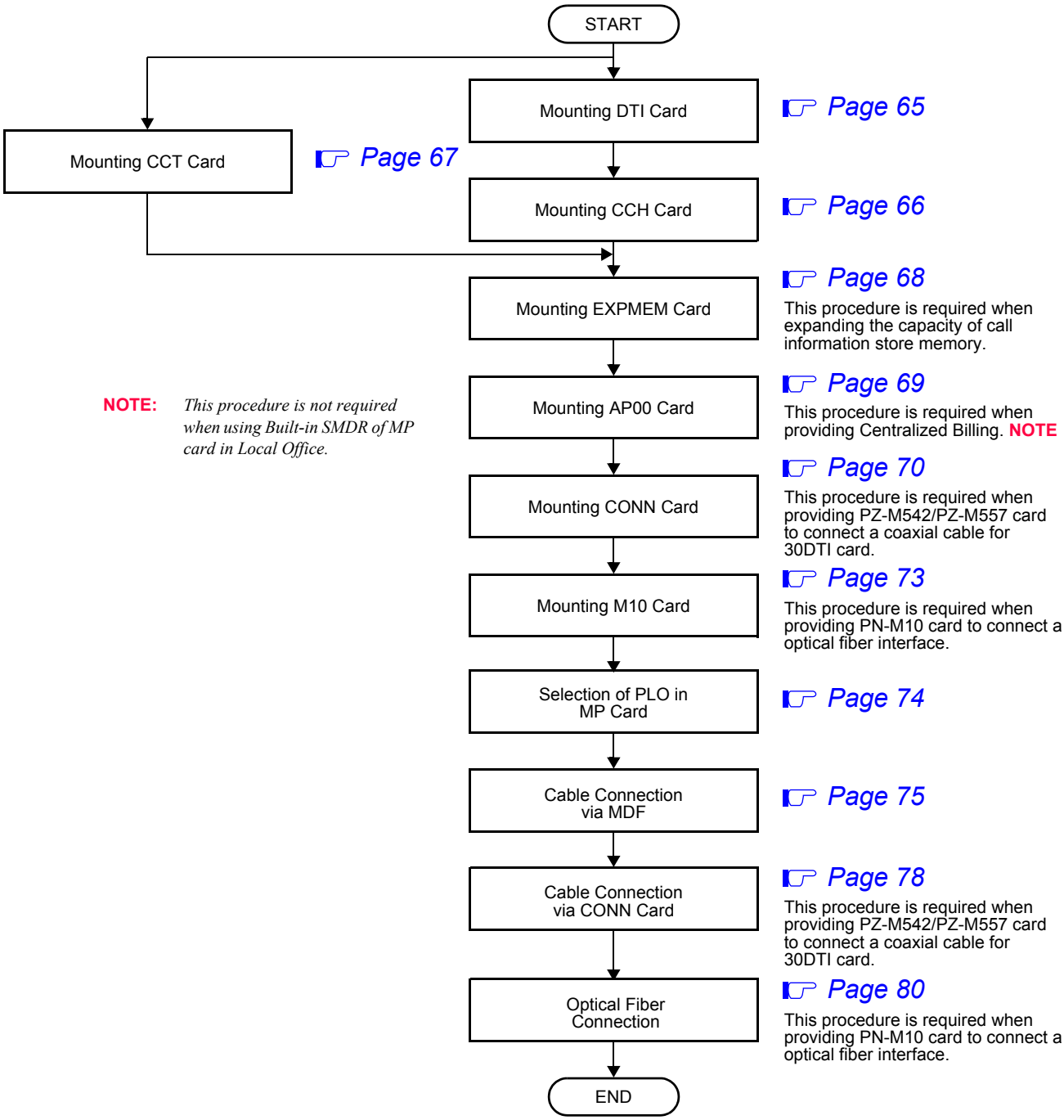
EQUIPMENT	DESCRIPTION	QUANTITY	REMARKS
PN-2LDT (LDT) or PN-4LDT (LDT) or PN-2ODT (ODT)	Loop Dial Trunk or 2-wire E&M/4-wire E&M Trunk	1-128 (2LDT/ODT) 1-64 (4LDT)	
PN-SC00 (CCH)	Common Channel Handler Card	1-8	
PN-AP00-B (AP00)	Application Processor Card for Centralized Billing	1	For center office
PN-AP00-D (AP00)	Application Processor Card for Centralized Billing	1	For center office
PZ-M537 (EXPMEM)	Expansion Memory Card for AP00	1	For Call Record expansion ☞ Page 19
MODEM*	For Common Signaling Channel	N	N: Number of CCH
RS NORM-4 CA-A/ RS NORM-4S CA-A	Connecting cables between CCH and MODEM	N	N: Number of CCH Length: 4 m (13.1 ft.)
LINE Cable*	Connecting cable between MODEMs	N	N: Number of CCH

* Should be provided with customer.

INSTALLATION PROCEDURE FOR DIGITAL CCIS

Install the equipment according to the procedures shown below.
For installation of the PBX, refer to the Installation Procedure Manual.

Installation Procedure for Digital CCIS



Mounting DTI Card

(1) Before mounting the DTI (PN-24DTA-C/PN-30DTC-C) card, set the MB switch to UP position, and set the other switches to appropriate position. See CHAPTER 4. ☞ *Page 395*, *Page 402*

(2) Mount the DTI card in the following AP slots of PIM0 through PIM7.
PIM0-7: AP00-AP11 slots
PIM0 (for Backup CPU): AP00-AP10 slots

NOTE: *The DTI card (DTI0, DTI1) which sends a clock signal to PLO of the MP card must be mounted in the AP slots on PIM0.*

(3) After mounting the card, set the MB switch to DOWN position to put the card in service.

Mounting CCH Card

(1) Before mounting the CCH (PN-SC00) card, set the MB switch to UP position, and set the other switches to appropriate position.
See CHAPTER 4. ☞ *Page 408*

(2) Mount the CCH card in the following AP slots of PIM0 through PIM7.
PIM0-7: AP00-AP11 slots
PIM0 (for Backup CPU): AP00-AP10 slots

(3) After mounting the card, set the MB switch to DOWN position to put the card in service.

Mounting CCT Card

(1) Before mounting the CCT (PN-24CCTA/PN-30CCTA/PN-DTA/PN-DTB) card, set the MB switch to UP position, and set the other switches to appropriate position. See CHAPTER 4. ☞ *Page 368*, *Page 374*, *Page 381*, *Page 388*

(2) Mount the CCT card in the following AP slots of PIM0 through PIM7.
PIM0-7: AP00-AP11 slots
PIM0 (for Backup CPU): AP00-AP10 slots

(3) After mounting the card, set the MB switch to DOWN position to put the card in service.

NOTE: *When you use the CCT card, the CCH (PN-SC00) card is not required because the CCT has a built-in CCH.*

Mounting EXPMEM Card

When billing information of more than 1600 calls is needed, install the EXPMEM (PZ-M537) card on the AP00 (PN-AP00-B) card as below.

(1) Confirm the correct switch setting of the EXPMEM card.
See CHAPTER 4. ☞ *Page 411*

(2) Mount the EXPMEM card on the AP00 card.
See CHAPTER 4. ☞ *Page 413*

Mounting AP00 Card

When Centralized Billing is required, install the AP00 (PN-AP00-B/PN-AP00-D) card in center office as below.
When billing information of more than 1600 calls is needed, install the AP00 card as below.

(1) Before mounting the AP00 card, set the MB switch to UP position, and set the other switches to appropriate position.
See CHAPTER 4. ☞ *Page 356*, *Page 362*

(2) Mount the AP00 card in one of the following AP slots of PIM0 through PIM7.
PIM0-7: AP00-AP11 slots
PIM0 (for Backup CPU): AP00-AP10 slots

(3) After mounting the card, set the MB switch to the DOWN position to put the card in service.

Mounting CONN Card

When providing the CONN (PZ-M542/PZ-M557) card to connect a coaxial cable for 30DTI card, do the following installation.

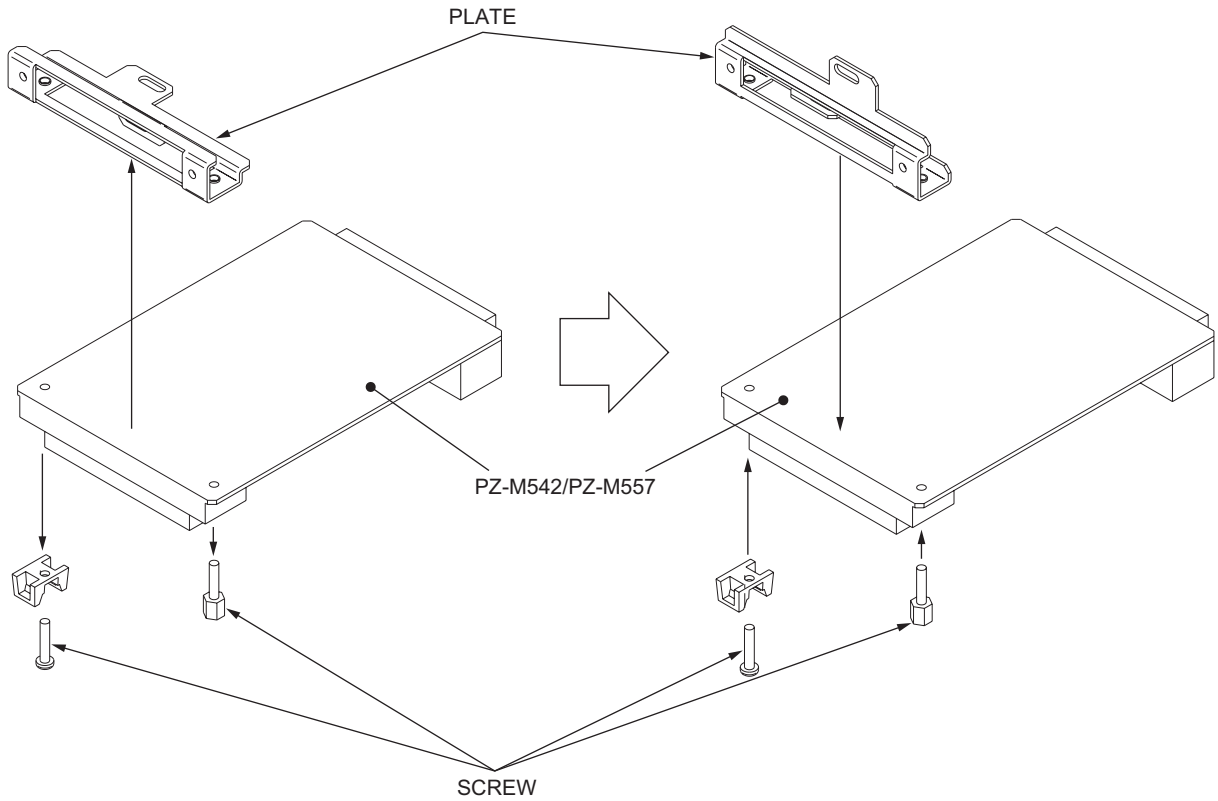
(1) Confirm the correct switch settings of the CONN card.
See CHAPTER 4. ☞ *Page 414*, *Page 416*

(2) Connect the CONN card to LTC connector on BWB in the PIM which accommodates DTI/CCT cards as shown below.

STEP1: When using LTC0 or LTC2 connector to mount the PZ-M542/PZ-M557 card, take off the PLATE from the PZ-M542/PZ-M557 card. Then, overturn the PLATE and secure it to the card with screws.
When using LTC1 or LTC3 connector to mount the PZ-M542/PZ-M557 card, skip STEP1

NOTE: *The PLATE and screws are attached to the PZ-M542/PZ-M557 card.*

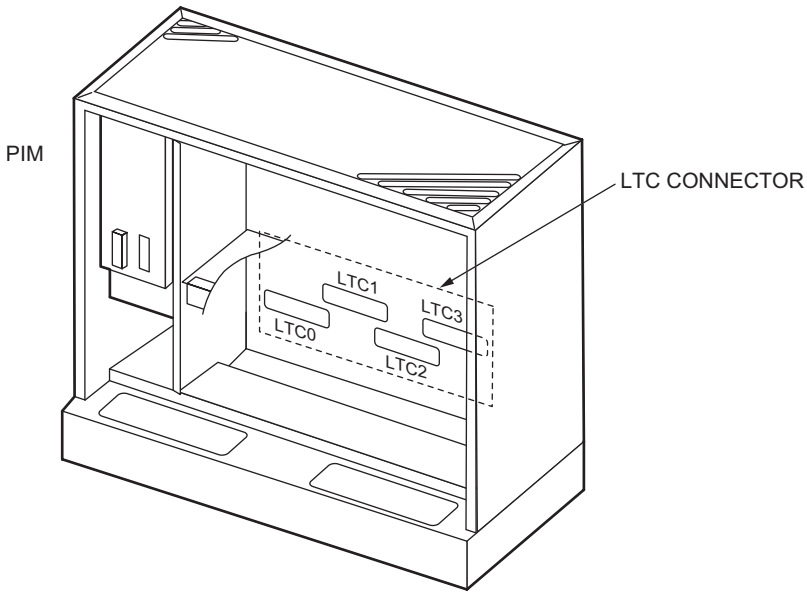
Connection of PZ-M542/PZ-M557 and PLATE



STEP2: Connect the LT connector on the PZ-M542/PZ-M557 card to the LTC connector on BWB in PIM.

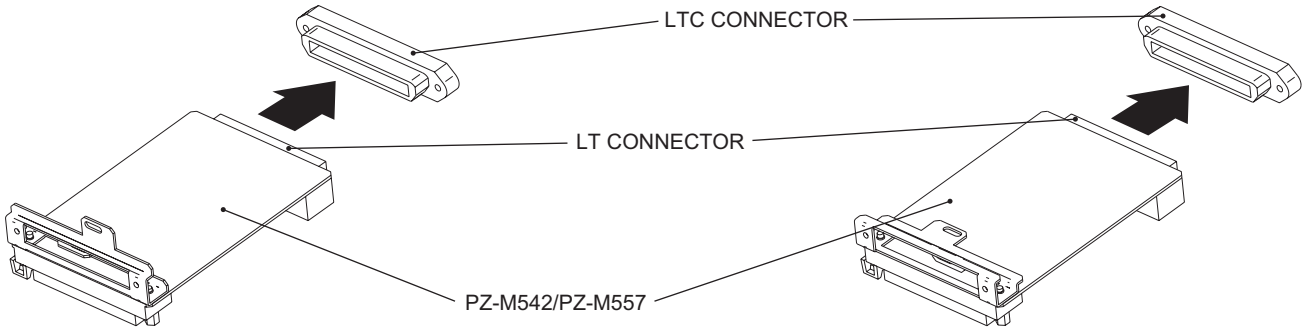
NOTE: *Two PZ-M542/PZ-M557 cards cannot be mounted on the adjoining LTC connectors. LTC0 and LTC2, or LTC0 and LTC3, or LTC1 and LTC3 are mountable.*

Mounting of PZ-M542/PZ-M557 Card



When connecting to LTC1 or LTC3

When connecting to LTC0 or LTC2

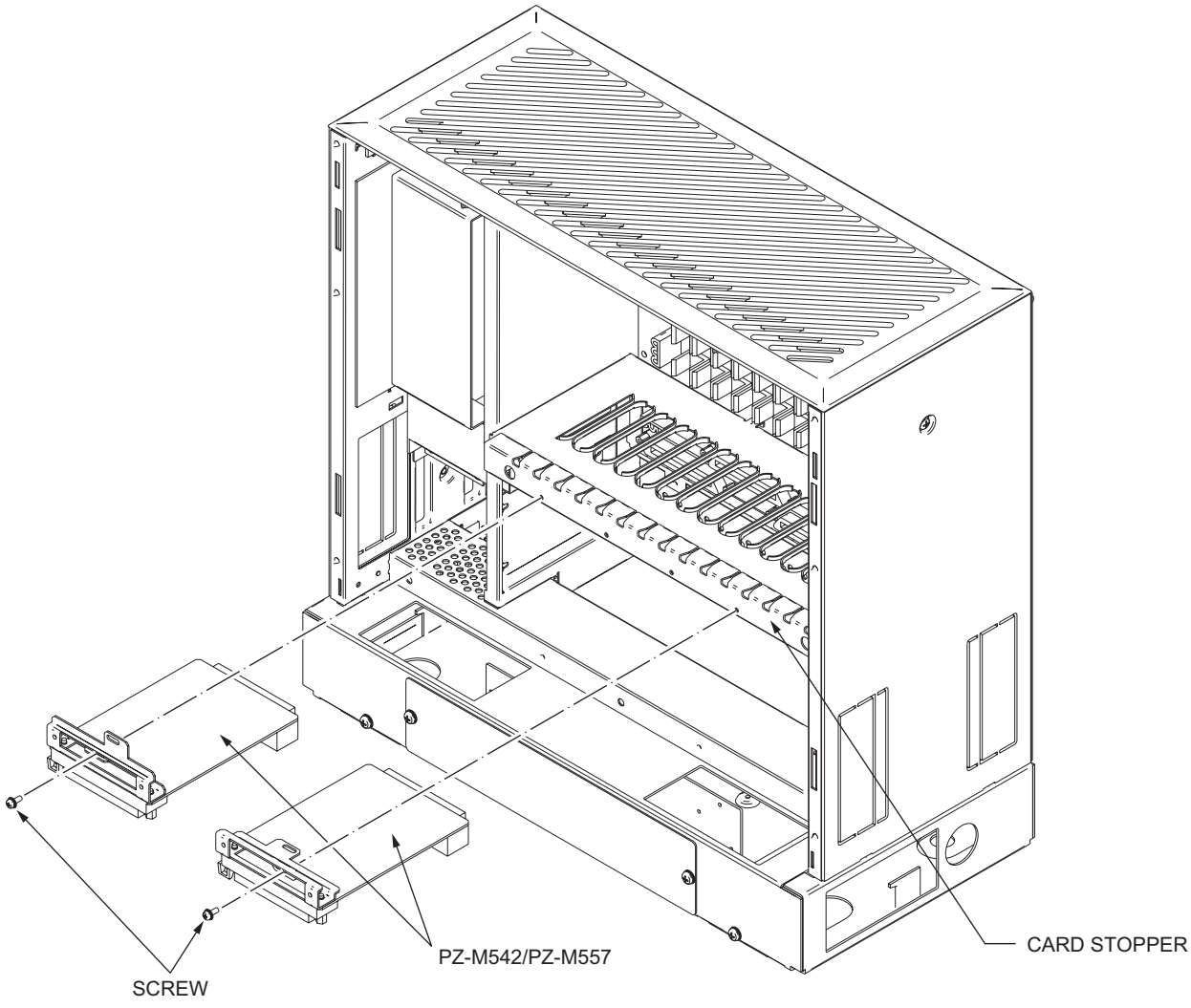


STEP3: Secure the PZ-M542/PZ-M557 card to the PIM CARD STOPPER with one screw.

NOTE 1: *Screw is attached to the PZ-M542/PZ-M557 card.*

NOTE 2: *Before securing the PZ-M542/PZ-M557 card to the PIM CARD STOPPER, all the cards should be mounted on the card slots and the PIM CARD STOPPER should be secured with screws. For installation of the PIM CARD STOPPER, refer to the Installation Procedure Manual, CHAPTER 2, "MOUNTING CIRCUIT CARDS".*

Mounting of PZ-M542/PZ-M557 Card



Mounting M10 Card

(1) Confirm the correct switch settings of the M10 (PN-M10) card.
See CHAPTER 4. ☞ *Page 420*

(2) Mount the M10 card in the following LT slots of PIM0 through PIM7.
PIM0-7: LT00-LT11 slots
PIM0 (for Backup CPU): LT00-LT10 slots

Selection of PLO in MP Card

(1) Select the PLO input by the switch settings of MP (PN-CP24-A/PN-CP24-B/ PN-CP24-C/PN-CP24-D/PN-CP27-A/PN-CP27-B) card as follows.

- Selection of PLO0 input
  For clock receiver office:

SW2-2	SW2-3	FUNCTION
OFF	OFF	1.5 MHz clock [For PN-24DTA/PN-24CCT/PN-DTA/ PN-DTB/PN-24PRT/PZ-M649]
ON	OFF	192 kHz clock [For PN-BRTA]
OFF	ON	2 MHz clock [For PN-30DTC/PN-DTA/PN-DTB/PN-2BRT/ PN-4BRT/PN-30CCT/PN-30PRT/PZ-M650]
ON	ON	Not used

  For clock source office:

SW2-2	SW2-3
OFF	OFF

- Selection of PLO1 input
  For clock receiver office:

SW4-3	SW4-4	FUNCTION
OFF	OFF	1.5 MHz clock [For PN-24DTA/PN-24CCT/PN-DTA/ PN-DTB/PN-24PRT/PZ-M649]
ON	OFF	192 kHz clock [For PN-BRTA]
OFF	ON	2 MHz clock [For PN-30DTC/PN-DTA/PN-DTB/PN-2BRT/ PN-4BRT/PN-30CCT/PN-30PRT/PZ-M650]
ON	ON	Not used

  For clock source office:

SW4-3	SW4-4
OFF	OFF

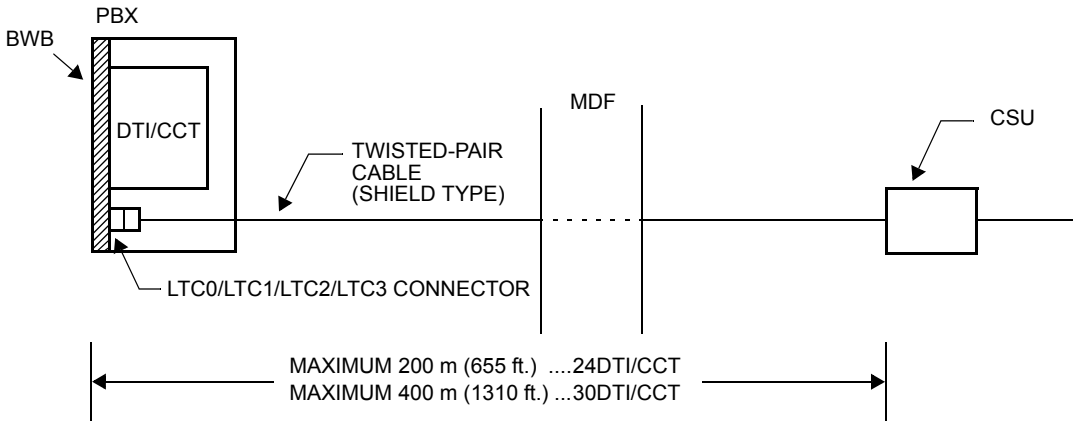
(2) Mount the MP card in the MP slot of PIM0.

Cable Connection via MDF

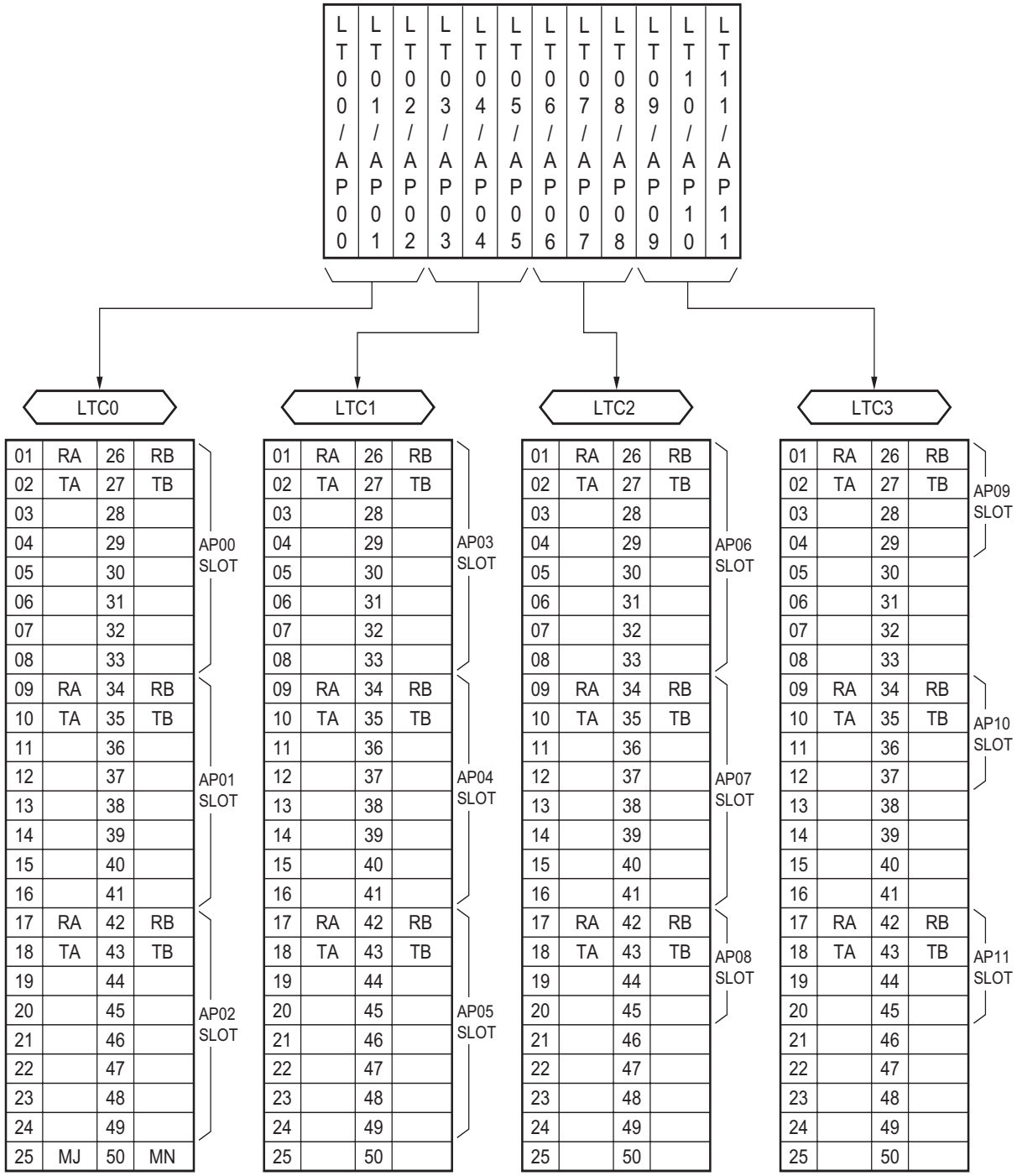
When using a twisted-pair cable, connect the cable to a CSU via the MDF as shown below.

- Location of AP Slots and LTC Connectors for DTI/CCT ☞ *Page 76*
- Example of MDF Cross Connection for DTI/CCT ☞ *Page 77*

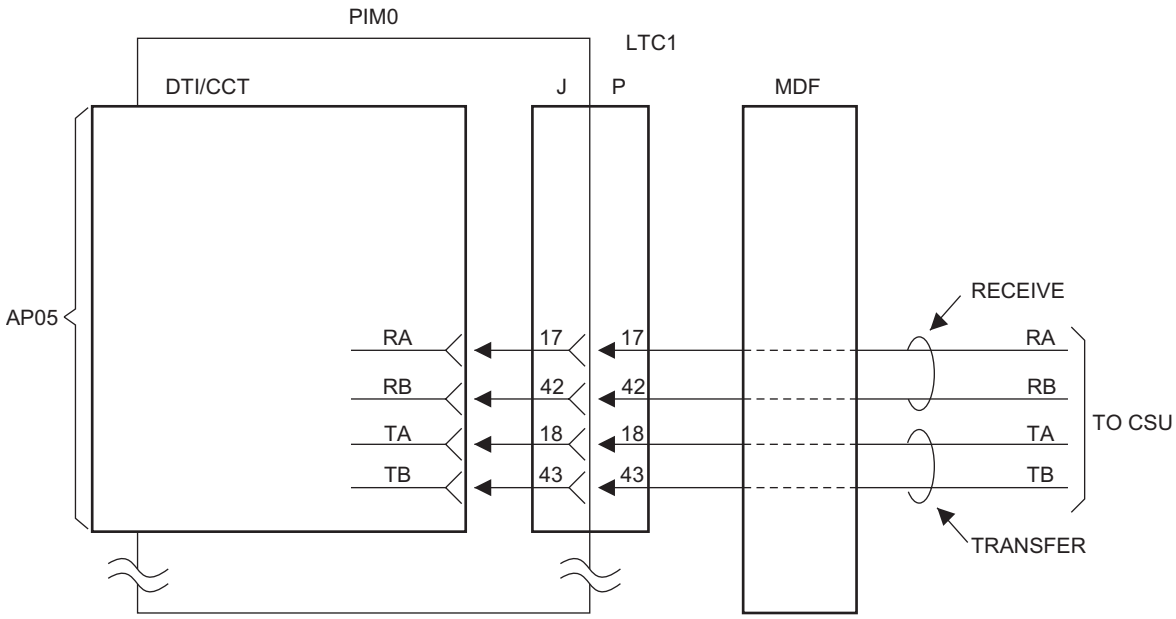
DTI/CCT Cable Connection via MDF



Location of AP Slots and LTC Connectors for DTI/CCT



Example of MDF Cross Connection for DTI/CCT



LTC1 (J)

17	RA	42	RB
18	TA	43	TB
19		44	
20		45	

LTC1 (P)

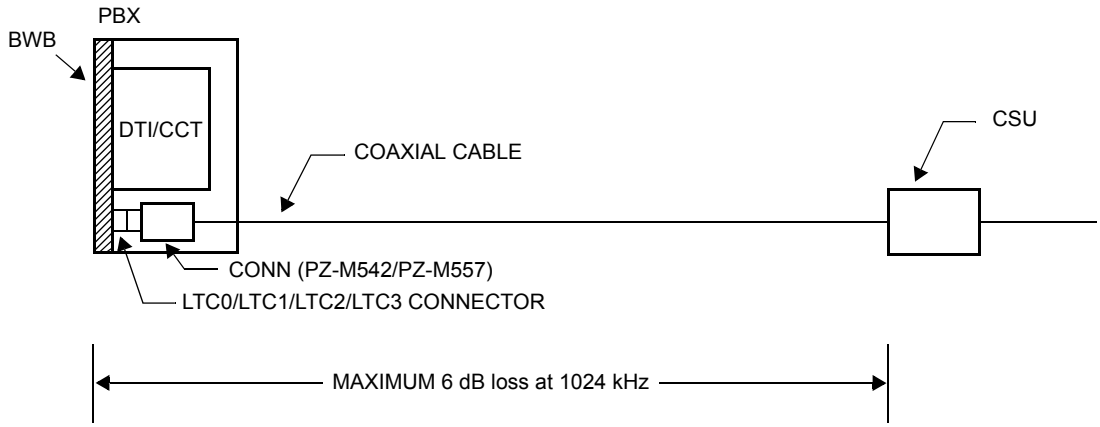
42	RB	17	RA
43	TB	18	TA
44		19	
45		20	

Cable Connection via CONN Card

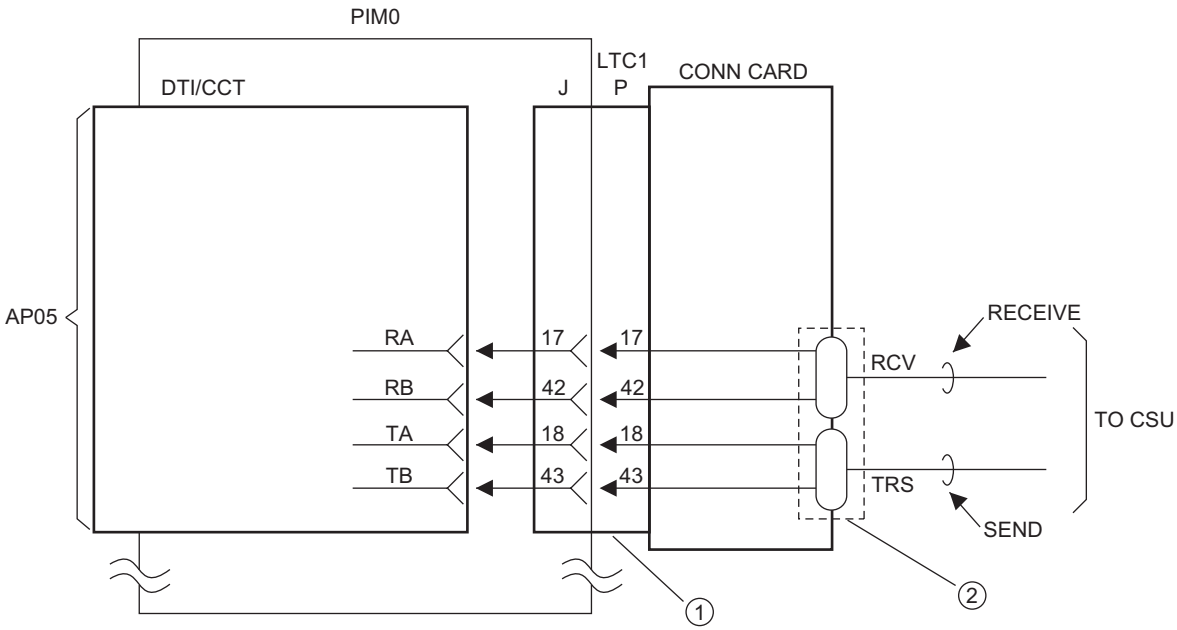
When using a coaxial cable, connect the cable to a CSU via the CONN (PZ-M542/PZ-M557) card as shown below.

The figure in next page shows an example of the cable connection when the DTI/CCT card is mounted in the AP05 slot of PIM0.

Cable Connection via CONN Card



Example of Coaxial Cable Connection



1 LTC1 CONNECTOR

2 COAXIAL CONNECTOR

LTC1 (J)

17	RA	42	RB
18	TA	43	TB
19		44	
20		45	

LTC1 (P)

42	RB	17	RA
43	TB	18	TA
44		19	
45		20	

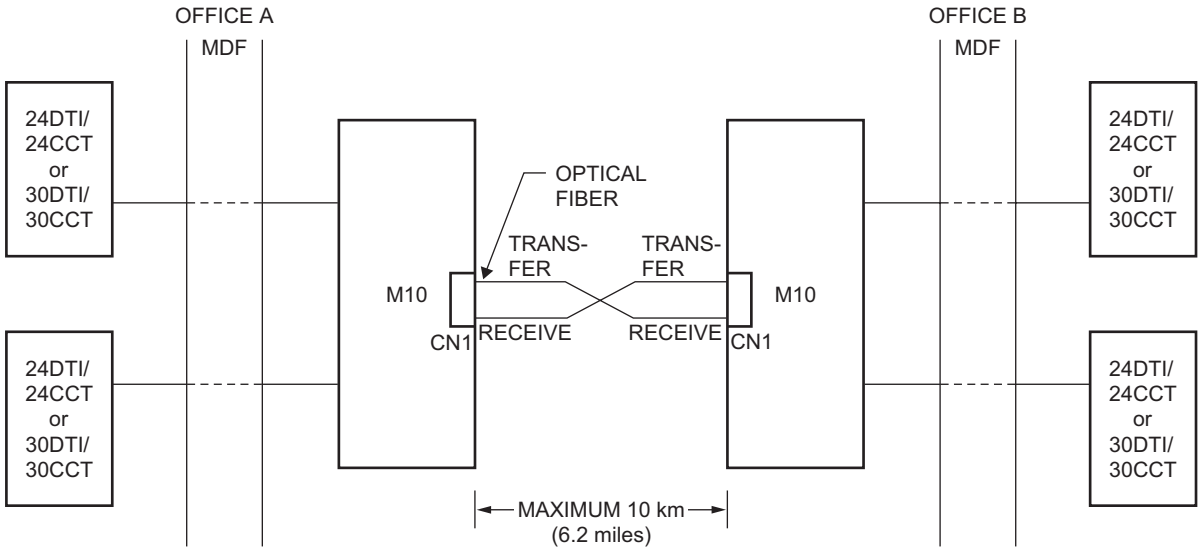
Optical Fiber Connection

The optical fiber interface card (PN-M10) is available for DTI to DTI connection or CCT to CCT connection between the 2000 IPS/2000 IVS^2/Retro system of them.

(1) Connect the fibers each other to the CN1 connector of the M10 cards.
Fiber Requirement
Size of fiber: Any size of Single Mode fiber
Kind of fiber optic connector: SC connector
Maximum distance: 10 km (6.25 miles)

(2) Connect two 24DTI/24CCT cards or two 30DTI/30CCT cards to one M10 card, via MDF through LTC connector on the BWB.
The following figures show the outline of connection and example of M10 MDF cross connection.

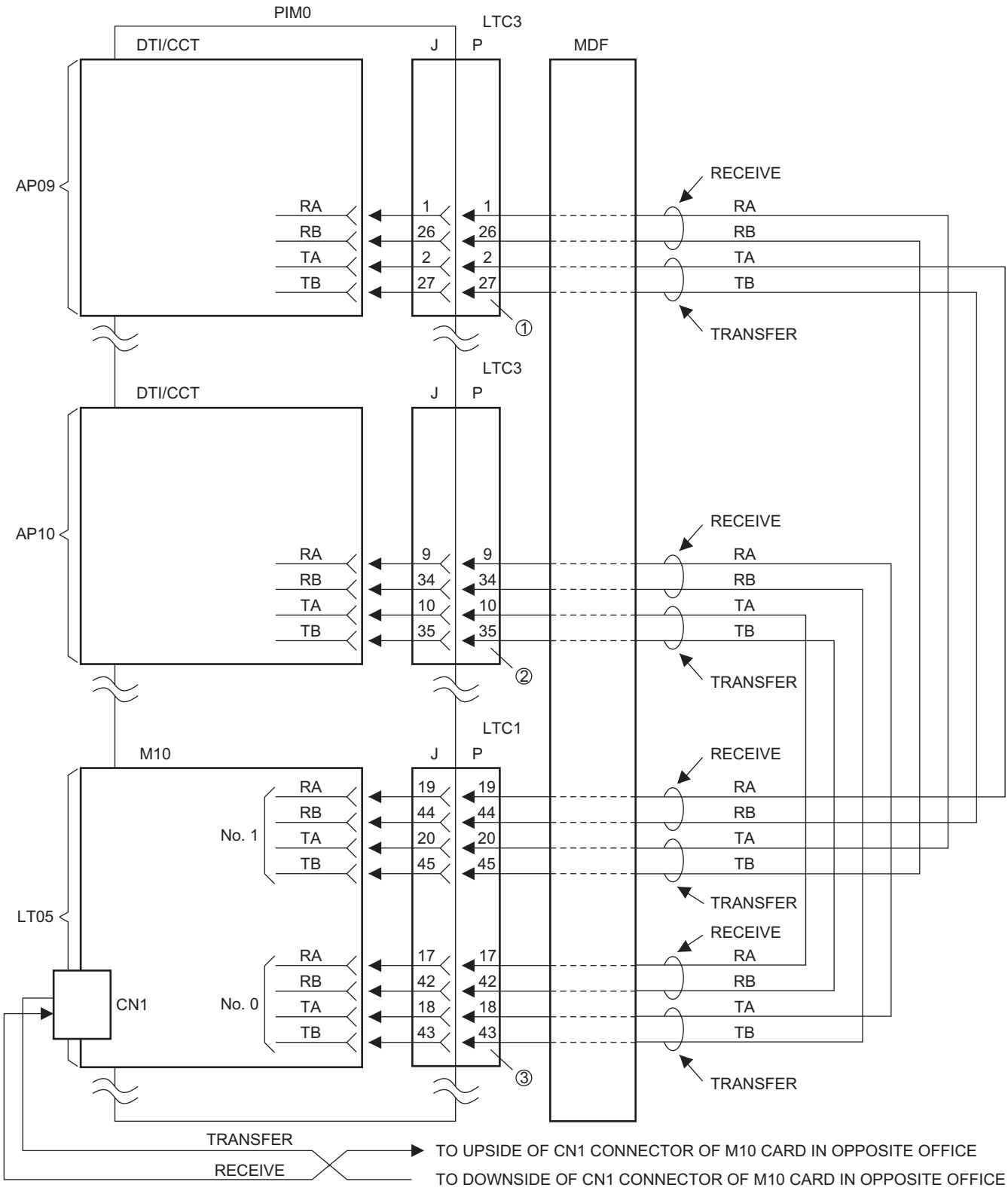
Outline of Optical Fiber Connection



NOTE 1: *The PN-M10 card must be directly connected to the PN-M10 card in opposite office.*

NOTE 2: *Connect two optical fibers which are used for receive and send signals to CN1 connector of M10 card. The upside of CN1 connector is used for sending and the downside is used for receiving.*

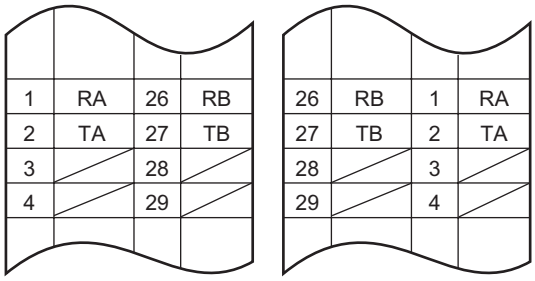
Example of MDF Cross Connection for M10 Card



Continued on next page

Example of MDF Cross Connection for M10 Card

① LTC3 CONNECTOR



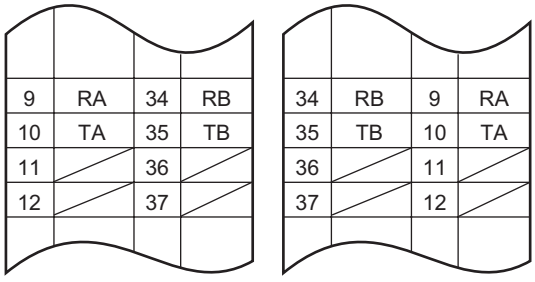
1	RA	26	RB
2	TA	27	TB
3		28	
4		29	

LTC (J)

26	RB	1	RA
27	TB	2	TA
28		3	
29		4	

(P)

② LTC3 CONNECTOR



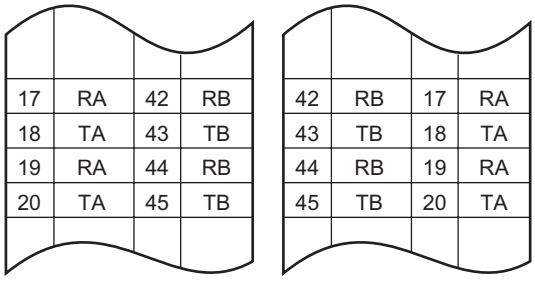
9	RA	34	RB
10	TA	35	TB
11		36	
12		37	

LTC (J)

34	RB	9	RA
35	TB	10	TA
36		11	
37		12	

(P)

③ LTC1 CONNECTOR



17	RA	42	RB
18	TA	43	TB
19	RA	44	RB
20	TA	45	TB

LTC (J)

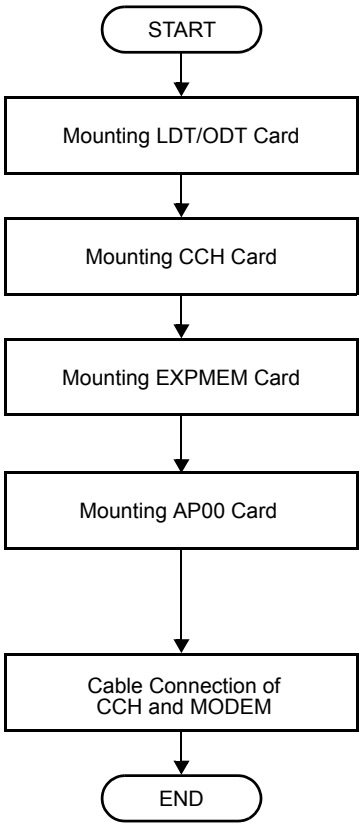
42	RB	17	RA
43	TB	18	TA
44	RB	19	RA
45	TB	20	TA

(P)

INSTALLATION PROCEDURE FOR ANALOG CCIS

Install the equipment according to the procedure shown below.
For installation of the PBX, refer to the Installation Procedure Manual.

Installation Procedure for Analog CCIS



☞ Page 84

☞ Page 66

☞ Page 68
This procedure is required when expanding the capacity of call information store memory.

☞ Page 69
This procedure is required when providing Centralized Billing.

NOTE: *This procedure is not required when using Built-in SMDR of MP card in Local Office.*

☞ Page 85

Mounting LDT/ODT Card

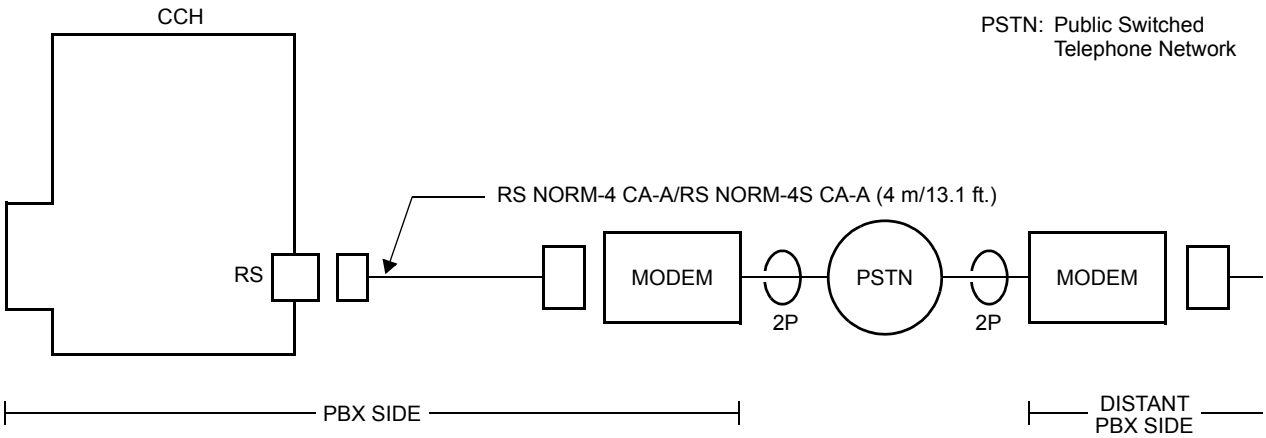
Mount the LDT (PN-2LDTA/PN-4LDTA) card or the ODT (PN-2ODTA/PN-2ODTB) card in the following LT slots of PIM0 through PIM7.
PIM0-7: LT00-LT11 slots
PIM0 (for Backup CPU): LT00-LT10 slots

Cable Connection of CCH and MODEM

- When providing the Common Signaling Data Link via MODEM:

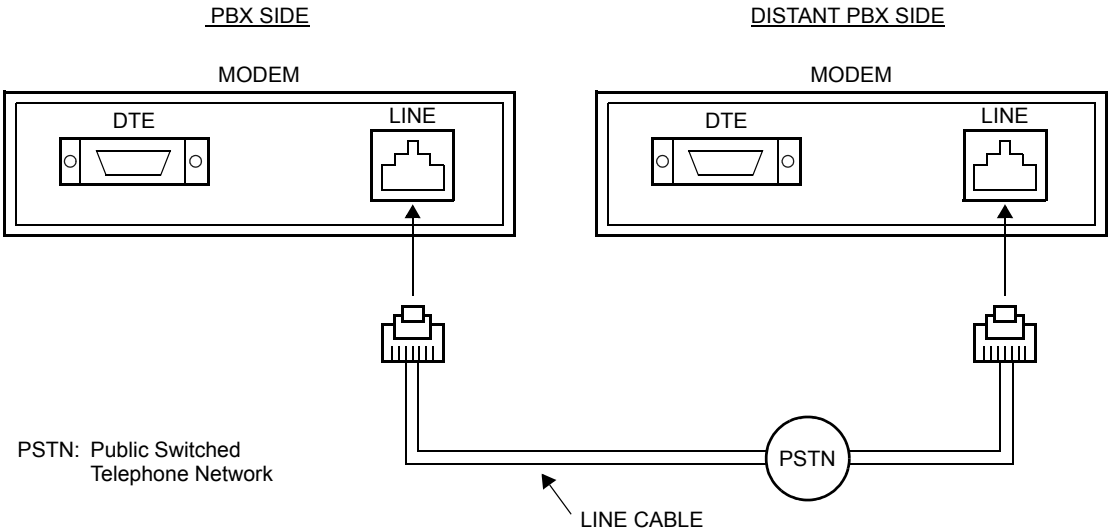
(1) Connect the RS NORM-4 CA-A/RS NORM-4S CA-A to the CCH card and the MODEM (PBX side) as shown below.

Cable Connection for Common Signaling Data Link via MODEM



(2) Connect the LINE cable between the MODEM (PBX side) and MODEM (Distant PBX side) as shown below.

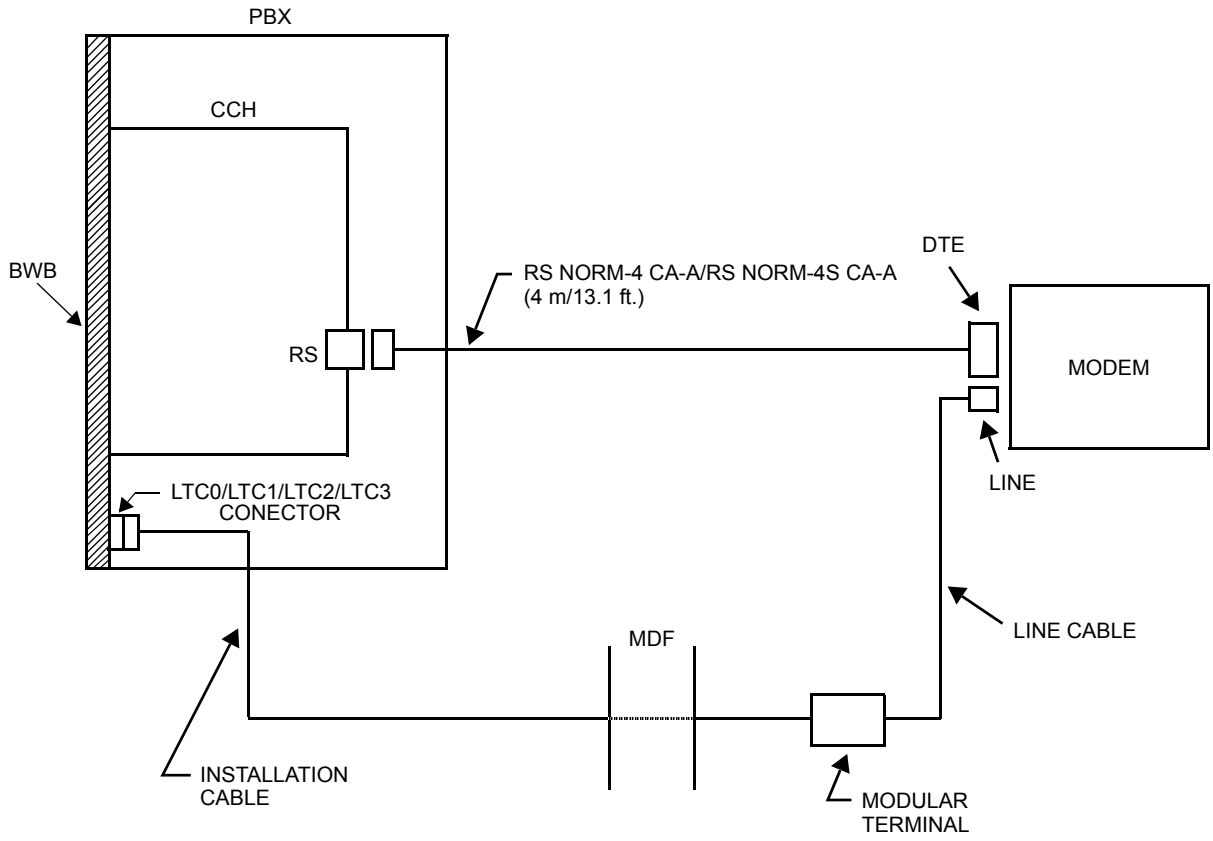
LINE Cable Connection via MODEM



- When providing the Common Signaling Data Link via LDT/ODT:

(1) Connect the RS NORM-4 CA-A/RS NORM-4S CA-A to the CCH card and the MODEM (PBX side) as shown below.

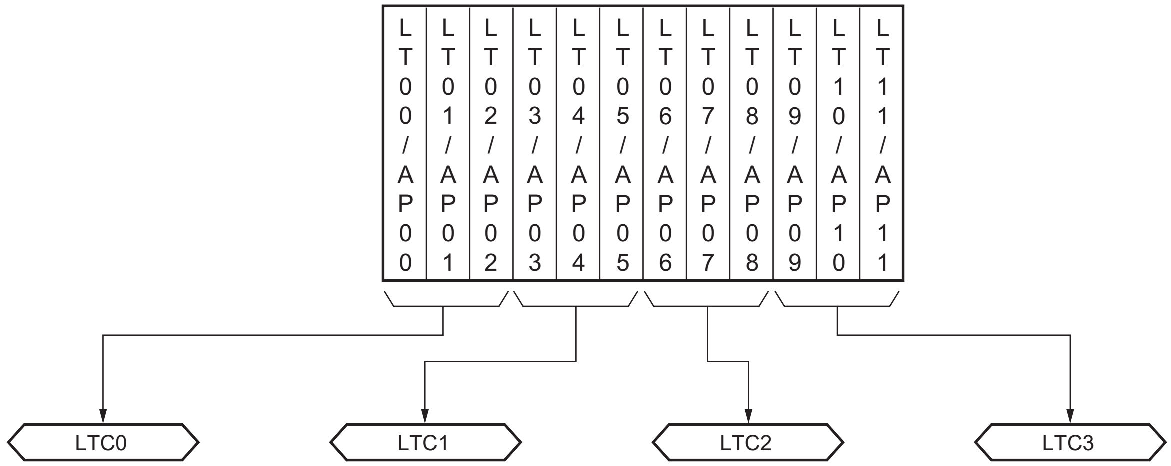
Cable Connection for Common Signaling Data Link via LDT/ODT



(2) Connect the LINE cable to the MODEM and the MDF as shown below.

- Location of AP Slots and LTC Connectors for CCH ☞ *Page 87*
- Example of LINE Cable and MDF Cross Connection for CCH ☞ *Page 88*

Location of AP Slots and LTC Connectors for CCH



LTC0

01	TXR	26	TXT	AP00 SLOT
02	RCVR	27	RCVT	
03		28		
04		29		
05		30		
06		31		
07		32		
08		33		
09	TXR	34	TXT	AP01 SLOT
10	RCVR	35	RCVT	
11		36		
12		37		
13		38		
14		39		
15		40		
16		41		
17	TXR	42	TXT	AP02 SLOT
18	RCVR	43	RCVT	
19		44		
20		45		
21		46		
22		47		
23		48		
24		49		
25	MJ	50	MN	

LTC1

01	TXR	26	TXT	AP03 SLOT
02	RCVR	27	RCVT	
03		28		
04		29		
05		30		
06		31		
07		32		
08		33		
09	TXR	34	TXT	AP04 SLOT
10	RCVR	35	RCVT	
11		36		
12		37		
13		38		
14		39		
15		40		
16		41		
17	TXR	42	TXT	AP05 SLOT
18	RCVR	43	RCVT	
19		44		
20		45		
21		46		
22		47		
23		48		
24		49		
25		50		

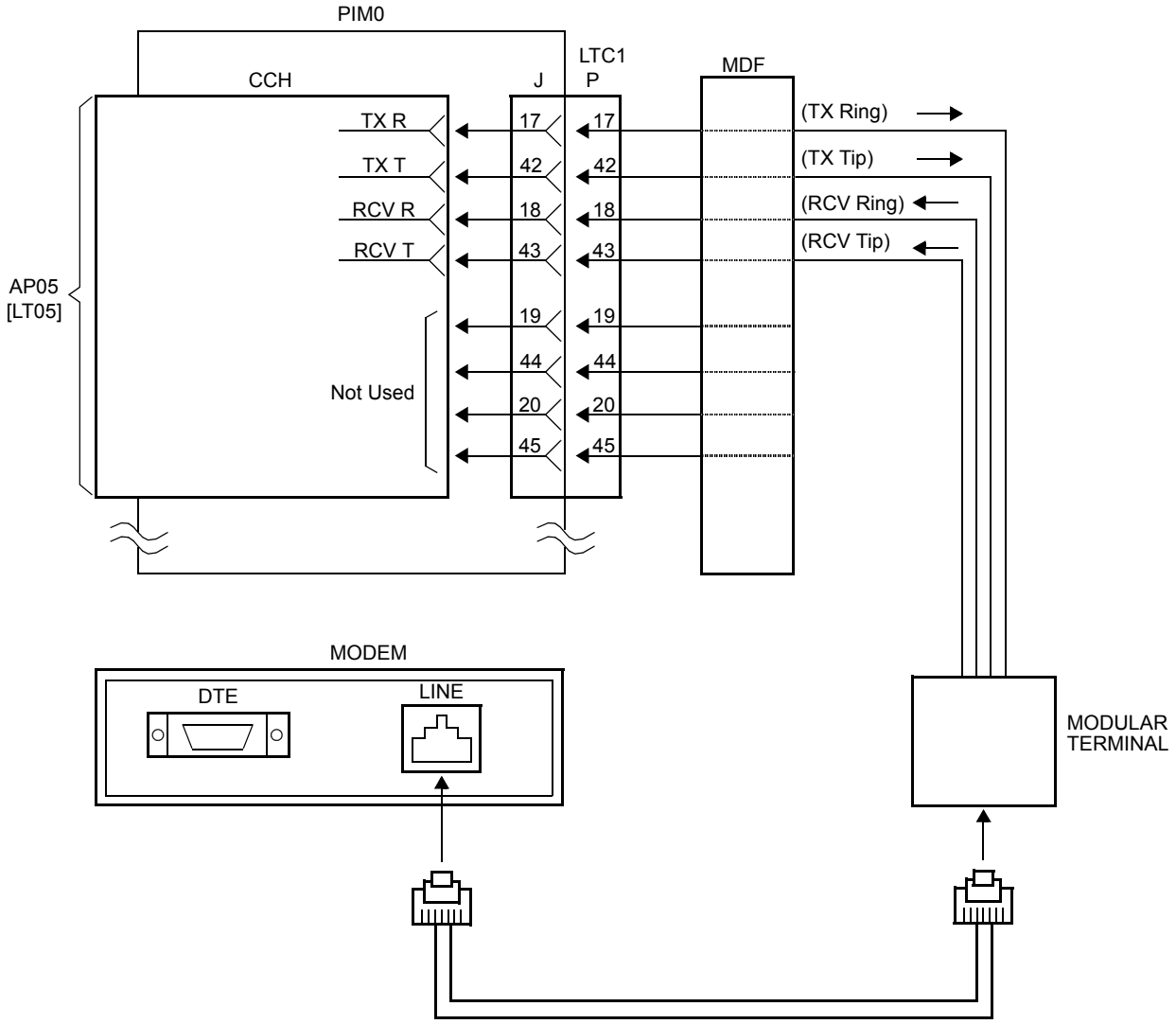
LTC2

01	TXR	26	TXT	AP06 SLOT
02	RCVR	27	RCVT	
03		28		
04		29		
05		30		
06		31		
07		32		
08		33		
09	TXR	34	TXT	AP07 SLOT
10	RCVR	35	RCVT	
11		36		
12		37		
13		38		
14		39		
15		40		
16		41		
17	TXR	42	TXT	AP08 SLOT
18	RCVR	43	RCVT	
19		44		
20		45		
21		46		
22		47		
23		48		
24		49		
25		50		

LTC3

01	TXR	26	TXT	AP09 SLOT
02	RCVR	27	RCVT	
03		28		
04		29		
05		30		
06		31		
07		32		
08		33		
09	TXR	34	TXT	AP10 SLOT
10	RCVR	35	RCVT	
11		36		
12		37		
13		38		
14		39		
15		40		
16		41		
17	TXR	42	TXT	AP11 SLOT
18	RCVR	43	RCVT	
19		44		
20		45		
21		46		
22		47		
23		48		
24		49		
25		50		

Example of LINE Cable and MDF Cross Connection for CCH



LTC (J) (P)

17	TXR	42	TXT	42	TXT	17	TXR
18	RCV R	43	RCV T	43	RCV T	18	RCV R
19		44		44		19	
20		45		45		20	

CHAPTER 3

SYSTEM DATA PROGRAMMING

This chapter explains the programming procedure for providing CCIS system, and also explains the general description, programming procedure, operating procedure, and hardware requirement of each service feature.

HOW TO READ THIS CHAPTER

This chapter explains the feature programming for each service feature about the following Abbreviations.

(1) : 1st data

(2) : 2nd data

◀ : Initial data; With the system data clear command (CM00, CM01), the data with this marking is automatically set for each command.

(INITIAL) : A reset of the MP card is required after data setting.
Press SW1 switch on the MP card.

(AP00 INITIAL) : A reset of the AP00 card is required after data setting.
Set the Make Busy switch to UP and then DOWN.

(DTI INITIAL) : A reset of the DTI card is required after data setting.
Set the Make Busy switch to UP and then DOWN.

(OFF LINE) : Command with this marking can be used only under Off-Line mode of the MP card.
To set Off-Line mode,
(1) Set SW3 on the MP card to “2” or “3”.
(2) Press SW1 on the MP card.

(AP OFF LINE) : Command with this marking can be used only under Off-Line mode of the AP00 card.

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 Calling [Speed Dialing]" from a station), the data has been set is invalid.**
  You must execute the system data backup before the following operations.
  -Turning Off the system
  -System Initialization (reset of MP card)
  -Changing the MP card to Off-Line Mode
  -Changing the MP card 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 MAT/CAT by CMEC Y=6>0:0
- **Do not reset the MP card while "SYSD" lamp on the MP card is flashing.**

Office Data Conversion

When upgrading the software of the system from Series 3300 or before to Series 3400 or later, the office data conversion by CM00>90 is required. The office data that has been converted and the office data in Series 3400 software or later are incompatible with the software of Series 3300 or before. We recommend to execute the system data backup before the office data conversion.

NOTE: *When upgrading the software in Retrofit system to Series 3400 or later, convert the office data using "Office Data Converter" in the MATWorX CD-ROM and then execute the office data conversion by CM00>90.*

START	DESCRIPTION	DATA
CM00	Execute the office data conversion. **[Series 3200 R6.2 software required]** OFF LINE	(1) 90 (2) 0: Start conversion 1: Always displayed after first data "90" is typed **NOTE 1**
END		

NOTE 1: *When first data "90" is typed, second data "1" is displayed. Also while converting the office data, "1" is displayed.*

NOTE 2: *There is no problem even if the office data conversion is executed repeatedly.*

LEN Assignment by CM14

For the setting of LEN by CM14, the range of the FP/AP number that must be assigned to the 1st data of CM14 is valid by the software version you use.
Assign the correct FP/AP number to each FP/AP, referring to the tables below.

[For Series 3200 R6.1 software or before]

×: Available –: Not available

FP/AP No. / FP/AP TYPE	00	01-03	04-15	16-19	20-31	32-59	60-63
FP card (PN-CP15)	–	×	–	×	–	–	–
MP built-in FP	×	–	–	–	–	–	–
DAIA/DAID card	–	×	–	×	–	–	–
Virtual FP for D^{term}IP	–	×	–	×	–	–	–
AP card	–	–	×	–	×	–	–
Virtual AP (Virtual IPT)	–	–	×	–	×	–	–

[For Series 3200 R6.2 software]

×: Available –: Not available

FP/AP No. / FP/AP TYPE	00	01-03	04-15	16-19	20-31	32-59	60-63
FP card (PN-CP15)	–	×	–	×	–	–	–
MP built-in FP	×	–	–	–	–	–	–
Virtual FP for D^{term}IP	–	×	×	×	×	–	–
AP card	–	–	×	–	×	–	–
Virtual AP (Virtual IPT)	–	–	×	–	×	–	–

[For Series 3300 software]

×/Δ: Available **NOTE 1** –: Not available

FP/AP No. / FP/AP TYPE	00	01-03	04-15	16-19	20-31	32-59	60-63
FP card (PN-CP15)	–	×	–	×	–	–	–
MP built-in FP	×	–	–	–	–	–	–
Virtual FP for D^{term}IP	–	×	Δ	×	Δ	Δ	–
AP card	–	–	×	–	×	–	–
Virtual AP (Virtual IPT/ Virtual CSH **[For PHS]**)	–	–	Δ	–	Δ	×	–
Virtual FP for PS Station	–	Δ	–	–	–	–	×

[For Series 3400 software or later]

×/Δ: Available **NOTE 1** –: Not available

FP/AP No. / FP/AP TYPE	00	01-03	04-15	16-19	20-31	32-59	60-63
FP card (PN-CP15)	–	×	–	×	–	–	–
MP built-in FP	×	–	–	–	–	–	–
Virtual FP for D^{term}IP	–	×	Δ	×	Δ	Δ	–
AP card	–	–	×	–	×	–	–
Virtual AP (Virtual IPT/ Virtual CSH for IP-CS **[For PHS]**/Virtual CSH for WLAN) **NOTE 3**	–	–	Δ	–	Δ	×	–
Virtual FP for PS Station/ Virtual FP for WLAN Station **NOTE 3**	–	Δ	–	–	–	× **NOTE 2**	×

NOTE 1: *Although FP/AP number marked with "Δ" is available to use, we recommend FP/AP number marked with "×".*

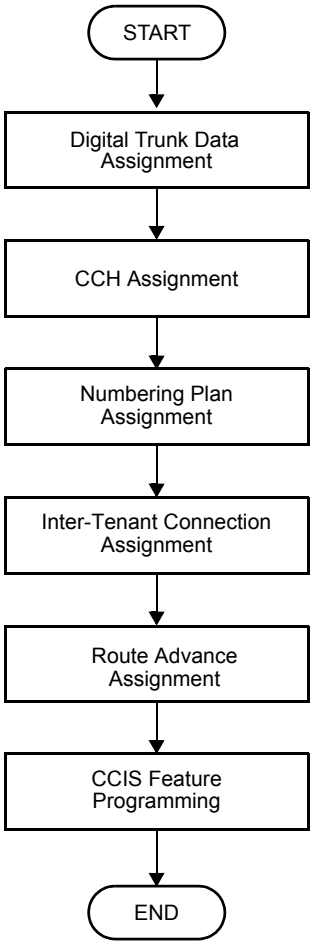
NOTE 2: *We recommend the setting of the FP number (60-63), when providing 256 PS stations/WLAN stations or less and setting of the FP number (56-63), when providing 257 PS stations/WLAN stations or more.*

NOTE 3: *Virtual CSH for WLAN and Virtual FP for WLAN Station are available for Series 3600 software or later.*

DIGITAL CCIS PROGRAMMING

Program the system data according to the procedures shown below.

Programming Procedure for Digital CCIS



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☞ Page 136

You can see the sample data programming shown below.

- Sample Data Programming for Open Numbering System ☞ Page 114
- Sample Data Programming for Closed Numbering System ☞ Page 119

Digital Trunk Data Assignment

START	DESCRIPTION	DATA
CM05	Assign an AP number to each DTI/CCT card. The AP number must match the switch settings on the DTI/CCT card. (INITIAL)	• Y=0 (1) 04-15, 20-31: AP No. (2) 09: DTI card 11: CCT card
	Specify the AP highway channel for the DTI/CCT card. (INITIAL)	• Y=1 (1) 04-15, 20-31: AP No. (2) 0 : Use Expanded Highway channel (128 time slots) 1◀: Use Basic Highway channel (128 time slots)
CM07	Assign a trunk number to each channel number on the DTI/CCT card. (INITIAL) **NOTE 1:** *For the 30DTI/30CCT, channel No. 00 cannot be used.* **NOTE 2:** *The system allocates time slots to consecutive channels from lowest to highest channel numbers assigned. To minimize the number of time slots allocated, assign trunk numbers to the consecutive channels on each card. Never skip channels in CM07.*	• Y=01 (1) XX ZZ XX: 04-15, 20-31: AP No. assigned by CM05 Y=0 ZZ : Channel No. of DTI/CCT 00-23: For 24DTI/24CCT 01-31: For 30DTI/30CCT (2) D000-D254: Trunk No. Any trunk number already assigned by CM10/CM14 cannot be used. Do not assign Trunk No.D255 for CCIS.
A		

A

CMAA

B

DESCRIPTION

Assign the necessary functions to each 24DTI/24CCT cards.

DTI INITIAL

After entering the data, set the MB switch on the DTI card to UP, and then to DOWN, for DTI initialization.

NOTE 1: *This command is only applicable for the 24DTI/24CCT card.*

NOTE 2: *The following table shows the relationship between CMAA Y=01 and Y=02.*

CMAA Y=01 (FRAME CONFIGURATION)	CMAA Y=02 (ZERO CODE SUPPRESSION)	SIGNALING
24-Multi Frame [1]		B8ZS
12-Multi Frame [0]	Not available [1]	Transparent
	Available [0]	B7

[ ] indicates 2nd Data

NOTE 3: *If 56K CCIS is used, 24 Multi-Frame (ESF) must be assigned.*

DATA

- Y=00 Data Mode

(1) 04-15, 20-31: AP No. assigned by CM05 Y=0

(2) 0: Based on AT&T Specifications

- Y=01 Frame Configuration

(1) 04-15, 20-31: AP No. assigned by CM05 Y=0

(2) 0 : 12-Multi Frame (D4)
1◀: 24-Multi Frame (ESF) **NOTE 3**

- Y=02 Zero Code Suppression [B7]

(1) 04-15, 20-31: AP No. assigned by CM05 Y=0

(2) 0 : Available (Non Transparent)
1◀: Not available (Transparent)

- Y=03

(1) 04-15, 20-31: AP No. assigned by CM05 Y=0

(2) 7◀: Common Channel Interoffice Signaling

B

	DESCRIPTION	DATA
CM30	Assign a trunk route number to each DTI/CCT.	• Y=00 (1) 000-254: Trunk No. assigned by CM07 Y=01 (2) 00-63: Trunk Route No.
	NOTE 1: *The trunk routes used for a common signaling channel must be different from the trunk routes used for voice channels.*	
	NOTE 2: *If channel number 16 is assigned as Common Signaling channel, all channels in the DTI/CCT must be assigned as No. 7 CCIS trunk.*	
	NOTE 3: *The DTI/CCT route must be separated from any analog trunk route.*	
CM35	Assign the trunk route data for common signaling channel and voice channels. Minimum of two routes.	• Y=00 (1) 00-63: Trunk Route No. (2) 04: Tie Line
		• Y=01 (1) 00-63: Trunk Route No. (2) 7◀: DP/DTMF
		• Y=04 (1) 00-63: Trunk Route No. (2) 2: Answer Signal arrives
		• Y=05 (1) 00-63: Trunk Route No. (2) 1◀: Release Signal arrives
	Specify the incoming connection signal.	• Y=09 (1) 00-63: Trunk Route No. (2) 03: Wink Start/CCIS
	Specify the outgoing start condition.	• Y=20 (1) 00-63: Trunk Route No. (2) 00: Wink Start/CCIS

C

C

	DESCRIPTION	DATA
CM35	Specify the DTI/CCT PAD Patterns on the voice channel route.	• Y=19 (1) 00-63: Trunk Route No. (2) 0-3 : Programmable PAD (See CM42 ☞ *Page 101*) 4-7◀: Fixed PAD (See the following tables.)

CM35 Y=19 DTI/CCT PAD

[Australia/New Zealand]

CONNECTION PATTERNS (A-B)	PAD DATA OF B TRUNK [dB]			
	DATA =4 (T/R)	DATA =5 (T/R)	DATA =6 (T/R)	DATA =7 (T/R)
Station-DTI/CCT				0/0
Tone-DTI/CCT				0/0
COT/DID/LDT/IPT-DTI/CCT				0/0
ODT-DTI/CCT				0/0
DTI/BRT/PRT/ CCT/Virtual IPT-DTI/CCT				0/0

T/R: Transmit/Receive

[North America/μ-law countries/A-law countries]

CONNECTION PATTERNS (A-B)	PAD DATA OF B TRUNK [dB]			
	DATA =4 (T/R)	DATA =5 (T/R)	DATA =6 (T/R)	DATA =7 (T/R)
Station-DTI/CCT	–3/–8	–3/–3	–3/–3	–3/–8
Tone-DTI/CCT	0/0	0/0	0/0	0/0
COT/DID/LDT/ ODT (2W E&M)/ IPT-DTI/CCT	0/0	0/0	0/0	0/0
ODT (4W E&M)-DTI/CCT	+3/–3	0/0	0/0	+3/–3
DTI/BRT/PRT/ CCT/Virtual IPT-DTI/CCT	0/–6	0/0	0/–6	0/0

T/R: Transmit/Receive
+: Gain
–: Loss

	Specify the trunk seizure sequence for voice channel route.	• Y=83 (1) 00-63: Trunk Route No. (2) 0 : As per CM08>078 1◀: By allotter
CM08	Specify the trunk seizure sequence when CM35 Y=83 is set to 0.	(1) 078 (2) 0 : Highest available trunk 1◀: Lowest available trunk
CM35	Provide the cyclic redundancy checking for 30DTI/30CCT when linking with the 2400 IPX.	• Y=89 (1) 00-63: Trunk Route No. (2) 0: To provide
	Provide the common signaling channel and voice channel routes with No. 7 CCIS facilities.	• Y=90 (1) 00-63: Trunk Route No. (2) 0: No. 7 CCIS

D

D

CM42

DESCRIPTION	DATA
When using the programmable PAD (CM35 Y=19, 2nd Data=0-3), assign the PAD data for the DTI/CCT.	(1) 50-65: See tables below. (2) 00-15: See tables below.

PATTERNS / 1ST DATA	PAD DATA PATTERNS				CONNECTING PATTERNS (A-B)
	CM35 Y=19 2ND DATA=0	CM35 Y=19 2ND DATA=1	CM35 Y=19 2ND DATA=2	CM35 Y=19 2ND DATA=3	
50 ≀ 65	50	54	58	62	STA/TONE-DTI/CCT
	51	55	59	63	COT/DID/LDT/IPT-DTI/CCT
	52	56	60	64	ODT (4W E&M)-DTI/CCT
	53	57	61	65	DTI/BRT/PRT/CCT/Virtual IPT/CFTC-DTI/CCT

[Australia/New Zealand]

PATTERNS / 2ND DATA		PAD DATA OF B TRUNK
		DTI /CCT (T/R) [dB]
00 ≀ 15	00	0/0
	01	–3/–3
	02	–8/–8
	03	–6/–6
	04	0/0
	05	0/–6
	06	–6/0
	07	0/0
	08 ≀ 15	Not Used

T/R: Transmit/Receive
+: Gain
–: Loss

E

E

CM42

DESCRIPTION	DATA

[North America/μ-law countries]

2ND DATA \ PATTERNS		PAD DATA OF B TRUNK DTI/CCT (T/R) [dB]
00 ≀ 15	00	0/0
	01	–2/–2
	02	–3/–3
	03	0/–6
	04	–3/–8
	05	+3/–3
	06	–6/–6
	07	–8/–8
	08 ≀ 15	Not Used

T/R: Transmit/Receive
+: Gain
–: Loss

[A-law countries]

2ND DATA \ PATTERNS		PAD DATA OF B TRUNK DTI/CCT (T/R) [dB]
00 ≀ 15	00	0/0
	01	–2/–2
	02	–3/–3
	03	0/–6
	04	–3/–8
	05	+3/–3
	06	–6/–6
	07	–8/–8
	08 ≀ 15	Not Used

T/R: Transmit/Receive
+: Gain
–: Loss

CM08

Provide station to station transfer over CCIS.

(1) 253
(2) 0: Available

END

CCH Assignment

START	DESCRIPTION	DATA
CM05	Assign an AP number to the CCH or CCT card. The AP number must match the switch settings on the CCH or CCT card. (INITIAL)	• Y=0 (1) 04-15, 20-31: AP No. (2) 11: CCH/CCT card
CM06	Assign a CCH number to each CCH or CCT card. (INITIAL)	• Y=07 (1) 0-7: CCH No. (2) 04-15, 20-31: AP No. of the CCH/CCT card assigned by CM05 Y=0
CM35	Assign a CCH number to each common signaling channel and voice channel route.	• Y=91 (1) 00-63: Trunk Route No. (2) 0-7: CCH No.
CM30	Assign a Circuit Identification Code (CIC) to each trunk number used for voice channel. (INITIAL)	• Y=35 (1) 000-254: Trunk No. (2) 001-127: CIC
	NOTE: *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. A CIC should not be assigned to a trunk used as a Common Signaling Channel.*	
CMA7	Assign the trunk number to be used as the common signaling channel.	• Y=00 (1) 0-7: CCH No. (2) 000-254: Trunk No. assigned by CM07 Y=01
	Assign an Originating Point Code (OPC) to each CCH number. (INITIAL)	• Y=01 (1) 0-7: CCH No. (2) 00001-16367: Originating Point Code
	NOTE: *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 CCH numbers provided in the same system.*	
A		

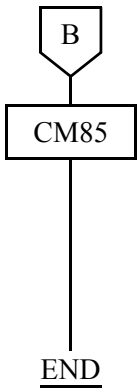
	DESCRIPTION	DATA
A		
CMA7	Assign a Destination Point Code (DPC) to each CCH number. **NOTE:** *The Destination Point Code is used to designate a terminating office in the No. 7 CCIS network. Usually a different DPC is assigned to each CCH number in the same system.*	• Y=02 (1) 0-7: CCH No. (2) 00001-16367: DPC
	Assign the Point Code of the Centralized Fault Reporting office, if required.	• Y=05 (1) 0-7: CCH No. (2) 00001-16367: Point Code of Centralized Fault Reporting office
	Assign the originating office number to each CCH number, if required. **NOTE:** *This data setting is required only for open numbering system.*	• Y=06 (1) 0-7: CCH No. (2) 0000-9999: Office No.
CMA8	Assign the CCH number to which a signaling message is transferred according to the Point Code received. Up to 256 point codes can be assigned.	(1) 00001-16367: DPC (2) 0-7: CCH No.
CMAA	Select the CCH for CCIS.	• Y=14 (1) 04-15, 20-31: AP No. assigned by CM05 Y=0 (2) 0 : PN-24CCTA/PN-30CCTA/PN-DTA/ PN-DTB (Built-in CCH) 1◀: PN-SC00 (CCH)
	Specify the type of the CCT card.	• Y=15 (1) 04-15, 20-31: AP No. assigned by CM05 Y=0 (2) 0 : PN-30CCTA 1◀: PN-24CCTA
END		

Numbering Plan Assignment

- For open numbering system

START	DESCRIPTION	DATA
CM20	Assign the access code for LCR Group 0-3.	• 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
CM8A	Assign an Area Code Development Pattern number to each LCR Group.	• 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 the digits to be dialed in the Area Code Development Pattern number assigned by CM8A Y=A000.	• Y=4005-4007 Area Code Development Pattern No. 5-7 (1) X-X---X: Area Code 1-8 digits (2) 0000-0255: Route Pattern No. 000-255
	Assign an area code for intra-office termination, if required.	• Y=4005-4007 Area Code Development Pattern No. 5-7 (1) X-X---X: Area Code 1-8 digits (2) 8000: Intra-Office Termination
	Assign the next Route Pattern number to the Route Pattern number assigned CM8A Y=4005-4007. **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.*	• Y=0000-0255 Route Pattern No. 000-255 (1) 0: Designation of next table (2) 0000-0255: Next Route Pattern No. 000-255
	Specify the order LCR selection for the Route Pattern number assigned by CM8A Y=4005-4007.	• Y=0000-0255 Route Pattern No. 000-255 (1) 1: 1st 2: 2nd 3: 3rd 4: 4th (2) XXX ZZ XXX: 000-255: LCR Pattern No. ZZ : 00-63: Trunk Route No.
A		

	DESCRIPTION	DATA
A		
CM8A	For area code delection, designate the digits to be deleted.	• Y=5000-5255 LCR Pattern No. 000-255 (1) 153: Designation of digit to be deleted (2) 00 : No digit deletion 01-10: Leading 1-10 digits deletion CCC : No digit deletion
	When sharing LCR Pattern number and LCR Pattern number for alternative routing (To allow maximum 255 alternative routing offices), specify to assign area code addition by CM8A Y=5000-5255>178. **[Series 3300 software required]**	• Y=5000-5255 LCR Pattern No. 000-255 (1) 177: Sharing LCR Pattern No. for alternative routing (2) 0 : Assigned by CM8A Y=5000-5255>178 1◀: Assigned by CM8A Y=5000-5255>100
	For area code addition, designate the digits to be added when CM8A Y=5000-5255>177 2nd data is 1.	• Y=5000-5255 LCR Pattern No. 000-255 (1) 100: Designation of Digit Addition Pattern No. (2) 9000-9255: Digit Addition Pattern No. 000-255 CCC : No digit addition
	For area code addition, designate the digits to be added when CM8A Y=5000-5255>177 2nd data is 0. **[Series 3300 software required]**	• Y=5000-5255 LCR Pattern No. 000-255 (1) 178: Designation of Digit Addition Pattern No. (2) 9000-9255: Digit Addition Pattern No. 000-255 CCC : No digit addition • Y=9000-9255 Digit Addition Pattern No. 000-255 (1) 0: Entry of digit code to be added (2) X-X---X: Digits to be added (Maximum 32 digits)
CM08	Specify the maximum number of dialed digits sent to the CCIS network.	(1) 379 (2) 0 : 24 digits 1◀: 15 digits
B		

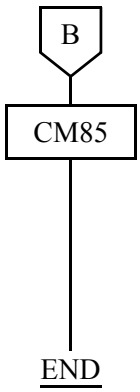


DESCRIPTION	DATA
Specify the maximum number of digits dialed by the calling party. The maximum number of digits (including the area codes) should be assigned to each area code.	• Y=0-7 Area Code Development Pattern No. 0-7 assigned by CM8A Y=A000 (1) X-X---X: Area Code dialed 1-8 digits (2) 01-24◀: 1-24 digits 25-79 : 25-79 digits

- For closed numbering system

START	DESCRIPTION	DATA
CM20	Assign the access code for LCR Group 3.	• Y=0-3 Numbering Plan Group 0-3 (1) X-XXXX: Access Code (2) A129: LCR Group 3
	When providing Centralized MAT or Network Station Number (FCCS), assign the access code for the number of digits of the network station number. **NOTE:** *For Centralized MAT or Number Portability, this data must be set.*	• Y=0-3 Numbering Plan Group 0-3 (1) X-XXXX: Access Code (2) 811-818: 1-8 digits network station No.
CM8A	Assign an Area Code Development Pattern number to the LCR Group selected above.	• Y=A000 (1) 0-3: LCR Group 3 (2) 4005-4007: Area Code Development Pattern No. 5-7
	Assign a Route Pattern number to the digits to be dialed in the Area Code Development Pattern number assigned by CM8A Y=A000. **NOTE:** *The digits assigned in CM20 to A129: LCR Group 3 must be entered in the Area Code Development Pattern table for access to the desired Route Pattern number.*	• Y=4005-4007 Area Code Development pattern No. 5-7 (1) X-X---X: Area Code 1-8 digits (2) 0000-0255: Route Pattern No. 000-255
	Assign an area code (station number) for intra-office station, if required.	• Y=4005-4007 Area Code Development Pattern No. 5-7 (1) X-X---X: Area Code 1-8 digits (2) 8001-8008: 1-8 digits Intra-Office Station
	Specify the LCR selection priority for the Route Pattern number assigned by CM8A Y=4005-4007.	• Y=0000-0255 Route Pattern No. 000-255 (1) 1: 1st priority 2: 2nd priority 3: 3rd priority 4: 4th priority (2) XXX ZZ XXX: 000-255: LCR Pattern No. ZZ : 00-63: Trunk Route No.
A		

	DESCRIPTION	DATA
A		
CM8A	For area code deletion, designate the digits to be deleted.	• Y=5000-5255 LCR Pattern No. 000-255 (1) 153: Designation of digit to be deleted (2) 00 : No digit deletion 01-10: Leading 1-8 digits deletion CCC : No digit deletion
	When sharing LCR Pattern number and LCR Pattern number for alternative routing (To allow maximum 255 alternative routing offices), specify to assign area code addition by CM8A Y=5000-5255>178. **[Series 3300 software required]**	• Y=5000-5255 LCR Pattern No. 000-255 (1) 177: Sharing LCR Pattern No. for alternative routing (2) 0 : Assigned by CM8A Y=5000-5255>178 1◀: Assigned by CM8A Y=5000-5255>100
	For area code addition, designate the digits to be added when CM8A Y=5000-5255>177 2nd data is 1.	• Y=5000-5255 LCR Pattern No. 000-255 (1) 100: Designation of Digit Addition Pattern No. (2) 9000-9255: Digit Addition Pattern No. 000-255 CCC : No digit addition
	For area code addition, designate the digits to be added when CM8A Y=5000-5255>177 2nd data is 0. **[Series 3300 software required]**	• Y=5000-5255 LCR Pattern No. 000-255 (1) 178: Designation of Digit Addition Pattern No. (2) 9000-9255: Digit Addition Pattern No. 000-255 CCC : No digit addition • Y=9000-9255 Digit Addition Pattern No. 000-255 (1) 0 (2) X-X---X: Digits to be added (Maximum 32 digits)
CM08	Specify the maximum number of dialed digits sent to the CCIS network.	(1) 379 (2) 0 : 24 digits 1◀: 15 digits
B		

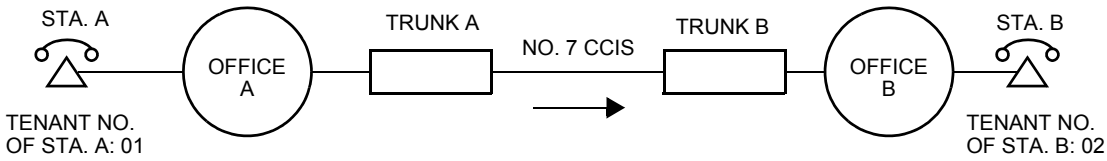


DESCRIPTION	DATA
Specify the maximum number of digits dialed by the calling party. The maximum number of digits (including the area codes) should be assigned to each area code.	• Y=0-7 Area Code Development Pattern No. 0-7 assigned by CM8A Y=A000 (1) X-X---X: Area Code dialed 1-8 digits (2) 01-24◀: 1-24 digits 25-79 : 25-79 digits

Inter-Tenant Connection Assignment

START	DESCRIPTION	DATA
CM12	Assign the tenant number to each station. **NOTE:** *When linking with the 2400 IPX, the tenant number for the 2000 IPS should be assigned as 01-63. 00 is not used.*	• Y=04 (1) X-XXXXXXXX: Station No. (2) 00-63: Tenant No. 00-63 01◀ : Tenant No. 01
CM30	Assign the tenant number to each trunk. **NOTE:** *When linking with the 2400 IPX, the tenant number for the 2000 IPS should be assigned as 01-63. 00 is not used.*	• Y=01 (1) 000-254: Trunk No. (2) 00-63: Tenant No. 00-63 01◀ : Tenant No. 01
CM63	Specify the inter-tenant connection for station-to-station calling or incoming call termination. (See Example 1, 2 in the following pages.)	• Y=1 Station-to-Station Calling (1) XX ZZ XX: 00-63: Tenant No. of Calling Station ZZ : 00-63: Tenant No. of Called Station (2) 0 : Restricted 1◀: Allow • Y=2 Incoming Call Termination (1) XX ZZ XX: 00-63: Tenant No. of Called Station ZZ : 00-63: Tenant No. of Trunk (2) 0 : Restricted 1◀: Allow
END		

Example 1: Inter-Tenant Connection for Station-to-Station Calling

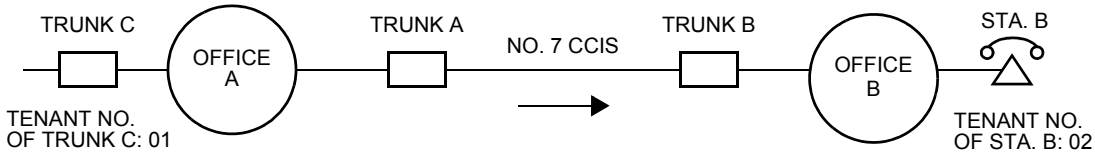


For the inter-tenant connection between Station A and Station B, the data assignment at Office B is as follows.

Command Code	1st Data	2nd Data
CM63 Y=1	01 02 01: Tenant No. of Calling Station (Station A) 02: Tenant No. of Called Station (Station B)	1◀: Allow

NOTE: *The inter-tenant restriction between Trunk B and Station B (CM63 Y=2) is ineffective.*

Example 2: Inter-Tenant Connection for Incoming Call Termination



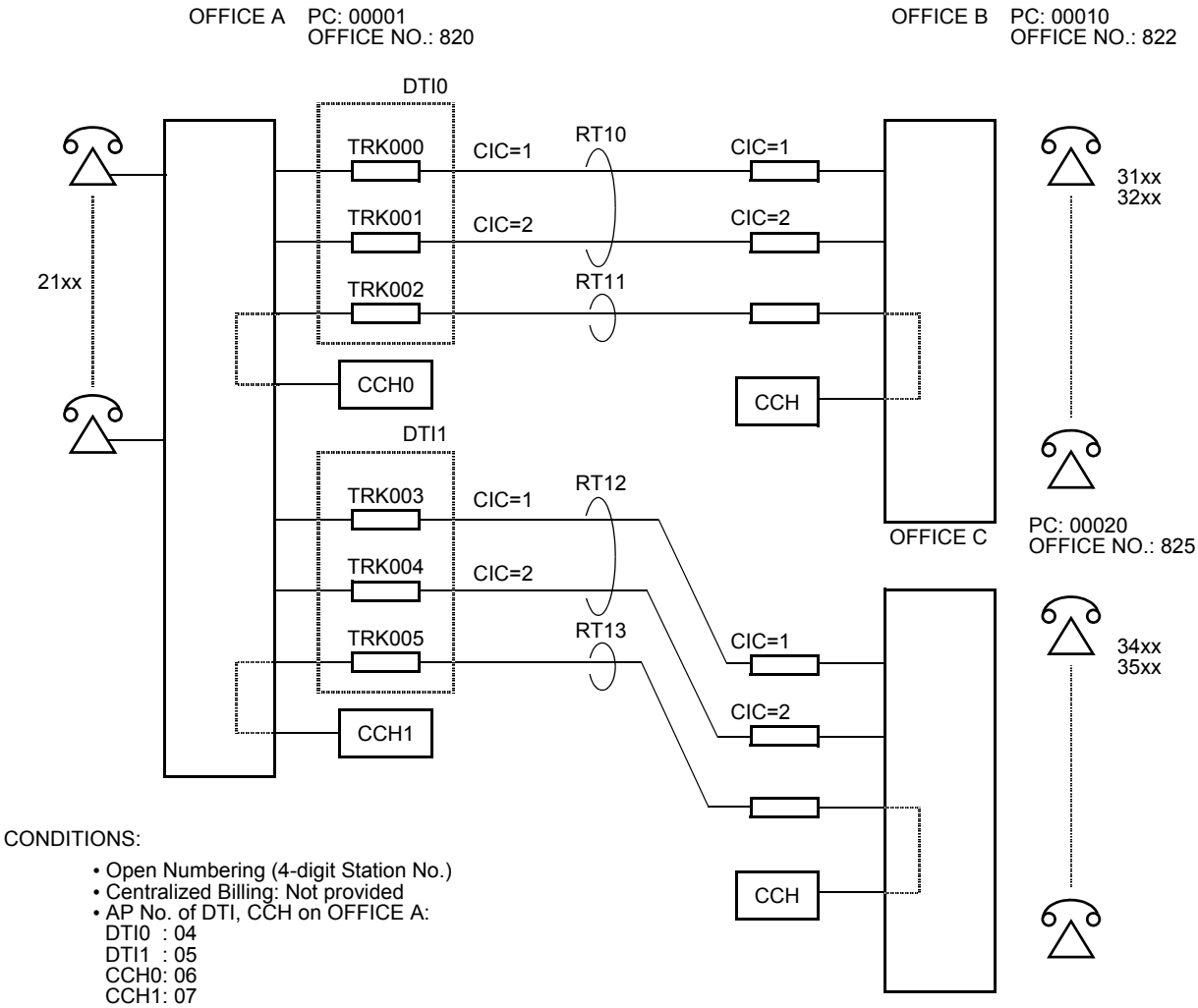
For the inter-tenant connection between Trunk C (Office A) and Station B (Office B), the data assignment at Office B is as follows.

Command Code	1st Data	2nd Data
CM63 Y=2	01 02 01: Tenant No. of Called Station (Station B) 02: Tenant No. of Trunk (Trunk C)	1◀: Allow

NOTE: *The inter-tenant restriction between Trunk B and Station B (CM63 Y=2) is ineffective.*

Sample Data Programming for Open Numbering System

EXAMPLE



CONDITIONS:

- Open Numbering (4-digit Station No.)
- Centralized Billing: Not provided
- AP No. of DTI, CCH on OFFICE A:
  DTI0 : 04
  DTI1 : 05
  CCH0: 06
  CCH1: 07

For office A, the following programming is required:

(1) Assign the DTI card.

Command Code	1st Data	2nd Data	
05 Y=0	04	09	: DTI0
	05	09	: DTI1
05 Y=1	04	1	: Basic Highway channel
	05	1	: Basic Highway channel

(2) Assign a trunk number to the required DTI channels.

Command Code	1st Data	2nd Data	
07 Y=01	0401	D000	: TRK000
	0402	D001	: TRK001
	0403	D002	: TRK002 (Common Signaling Channel)
	0501	D003	: TRK003
	0502	D004	: TRK004
	0503	D005	: TRK005 (Common Signaling Channel)

(3) Assign the DTI card parameters.
(These data assignments are only for 24DTI card.)

Command Code	1st Data	2nd Data
AA Y=00	04	0
	05	0
AA Y=01	04	0/1
	05	0/1
AA Y=02	04	0
	05	0
AA Y=03	04	7
	05	7

(4) Assign a trunk route number to the DTI trunks.

Command Code	1st Data	2nd Data	
30 Y=00	000	10	] : RT10
	001	10	
	002	11	: RT11
	003	12	] : RT12
	004	12	
	005	13	: RT13

(5) Assign the trunk route data.

Command Code	1st Data	2nd Data	
35 Y=00	10	04	Tie Line route assignment
	11	04	
	12	04	
	13	04	
35 Y=01	10	7	Dialing signal type
	11	7	
	12	7	
	13	7	
35 Y=04	10	2	Answer Signal
	11	2	
	12	2	
	13	2	
35 Y=05	10	1	Release Signal
	11	1	
	12	1	
	13	1	
35 Y=09	10	03	Incoming connection signal
	11	03	
	12	03	
	13	03	
35 Y=19	10	0-7	DTI PAD Pattern assignment 2nd data varies depending on the Level Diagram in the network.
	11	0-7	
	12	0-7	
	13	0-7	
35 Y=20	10	00	Sender start condition
	11	00	
	12	00	
	13	00	
35 Y=90	10	0	No. 7 CCIS facilities assignment
	11	0	
	12	0	
	13	0	

(6) Assign the CCH card.

Command Code	1st Data	2nd Data	
05 Y=0	06	11	: CCH0
	07	11	: CCH1

(7) Assign the CCH number to each CCH.

Command Code	1st Data	2nd Data	
06 Y=07	0	06	: CCH 0
	1	07	: CCH 1

(8) Assign the CCH to each route.

Command Code	1st Data	2nd Data	
35 Y=91	10	0	] : CCH 0
	11	0	
	12	1	] : CCH 1
	13	1	

(9) Assign a CIC to each voice channel trunk.

Command Code	1st Data	2nd Data	
30 Y=35	000	001	: CIC1
	001	002	: CIC2
	003	001	: CIC1
	004	002	: CIC2

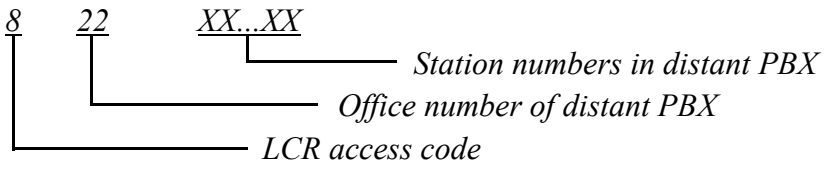
(10) Assign the CCH data.

Command Code	1st Data	2nd Data	
A7 Y=00	0	002	] Common Signaling Channel assignment
	1	005	
A7 Y=01	0	00001	] Originating Point Code assignment
	1	00001	
A7 Y=02	0	00010	] Destination Point Code assignment
	1	00020	
A7 Y=06	0	0820	] Office number assignment
	1	0820	
A8	00010	0	] Destination Point Code to which a signaling message is transferred.
	00020	1	

(11) Assign the route access data.

Command Code	1st Data	2nd Data	
20 Y=0	8	A126	: Access Code=8
8A Y=A000	0	4005	: Area Code Development Pattern No. 5
8A Y=4005	22 25	0000 0001	: Route Pattern 000 : Route Pattern 001
8A Y=0000	1	00010	: Trunk Route 10
8A Y=0001	1	00012	: Trunk Route 12
8A Y=5000	100	9000	: Digit Addition Pattern No. 000
8A Y=9000	0	8	: Addition of digit "8"
85 Y=5	22 25	07 07	] Maximum number of digits dialed is 7.

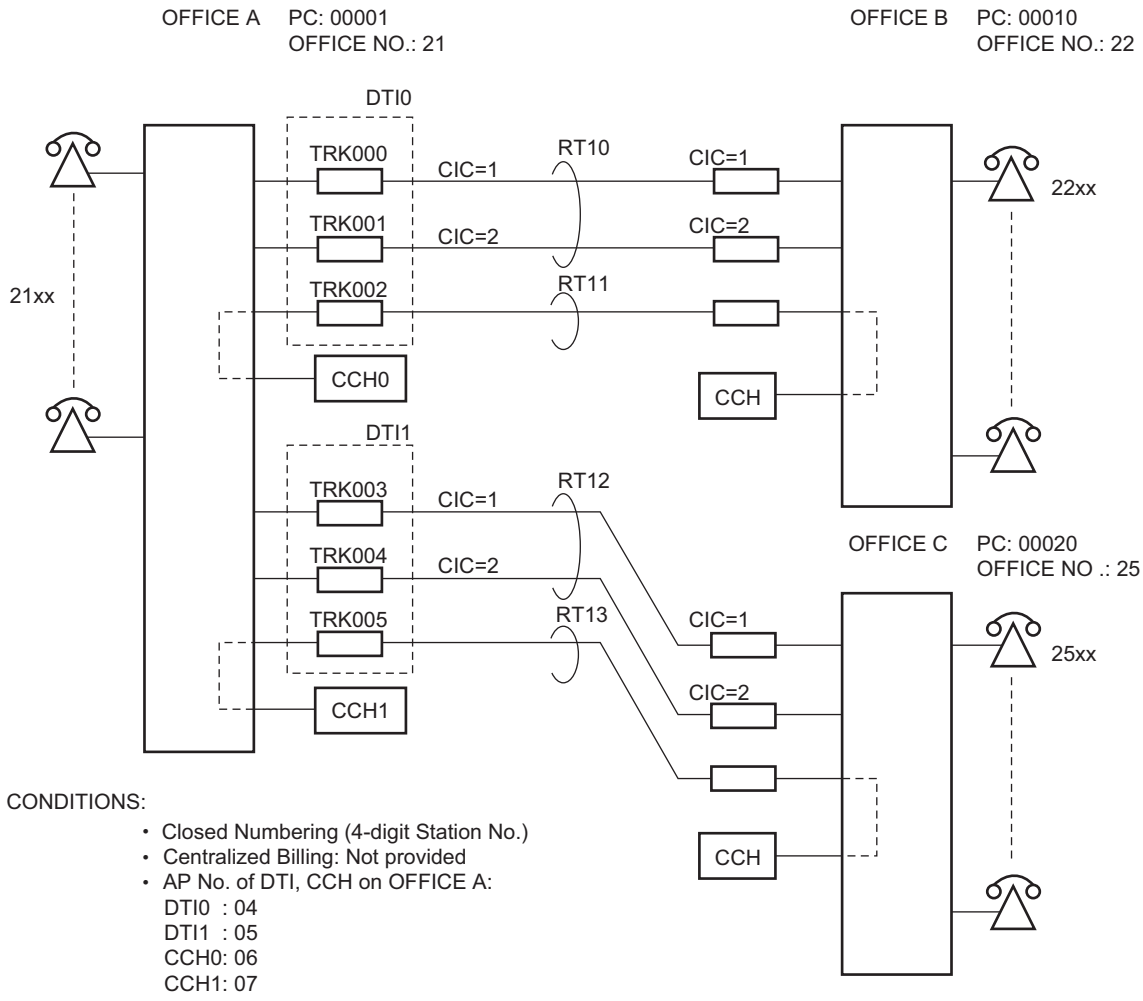
NOTE: *The example shows:*



Second dial tone will be heard after 8 is dialed.
8 will be added and sent to distant PBX.

Sample Data Programming for Closed Numbering System

EXAMPLE



CONDITIONS:

- Closed Numbering (4-digit Station No.)
- Centralized Billing: Not provided
- AP No. of DTI, CCH on OFFICE A:
  DTI0 : 04
  DTI1 : 05
  CCH0: 06
  CCH1: 07

For office A, the following programming is required:

(1) Assign the DTI card.

Command Code	1st Data	2nd Data	
05 Y=0	04	09	: DTI0
	05	09	: DTI1
05 Y=1	04	1	: Basic Highway channel
	05	1	: Basic Highway channel

(2) Assign a trunk number to the required DTI channels.

Command Code	1st Data	2nd Data	
07 Y=01	0401	D000	: TRK000
	0402	D001	: TRK001
	0403	D002	: TRK002 (Common Signaling Channel)
	0501	D003	: TRK003
	0502	D004	: TRK004
	0503	D005	: TRK005 (Common Signaling Channel)

(3) Assign the DTI card parameters.
(These data assignments are only for 24DTI card.)

Command Code	1st Data	2nd Data
AA Y=00	04	0
	05	0
AA Y=01	04	0/1
	05	0/1
AA Y=02	04	0/1
	05	0/1
AA Y=03	04	7
	05	7

(4) Assign a trunk route number to the DTI trunks.

Command Code	1st Data	2nd Data		
30 Y=00	000	10	]	: RT10
	001	10	]	
	002	11		: RT11
	003	12	]	: RT12
	004	12	]	
	005	13		: RT13

(5) Assign the trunk route data.

Command Code	1st Data	2nd Data	
35 Y=00	10	04	Tie Line route assignment
	11	04	
	12	04	
	13	04	
35 Y=01	10	7	Dialing signal type
	11	7	
	12	7	
	13	7	
35 Y=04	10	2	Answer Signal
	11	2	
	12	2	
	13	2	
35 Y=05	10	1	Release Signal
	11	1	
	12	1	
	13	1	
35 Y=09	10	03	Incoming connection signal
	11	03	
	12	03	
	13	03	
35 Y=19	10	0-7	DTI PAD Pattern assignment 2nd data varies depending on the Level Diagram in the network.
	11	0-7	
	12	0-7	
	13	0-7	
35 Y=20	10	00	Sender start condition
	11	00	
	12	00	
	13	00	
35 Y=90	10	0	No. 7 CCIS facilities assignment
	11	0	
	12	0	
	13	0	

(6) Assign the CCH card.

Command Code	1st Data	2nd Data	
05 Y=0	06	11	: CCH0
	07	11	: CCH1

(7) Assign the CCH number to each CCH.

Command Code	1st Data	2nd Data	
06 Y=07	0	06	: CCH 0
	1	07	: CCH 1

(8) Assign the CCH number to each route.

Command Code	1st Data	2nd Data	
35 Y=91	10	0	] : CCH 0
	11	0	
	12	1	] : CCH 1
	13	1	

(9) Assign a CIC to each voice channel trunk.

Command Code	1st Data	2nd Data	
30 Y=35	000	001	: CIC1
	001	002	: CIC2
	003	001	: CIC1
	004	002	: CIC2

(10) Assign the CCH data.

Command Code	1st Data	2nd Data	
A7 Y=00	0	002	] Common Signaling Channel assignment
	1	005	
A7 Y=01	0	00001	] Originating Point Code assignment
	1	00001	
A7 Y=02	0	00010	] Destination Point Code assignment
	1	00020	
A8	00010	0	] Destination Point Code to which a signaling message is transferred.
	00020	1	

(11) Assign the route access data.

Command Code	1st Data	2nd Data	
20 Y=0	22	A129	: Access Code=22
20 Y=0	25	A129	: Access Code=25
8A Y=A000	3	4007	: Area Code Development Pattern No. 5
8A Y=4007	22 25	0000 0001	: Route Pattern 000 (22XX) : Route Pattern 001 (25XX)
8A Y=0000	1	00010	: Route 10 access by 22XX
8A Y=0001	1	00012	: Route 12 access by 25XX
20 Y=0	21	804	: 4 digits station (for originating station No.)
85 Y=5	22 25	04 04	] Maximum number of digits dialed is 4.

NOTE: *The example shows:*

22 XX
└── *Station numbers in office B*
25 XX
└── *Station numbers in office C*

No second dial tone will be heard.
No digits will be added.

Route Advance Assignment

To provide the Alternative Routing (another trunk route) for CCT when an outgoing call via No. 7 CCIS is not available due to a fault occurrence, do the following programming.

START	DESCRIPTION	DATA
CM35	Provide the voice channel route of CCT with Alternative Routing for a fault occurrence.	• Y=186 (1) 00-63: Trunk Route No. (2) 0 : To provide 1◀: Not provided
	Provide the tandem calls with Alternative Routing for a fault occurrence.	• 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.	• Y=0 (1) 104 (2) 03-99: 03-99 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
CM20	Assign the access code for LCR Group 0-3.	• 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 feature access key for LCR Group 0-2 to D^{term}, if required.	• 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.	• Y=76 (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.	• 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.	• 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.	• Y=4005-4007 Area Code Development Pattern No. 5-7 (1) X...X: Area Code, Maximum 8 digits (2) 5000-5255: LCR Pattern No. 000-255
	For area code deletion, designate the digits to be not deleted.	• 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. **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.*	• Y=0000-0255 Route Pattern No. 000-255 (1) 0: Designation of next table (2) 0000-0255: Next Route Pattern No. 000-255

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:

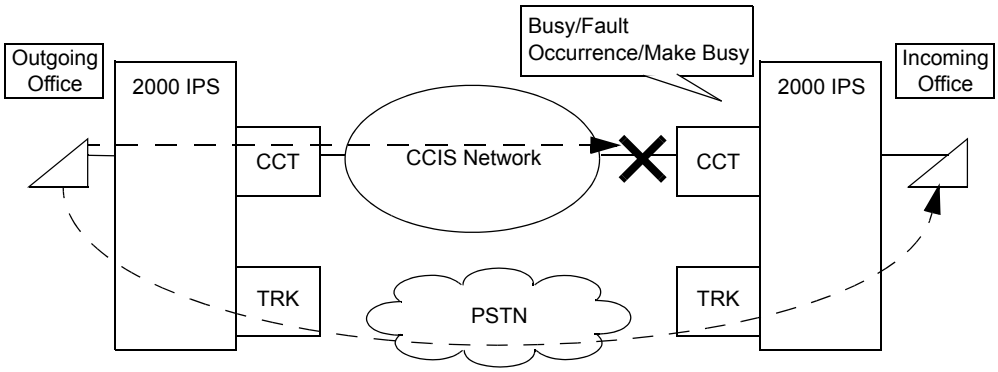
Y	1ST DATA		2ND DATA	ORDER OF LCR SELECTION
0000	0	Destination of next table	0001	
	1	1st LCR selection	00000	1st LCR selection
	2	2nd LCR selection	00101	2nd LCR selection
	3	3rd LCR selection	00202	3rd LCR selection
	4	4th LCR selection	NONE (Unavailable)	
0001	0	Destination of next table	NONE	
	1	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 CCH number.	• Y=10 (1) 0-7: CCH No. (2) 00-14: 0-28 seconds (2 second increments) 15◀ : 6 seconds

END

When the offices are connected with No. 7 CCIS, and if all outgoing trunks of the incoming office are busy, or the MB switch of CCT card is ON/all outgoing trunks are in the 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 where the message is received can detour the call via an another trunk route such as ISDN.

[Series 3600 software required]



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

CM08

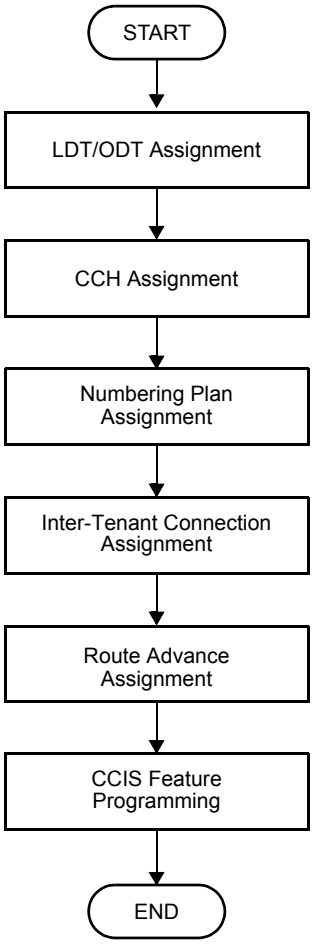
DESCRIPTION	DATA
Provide the system with the alternative routing when the MB switch of CCT card is ON in incoming office or when all outgoing trunks of incoming office are in the make busy condition. **NOTE:** *The make busy condition means when the MB switch of cards is ON and CME5 Y=1/Y=5 is set to 0.*	(1) 624 (2) 0 : To provide (CGC sending) 1◀: Not provided (CFL sending)
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

ANALOG CCIS PROGRAMMING

Program the system data according to the procedures shown below.

Programming Procedure for Analog CCIS



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LDT/ODT Assignment

START	DESCRIPTION	DATA
CM10	Assign a trunk number to each LDT/ODT card. **NOTE 1:** *We recommend the setting of trunk number by CM14, when using Series 3200 R6.2 software or later.* **NOTE 2:** *The Trunk number must be assigned to the 1st LEN (Level 0) and the 2nd LEN (Level 1) of each LT slot.*	(1) 000-763: LEN (2) D000-D254: Trunk No. Any trunk number already assigned by CM07 cannot be used. Do not assign Trunk No.D255 for CCIS.
CM14	Assign a trunk number to each LDT/ODT card. **[Series 3200 R6.2 software required]** **NOTE:** *The Trunk number must be assigned to the 1st LEN (Level 0) and the 2nd LEN (Level 1) of each LT slot.*	(1) XX ZZZ (LEN) XX : 00-59: FP No. ZZZ: 000-127: Port No. (2) DD000-DD254: Trunk No. NONE◀: No data Any trunk number already assigned by CM07 cannot be used. Do not assign Trunk No.255 for CCIS.
CM30	Assign a trunk route number to each trunk.	• Y=00 (1) 000-254: Trunk No. assigned by CM10/ CM14 (2) 00-63: Trunk Route No.
A		

A

	DESCRIPTION	DATA
CM35	Assign the trunk route data for voice channels.	• Y=00 (1) 00-63: Trunk Route No. (2) 04: Tie Line • Y=01 (1) 00-63: Trunk Route No. (2) 7◀: DP/DTMF • Y=04 (1) 00-63: Trunk Route No. (2) 2: Answer Signal arrives • Y=05 (1) 00-63: Trunk Route No. (2) 1◀: Release Signal arrives • Y=09 (1) 00-63: Trunk Route No. (2) 03: Wink Start/CCIS • Y=20 (1) 00-63: Trunk Route No. (2) 00: Wink Start/CCIS
	When you use the ODT card for 2-wire E&M trunk, set CM35 Y=100 to 14. (INITIAL)	• Y=100 (1) 00-63: Trunk Route No. (2) 14: 2-wire E&M Trunk

NOTE: *When using Series 3600 software or later, a reset of the MP card is not required after this command is set/changed.*
When changing the data with online, the data is valid after the trunk card is unplugged and plugged in.

If the echo occurs when you use the LDT card, set CM35 Y=100 to 07. (INITIAL)	(1) 00-63: Trunk Route No. (2) 07: LDT (for short line only)

B

B

CM35

DESCRIPTION

Specify the PAD Patterns on the voice channel route.

[Australia/New Zealand]

CONNECTION PATTERNS (A-B)	PAD DATA OF B TRUNK [dB]			
	DATA =4 (T/R)	DATA =5 (T/R)	DATA =6 (T/R)	DATA =7 (T/R)
Station-ODT		0/0	0/0	0/0
Tone-ODT		0/0	0/0	0/0
COT/DID/LDT/ IPT-ODT		0/0	–8/–8	–8/–8
ODT-ODT		0/0	–8/–8	–3/–3
DTI/BRT/PRT/ CCT/Virtual IPT-ODT		0/0	–8/–8	–3/–3
Station-LDT		0/+6	0/+6	0/+6
Tone-LDT		0/+6	0/+6	0/+6
COT/DID/LDT/ IPT-LDT		0/+6	–6/+6	–6/+6
ODT-LDT		0/+6	–6/+6	0/+6
DTI/BRT/PRT/ CCT/Virtual IPT-LDT		0/+6	–6/+6	0/+6

T/R: Transmit/Receive
+: Gain
–: Loss

C

DATA

- Y=19

(1) 00-63: Trunk Route No.
(2) 0-3 : Programmable PAD
(See CM42 ☞ *Page 133*)
4-7◀: Fixed PAD
(See left column.)

C

CM35

DESCRIPTION	DATA

[North America/μ-law countries/A-law countries]

CONNECTION PATTERNS (A-B)	PAD DATA OF B TRUNK [dB]			
	DATA =4 (T/R)	DATA =5 (T/R)	DATA =6 (T/R)	DATA =7 (T/R)
Station-ODT (4W E&M)			–3/–3	–3/–3
Tone-ODT (4W E&M)			0/0	0/0
COT/DID/LDT/ODT (2W E&M)/IPT-ODT (4W E&M)			–2/–2	0/0
ODT (4W E&M)-ODT (4W E&M)			0/0	0/0
DTI/BRT/PRT/CCT/Virtual IPT-ODT (4W E&M)			0/0	0/0
Station-LDT/ODT (2W E&M)			–3/–3	0/0
Tone-LDT/ODT (2W E&M)			0/0	0/0
COT/DID/LDT/ODT (2W E&M)/IPT-LDT/ODT (2W E&M)			0/0	0/0
ODT (4W E&M)-LDT/ODT (2W E&M)			0/0	0/0
DTI/BRT/PRT/CCT/Virtual IPT-LDT/ODT (2W E&M)			0/0	0/0

T/R: Transmit/Receive
+: Gain
–: Loss

Provide the voice channel route with No. 7 CCIS facilities.

- Y=90

(1) 00-63: Trunk Route No.
(2) 0: No. 7 CCIS

CM30

Assign a Circuit Identification Code (CIC) to each trunk number used for voice channels.

INITIAL

- Y=35

(1) 000-254: Trunk No.
(2) 001-127: CIC

D

D

CM42

DESCRIPTION	DATA
When using the programmable PAD (CM35 Y=19, 2nd Data=0-3), assign the PAD data.	(1) 50-65: See tables below. (2) 00-15: See tables below.

PATTERNS / 1ST DATA	PAD DATA PATTERNS				CONNECTING PATTERNS (A-B)
	CM35 Y=19 2ND DATA=0	CM35 Y=19 2ND DATA=1	CM35 Y=19 2ND DATA=2	CM35 Y=19 2ND DATA=3	
50 ≀ 65	50	54	58	62	STA-ODT/LDT
	51	55	59	63	TONE-ODT/LDT
	52	56	60	64	COT/DID/LDT/ ODT (2W E&M)/IPT-ODT/LDT
	53	57	61	65	ODT (4W E&M)/DTI/ BRT/PRT/CCT/Virtual IPT/CFTC-ODT/LDT

[Australia/New Zealand]

PATTERNS / 2ND DATA		PAD DATA OF B TRUNK (T/R) [dB]	
		ODT	LDT
00 ≀ 15	00	0/0	0/+6
	01	–3/–3	0/+6
	02	–8/–8	–6/+6
	03	–6/–6	0/0
	04	0/0	0/+6
	05	0/–6	0/0
	06	–6/0	0/0
	07	0/0	0/0
	08 ≀ 15	Not Used	

T/R: Transmit/Receive
+: Gain
–: Loss

E

E

CM42

DESCRIPTION	DATA

[North America/μ-law countries]

2ND DATA \ PATTERNS		PAD DATA OF B TRUNK (T/R) [dB]		
		ODT (4W E&M)	ODT (2W E&M)	LDT
00 ≀ 15	00	0/0	0/0	0/0
	01	0/0	0/0	0/0
	02	0/0	0/0	0/0
	03	–2/–2	–3/–3	–3/–3
	04	–3/–3	0/0	0/0
	05	–12/–11	–6/–6	–6/–6
	06	–16/–11	0/0	0/+5
	07	–6/–6	0/0	+3/+3
	08 ≀ 15	Not Used		

T/R: Transmit/Receive
+: Gain
–: Loss

[A-law countries]

2ND DATA \ PATTERNS		PAD DATA OF B TRUNK (T/R) [dB]		
		ODT (4W E&M)	ODT (2W E&M)	LDT
00 ≀ 15	00	0/0	0/0	0/0
	01	0/0	0/0	0/0
	02	0/0	0/0	0/0
	03	–2/–2	–3/–3	–3/–3
	04	–3/–3	0/0	0/0
	05	–12/–11	–6/–6	–6/–6
	06	–16/–11	0/0	0/+5
	07	–6/–6	0/0	+3/+3
	08 ≀ 15	Not Used		

T/R: Transmit/Receive
+: Gain
–: Loss

END

CCH Assignment

Follow the same programming procedure as shown in "CCH Assignment" in DIGITAL CCIS PROGRAMMING. ☞ *Page 103*

Note that the assignment of trunk number by CMA7 Y=00 is not required when the CCH is connected with a dedicated line. CMA7 Y=00 is required when the common signaling channel is connected via an LDT/ODT card.

Numbering Plan Assignment

Follow the same programming procedure as shown in "Numbering Plan Assignment" in DIGITAL CCIS PROGRAMMING. ☞ *Page 105*

Inter-Tenant Connection Assignment

Follow the same programming procedure as shown in "Inter-Tenant Connection Assignment" in DIGITAL CCIS PROGRAMMING. ☞ *Page 111*

Route Advance Assignment

Follow the same programming procedure as shown in "Route Advance Assignment" in DIGITAL CCIS PROGRAMMING. ☞ *Page 124*

CCIS FEATURE PROGRAMMING

This section explains the feature programming of each CCIS service feature.

The following features require no programming.

- Attendant Controlled Conference-CCIS
- Call Processing Indication-CCIS
- Called Station Status Display-CCIS
- Digital Display-Station-CCIS
- Digital Display-Trunk-CCIS
- Elapsed Time Display-CCIS
- Hands-Free Answerback-CCIS
- Individual Attendant Access-CCIS
- Service Display-CCIS
- Station-Controlled Conference-CCIS
- Station-to-Station Calling-Operator Assistance-CCIS

ATTENDANT CAMP-ON WITH TONE INDICATION-CCIS

General Description

This feature permits the Attendant, when the desired station at another switching office is busy, to hold an incoming call in a special waiting mode. A distinctive Camp-On tone is sent to the busy station when the Attendant sets Camp-On. When that station becomes idle, it is automatically rung and connected to the waiting trunk party.

Station Application

Attendant Console

Programming

START	DESCRIPTION	DATA
CM08	Specify the Camp-On Tone sent to busy station.	(1) 068 (2) 0 : Camp on Tone is sent out only once. 1◀: Camp on Tone is repeated at an interval of 4 seconds
CM41	Specify the recall timing of Camp-On.	• Y=0 (1) 00 (2) 01-14: 2.4-33.6 seconds (2.4 second increments) 15-24: 38.4-124.8 seconds (9.6 second increments) If no data is set, the default setting is 31.2-33.6 seconds.
END		

To reenter a Camped-On trunk from an Attendant before Automatic Recall:

START	DESCRIPTION	DATA
CM20	Assign the access code for Call Pickup-Direct.	• Y=0-3 Numbering Plan Group 0-3 (1) X-XXXX: Access Code (2) A021: Call Pickup-Direct
END		

To display the busy station number and name on an Attendant Console when reentering a Camped-On trunk by pressing the loop key:

START	DESCRIPTION	DATA
CM08	Provide the Attendant Console with the busy station number/name display when reentering a Camped-On trunk.	(1) 441 (2) 0 : Available 1◀: Not available
END		

Operating Procedure

To activate an Attendant Camp-On with Tone Indication-CCIS from an Attendant Console:

1. Dial the desired station number at another switching office and receive busy tone.
2. Press the **RELEASE** key.
3. A Camp-On tone is sent to the busy station and Camp-On is set.

To cancel an Attendant Camp-On with Tone Indication-CCIS from an Attendant Console:

1. Press the **LOOP** key corresponding to the held call and connect to the waiting trunk party.
2. Press the **DEST** key and receive busy tone.
3. Press the **CANCL** key.

AUTOMATIC RECALL-CCIS

General Description

This feature works as a time reminder. When an Attendant-handled call through CCIS remains on hold, camped-on, or ringing unanswered for a fixed interval, the Attendant is automatically alerted.

Station Application

Attendant Console

Programming

START	DESCRIPTION	DATA
CM41	Specify the timing for Automatic Recall. If no data is set, the following timing will be applied: Attendant Recall – 31.2-33.6 seconds Non Exclusive Hold – 60-64 seconds Exclusive Hold – 236-240 seconds Transfer Recall – 24-28 seconds Attendant Hold Recall – 31.2-33.6 seconds Camp-On Recall – 24-32 seconds	• Y=0 (1) 00 : Attendant Recall (2) 01-14: 2.4-33.6 seconds (2.4 second increments) 15-24: 38.4-124.8 seconds (9.6 second increments) (1) 11 : Attendant Hold Recall (2) 01-14: 2.4-33.6 seconds (2.4 second increments) 15-24: 38.4-124.8 seconds (9.6 second increments)
END		

Operating Procedure

No manual operation is required.

BROKERAGE-HOT LINE-CCIS

General Description

This feature provides a ringdown connection between two stations, each using a D^{term}, in different offices in the CCIS network.

Programming

START	DESCRIPTION	DATA
CM11	Assign the Virtual Line station number to the required Virtual LEN.	(1) 000-255: Virtual LEN (2) X-XXXXXXXX: Virtual Line station No.
CM12	Assign the Hot Line to the Virtual Line stations assigned by CM11.	• Y=03 (1) X-XXXXXXXX: Virtual Line station No. (2) 04: Hot Line
CM71	Allocate the memory area for the Hot Line-Outside call. For example, to assign the 10 Hot Line-Outside calls into No. 100 through No. 109 Memory Slots, 2nd data is "100010". Abbreviated Codes are automatically assigned as shown below: Memory Slot 100 — Abbrev. Code 00 〜 — 〜 Memory Slot 109 — 09	(1) 65: For Hot Line-Outside (2) XXX YYY XXX: 000-299 (Starting Memory Slot No. in blocks) YYY: 001-300 (No. of Memory Slots to be assigned in blocks)
CM72	Assign the destination party's number and name to each Memory Slot number.	• Y=0 (1) 000-299: Memory Slot No. (2) XXXX , YY...Y XXXX: Access Code (Maximum 4 digits) , : Separator Mark YY...Y: Calling Party's No. (Maximum 26 digits) • Y=1 (1) 000-299: Memory Slot No. (2) XXX...X: Station Name Character Code (Maximum 32 digits: 16 characters) See CM77 in the Command Manual.
A		

	DESCRIPTION	DATA
A		
CM72		• Y=2 (1) 000-299: Memory Slot No. (2) XXX...X: Station Name Character by MAT/CAT (Maximum 16 characters)
CM52	Assign the Hot Line pairs. Bidirectional Hot Line should be assigned as follows: Hot Line Pair No. / Calling Side / Called Side 00 / Station A / Station B 01 / Station B / Station A **NOTE 1:** *Up to 100 Hot Line stations (50 pair) can be set.*	• Y=00-99 Hot Line pair No. (1) 0: Calling Station 1: Called Station (2) Station No. E00X X: 0-7: ATTCON No. assigned by CM06 Y=01 CXX (For Called Outside party) XX: Abbreviated Code given by CM71 **NOTE 2:** *Do not assign station number with first digit "0".*
CM90	Assign the Virtual Line station and **RELEASE** keys on the D^{term}.	• Y=00 (1) My Line No. + [,] + Key No. (2) X-XXXXXXXX: Virtual Line station No. F1020: Release key
END		

Operating Procedure

To access a Brokerage-Hot Line-CCIS from a D^{term}:

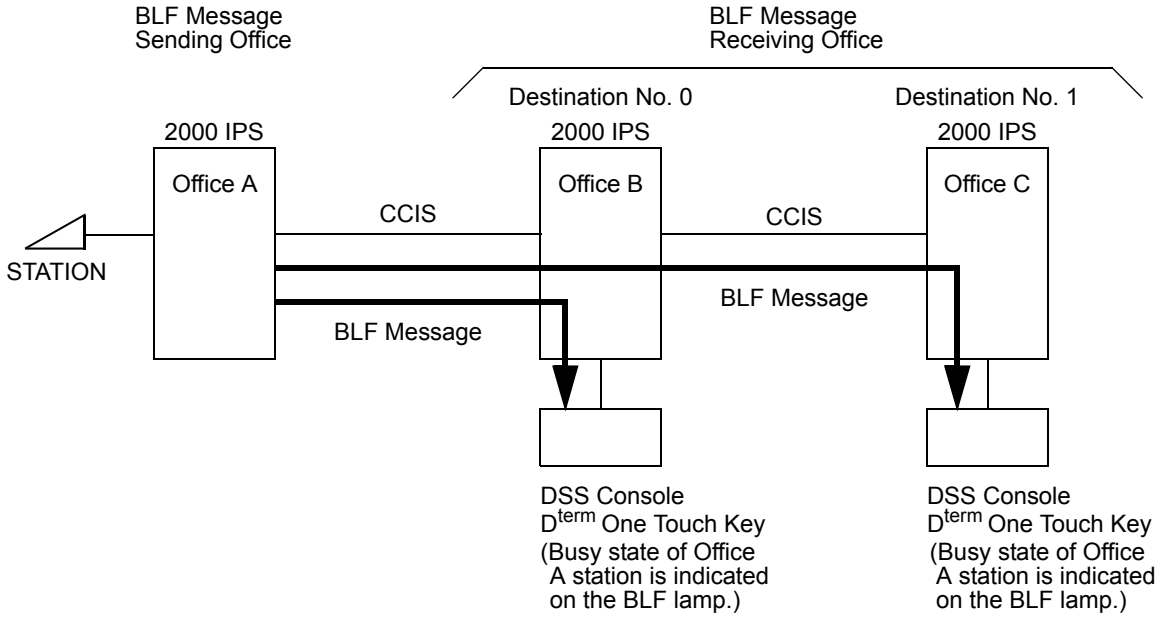
1. Lift the handset or press the **Speaker** key.
2. Press the line/feature key associated with the preassigned station.
   The destination station is automatically dialed, ring back tone is heard and the destination station answers.
3. After completion of conversation, hang up or press the **Speaker** key.

To make another Brokerage-Hot Line-CCIS call immediately, press another line/feature key without going on hook and off hook.

BUSY LAMP FIELD (BLF)-CCIS

General Description

This feature provides a busy status indication of the predetermined stations within the CCIS network. The visual indication is provided with a red LED associated with each DSS key on the DSS/BLF Console and D^{term}. Pressing the DSS key allows a direct access to the preprogrammed station within the CCIS network.



Station Application

All D^{term}s with DSS keys and the associated LEDs, and DSS/BLF Console

Programming

- For BLF message sending office (Office A)

START	DESCRIPTION	DATA
CMA8	Assign a Destination Point Code of each office within the CCIS network, to the CCH number.	(1) 00001-16367: DPC (2) 0-7: CCH No.
CMA7	Provide Busy Lamp Field (BLF)-CCIS to each CCH number.	• Y=30 (1) 0-7: CCH No. (2) 0: To provide
CM12	Specify the sending BLF message via CCIS for each station. A maximum of 8 destinations (Destination No. 0-7) can be set for each station.	• Y=30-37 Destination No. 0-7 (1) X-XXXXXXXX: Station No. (2) 0 : To send 1◀: Not sent
CM50	Register the DPCs and their destination number for sending BLF message via CCIS. A maximum of 8 destinations (Destination No. 0-7) can be set per system. When the CCIS network adopts Open Numbering system, assign the access code and office number of own office to be added to the station number for sending the BLF message.	• Y=08 (1) 0-7: Destination No. 0-7 assigned by CM12 Y=30-37 (2) 00001-16367: DPC • Y=07 (1) 0 (2) X-XXXX: Access Code + Originating Office No. X: 0-9, A(*), B(#) **NOTE:** *Amount of Access Code + Office No. + Station No. must be no more than 8 digits.*
CM08	Specify whether the busy indication is provided on station base or extension base when the Sub Line or Trunk Line is used on the D^{term}. **NOTE:** *The BLF indication is as follows:*	(1) 269 (2) 0 : Station base 1◀: Extension base
END		

CM08>269	When Sub Line is used	When Trunk Line is used
0	My Line and Sub Line	My Line
1◀	Sub Line	Not provided

- For BLF message receiving office (Office B, C)

START	DESCRIPTION	DATA
CMA7	Provide Busy Lamp Field (BLF)-CCIS to each CCH number.	• Y=30 (1) 0-7: CCH No. (2) 0: To provide
CM11	To the virtual LEN, assign the station number of the other office which is accommodated to the BLF, as follows. For closed numbering system: station number For open numbering system: Access code + office number + station number	(1) 000-255: Virtual LEN (2) X-XXXXXXXX: Station No. **NOTE:** *Amount of Access Code + Office No. + Station No. must be no more than 8 digits.*
CM13	Specify whether the station number assigned by CM11 is own office station or the other office station	• Y=40 (1) X-XXXXXXXX: Station No. assigned by CM11 (2) 0 : Other office station 1◀: Own office station
CM97	Assign the station number of the other office to the keys on the DSS Console.	(1) DSS Console No. (00-31) + [,] + DSS Key No. (00-59) (2) X-XXXXXXXX: Station No. assigned by CM11
CM74	Assign the station number of the other office to the One Touch keys on the D^{term}.	• Y=0 (1) X YY Z X : 0-9: 1000-Slot Memory Block No. YY: 00-99: 10-Slot Memory Block No. Z : 0-9: Memory Parcel No. (2) X-XXXXXXXX: Station No. assigned by CM11
CM08	Specify whether the line lockout indication is available on the DSS Console.	(1) 274 (2) 0 : Available 1◀: Not available
END		

Operating Procedure

To initiate a call

1. Press the desired DSS key.
2. Lift the handset and converse when party answers.

   OR

1. Lift the handset and receive dial tone.
2. Press the desired DSS key.
3. Converse when party answers.

To display Busy or Line Lockout status

No manual operation is required.

BUSY VERIFICATION-CCIS

General Description

This feature permits an Attendant, via the Attendant Console on the 2400 IPX or the 2000 IPS, to interrupt a busy station's call at another switching office connected through CCIS.

Programming

START	DESCRIPTION	DATA
CM08	Provide the system with Busy Verification.	(1) 012 (2) 1◀: Available
	Specify whether the Warning Tone is sent to the connected parties. • Three burst tone **[Other than New Zealand]** • One burst tone **[New Zealand Only]**	(1) 046 (2) 0 : Not sent 1◀: To send
	Specify the Warning Tone sent to connected parties.	(1) 045 (2) 0 : Only once 1◀: Every 4 seconds
	Specify the Warning Tone sent to the outside party.	(1) 076 (2) 0 : Not sent 1◀: To send
CM12	Assign Service Restriction Class A to the required stations.	• Y=02 (1) X-XXXXXXXX: Station No. (2) XX ZZ XX: 00-15◀: Service Restriction Class A
CM15	Allow Busy Verification in Service Restriction Class A assigned by CM12 Y=02.	• Y=09 (1) 00-15: Service Restriction Class A assigned by CM12 Y=02 1◀: Allow
END		

Operating Procedure

To activate a Busy Verification-CCIS:

1. Press an idle **LOOP** key.
2. Dial the desired station number and receive busy tone.
3. Press the **BV** key.
4. A two-burst tone is sent to connected parties.
5. The Attendant may monitor or join the conversation.
6. Press the **RELEASE** key to disengage.

CALL BACK-CCIS

General Description

This feature provides inter-office Call Back. A station that has dialed a busy station at another office can set Call Back-CCIS by dialing a feature access code. When this feature has been set, the setting station will ring as soon as the busy station becomes available.

Programming

START	DESCRIPTION	DATA
CM12	Assign Service Restriction Class A to the required stations.	• Y=02 (1) X-XXXXXXXX: Station No. (2) XX ZZ XX: 00-15◀: Service Restriction Class A
CM15	Allow Call Back in Service Restriction Class A assigned by CM12 Y=02.	• Y=03 (1) 00-15: Service Restriction Class A assigned by CM12 Y=02 (2) 1◀: Allow
CM20	Assign the access code for Call Back.	• Y=0-3 Numbering Plan Group 0-3 (1) X-XXXX: Access Code For setting the different access code from OG Trunk Queuing: (2) A002: Call Back Set A003: Call Back Cancel For setting the same access code as OG Trunk Queuing: (2) A004: Set A005: Cancel
CM90	Assign a Call Back key to the D^{term}, if desired.	• Y=00 (1) My Line No. + , + Key No. (2) F0004: Trunk Queuing-Outgoing/Call Back
END		

Operating Procedure

Single-Line Telephone

To set Call Back-CCIS from a Single-Line Telephone:

1. Dial the desired station number and receive busy tone.
2. Press the hook switch and receive Feature Dial Tone.
3. Dial the Call Back feature access code and receive Service Set Tone.
4. Replace the handset.
5. When the busy station becomes idle, the setting station will ring.
6. When the setting station answers, the originally called station will ring.

To cancel Call Back-CCIS from a Single-Line Telephone:

1. Lift the handset and receive dial tone.
2. Dial the Call Back cancellation code and receive Service Set Tone.

D^{term}

To set Call Back-CCIS from a D^{term}:

1. Dial the desired station number and receive busy tone.
2. Press the Call Back feature key and receive Service Set Tone. The LCD shows:

Called station number

3. Replace the handset.
4. When the busy station becomes idle, the setting station will ring. The LCD shows:

Called station number
flashes at calling station

5. When the setting station answers, the originally called station will ring.
6. The originally called station's LCD shows:

Called station number

To cancel a Call Back-CCIS from a D^{term}:

1. Lift the handset or press the **Speaker** key and receive dial tone.
2. Press the Call Back feature key and receive Service Set Tone. The feature is canceled.
3. The LCD shows:

CALL FORWARDING-ALL CALLS-CCIS

MULTIPLE CALL FORWARDING-ALL CALLS-CCIS

General Description

This feature permits all calls destined for a particular station to be routed to another station or to an Attendant Console, in another office in the CCIS network, regardless of the status (busy or idle) of the called station. The activation and cancellation of this feature may be accomplished by either the station user or an Attendant.

Programming

START	DESCRIPTION	DATA
CMD12	Assign Service Restriction Class A to the required stations.	• Y=02 (1) X-XXXXXXXX: Station No. (2) XX ZZ XX: 00-15◀: Service Restriction Class A
CMD15	Allow Call Forwarding-All Calls and Call Forwarding-All Calls-Outside in Service Restriction Class A assigned by CM12 Y=02. **NOTE:** *When providing Call Forwarding-All Calls-Outside, set "1" (Allow) for Y=00, Y=26 of CM15.*	• Y=00 Call Forwarding-All Calls • Y=26 Call Forwarding-All Calls-Outside (1) 00-15: Service Restriction Class A assigned by CM12 Y=02 (2) 1◀: Allow
CMD20	Assign an access code for Call Forwarding-All Calls Set and Cancel respectively.	• Y=0-3 Numbering Plan Group 0-3 (1) X-XXXX: Access Code (2) A010: Call Forwarding-All Calls Set A011: Call Forwarding-All Calls Cancel
A		

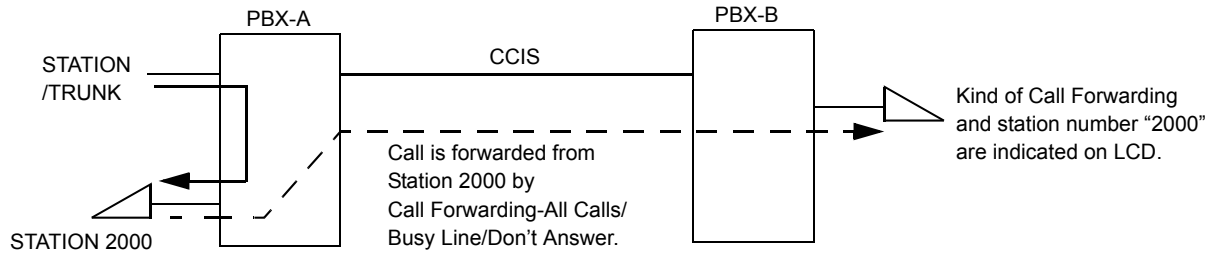
A

	DESCRIPTION	DATA
CM35	To apply this feature to incoming calls, assign trunk route combinations for Tandem connection.	(1) Y=05 (2) 00-63: Trunk Route No. 1◀: Release Signal arrives
CM36		• Y=0 (1) XX ZZ XX: 00-63 (Incoming Trunk Route) ZZ : 00-63 (Outgoing Trunk Route) (2) 0: Allow
CM08	Allow Call Forwarding-Outside-CCIS.	(1) 370 (2) 1◀: Allowed
	Specify the Call Forwarding-All Calls-Outside setting operation.	(1) 222 (2) 0 : The feature is set when the station goes on hook/when receiving Service Set Tone (ORT time out) 1◀:The feature is set when receiving Service Set Tone (ORT time out)
	Assign whether an extension can set the destination of Call Forwarding-All Calls-Outside by entering only a trunk access code.	(1) 386 (2) 0 : Restricted 1◀: Allowed
	Assign whether the system should check the trunk restriction class of the forwarded station during Call Forwarding-All Calls-Outside.	(1) 387 (2) 0 : Follow the trunk restriction class 1◀: No check

B

	DESCRIPTION	DATA
B		
CMA7	Allow or restrict Multiple Call Forwarding-All Calls/Busy Line/Don't Answer-CCIS for each CCH number.	• Y=29 (1) 0-7: CCH No. (2) 0 : Allowed 1◀: Restricted (Only once)
CM42	Specify the number of times of Multiple Call Forwarding-All Calls/Busy Line/Don't Answer-CCIS.	(1) 72 (2) 01-07: 1 time-7 times If no data is set, the default setting is 5 times.
CM65	Provide Call Forwarding feature with each tenant as per incoming call type.	• Y=23 Internal Call or ATT assisted Call • Y=24 C.O. Incoming Call • Y=25 Tie Line Incoming Call (1) 00-63: Tenant No. (2) 1◀: Call Forwarding
CM48	Select the Dial Tone on setting Call Forwarding-All Calls.	• Y=2 (1) 13: Dial Tone on Setting Call Forwarding-All Calls (2) 0 : Special Dial Tone 1◀: Dial Tone
CM90	Assign the Call Forwarding-All Calls key to a D^{term}, if desired.	• Y=00 (1) My Line No. + , + Key No. (2) F0010: Call Forwarding-All Calls Set/Cancel
END		

When a call is forwarded through CCIS by Call Forwarding-All Calls/-Busy Line/-Don't Answer, the kind of Call Forwarding and the station number which is setting the service can be indicated on the LCD of the forwarding destination D^{term}.



To provide this feature, do the following programming.

- On the forwarding side PBX (PBX-A)

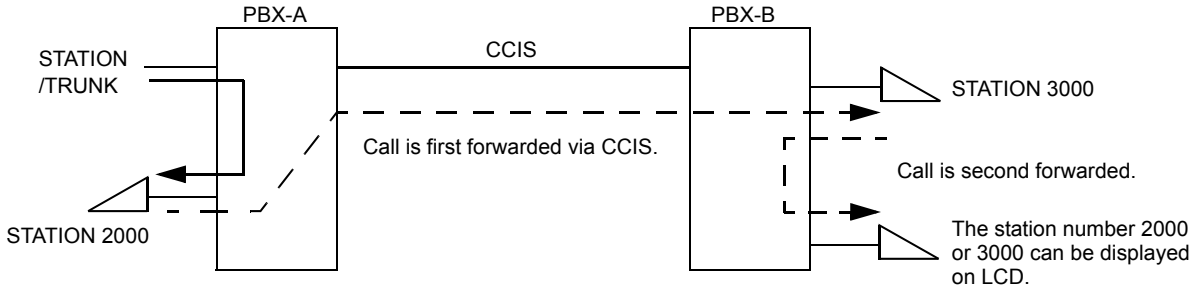
START	DESCRIPTION	DATA
CM08	Provide the system with sending of Call Forwarding station information through CCIS.	(1) 373 (2) 0: To provide
END		

- On the forwarded destination side PBX (PBX-B)

START	DESCRIPTION	DATA
CM12	Assign Service Restriction Class C to the required stations.	• Y=07 (1) X-XXXXXXXX: Station No. (2) XX: 00-15◀: Service Restriction Class C
CM15	Specify the LCD digits number of the D^{term} as 24 digits.	• Y=95 (1) 00-15: Service Restriction Class C assigned by CM12 Y=07 (2) 0: 24 digits
END		

When a call is forwarded twice, this feature enables to display the first forwarding station number via CCIS or the second forwarding station number of own office on LCD of the forwarding destination D^{term}.

[Series 3600 software required]



- On the forwarded destination side PBX (PBX-B)

START

DESCRIPTION	DATA
CM08	Specify to display the first forwarding station number via CCIS or the second forwarding station number of own office on LCD of forwarding destination D^{term}. **NOTE:** *In the case of not forwarding via CCIS, the number to be displayed on LCD is always forwarding number of own office, regardless of setting 2nd data=0.*	(1) 564 (2) 0 : The first forwarding number via CCIS 1◀: The second forwarding number of own office

END

Operating Procedure

Single Line Telephone

To set a Call Forwarding-All Calls-CCIS from a Single Line Telephone:

1. Lift the handset and receive dial tone.
2. Dial the Call Forwarding-All Calls feature access code and receive Feature Dial Tone.
3. Dial the outgoing trunk access code and receive a single burst of Service Set Tone. (This operation is required for a network using Open Numbering Plan.)
4. Dial the desired target station number and receive Service Set Tone.
5. Wait approximately five seconds and receive Service Set Tone.

To cancel a Call Forwarding-All Calls-CCIS from a Single Line Telephone:

1. Lift the handset and receive dial tone.
2. Dial the Call Forwarding-All Calls cancellation code and receive Service Set Tone.

Attendant Console

To set a Call Forwarding-All Calls-CCIS from an Attendant Console:

1. Press an idle **LOOP** key.
2. Dial the Call Forwarding-All Calls feature access code and receive Feature Dial Tone.
3. Dial the originating station number.
4. Dial the outgoing trunk access code and receive a single burst of Service Set Tone. (This operation is required for a network using Open Numbering Plan.)
5. Dial the desired target station number and receive Service Set Tone.
6. Press the **RELEASE** key.

To cancel a Call Forwarding-All Calls-CCIS from an Attendant Console:

1. Press an idle **LOOP** key.
2. Dial the Call Forwarding-All Calls cancellation code and receive Feature Dial Tone.
3. Dial the originating station number and receive Service Set Tone.
4. Press the **RELEASE** key.

NOTE: *The Attendant Console can set/cancel Call Forwarding-All Calls for stations within the local system in which the Attendant Console resides.*

D^term

To set a Call Forwarding-All Calls-CCIS from a D^term:

1. Lift the handset or press the **Speaker** key and receive dial tone.
2. Press the Call Forwarding-All Calls feature key and receive Feature Dial Tone.
3. Dial the outgoing trunk access code and receive a single burst of Service Set Tone. (This operation is required for a network using Open Numbering Plan.)
4. Dial the desired target station number and receive Service Set Tone.
5. Wait approximately five seconds and receive Service Set Tone. The LED lights and the LCD shows:

Forwarding station number

6. Replace the handset or press the **Speaker** key.

To cancel a Call Forwarding-All Calls-CCIS from a D^term:

1. Lift the handset or press the **Speaker** key and receive dial tone.
2. Press the Call Forwarding-All Calls feature key. The LCD shows:

3. Dial " ✳ " and receive Service Set Tone. The LED of the associated feature key will go out. The LCD shows:

4. Replace the handset or press the **Speaker** key.

CALL FORWARDING-BUSY LINE-CCIS

MULTIPLE CALL FORWARDING-BUSY LINE-CCIS

General Description

This feature permits a call to a busy station to be immediately forwarded to a predesignated station or to an Attendant Console in another office in the CCIS network.

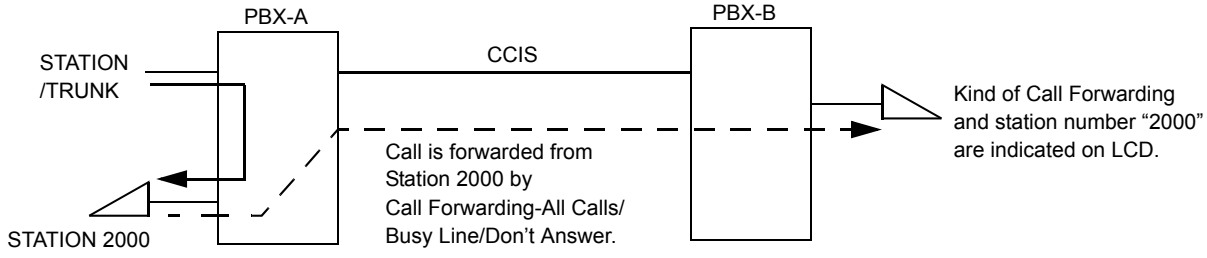
Programming

START	DESCRIPTION	DATA
CM12	Assign Service Restriction Class A to the required stations.	• Y=02 (1) X-XXXXXXXX: Station No. (2) XX ZZ XX: 00-15◀: Service Restriction Class A
CM15	Allow Call Forwarding-Busy Line and Call Forwarding-Busy Line-Outside in Service Restriction Class A assigned by CM12 Y=02. **NOTE:** *When providing Call Forwarding-Busy Line-Outside, set "1" (Allow) for Y=11, Y=28, Y=12, Y=29 of CM15.*	• Y=11 Call Forwarding-Busy Line • Y=28 Call Forwarding-Busy Line-Outside • Y=12 Call Forwarding-Busy Line/Don't Answer • Y=29 Call Forwarding-Busy Line-Outside/Don't Answer-Outside (1) 00-15: Service Restriction Class A assigned by CM12 Y=02 (2) 1◀: Allow
CM20	Assign an access code for Call Forwarding-Busy Line Set and Cancel respectively.	• Y=0-3 Numbering Plan Group 0-3 (1) X-XXXX: Access Code (2) A014: Call Forwarding-Busy Line Set A015: Call Forwarding-Busy Line Cancel For setting the same access code as Call Forwarding-Busy Line: (1) X-XXXX: Access Code (2) A012: Call Forwarding-Don't Answer/ Busy Line Set A013: Call Forwarding-Don't Answer/ Busy Line Cancel
A		

	DESCRIPTION	DATA
A		
CM35	To apply this feature to incoming calls, assign trunk route combinations for Tandem connection.	• Y=05 (1) 00-63: Trunk Route No. (2) 1◀: Release Signal arrives
CM36		• Y=0 (1) XX ZZ XX: 00-63 (Incoming Trunk Route) ZZ : 00-63 (Outgoing Trunk Route) (2) 0: Allow
CM08	Allow Call Forwarding-Outside-CCIS.	(1) 370 (2) 1◀: Allowed
	Specify the Call Forwarding-Busy Line-Outside setting operation.	(1) 222 (2) 0 : The feature is set when the station goes on hook/when receiving Service Set Tone (ORT time out) 1◀: The feature is set when receiving Service Set Tone (ORT time out)
	Allow or restrict the ability to set Call Forwarding-Busy Line for a station with Do Not Disturb set.	(1) 240 (2) 0 : Allowed 1◀: Restricted
	Assign whether an extension can set the destination of Call Forwarding-Busy Line-Outside by entering only a trunk access code.	(1) 386 (2) 0 : Restricted 1◀: Allowed
	Assign whether the system should check the trunk restriction class of the forwarded station during Call Forwarding-Busy Line-Outside.	(1) 387 (2) 0 : Follow the trunk restriction class 1◀: No check
B		

	DESCRIPTION	DATA
B		
CMA7	Allow or restrict Multiple Call Forwarding-All Calls/Busy Line/Don't Answer-CCIS for each CCH number.	• Y=29 (1) 0-7: CCH No. (2) 0 : Allowed 1◀: Restricted (Only once)
CM42	Specify the number of times of Multiple Call Forwarding-All Calls/Busy Line/Don't Answer-CCIS.	(1) 72 (2) 01-07: 1 time-7 times If no data is set, the default setting is 5 times.
CM65	Provide Call Forwarding feature with each tenant as per incoming call type.	• Y=23 Internal Call or ATT assisted call • Y=24 C.O. Incoming Call • Y=25 Tie Line Incoming Call (1) 00-63: Tenant No. (2) 1◀: Call Forwarding
CM90	Assign the Call Forwarding-Busy Line key to a D^{term}, if desired.	• Y=00 (1) My Line No. + , + Key No. (2) F0014: Call Forwarding-Busy Line Set/Cancel For setting the same key as Call Forwarding-Don't Answer: (1) My Line No. + , + Key No. (2) F0012: Call Forwarding-Don't Answer/Busy Line Set/Cancel
END		

When a call is forwarded through CCIS by Call Forwarding-All Calls/-Busy Line/-Don't Answer, the kind of Call Forwarding and the station number which is setting the service can be indicated on the LCD of the forwarding destination D^{term}.



To provide this feature, do the following programming.

- On the forwarding side PBX (PBX-A)

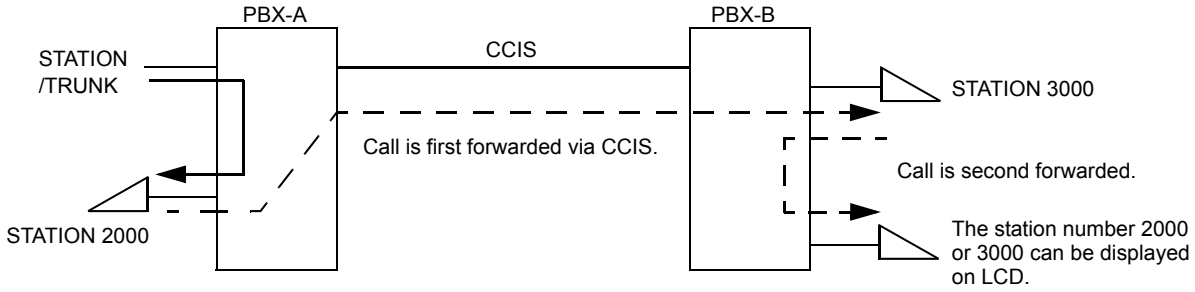
START	DESCRIPTION	DATA
CM08	Provide the system with sending of Call Forwarding station information through CCIS.	(1) 373 (2) 0: To provide
END		

- On the forwarded destination side PBX (PBX-B)

START	DESCRIPTION	DATA
CM12	Assign Service Restriction Class C to the required stations.	• Y=07 (1) X-XXXXXXXX: Station No. (2) XX: 00-15◀: Service Restriction Class C
CM15	Specify the LCD digits number of the D^{term} as 24 digits.	• Y=95 (1) 00-15: Service Restriction Class C assigned by CM12 Y=07 (2) 0: 24 digits
END		

When a call is forwarded twice, this feature enables to display the first forwarding station number via CCIS or the second forwarding station number of own office on LCD of the forwarding destination D^{term}.

[Series 3600 software required]



- On the forwarded destination side PBX (PBX-B)

START

CM08

DESCRIPTION	DATA
Specify to display the first forwarding station number via CCIS or the second forwarding station number of own office on LCD of forwarding destination D^{term}.	(1) 564 (2) 0 : The first forwarding number via CCIS 1◀: The second forwarding number of own office

NOTE: *In the case of not forwarding via CCIS, the number to be displayed on LCD is always forwarding number of own office, regardless of setting 2nd data=0.*

END

Operating Procedure

Single Line Telephone

To set a Call Forwarding-Busy Line-CCIS from a Single Line Telephone:

1. Lift the handset and receive dial tone.
2. Dial the Call Forwarding-Busy Line feature access code and receive Feature Dial Tone.
3. Dial the outgoing trunk access code and receive a single burst of Service Set Tone. (This operation is required for a network using Open Numbering Plan.)
4. Dial the desired target station number and receive Service Set Tone.
5. Wait approximately five seconds and receive Service Set Tone.

To cancel a Call Forwarding-Busy Line-CCIS from a Single Line Telephone:

1. Lift the handset and receive dial tone.
2. Dial the Call Forwarding-Busy Line cancellation code and receive Service Set Tone.

Attendant Console

To set a Call Forwarding-Busy Line-CCIS from an Attendant Console:

1. Press an idle **LOOP** key.
2. Dial the Call Forwarding-Busy Line feature access code and receive Feature Dial Tone.
3. Dial the originating station number.
4. Dial the outgoing trunk access code and receive a single burst of Service Set Tone. (This operation is required for a network using Open Numbering Plan.)
5. Dial the desired target station number and receive Service Set Tone.
6. Press the **RELEASE** key.

To cancel a Call Forwarding-Busy Line-CCIS from an Attendant Console:

1. Press an idle **LOOP** key.
2. Dial the Call Forwarding-Busy Line cancellation code and receive Feature Dial Tone.
3. Dial the originating station number and receive Service Set Tone.

NOTE: *The Attendant Console can only set/cancel Call Forwarding-Busy Line for stations within the local system in which the Attendant Console resides.*

D^term

To set a Call Forwarding-Busy Line-CCIS from a D^term:

1. Lift the handset or press the **Speaker** key and receive dial tone.
2. Press the Call Forwarding-Busy Line feature key and receive Feature Dial Tone.
3. Dial the outgoing trunk access code and receive a single burst of Service Set Tone. (This operation is required for a network using Open Numbering Plan.)
4. Dial the desired target station number and receive Service Set Tone.
5. Wait approximately five seconds and receive Service Set Tone. The LED lights and the LCD shows:

SET XXXX
(TIME DISPLAY)

Forwarding station number

6. Replace the handset or press the **Speaker** key.

To cancel Call Forwarding-Busy Line-CCIS from a D^term:

1. Lift the handset or press the **Speaker** key and receive dial tone.
2. Press the Call Forwarding-Busy Line feature key. The LCD shows:

CF BUSY YYY
(TIME DISPLAY)

3. Dial " ✳ " and receive Service Set Tone. The LED of the associated feature key will go out. The LCD shows:

CANCEL
(TIME DISPLAY)

4. Replace the handset or press the **Speaker** key.

CALL FORWARDING-DON'T ANSWER-CCIS

MULTIPLE CALL FORWARDING-DON'T ANSWER-CCIS

General Description

This feature permits a call to an unanswered station to be forwarded to a predesignated station or to an Attendant Console in another office, when the called station does not answer after a predetermined time period.

Programming

START	DESCRIPTION	DATA
CM12	Assign Service Restriction Class A to the required stations.	• Y=02 (1) X-XXXXXXXX: Station No. (2) XX ZZ XX: 00-15◀: Service Restriction Class A
CM15	Allow Call Forwarding-Don't Answer and Call Forwarding-Don't Answer-Outside in Service Restriction Class A assigned by CM12 Y=02. When providing Call Forwarding-Don't Answer-Outside, set "1" (Allow) for Y=10, Y=27of CM15.	• Y=10 Call Forwarding-Don't Answer • Y=27 Call Forwarding-Don't Answer-Outside • Y=12 Call Forwarding-Busy Line/Don't Answer • Y=29 Call Forwarding-Busy Line-Outside/Don't Answer-Outside (1) 00-15: Service Restriction Class A assigned by CM12 Y=02 (2) 1◀: Allow
CM20	Assign an access code for Call Forwarding-Don't Answer Set and Cancel respectively.	• Y=0-3 Numbering Plan Group 0-3 (1) X-XXXX: Access Code (2) A016: Call Forwarding-Don't Answer Set A017: Call Forwarding-Don't Answer Cancel For setting the same access code as Call Forwarding-Busy Line: (1) X-XXXX: Access Code (2) A012: Call Forwarding-Don't Answer/ Busy Line Set A013: Call Forwarding-Don't Answer/ Busy Line Cancel
A		

A

	DESCRIPTION	DATA
CM35	To apply this feature to incoming calls, set the trunk route combinations for Tandem connection.	• Y=05 (1) 00-63: Trunk Route No. (2) 1◀: Release Signal arrives
CM36		• Y=0 (1) XX ZZ XX: 00-63 (Incoming Trunk Route) ZZ : 00-63 (Outgoing Trunk Route) (2) 0: Allow
CM08	Allow Call Forwarding-Outside-CCIS.	(1) 370 (2) 1◀: Allowed
	Specify the Call Forwarding-Don't Answer-Outside setting operation.	(1) 222 (2) 0 : The feature is set when the station goes on hook/when receiving Service Set Tone (ORT time out) 1◀: The feature is set when receiving Service Set Tone (ORT time out)
	Specify the system operation when terminating a DID call to station with Call Forwarding-Don't Answer set to a busy destination station. (Destination station has no call forwarding set.)	(1) 449 (2) 0 : Ring continuously at forwarded DID station 1◀: Drop to busy signal after time set by CM41 Y=0>01
	Assign whether an extension can set the destination of Call Forwarding-Don't Answer-Outside by entering only a trunk access code.	(1) 386 (2) 0 : Restricted 1◀: Allowed
	Assign whether the system should check the trunk restriction class of the forwarded station during Call Forwarding-Don't Answer-Outside.	(1) 387 (2) 0 : Follow the trunk restriction class 1◀: No check

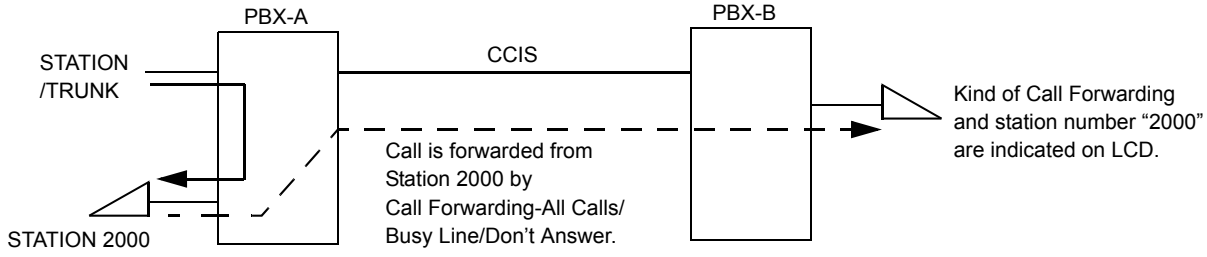
B

B

	DESCRIPTION	DATA
CMA7	Allow or restrict Multiple Call Forwarding-All Calls/Busy Line/Don't Answer-CCIS for each CCH number.	• Y=29 (1) 0-7: CCH No. (2) 0 : Allowed 1◀: Restricted (Only once)
CM42	Specify the number of times of Multiple Call Forwarding-All Calls/Busy Line/Don't Answer-CCIS.	(1) 72 (2) 01-07: 1 time-7 times If no data is set, the default setting is 5 times.
CM65	Provide Call Forwarding feature with each tenant as per incoming call type.	• Y=23 Internal Call or ATT assisted call • Y=24 C.O. Incoming Call • Y=25 Tie Line Incoming Call (1) 00-63: Tenant No. (2) 1◀: Call Forwarding
CM41	Specify the timing for Call Forwarding-Don't Answer for a trunk incoming call.	• Y=0 (1) 01 (2) 01-30: 4-120 seconds (4 second increments) If no data is set, the default setting is 32-36 seconds.
	Specify the timing for Call Forwarding-Don't Answer for an internal call or an assisted call.	• Y=0 (1) 15 (2) 01-30: 4-120 seconds (4 second increments) If no data is set, the default setting is 32-36 seconds.
CM90	Assign the Call Forwarding-Don't Answer key to a D^{term}, if desired.	• Y=00 (1) My Line No. + [,] + Key No. (2) F0016: Call Forwarding-Don't Answer Set/Cancel For setting the same key as Call Forwarding-Busy Line: (1) My Line No. + [,] + Key No. (2) F0012: Call Forwarding-Don't Answer/ Busy Line Set/Cancel

END

When a call is forwarded through CCIS by Call Forwarding-All Calls/-Busy Line/-Don't Answer, the kind of Call Forwarding and the station number which is setting the service can be indicated on the LCD of the forwarding destination D^{term}.



To provide this feature, do the following programming.

- On the forwarding side PBX (PBX-A)

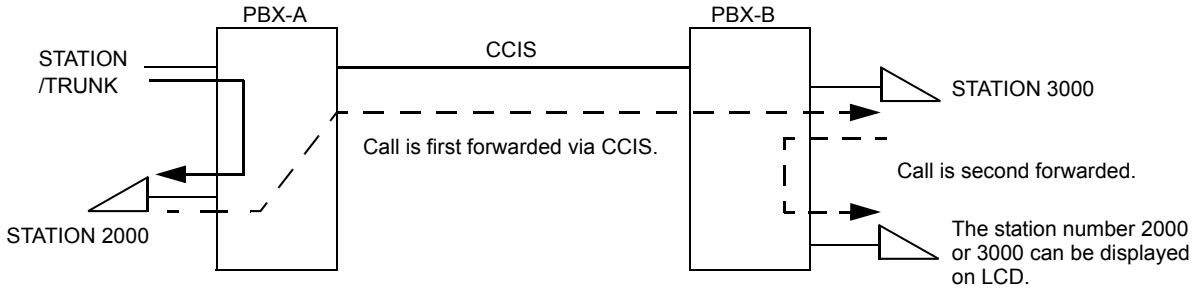
START	DESCRIPTION	DATA
CM08	Provide the system with sending of Call Forwarding station information through CCIS.	(1) 373 (2) 0: To provide
END		

- On the forwarded destination side PBX (PBX-B)

START	DESCRIPTION	DATA
CM12	Assign Service Restriction Class C to the required stations.	• Y=07 (1) X-XXXXXXXX: Station No. (2) XX: 00-15◀: Service Restriction Class C
CM15	Specify the LCD digits number of the D^{term} as 24 digits.	• Y=95 (1) 00-15: Service Restriction Class C assigned by CM12 Y=07 (2) 0: 24 digits
END		

When a call is forwarded twice, this feature enables to display the first forwarding station number via CCIS or the second forwarding station number of own office on LCD of the forwarding destination D^{term}.

[Series 3600 software required]



- On the forwarded destination side PBX (PBX-B)

START

CM08

END

DESCRIPTION	DATA
Specify to display the first forwarding station number via CCIS or the second forwarding station number of own office on LCD of forwarding destination D^{term}.	(1) 564 (2) 0 : The first forwarding number via CCIS 1◀: The second forwarding number of own office

NOTE: *In the case of not forwarding via CCIS, the number to be displayed on LCD is always forwarding number of own office, regardless of setting 2nd data=0.*

Operating Procedure

Single-Line Telephone

To set a Call Forwarding-Don't Answer-CCIS from a Single-Line Telephone:

1. Lift the handset and receive dial tone.
2. Dial the Call Forwarding-Don't Answer feature access code and receive Feature Dial Tone.
3. Dial the outgoing trunk access code and receive a single burst of Service Set Tone. (This operation is required for a network using Open Numbering Plan.)
4. Dial the desired target station number and receive Service Set Tone.
5. Wait approximately five seconds and receive Service Set Tone.

To cancel a Call Forwarding-Don't Answer-CCIS from a Single-Line Telephone:

1. Lift the handset and receive dial tone.
2. Dial Call Forwarding-Don't Answer cancellation code and receive Service Set Tone.

Attendant Console

To set a Call Forwarding-Don't Answer-CCIS from an Attendant Console:

1. Press an idle **LOOP** key.
2. Dial the Call Forwarding-Don't Answer feature access code and receive Feature Dial Tone.
3. Dial the originating station number.
4. Dial the outgoing trunk access code and receive a single burst of Service Set Tone. (This operation is required for a network using Open Numbering Plan.)
5. Dial the desired target station number and receive Service Set Tone.
6. Press the **RELEASE** key.

To cancel a Call Forwarding-Don't Answer-CCIS from an Attendant Console:

1. Press an idle **LOOP** key.
2. Dial the Call Forwarding-Don't answer cancellation code and receive Feature Dial Tone.
3. Dial the originating station number and receive Service Set Tone.
4. Press the **LOOP** key.

NOTE: *The Attendant Console can only set/cancel Call Forwarding-Don't Answer for stations within the local system in which the Attendant Console resides.*

D^term

To set a Call Forwarding-Don't Answer-CCIS from a D^term:

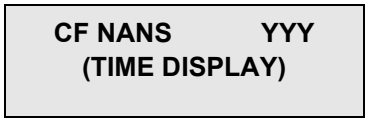
1. Lift the handset or press the **Speaker** key and receive dial tone.
2. Press the Call Forwarding-Don't Answer feature key and receive Feature Dial Tone.
3. Dial the outgoing trunk access code and receive a single burst of Service Set Tone. (This operation is required for a network using Open Numbering Plan.)
4. Dial the desired target station number and receive Service Set Tone.
5. Wait approximately five seconds and receive Service Set Tone. The LED lights. The LCD shows:

Forwarding station number

6. Replace the handset or press the **Speaker** key.

To cancel a Call Forwarding-Don't Answer-CCIS from a D^term:

1. Lift the handset or press the **Speaker** key and receive dial tone.
2. Press the Call Forwarding-Don't Answer feature key. The LCD shows:



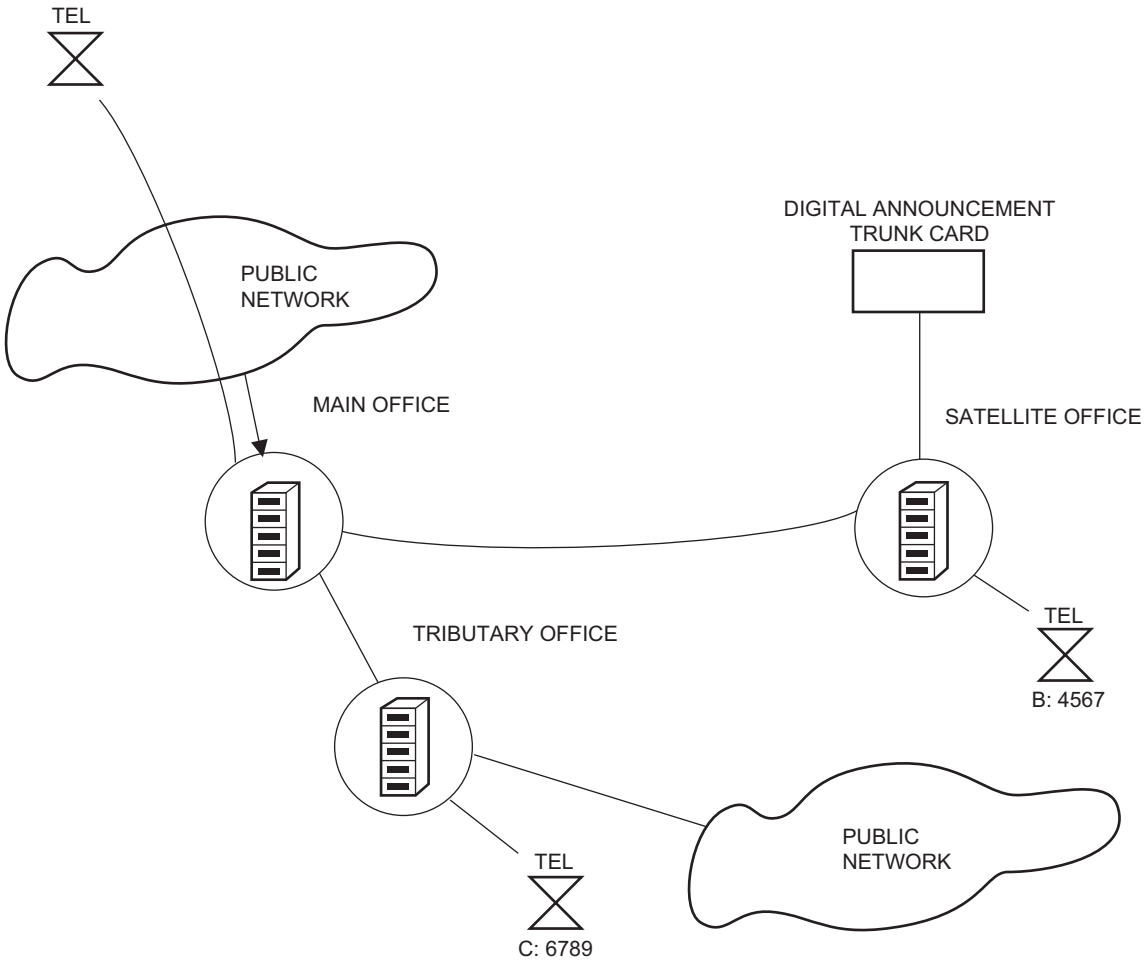
3. Dial " ⁎ " and receive Service Set Tone. The LED of the associated feature key will go out. The LCD shows:

4. Replace the handset or press the **Speaker** key.

CALL FORWARDING-INTERCEPT-CCIS

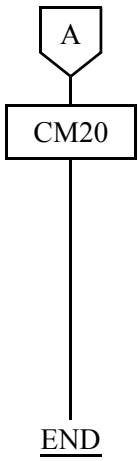
General Description

This feature allows calls to an inoperative number, through a CCIS trunk, to be intercepted and automatically routed to a recorded announcement informing the caller that an inoperative number was dialed and giving the Listed Directory Number for information.



Programming

START	DESCRIPTION	DATA
CM10	Assign the Digital Announcement Trunk card number to the required LEN. (For Intercept Announcement only.) **NOTE:** *The Digital Announcement Trunk card number must be assigned to the 1st LEN (Level 0), the 3rd LEN (Level 2), the 5th LEN (Level 4), and the 7th LEN (Level 6) of each LT slot.*	(1) 000-763: LEN (2) EB002-EB127: Digital Announcement Trunk Card No. For PIM0/PIM1: EB002-EB031 For PIM2/PIM3: EB032-EB063 For PIM4/PIM5: EB064-EB095 For PIM6/PIM7: EB096-EB127 **NOTE:** *EB000 and EB001 are dedicated to built-in Digital Announcement Trunk of the MP card.*
CM12	Assign Service Restriction Class A to the required stations. (For Intercept Announcement only.)	• Y=02 (1) X-XXXXXXX: Station No. (2) XX ZZ XX: 00-15◀: Service Restriction Class A
CM15	Allow Digital Announcement Trunk access in Service Restriction Class A assigned by CM12 Y=02. (For Intercept Announcement only.)	• Y=33 (1) 00-15: Service Restriction Class A assigned by CM12 Y=02 (2) 1◀: Allow
CM49	Set the function to each Digital Announcement Trunk accommodated into the system. (For Intercept Announcement only.)	• Y=00 (1) 000-001: Built-in DAT on MP card 002-127: Digital Announcement Trunk No. (EB002-EB127) (2) 0A00: Call Forwarding-Intercept Announcement
CM51	Assign a destination for the intercepted call for each tenant.	• Y=07 (1) 00-63: Tenant No. (2) EB000-EB127 : Digital Announcement Trunk Card No. X-XXXXXXXX: Station No. E000 : Attendant Console
A		



DESCRIPTION	DATA
To record, replay, or delete a massage, assign the appropriate Digital Announcement Trunk Card access codes. (For Intercept Announcement only.)	• Y=0-3 Numbering Plan Group 0-3 (1) X-XXXX: Access Code (2) A100: Digital Announcement Trunk access (Record) A101: Digital Announcement Trunk access (Replay) A102: Digital Announcement Trunk access (Delete)

Operating Procedure

No manual operation is required once this feature has been programmed in system data.

CALL FORWARDING-OVERRIDE-CCIS

General Description

This feature allows a target station user (Station A) to call a station (Station B) which has Call Forwarding-All Calls-CCIS set.

Programming

START	DESCRIPTION	DATA
CM08	Assign Call Forwarding-Override-CCIS.	(1) 371 (2) 0 : Not available (BT connection) 1◀: Available
END		

Operating Procedure

No manual operation is required.

CALL TRANSFER-ALL CALLS-CCIS

General Description

This feature allows a station user to transfer incoming or outgoing Central Office, intra-office and inter-office calls to another station in the CCIS network, without Attendant assistance.

Programming

START	DESCRIPTION	DATA
CM12	Assign Service Restriction Class A to the required stations.	• Y=02 (1) X-XXXXXXXX: Station No. (2) XX ZZ XX: 00-15◀: Service Restriction Class A
CM15	Allow Trunk to Trunk Transfer in Service Restriction Class A assigned by CM12 Y=02.	• Y=22 (1) 00-15: Service Restriction Class A assigned by CM12 Y=02 (2) 1◀: Allow
CM12	Assign Service Restriction Class C to the required stations.	• Y=07 (1) X-XXXXXXXX: Station No. (2) XX: 00-15◀: Service Restriction Class C
CM15	Allow switch hook flash capability during C.O. line connection in Service Restriction Class C assigned by CM12 Y=07.	• Y=90, 91 (1) 00-15: Service Restriction Class C assigned by CM12 Y=07 (2) 1◀: Allow
CM36	Specify the combination of Trunk Routes allowing a Trunk to Trunk (CCIS) Connection.	• Y=0 (1) XX ZZ XX: 00-63 (Incoming Trunk Route) ZZ : 00-63 (Outgoing Trunk Route) (2) 0 : Allow 1◀: Restricted
A		

	DESCRIPTION	DATA
A		
CM08	Specify Call Transfer from a station before a called station answers.	(1) 062 (2) 0 : Not available 1◀: Available
	When a station that has a C.O./Tie line call (via TRK-A) on Consultation Hold is talking with an another C.O./Tie line call (via TRK-B), specify the system operation after the C.O./Tie line call (via TRK-B) is completed. **[Series 3300 software required]**	(1) 534 (2) 0 : Return to the original call (via TRK-A) 1◀: ROT
END		

NOTE: *See also the programming for "Trunk to Trunk Connection" in the "Feature Programming Manual", when no release signal arrives from the incoming trunk route.*

Operating Procedure

To transfer a call in progress from a Single-Line Telephone:

1. Press the hookswitch momentarily and receive Feature Dial Tone.
2. Dial the third party and receive ringback tone.
3. Wait for the third party to answer and announce the transfer while keeping the first party on Consultation Hold-All Calls-CCIS. When the station user hangs up, the first and third parties will be automatically connected.

To transfer a call in progress from a D^{term}:

1. Press the **Transfer** key and receive Feature Dial Tone.
2. Dial the third party and receive ringback tone.
3. Wait for the third party to answer and announce the transfer while keeping the first party on Consultation Hold-All Calls-CCIS. When the station user hangs up, the first and third parties will be automatically connected.

CALL TRANSFER-ATTENDANT-CCIS

General Description

This feature permits a station user, while connected to a CCIS network call, to transfer a call to an Attendant Console via the CCIS network.

Programming

START	DESCRIPTION	DATA
CM12	Assign Service Restriction Class A to the required stations.	• Y=02 (1) X-XXXXXXXX: Station No. (2) XX ZZ XX: 00-15◀: Service Restriction Class A
CM15	Allow Trunk to Trunk Transfer in Service Restriction Class A assigned by CM12 Y=02.	• Y=22 (1) 00-15: Service Restriction Class A assigned by CM12 Y=02 (2) 1◀: Allow
CM12	Assign Service Restriction Class C to the required stations.	• Y=07 (1) X-XXXXXXXX: Station No. (2) XX: 00-15◀: Service Restriction Class C
CM15	Allow Switch hook flash capability during C.O. line connection in Service Restriction Class C assigned by CM12 Y=07.	• Y=90, 91 (1) 00-15: Service Restriction Class C assigned by CM12 Y=07 (2) 1◀: Allow
CM36	Specify the combination of Trunk Routes allowing a Trunk to Trunk (CCIS) Connection. The incoming Trunk Route must provide a release signal for this feature. (See CM35 Y=05 in the Command Manual)	• Y=0 (1) XX ZZ XX: 00-63 (Incoming Trunk Route) ZZ : 00-63 (Outgoing Trunk Route) (2) 0 : Allow 1◀: Restricted
CM08	Specify Call Transfer from a station before the called attendant answers.	(1) 063 (2) 0 : Available 1◀: Not available
END		

NOTE 1: *In the Inter-Tenant Connection Assignment, the Tenant number should be assigned as 01-63. 00 should not be used if connecting to a PBX.*

NOTE 2: *Refer to Numbering Plan Assignment and assign a dial code to call the attendant by the LCR feature.*

Operating Procedure

To transfer a call to an Attendant Console:

1. While engaged in a Central Office trunk call, press the hookswitch momentarily and receive Feature Dial Tone.
2. Dial the operator access code.
3. The **ATND** lamp on the Attendant Console flashes and the buzzer sounds. The station receives ring-back tone.

To answer from the Attendant Console:

1. Refer to the Attendant Console User's Guide.

   If the station wishes to return to the Central Office trunk call while the Attendant Console is being called:

1. Press the hookswitch momentarily. The **ATND** lamp on the Attendant Console goes out and the buzzer stops.
2. Ringback tone ceases and the station returns to the Central Office trunk call.

CALLING NAME DISPLAY-CCIS

General Description

This feature permits the station name of a calling or called party at another switching office, through the CCIS network, to be displayed either on a D^{term} or an Attendant Console.

Programming

START	DESCRIPTION	DATA
CM08	Provide the system with the Name Display service.	(1) 255: Name Display (2) 1◀: To provide
	Specify the number of digits sent to the CCIS network to 24 digits.	(1) 379: Number of dialed digits (2) 0: 24 digits
	Specify the time to go back to date and time display after the call is answered.	(1) 120 (2) 0 : 10 seconds later 1◀: 6 seconds later
	Specify the duration to display the name.	(1) 121 (2) 0 : Until call finished 1◀: As per CM08>120
	Specify the duration of displaying the name when the incoming call is answered/the select key for Calling Number Display and Calling Name Display or CID key is pressed. **[Series 3300 software required]**	(1) 537 (2) 0 : Until call is finished/key is pressed again 1◀: 6 seconds
	Specify the duration of displaying the destination information when the outgoing call is answered by the destination via CCIS. **[Series 3300 software required]**	(1) 538 (2) 0 : Until call is finished 1◀: 6 seconds
CM20	Assign the access code for station user name entry from an individual station.	• Y=0-3 Numbering Plan Group 0-3 (1) X-XXXX: Access Code (0-9, *, #) (2) A110
CM35	Assign a trunk name number to each trunk route.	• Y=03 (1) 00-63: Trunk Route No. (2) 00-14: Trunk Name No. 15 : Kind of trunk route assigned by CM35 Y=00 are displayed 16-63: Trunk Name No.
A		

	DESCRIPTION	DATA
A		
CMA7	Provide each CCH number with Name Display feature.	• Y=26 Name Display (1) 0-7: CCH No. 0-7 (2) 0: To provide
CM77	Enter the desired user's name to each station number with Character Codes or characters.	• Y=0 By Character Code (1) X-XXXXXXXX: Station No. assigned by CM10/CM14/Virtual station No. assigned by CM11 (2) 20-7F: Character Code Maximum 32 digits (See CM77 in the Command Manual) NONE◀: No data • Y=1 By character (1) X-XXXXXXXX: Station No. assigned by CM10/CM14/Virtual station No. assigned by CM11 (2) A-Z, 0-9 : Character Maximum 16 characters NONE◀: No data
	Assign the desired trunk name to each trunk route by CM77 Y=2 or Y=3.	• Y=2 By character Code (1) 00-14, 16-63: Trunk Name No. assigned by CM35 Y=03. (2) Character Code 20-7F: (See CM77 in the Command Manual) NONE◀: No data • Y=3 By character (1) 00-14, 16-63: Trunk Name No. assigned by CM35 Y=03. (2) A-Z, 0-9 : Character Code Maximum 4 characters NONE◀: No data
END		

NOTE 1: *The maximum number of stations that can be provided with user's name display is 384. The maximum number of characters per name is eight, including spaces.*

NOTE 2: *User's name can be assigned to Single Line Telephones, and cannot be assigned to the Attendant Console.*

Continued on next page

NOTE 3: *The trunk name display is provided on a trunk route basis. The maximum amount of characters in the trunk name display is four. And the maximum number of trunk routes assignable is 16.*

NOTE 4: *There are two way to change a name that currently programmed. By overwriting with a new name, or by inserting a blank space as the first character will cancel the existing name.*

Operating Procedure

No manual operation is required.

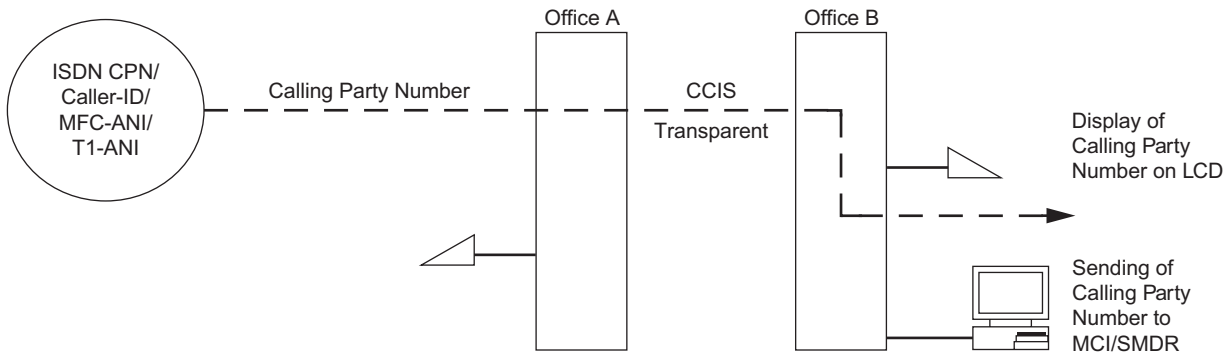
CALLING NUMBER DISPLAY-CCIS

General Description

This feature permits the number of a calling or called party at another switching office to be displayed either on a D^{term} or an Attendant Console.

To transfer the calling party number received from the network (ISDN CPN/Caller-ID/MFC or T1-ANI) transparently between the offices on the CCIS network, assign the following data.

The calling party number sent from the network over CCIS can be displayed on the LCD of the station of another office over CCIS, and can be sent to the SMDR. It can be sent to also the MCI, if the system provides the MCI with ANI.



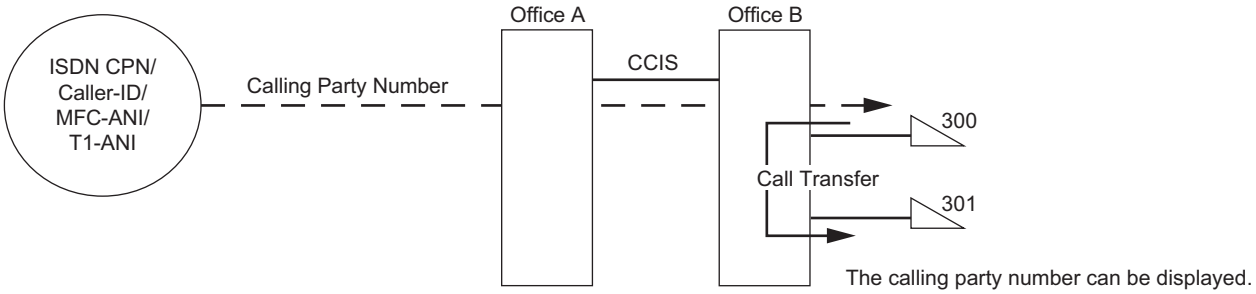
Programming

START	DESCRIPTION	DATA
CM08	Provide the system with the Name Display service for Office B.	(1) 255 (2) 1◀: To provide
	Provide the system with Caller ID Display feature for CCIS calls for Office A and B.	(1) 379 (2) 0: To provide
	Specify the duration of displaying the name when the incoming call is answered/the select key for Calling Number Display and Calling Name Display or CID key is pressed. **[Series 3300 software required]**	(1) 537 (2) 0 : Until call is finished/key is pressed again 1◀: 6 seconds
	Specify the duration of displaying the destination information when the outgoing call is answered by the destination via CCIS. **[Series 3300 software required]**	(1) 538 (2) 0 : Until call is finished 1◀: 6 seconds
A		

	DESCRIPTION	DATA
A		
CM15	Specify the number of digits on the LCD of the D^{term} for Office B. **NOTE:** *For the D^{term} 70/75 (Elite Terminal/ D^{term} E), assign "0". By this means, the information of transferred calls can be displayed on the LCD. This is available only for D^{term} 70/75. For the D^{term} 60/65 (E-Pro, Series III), assign "1".*	• Y=95 (1) 00-15: Service Restriction Class C (2) 0 : 24 digits 1◀: 16 digits
CMA7	Provide each CCH number with Name Display-CCIS feature for Office A and B.	• Y=26 (1) 0-7: CCH No. 0-7 (2) 0: To provide
	Provide the CCH number with Calling Party Information transferring service for Office A and B.	• Y=28 (1) 0-7: CCH No. 0-7 (2) 0: To provide
CM08	Provide Caller ID/CPN/ANI to Single Line Telephone from CCIS.	(1) 603 (2) 0: Provided
END		

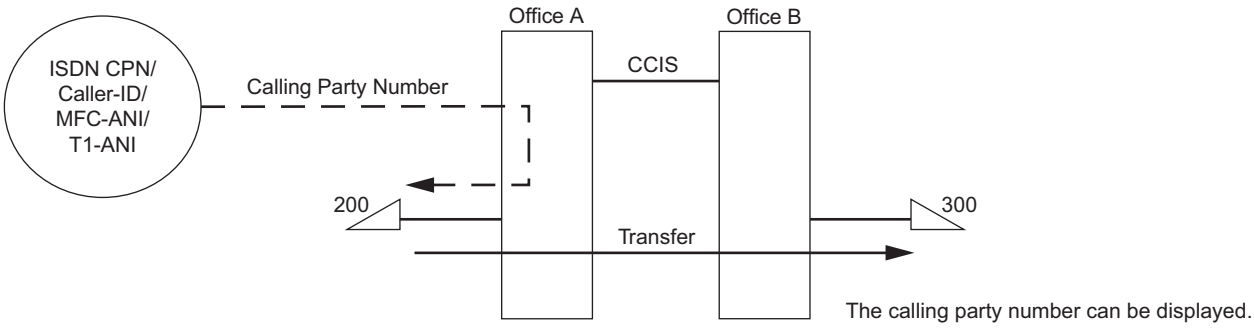
The conditions for transferring calling party number over CCIS related to the Call Transfer, Call Forwarding feature are described below.

When the Station 300 on the Office B answers the call from the network, and transfers the call to the Station 301 on the Office B, the calling party number will be displayed on the Station 301.

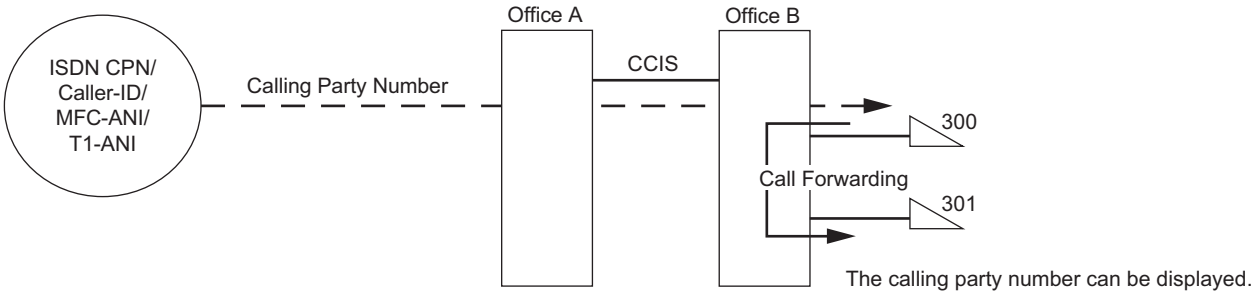


Continued on next page

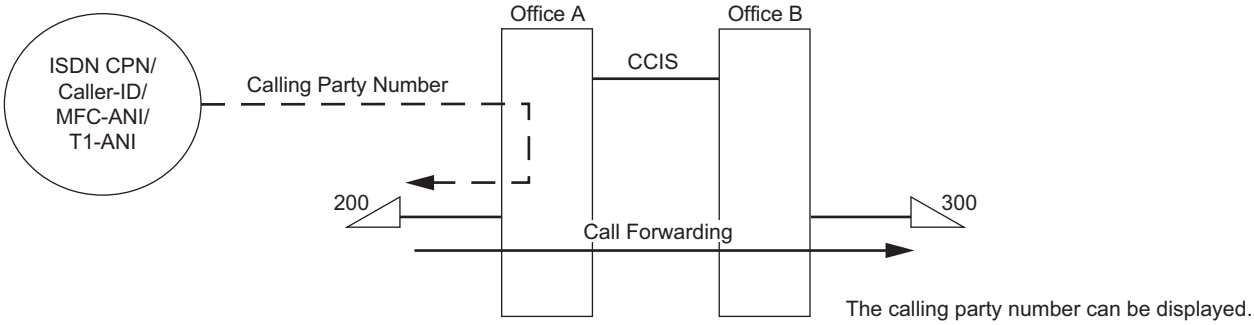
When the Station 200 on the Office A answers the call from the network, and transfers the call to the Station 300 on the Office B, the calling party number will be displayed on the Station 300.



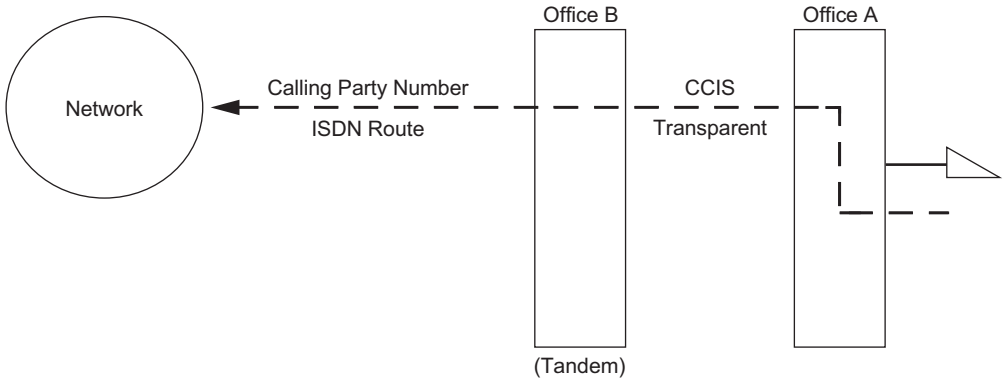
When the call from the network terminates to the Station 300 on the Office B and be forwarded to the Station 301 on the Office B, the calling party number will be displayed on the Station 301.



When the call from the network terminates to the Station 200 on the Office A and be forwarded to the Station 300 on Office B, the calling party number will be displayed on the Station 300.



To transmit a calling party number to the ISDN route over CCIS tandem connection:



- For Calling Party Side Office (Office A)

START	DESCRIPTION	DATA
CM12	Assign the calling party number sent to the network. "*", "#" are not available for the sending number.	• Y=12 (1) X-XXXXXXXX: Station No. (2) X-XXXX: Sending No.
	Assign the Local Office Code Table number.	• Y=13 (1) X-XXXXXXXX: Station No. (2) 00-14: Local Office Code Table No. 00-14
CM50	Assign the Local Office Code sent to the network. "*", "#" is not available for the sending number.	• Y=05 (1) 00-14: Local Office Code Table No. 00-14 (2) X-XXX...: Local Office Code (Maximum 12 digits)
A		

	DESCRIPTION	DATA
A		
CM20	Assign the LCR data for CCIS calls.	See "Least Cost Routing-3/6 digit" in the Feature Programming Manual.
CM81	This feature is available only when the calling party calls to CCIS route by the LCR.	
CM8A		
CM85		
CM35		
CM8A	Add the calling party number for ISDN calls via CCIS route.	• Y=5000-5255 LCR Pattern No. 000-255 (1) 165: Caller ID of outgoing call by CCIS (2) 0: To add
CM08	Provide the system with Caller ID Display feature for CCIS calls.	(1) 379 (2) 0: To provide
CMA7	Provide each CCH number with Name Display-CCIS feature.	• Y=26 (1) 0-7: CCH No. 0-7 (2) 0: To provide
	Provide the CCH number with Calling Party Information transferring service.	• Y=28 (1) 0-7: CCH No. 0-7 (2) 0: To provide
END		

- For Tandem Office (Office B)

START	DESCRIPTION	DATA
CM08	Provide the system with Caller ID Display feature for CCIS calls.	(1) 379 (2) 0: To provide
CMA7	Provide each CCH number with Name Display-CCIS feature.	• Y=26 (1) 0-7: CCH No. 0-7 (2) 0: To provide
	Provide the CCH number with Calling Party Information transferring service.	• Y=28 (1) 0-7: CCH No. 0-7 (2) 0: To provide
CM35	Provide the Calling Party Information transferring service to the ISDN route.	• Y=145 (1) 00-63: Trunk Route No. (2) 0: To provide
END		

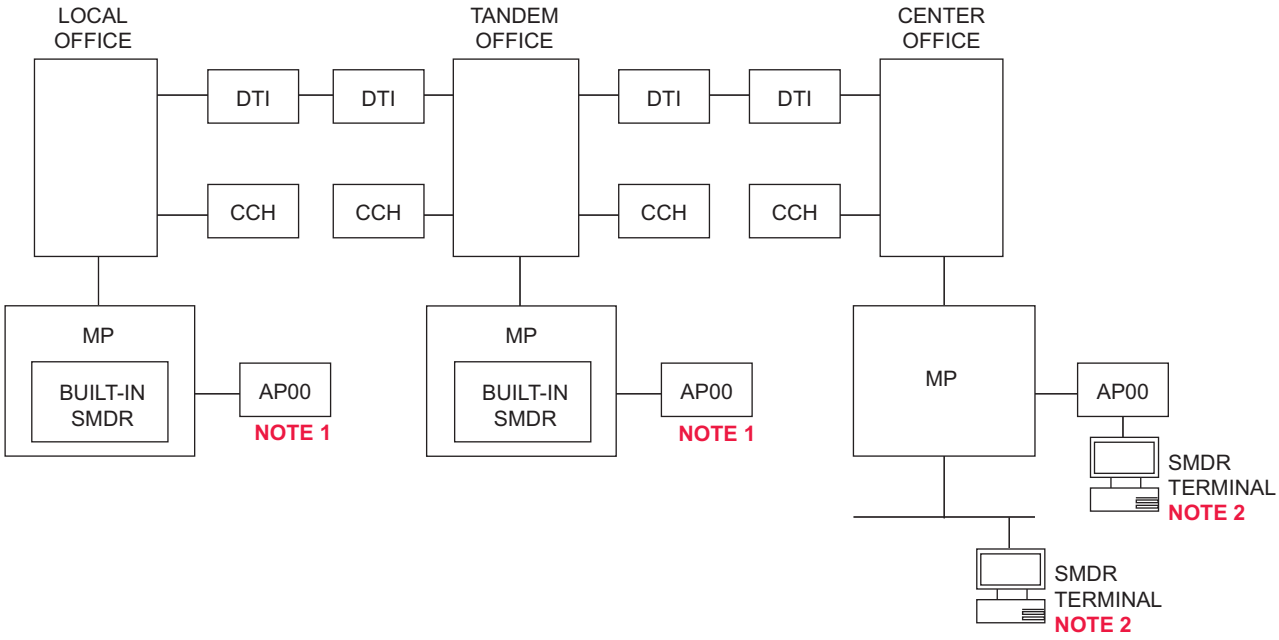
Operating Procedure

No manual operation is required.

CENTRALIZED BILLING-CCIS

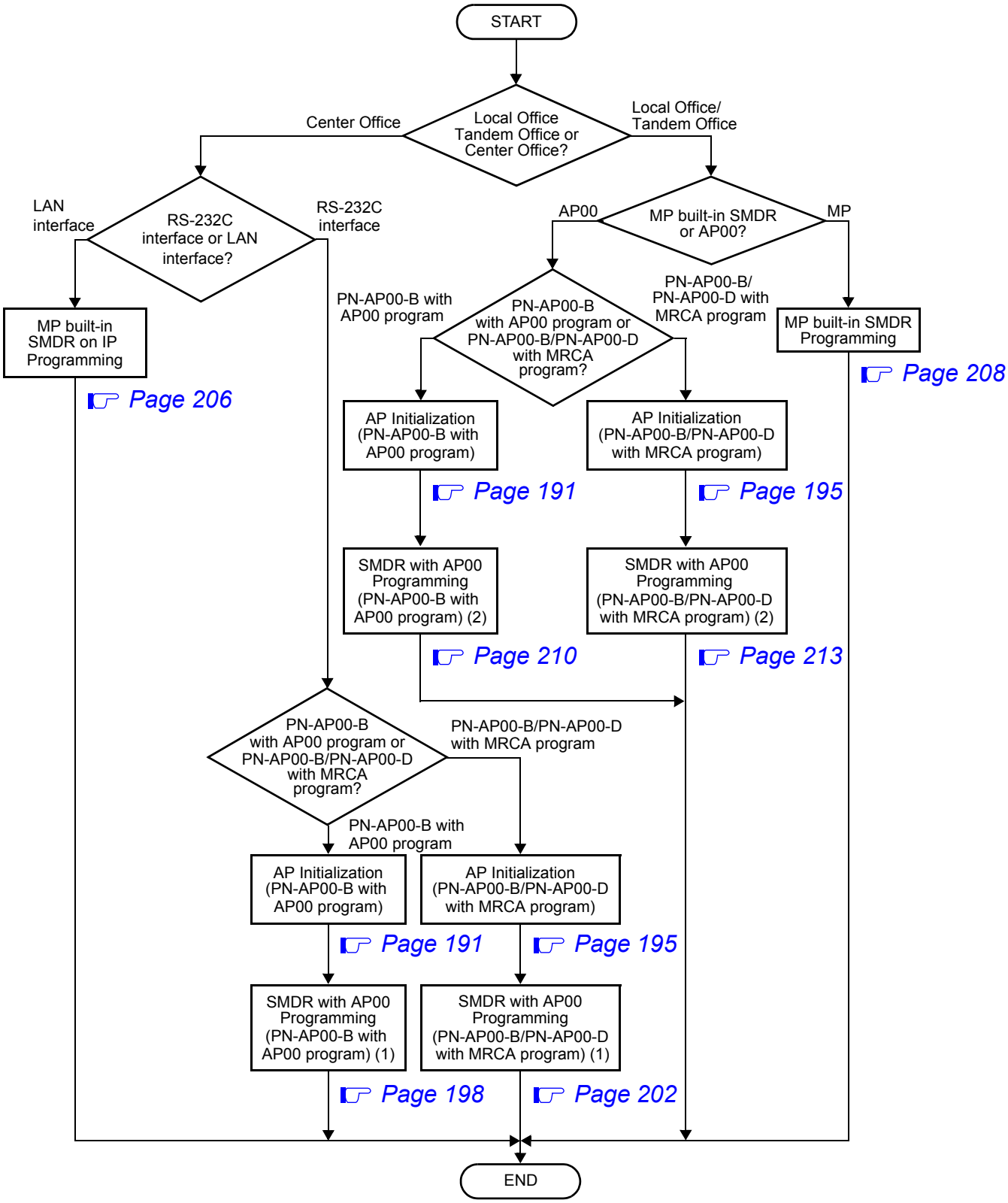
General Description

This feature is used to collect billing information from each office within the network and to direct it to the associated center office. Billing information is then forwarded to the central billing center via RS-232C interface or LAN interface.



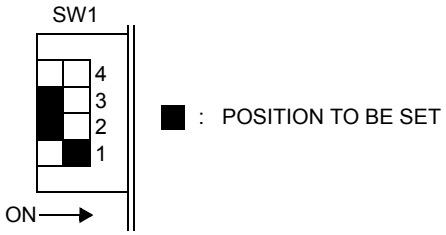
NOTE 1: *Either AP00 or MP built-in SMDR is used in local office/tandem office.*
NOTE 2: *Either SMDR with AP00 or MP built-in SMDR on IP is used in center office.*

Programming Summary



AP Initialization (PN-AP00-B with AP00 program)

This section explains the data assignment to make the AP active. If the system already applied the AP related feature, you can skip the data assignment explained on this section. The AP should have already activated if one of the following feature applied; Station Message Detail Recording (SMDR), Message Center Interface (MCI), D^{term} TIMS (Time Information Management System), Property Management System (PMS), or Hotel printer. You can distinguish whether the AP active or not by the RUN lamp indication. The RUN lamp flashes on green color when the AP is in active.
When installing the AP00 at first time, do the following AP initialization.

START	DESCRIPTION	DATA
CM05	Assign an AP number to the AP00 card. The AP number must match the SENSE switch setting on the AP00 card. (INITIAL) On the AP00 card, set SW1 switch as shown below.  	• Y=0 (1) 04-15, 20-31: AP No. (2) 04: AP00 card SW1-4 should be set as follows; ON : The AP No. is 04-15 OFF: The AP No. is 20-31
CMD101	Load the initial data into the AP00 card. (AP OFF LINE)	(1) 0000 (2) CCC
CMD001	Specify Local Office or Center Office for Centralized Billing-CCIS	(1) 179 (2) 0◀: Local Office 1 : Center Office
A		

A

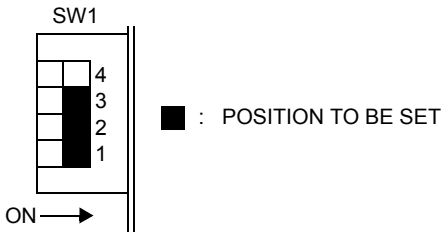
CMD003

DESCRIPTION	DATA
Allow the maximum number of Call Record sending to SMDR which is set to "5" by CMD001>80/100/120/140.	(1) 24 (2) 0◀ : No limitation 1-27000: 1-27000 calls
NOTE: *When the data is set to 1-27000, external alarm of memory overflow is available, if CM44, 2nd data=3002 is assigned.*	
Assign the maximum number of Call Record for a local office of Centralized Billing-CCIS.	(1) 26 (2) 0◀ : No record 1-27000: 1-27000 calls
NOTE: *When the data is set to 1-27000, external alarm of memory overflow is available, if CM44, 2nd data=3000 is assigned.*	
Assign the maximum number of Call Record sending to SMDR/PMS which is set to "4" by CMD001>80/100/120/140.	(1) 29 (2) 0◀ : No record 1-27000: 1-27000 calls
NOTE: *When the data is set to 1-27000, external alarm of memory overflow is available, if CM44, 2nd data=3001 is assigned.*	

B

B

CMD102

DESCRIPTION	DATA
Clear the billing memory. AP OFF LINE	(1) 0000 (2) CCC
On the AP00 card, set the SW1 switch as shown below:  	SW1-4 should be set as follows; ON : The AP No. is 04-15 OFF: The AP No. is 20-31

NOTE 1: *"DATA ERROR" will be indicated when CMD102>000: CCC is entered in case that the sum of all call records numbers set by second data of CMD003>23, 24, 25, 26, 28, 29, 30 exceeds the amount of call records number shown in* **NOTE 2** *below, or System Data All Clear by CMD101 is not executed.*

NOTE 2: *By entering the 1st data "0000", status of the EXPMEM card (PZ-M537) will be displayed as shown below.*

No EXPMEM on AP00 is provided		EXPMEM on AP00 is provided	
When CMD001>179 is set to 0 (Local Office of Centralized Billing-CCIS/Stand-alone)	When CMD001>179 is set to 1 (Center Office of Centralized Billing-CCIS)	When CMD001>179 is set to 0 (Local Office of Centralized Billing-CCIS/Stand-alone)	When CMD001>179 is set to 1 (Center Office of Centralized Billing-CCIS)
1600	800	27000: When CMD003>28 is set to 0 (Call Record for CIS is not provided) 26000: When CMD003>28 is set to other than 0 (Call Record for CIS is provided)	

C

C

CM12

DESCRIPTION	DATA
Specify to each station whether a station is controlled by AP00 card or not. **[Series 3400 software required]** AP00 INITIAL	• Y=49 (1) X-XXXX: Station No. (2) 0 : Not controlled 1 : Controlled 3◀: Only 504 stations are controlled in order of station registration (The stations after the 504th are not controlled)

NOTE 1: *In billing features using AP00 card, a maximum of 504 stations can be controlled by AP00 card. When 505 or more stations are accommodated in a system, you have to specify to each station whether a station is controlled by AP00 card or not.*

NOTE 2: *When billing features using AP00 card are provided in a system that has 505 or more stations, set the 2nd data 0 or 1 to all stations.*

NOTE 3: *You can confirm the stations assigned by CM12 Y=49. Execute CM12 Y=91 10 minutes after AP initialization completed. Enter the first data which was assigned by CM12 Y=49, the system displays the second data. Check CM12 Y=49 data setting when NONE is displayed even though a station is set as a controlled station by AP00 card.*

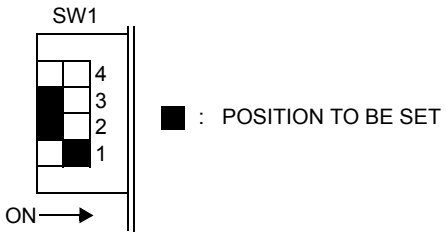
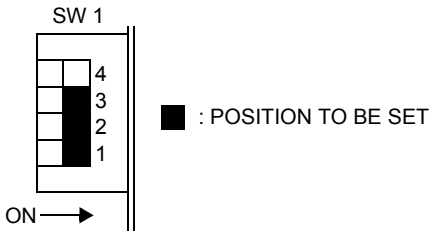
CM12 Y=91 (Confirmation of stations controlled by AP00 card)
(1) X-XXXX: Station No.
(2) 000-503: Controlled Station No. 000-503
NONE : Not controlled

END

AP Initialization (PN-AP00-B/PN-AP00-D with MRCA program)

[Series 3300 software required]

This section explains the data assignment to make the AP active. If the system already applied the AP related feature, you can skip the data assignment explained on this section. The AP should have already activated if one of the following feature applied; Station Message Detail Recording (SMDR), Message Center Interface (MCI), D^{term} TIMS (Time Information Management System), Hotel printer, or Do Not Disturb set/cancel at specified timing in advance. You can distinguish whether the AP active or not by the RUN lamp indication. The RUN lamp flashes on green color when the AP is in active.
When installing the AP00 at first time, do the following AP initialization.

START	DESCRIPTION	DATA
CM05	Assign an AP number to the AP00 card. The AP number must match the SENSE switch setting on the AP00 card. (INITIAL) On the AP00 card, set the SW1 switch as shown below. 	• Y=0 (1) 04-15, 20-31: AP No. (2) 45: AP00 with MRCA program SW1-4 should be set as follows; ON : The AP No. is 04-15 OFF: The AP No. is 20-31
CMDD99	Load the initial data into the AP00 card. (AP OFF LINE) On the AP00 card, set the SW1 switch as shown below. 	(1) 0000 (2) CCC SW1-4 should be set as follows; ON : The AP No. is 04-15 OFF: The AP No. is 20-31
A		

A

	DESCRIPTION	DATA
CMDD00	Specify Local Office or Center Office for Centralized Billing-CCIS	(1) 3 (2) 0◀: Local Office 1 : Center Office
CMDD02	Assign maximum number of Call Record sending to SMDR terminal 0. **NOTE:** *When the data is set to 1-23580, external alarm of memory overflew is available, if CM44 2nd data=3000 is assigned.*	(1) 0 (2) 0◀ : Not record 1-23580 : 1 call-23580 calls
	Assign maximum number of Call Record sending to SMDR terminal 1. **NOTE:** *When the data is set to 1-23580, external alarm of memory overflew is available, if CM44 2nd data=3002 is assigned.*	(1) 1 (2) 0◀ : Not record 1-23580 : 1 call-23580 calls
	Assign maximum number of Call Record for a local office of Centralized Billing-CCIS. **NOTE 1:** *When the data is set to 1-23580, external alarm of memory overflew is available, if CM44 2nd data=3001 is assigned.*	(1) 2 (2) 0◀ : Not record 1-23580 : 1 call-23580 calls

NOTE 2: *The amount of call record number set by CMDD02>0, 1, 2 must not exceed the following number.*

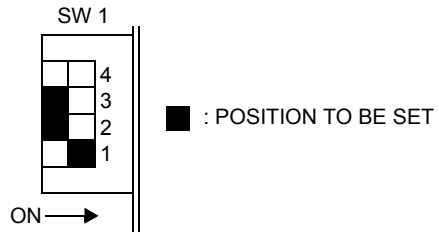
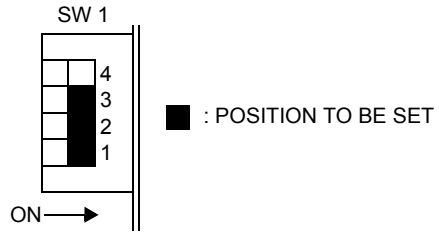
Amount of Call Records number of CMDD02 1st data 0, 1, 2			
No EXPMEM on AP00 (PN-AP00-B) is provided		**EXPMEM on AP00 (PN-AP00-B)/ AP00 (PN-AP00-D) is provided**	
CMDD00>3 is set to 0 (Local Office of Centralized Billing-CCIS/Stand-alone)	CMDD00>3 is set to 1 (Center Office of Centralized Billing-CCIS)	CMDD00>3 is set to 0 (Local Office of Centralized Billing-CCIS/Stand-alone)	CMDD00>3 is set to 1 (Center Office of Centralized Billing-CCIS)
2620	1310	23580	22270

NOTE 3: *CMDD02>0, 1, 2 are effective after executing CMDD98. Before executing CMDD98, be sure to print out all of the stored call records. CMDD98 deletes all of the stored call records.*

B

B

CMDD98

DESCRIPTION	DATA
On the AP00 card, set the SW1 switch as shown below. 	SW1-4 should be set as follows; ON : The AP No. is 04-15 OFF: The AP No. is 20-31
Clear the billing memory. (AP OFF LINE)	(1) 0000 (2) CCC
NOTE: *Before executing CMDD98, be sure to save/print out all of the stored call records.* *CMDD98 deletes all of the stored records.*	
On the AP00 card, set the SW1 switch as shown below. 	SW1-4 should be set as follows; ON : The AP No. is 04-15 OFF: The AP No. is 20-31

END

SMDR with AP00 Programming (PN-AP00-B with AP00 program) (1)

To send a billing information of center office to SMDR terminal via RS-232C interface, do the programming of SMDR with AP00 Programming (PN-AP00-B with AP00 program).

START	DESCRIPTION	DATA
CM02	Assign the system clock data.	(1) 0: Calendar Year (2) 2000-2099 (Ex. 2001) (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)
A		

	DESCRIPTION	DATA
A		
CM08	Provide the system with Centralized Billing-CCIS for Center Office. (INITIAL)	(1) 368 (2) 0: To provide
	Not provide the system with Centralized Billing-CCIS for Local Office.	(1) 378 (2) 1◀: Not provided
CMA7	Assign the second data to 1 (Distant end is a Local Office) to each CCIS channel.	• Y=03 (1) 0-7: CCIS channel No. (2) 1: Distant end is Local Office
CMD000	Invalidate the data for sending detail information on tandem calls to SMDR.	(1) 76 (2) 0◀: Not sent
CMD001	Specify the direction for sending of billing information from the Local Office.	(1) 239 (2) 1: SMDR terminal set to “4” by CMD001>80/100/120/140 2: SMDR terminal set to “5” by CMD001>80/100/120/140
CM04	Provide the direction of billing information which received from Local Office. **[Series 3400 software required]**	• Y=01 (1) 06 (2) 3◀: PN-AP00-B with AP00 program
	Specify PN-AP00-B with AP00 program as the destination to send an MP call information. **[Series 3400 software required]**	(1) 03 (2) 7◀: Not sent
B		

B

	DESCRIPTION	DATA
CMD001	Assign the attribute data, depending on the port (Port 0-3) connected to the SMDR terminal. (For the details of commands, refer to the Command Manual.) (AP00 INITIAL)	(1) See the following table. (2) See the following table.

FIRST DATA (1)				MEANING	SECOND DATA (2)	MEANING
PORT 0	PORT 1	PORT 2	PORT 3			
20	24	28	32	Data Speed	2/3/4/5	1200 bps/2400 bps/4800 bps/9600 bps **NOTE**
21	25	29	33	Stop Bit Length	0/1/2	1 bit/1.5 bits/2 bits
22	26	30	34	Data Length	0/1	7 bits/8 bits
23	27	31	35	Parity	0/1/2	None Parity/Even Parity/ Odd Parity
80	100	120	140	Equipment Type	4/5	Computer 0/Computer 1
81	101	121	141	Priority for Data Processing	0	1st
82	102	122	142	Message Format	3	NEAX 2400 IMS Format
84	104	124	144	Protocol	1	Free Wheel
85	105	125	145	Station Address (SA)	48	0
86	106	126	146	Unit Address (UA)	33	!

NOTE: *For the Port 1 and Port 3, data speed 9600 bps cannot be set.*

CMD015	Assign the Charging Station Class number to each station number.	(1) X-XXXX: Station No. (2) 00-15: Station Class No.

C

	DESCRIPTION	DATA
C		
CMD016	Invalidate the data setting of Centralized Billing-CCIS used for Local Office.	(1) XX31: Send detail information of C.O. outgoing calls to SMDR XX : 00-15 (Station Class No. assigned by CMD015) (2) 0◀: Not sent (1) XX32: Send detail information of Tie Line outgoing calls to SMDR XX : 00-15 (Station Class No. assigned by CMD015) (2) 0◀: Not sent (1) XX58: Send detail information of C.O./Tie Line incoming calls to SMDR XX : 00-15 (Station Class No. assigned by CMD015) (2) 0◀: Not sent
CMD004	Assign the originating office number, if required. Assign the billing office number, if required. **NOTE:** *If using a leading digits of 0 and 0 is required to print at the SMDR terminal, assign "A" for each leading 0 to be printed.* *If the leading digits 0 is not required to print at the SMDR terminal, assign "0".*	(1) 55 (2) X-XXXX: Originating Office No. **NOTE** (1) 56 (2) X-XXXX: Billing Office No. **NOTE**
END		

SMDR with AP00 Programming (PN-AP00-B/PN-AP00-D with MRCA program) (1)

[Series 3300 software required]

To send a billing information of center office to SMDR terminal via RS-232C interface, do the programming of SMDR with AP00 programming (PN-AP00-B/PN-AP00-D with MRCA program).

START	DESCRIPTION	DATA
CM02	Assign the system clock data.	(1) 0: Calendar Year (2) 2000-2099 (Ex. 2001) (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)
A		

	DESCRIPTION	DATA
A		
CM08	Provide the system with Centralized Billing-CCIS for Center Office. (INITIAL)	(1) 368 (2) 0: To provide
	Not provide the system with Centralized Billing-CCIS for Local Office.	(1) 378 (2) 1◀: Not provided
CMA7	Assign the second data to 1 (Distant end is a Local Office) to each CCIS channel.	• Y=03 (1) 0-7: CCIS channel No. (2) 1: Distant end is Local Office
CMDD03	Assign the originating office number, if required.	(1) 55 (2) 0-9999: Originating Office No.
	Assign the billing office number, if required.	(1) 56 (2) 0-9999: Billing Office No.
CMDD01	Specify the direction for sending of billing information from the Local Office.	(1) 239 (2) 1: SMDR terminal 0 2: SMDR terminal 1
CM04	Specify the SMDR Message Format of billing information for SMDR with AP00. **[Series 3400 software required]**	• Y=01 (1) 09 (2) 00 : Extended NEAX 2400 IMS Format 15◀: Former NEAX 2400 IMS Format
	Provide the direction of billing information which received from Local Office. **[Series 3400 software required]**	(1) 06 (2) 3◀: PN-AP00-B/PN-AP00-D with MRCA program
	Specify PN-AP00-B/PN-AP00-D with MRCA program as the destination to send an MP call information. **[Series 3400 software required]**	(1) 03 (2) 2: PN-AP00-B/PN-AP00-D with MRCA program
B		

B

	DESCRIPTION	DATA
CMDD01	Set interface condition for AP00 card (PN-AP00-B/PN-AP00-D with MRCA program) RS port. AP00 INITIAL When you set CMDD01, the following initial data is set to each port as the interface condition. • Equipment Type: SMDR terminal 0 **NOTE** • Data Speed: 1200 bps • Stop Bit Length: 2 bits • Data Length: 8 bits • Parity: No Parity • Station Address (SA): 0 • Unit Address (UA): ! • Message Format: Former NEAX 2400 IMS Format **NOTE:** *When you set interface condition to two ports, change one of those ports of equipment type to SMDR terminal 1 by CMDD10>X00.*	(1) 100 (Port 0) 101 (Port 1) 102 (Port 2) 103 (Port 3) (2) 3: SMDR with NEAX 2400 IMS Format
CMDD10	To change the interface condition of each port set by CMDD01, assign the attribute data, according to the SMDR terminal specifications. AP00 INITIAL	(1) X00: Equipment Type Connected to Port 0-3 X : 0-3: Port 0-3 (2) 1◀: SMDR terminal 0 2 : SMDR terminal 1 (1) X01: Data Speed for Port 0-3 X : 0-3: Port 0-3 (2) 1 : 300 bps 2◀: 1200 bps 3 : 2400 bps 4 : 4800 bps 5 : 9600 bps 6 : 19200 bps (1) X02: Stop Bit Length for Port 0-3 X : 0-3: Port 0-3 (2) 0 : 1 bit 1 : 1.5 bits 2◀: 2 bits

C

	DESCRIPTION	DATA
C		
CMDD10		(1) X03: Data Length for Port 0-3 X : 0-3: Port 0-3 (2) 0 : 7 bits 1◀: 8 bits (1) X04: Parity for Port 0-3 X : 0-3: Port 0-3 (2) 0: No Parity 1: Odd Parity 2: Even Parity (1) X05: Station Address (SA) for Port 0-3 X : 0-3: Port 0-3 (2) 48◀: 0 (1) X06: Unit Address (UA) for Port 0-3 X : 0-3: Port 0-3 (2) 32 : Space (No information) 33◀: ! (1) X10: Message Format for Port 0-3 X : 0-3: Port 0-3 (2) 0◀: Former NEAX 2400 IMS Format
CM12	Assign the Charging Station Class number to each station number.	• Y=45 (1) X-XXXXXXXX: Station No. (2) 00-15◀: Station Class No.
CM60	Assign the Charging Class number for AT-TCON/DESKCON number.	• Y=32 (1) 0-7: ATTCON No. (2) 00-15◀: Class No.
END		

MP built-in SMDR on IP Programming

[Series 3400 software required]

To send a billing information of center office to SMDR terminal via LAN interface, do the programming of MP built-in SMDR on IP Programming. For details of the programming, refer to Station Message Detail Recording (SMDR) of Feature Programming Manual.

START	DESCRIPTION	DATA
CM02	Assign the system clock data.	(1) 0: Calendar Year (2) 2000-2099 (Ex. 2001) (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)
A		

	DESCRIPTION	DATA
A		
CM0B	Assign the IP Address for the system. (INITIAL)	• Y=00 (1) 00 (2) 000000000000-255255255255: IP Address for the system
	Assign the Subnet Mask for the system. (INITIAL)	• Y=00 (1) 01 (2) 000000000000-255255255255: Subnet Mask for the system
	Assign the Default Gateway Address for the system. (INITIAL)	• Y=00 (1) 02 (2) 000000000000-255255255255: Default Gateway Address for the system
CM08	Provide the system with Centralized Billing-CCIS for Center Office. (INITIAL)	(1) 368 (2) 0: To provide
	Not provide the system with Centralized Billing-CCIS for Local Office.	(1) 378 (2) 1◀: Not provided
CMA7	Assign the second data to 1 (Distant end is a Local Office) to each CCIS channel.	• Y=03 (1) 0-7: CCIS channel No. (2) 1: Distant end is Local Office
	Assign the billing office number, if required.	• Y=07 (1) 0-7: CCIS channel No. (2) 0-9999: Billing Office No.
CM04	Provide the destination to send a billing information which received from Local Office.	• Y=01 (1) 06 (2) 0: SMDR terminal via LAN port
CM08	Specify whether the parity check is provided.	(1) 827 (2) 0 : Not Provided (None parity) 1◀: To provide (Parity as for CM08>828)
	Specify the kind of parity.	(1) 828 (2) 0 : Odd parity 1◀: Even Parity
END		

MP built-in SMDR Programming

For local office or tandem office, in addition to the programming of MP built-in SMDR, do the following programming. For details of the MP built-in SMDR, refer to Station Message Detail Recording (SMDR) of Feature Programming Manual.

NOTE: *When the system provides an AP00 card (CM05 Y=0 second data=04 is assigned), the MP built-in SMDR cannot be provided.*

START	DESCRIPTION	DATA
CM08	Provide the system with MP built-in SMDR. **NOTE:** *Do not assign CM40 Y=00>14 when using MP built-in SMDR in Local Office of Centralized Billing-CCIS.*	(1) 800 (2) 0: MP built-in SMDR
	Not provide the system with Centralized Billing-CCIS for Center Office. (INITIAL)	(1) 368 (2) 1◀: Not provided
	Provide the system with Centralized Billing-CCIS for Local Office.	(1) 378 (2) 0: To provide
	Specify whether the Office number is sent to Center Office for Centralized Billing-CCIS. **NOTE:** *When the network adopts Open Numbering Plan, set the office number by CMA7 Y=06.*	(1) 801 (2) 0 : To send 1◀: Not sent
A		

A

CMA7

DESCRIPTION	DATA
Assign the data as follows. 1st Data: CCIS channel No. (0-7) for Center Office 2nd Data: 0 See Example 3: Data Assignment of CMA7 Y=03, 04. ☞ *Page 227*	• Y=03 (1) 0-7: CCIS channel No. (2) 0 : Distant end is Center Office 1◀: Distant end is Local Office
Assign Centralized Billing destination. See Example 3: Data Assignment of CMA7 Y=03, 04. ☞ *Page 227*	• Y=04 (1) 0-7: CCIS channel No. (2) 00001-16367: Point Code of Center Office.
Assign Originating Office number for Open Numbering Plan. See Example 4: Data Assignment of CMA7 Y=06 and CMD004>55 ☞ *Page 228*	• Y=06 (1) 0-7: CCIS channel No. (2) 0-9999: Originating Office No.
Assign the billing office number, if required.	• Y=07 (1) 0-7: CCIS channel No. (2) 0-9999: Billing Office No.

END

SMDR with AP00 Programming (PN-AP00-B with AP00 program) (2)

For local office or tandem office, in addition to the programming of SMDR with AP00 programming (PN-AP00-B with AP00 program), do the following programming. For details of the SMDR with AP00 programming (PN-AP00-B with AP00 program), refer to Station Message Detail Recording (SMDR) of Feature Programming Manual.

START	DESCRIPTION	DATA
CM08	Not provide the system with MP built-in SMDR. **NOTE:** *Do not assign CM40 Y=00>14 when using MP built-in SMDR in Local Office of Centralized Billing-CCIS.*	(1) 800 (2) 1◀: Not provided (AP00 is effective)
	Not provide the system with Centralized Billing-CCIS for Center Office. (INITIAL)	(1) 368 (2) 1◀: Not provided
	Provide the system with Centralized Billing-CCIS for Local Office.	(1) 378 (2) 0: To provide
	Specify whether the calling party information (Trunk Route No./Station No.) is sent to SMDR on CCIS tandem calls. See Example 2: Data Assignment of SMDR Call Record on a Tandem Call through CCIS. ☞ Page 225	(1) 377 (2) 0 : Station No. and Office No. 1◀: Trunk Route No.
A		

A

	DESCRIPTION	DATA
CMA7	Assign the data as follows. • For Local Office: 1st Data: CCIS channel No. (0-7) for Center Office — 2nd Data: 0 • For Tandem Office: 1st Data: CCIS channel No. (0-7) for Center Office — 2nd Data: 0 1st Data: CCIS channel No. (0-7) for Local Office — 2nd Data: 1 See Example 3: Data Assignment of CMA7 Y=03, 04. ☞ Page 227	• Y=03 (1) 0-7: CCIS channel No. (2) 0 : Distant end is Center Office 1◀: Distant end is Local Office
	Assign Centralized Billing destination. See Example 3: Data Assignment of CMA7 Y=03, 04. ☞ Page 227	• Y=04 (1) 0-7: CCIS channel No. (2) 00001-16367: Point Code of Center Office.
CM65	Specify the station number sent to the 2400 IPX through CCIS for SMDR. **NOTE:** *If the Center Office is the 2400 IPX, CM65 Y=26 is required.*	• Y=26 (1) Tenant No. of Stations (2) 0 : My Line No. 1◀: Sub Line No.

B

	DESCRIPTION	DATA
B		
CMD015	Assign a Station Class number to the required station number.	(1) X-XXXX: Station No. (2) 00◀-15: Station Class No.
CMD016	Specify the direction for sending detail information on C.O. outgoing calls from the Local Office.	(1) XX31: Send detail information of C.O. outgoing calls to SMDR XX : 00-15 (Station Class No. assigned by CMD015) (2) 1: To send
	Specify the direction for sending detail information on Tie Line outgoing calls from the Local Office.	(1) XX32: Send detail information of Tie Line outgoing calls to SMDR XX : 00-15 (Station Class No. assigned by CMD015) (2) 1: To send
	Specify the direction for sending detail information on C.O./Tie Line incoming calls from the Local Office.	(1) XX58: Send detail information of C.O./Tie Line incoming calls to SMDR XX : 00-15 (Station Class No. assigned by CMD015) (2) 1: To send
CMD004	Assign the originating office number, if required. See Example 4: Data Assignment of CMA7 Y=06 and CMD004>55. ☞ *Page 228*	(1) 55 (2) X-XXXX: Originating Office No. **NOTE**
	Assign the billing office number, if required. **NOTE:** *If using a leading digits of 0 and 0 is required to print at the SMDR terminal, assign "A" for each leading 0 to be printed.* *If the leading digits 0 is not required to print at the SMDR terminal, assign "0".* See Example 5: Data Assignment of CMD004>56. ☞ *Page 229*	(1) 56 (2) X-XXXX: Billing Office No. **NOTE**
END		

SMDR with AP00 Programming (PN-AP00-B/PN-AP00-D with MRCA program) (2)

[Series 3300 software required]

For local office or tandem office, in addition to the programming of SMDR with AP00 programming (PN-AP00-B/PN-AP00-D with MRCA program), do the following programming. For details of the SMDR with AP00 programming (PN-AP00-B/PN-AP00-D with MRCA program), refer to Station Message Detail Recording (SMDR) of Feature Programming Manual.

START	DESCRIPTION	DATA
CM08	Not provide the system with MP built-in SMDR. **NOTE:** *Do not assign CM40 Y=00>14 when using MP built-in SMDR in Local Office of Centralized Billing-CCIS.*	(1) 800 (2) 1◀: Not provided (AP00 is effective)
	Not provide the system with Centralized Billing-CCIS for Center Office. (INITIAL)	(1) 368 (2) 1◀: Not provided
	Provide the system with Centralized Billing-CCIS for Local Office.	(1) 378 (2) 0: To provide
	Specify whether the calling party information (Trunk Route No./Station No.) is sent to SMDR on CCIS tandem calls. See Example 2: Data Assignment of SMDR Call Record on a Tandem Call through CCIS. ☞ Page 225	(1) 377 (2) 0 : Station No. and Office No. 1◀: Trunk Route No.
A		

A

	DESCRIPTION	DATA
CMA7	Assign the data as follows. • For Local Office: 1st Data: CCIS channel No. (0-7) for Center Office — 2nd Data: 0 • For Tandem Office: 1st Data: CCIS channel No. (0-7) for Center Office — 2nd Data: 0 1st Data: CCIS channel No. (0-7) for Local Office — 2nd Data: 1 See Example 3: Data Assignment of CMA7 Y=03, 04. ☞ Page 227	• Y=03 (1) 0-7: CCIS channel No. (2) 0 : Distant end is Center Office 1◀: Distant end is Local Office
	Assign Centralized Billing destination. See Example 3: Data Assignment of CMA7 Y=03, 04. ☞ Page 227	• Y=04 (1) 0-7: CCIS channel No. (2) 00001-16367: Point Code of Center Office.
CM65	Specify the station number sent to the 2400 IPX through CCIS for SMDR. **NOTE:** *If the Center Office is the 2400 IPX, CM65 Y=26 is required.*	• Y=26 (1) Tenant No. of Stations (2) 0 : My Line No. 1◀: Sub Line No.
CM12	Assign the Charging Station Class number to each station number.	• Y=45 (1) X-XXXXXXXX: Station No. (2) 00-15◀: Station Class No.

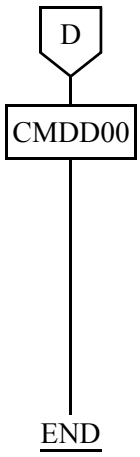
B

B

	DESCRIPTION	DATA
CM60	Assign the Charging Class number for ATTCON/DESKCON number.	• Y=32 (1) 0-7: ATTCON No. (2) 00-15◀: Class No.
CMDD04	Specify the direction for sending detail information on C.O./Tie Line outgoing calls from the Local Office.	(1) XX 04: Send detail information of C.O./Tie Line outgoing calls to the SMDR XX : Service Class No. assigned by CM12 Y=45/CM60 Y=32 (2) 1: To send
	Specify the direction for sending detail information on C.O./Tie Line incoming calls from the Local Office.	(1) XX 08: Send detail information of C.O./Tie Line incoming calls to the SMDR XX : Service Class No. assigned by CM12 Y=45/CM60 Y=32 (2) 1: To send
CMDD03	Assign the originating office number, if required. See Example 4: Data Assignment of CMA7 Y=06 and CMDD03>55. ☞ *Page 242*	(1) 55 (2) 0-9999: Originating Office No. **NOTE**
	Assign the billing office number, if required. **NOTE:** *If using a leading digits of 0 and 0 is required to print at the SMDR terminal, assign "A" for each leading 0 to be printed.* *If the leading digits 0 is not required to print at the SMDR terminal, assign "0".* See Example 5: Data Assignment of CMDD03>56. ☞ *Page 243*	(1) 56 (2) 0-9999: Billing Office No. **NOTE**
CM13	Provide the SMDR service for outgoing calls to the required station.	• Y=06 (1) X-XXXXXXXX: Station No. (2) 1◀: To provide

C

	DESCRIPTION	DATA
C		
CM35	Provide SMDR service for outgoing calls to the required trunk route.	• Y=14 (1) 00-63: Trunk Route No. (2) 1◀: To provide
	Assign a trunk access code sent to SMDR for outgoing calls.	• Y=44 (1) 00-63: Trunk Route No. (2) 00-99: Trunk Access Code
	Provide SMDR service for incoming calls to the required trunk routes.	• Y=49 (1) 00-63: Trunk Route No. (2) 0: To provide
CMDD00	Specify the direction for sending detail information on tandem calls from Local Office.	(1) 2: Send detail information of tandem call to SMDR (2) 0◀: Not sent 1 : To send
	For local office to SMDR, specify the buffering method when the number of the stored SMDR information has reached to the predetermined value.	(1) 7 (2) 0◀: New data is stored by deleting the oldest data 1 : No new data is stored
	Specify whether account code is sent in the Authorization Code Area of Call Record for tandem calls.	(1) 170 (2) 0◀: Not sent 1 : To send
	Specify whether the access code is added in Call Record.	(1) 171 (2) 0◀: Not added 1 : To add
	Specify whether DID number is set in destination number area of Call Record.	(1) 172 (2) 0◀: To set 1 : Not set
	Specify whether ANI for local office is sent to SMDR. **NOTE:** *CMDD00>173 is not available for the extended NEAX 2400 IMS Format.*	(1) 173 (2) 0◀: Not sent 1 : To send
D		



DESCRIPTION	DATA
Specify whether ISDN call charge information (AOC) is for local office is sent to SMDR.	(1) 174 (2) 0◀: Not sent 1 : To send
Specify whether the sending information to the SMDR for Centralized Billing-CCIS is metering pulse or charging rate. **[Series 3500 software required]**	(1) 175 (2) 0◀: Metering Pulse 1 : Charging Rate

Example of the programming (PN-AP00-B with AP00 program)

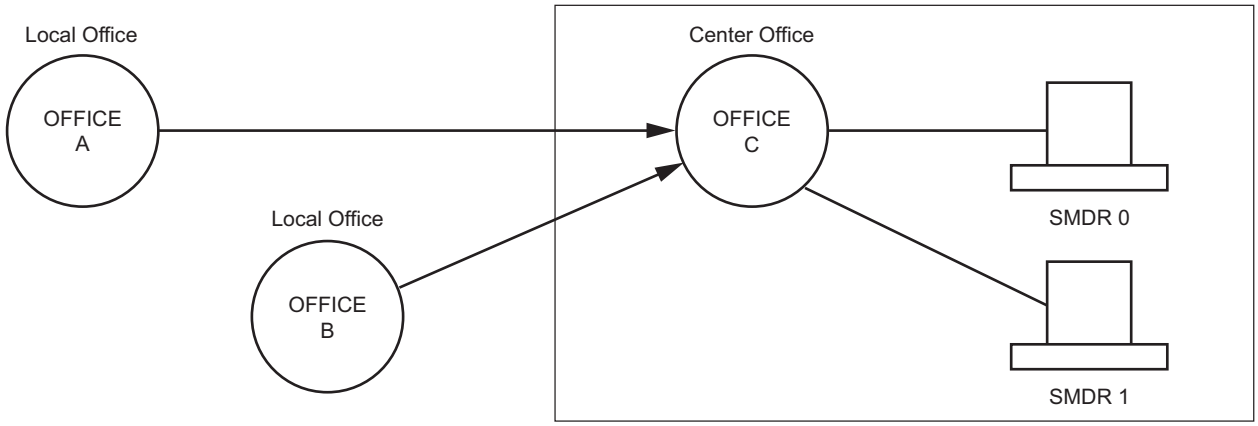
Example 1: Data Assignment of SMDR output for Center Office

In a Centralized Billing Office, the following four patterns of SMDR output can be selected.

(1) To SMDR 0 (Port 0): Sending of billing information from both a Center Office and Local Offices.
(2) To SMDR 1 (Port 0): Sending of billing information from both a Center Office and Local Offices.
(3) To SMDR 0 (Port 0): Sending of billing information from Local Offices.
To SMDR 1 (Port 1): Sending of billing information of a Center Office.
(4) To SMDR 0 (Port 0): Sending of billing information of a Center Office.
To SMDR 1 (Port 1): Sending of billing information from Local Offices.

- Data assignment of each pattern for Center Office

PATTERN	TO	FROM	CMD001> 80/100/ 120/140	CMD 001>239	CMD016	
					XX16, XX21, XX30	XX17, XX22, XX55
1	SMDR 0	Center Office C and Local Office A/B	4	1	1	0
2	SMDR 1	Center Office C and Local Office A/B	5	2	0	1
3	SMDR 0	Local Office A/B	4	1		
	SMDR 1	Center Office C	5		0	1
4	SMDR 0	Center Office C	4		1	0
	SMDR 1	Local Office A/B	5	2		



Centralized Billing Programming Steps for Pattern 1

SMDR 0 using Port 0
Local Office A, B uses AP00.

	CENTER OFFICE	LOCAL OFFICE A/B
CM05 Y=0>XX	: 04 (AP00)	04 (AP00)
CMD101>0000	: CCC (Data All Clear)	CCC
CMD001>179	: 1 (Center Office)	0 (Local Office)
CMD003>24	: 0 (Not record)	Desired setting
>26	: 0 (Not record)	No. of call record Local Office
>29	: No. of call record for SMDR 0	Desired setting
CMD102>0000	: CCC	CCC
CM08>800	: 1 (AP00)	1
>368	: 0 (Center Office)	1 (Local Office)
>378	: 1 (Not Local Office)	0 (Not Center Office)
CMA7 Y=03>0	: 1 (Distant Office is Local Office)	0 (Distant Office is Center Office)
=04>0	: NONE	Point Code of Center Office
CMD000>76	: 0 (Tandem Call to SMDR)	Default or desired setting
CMD001>239	: 1 (SMDR 0)	0 (Not Centralized Billing Office)
CM04 Y=01>06	: 3 (AP00 with AP00 program)	Default
>03	: 7 (Not sent)	Default
CMD001>20	: Data Speed (Port 0)	Default
>21	: Stop Bit (Port 0)	Default
>22	: Data Length (Port 0)	Default
>23	: Parity (Port 0)	Default
>80	: 4 (SMDR 0)	Default
>81	: 0 (Priority)	Default
>82	: 3 (2400 Format)	Default
>84	: 1 (Free Wheel)	Default
>85	: 48 (SA)	Default
>86	: 33 (UA)	Default
CMD015>XXXX	: XX (Station Class No.)	XX (Station Class No.)
CMD016>XX31	: 0 (C.O. outgoing calls to SMDR)	1
>XX32	: 0 (Tie Line outgoing calls to SMDR)	1
>XX58	: 0 (C.O./Tie Line incoming calls to SMDR)	1
>XX16	: 1 (C.O./Tie Line incoming calls to SMDR 0)	Desired setting
>XX17	: 0	Desired setting
CMD000>70	: Desired setting	Desired setting
>77	: Desired setting	Desired setting
>79	: Desired setting	Desired setting

Centralized Billing Programming Steps for Pattern 2

SMDR 1 Using Port 0
Local Office A, B uses AP00.

	CENTER OFFICE	LOCAL OFFICE A/B
CM05 Y=0>XX	: 04 (AP00)	04 (AP00)
CMD101>0000	: CCC (Data All Clear)	CCC
CMD001>179	: 1 (Center Office)	0 (Local Office)
CMD003>24	: No. of call record for SMDR 1	Desired setting
>26	: 0 (Not record)	No. of call record Local Office
>29	: 0 (Not record)	Desired setting
CMD102>0000	: CCC	CCC
CM08>800	: 1 (AP00)	1
>368	: 0 (Center Office)	1 (Local Office)
>378	: 1 (Not Local Office)	0 (Not Center Office)
CMA7 Y=03>0	: 1 (Distant Office is Local Office)	0 (Distant Office is Center Office)
=04>0	: NONE	Point Code of Center Office
CMD000>76	: 0 (Tandem Call to SMDR)	Default or desired setting
CMD001>239	: 2 (SMDR 1)	0 (Not Centralized Billing Office)
CM04 Y=01>06	: 3 (AP00 with AP00 program)	Default
>03	: 7 (Not sent)	Default
CMD001>20	: Data Speed (Port 0)	Default
>21	: Stop Bit (Port 0)	Default
>22	: Data Length (Port 0)	Default
>23	: Parity (Port 0)	Default
>80	: 5 (SMDR 1)	Default
>81	: 0 (Priority)	Default
>82	: 3 (2400 Format)	Default
>84	: 1 (Free Wheel)	Default
>85	: 48 (SA)	Default
>86	: 33 (UA)	Default
CMD015>XXXX	: XX (Station Class No.)	XX (Station Class No.)
CMD016>XX31	: 0 (C.O. outgoing calls to SMDR)	1
>XX32	: 0 (Tie Line outgoing calls to SMDR)	1
>XX58	: 0 (C.O./Tie Line incoming calls to SMDR)	1
>XX16	: 0	Desired setting
>XX17	: 1 (C.O./Tie Line incoming calls to SMDR 1)	Desired setting
CMD000>70	: Desired setting	Desired setting
>77	: Desired setting	Desired setting
>79	: Desired setting	Desired setting

Centralized Billing Programming Steps for Pattern 3

To SMDR 0: Setting of billing information from Local Offices.
To SMDR 1: Setting of billing information from Center Office.
Use two SMDR terminals, one for Port 0 and one for Port 1.

	CENTER OFFICE	LOCAL OFFICE A/B
CM05 Y=0>XX	: 04 (AP00)	04 (AP00)
CMD101>0000	: CCC (Data All Clear)	CCC
CMD001>179	: 1 (Center Office)	0 (Local Office)
CMD003>24	: No. of call record for SMDR 1	Desired setting
>26	: 0 (Not record)	No. of call record Local Office
>29	: 0 (Not record)	Desired setting
CMD102>0000	: CCC	CCC
CM08>800	: 1 (AP00)	1
>368	: 0 (Center Office)	1 (Local Office)
>378	: 1 (Not Local Office)	0 (Not Center Office)
CMA7 Y=03>0	: 1 (Distant Office is Local Office)	0 (Distant Office is Center Office)
=04>0	: NONE	Point Code of Center Office
CMD000>76	: 0 (Tandem Call to SMDR)	Default or desired setting
CMD001>239	: 1 (SMDR 0)	0 (Not Centralized Billing Office)
CM04 Y=01>06	: 3 (AP00 with AP00 program)	Default
>03	: 7 (Not sent)	Default
CMD001>20	: Data Speed (Port 0)	Default
>21	: Stop Bit (Port 0)	Default
>22	: Data Length (Port 0)	Default
>23	: Parity (Port 0)	Default
>24	: Data Speed (Port 1)	Default
>25	: Stop Bit (Port 1)	Default
>26	: Data Length (Port 1)	Default
>27	: Parity (Port 1)	Default
>80	: 4 (SMDR 0) (Port 0)	Default
>81	: 0 (Priority) (Port 0)	Default
>82	: 3 (2400 Format) (Port 0)	Default
>84	: 1 (Free Wheel) (Port 0)	Default
>85	: 48 (SA) (Port 0)	Default
>86	: 33 (UA) (Port 0)	Default
>100	: 5 (SMDR 1) (Port 1)	Default
>101	: 0 (Priority) (Port 1)	Default
>102	: 3 (2400 Format) (Port 1)	Default
>104	: 1 (Free Wheel) (Port 1)	Default
>105	: 48 (SA) (Port 1)	Default
>106	: 33 (UA) (Port 1)	Default
CMD015>XXXX	: XX (Station Class No.)	XX (Station Class No.)

	CENTER OFFICE	LOCAL OFFICE A/B
CMD016>XX31	: 0 (C.O. outgoing calls to SMDR)	1
>XX32	: 0 (Tie Line outgoing calls to SMDR)	1
>XX58	: 0 (C.O./Tie Line incoming calls to SMDR)	1
>XX16	: 1 (C.O./Tie Line incoming calls to SMDR 0)	Desired setting
>XX17	: 1 (C.O./Tie Line incoming calls to SMDR 1)	Desired setting
CMD000>70	: Desired setting	Desired setting
>77	: Desired setting	Desired setting
>79	: Desired setting	Desired setting

Centralized Billing Programming Steps for Pattern 4

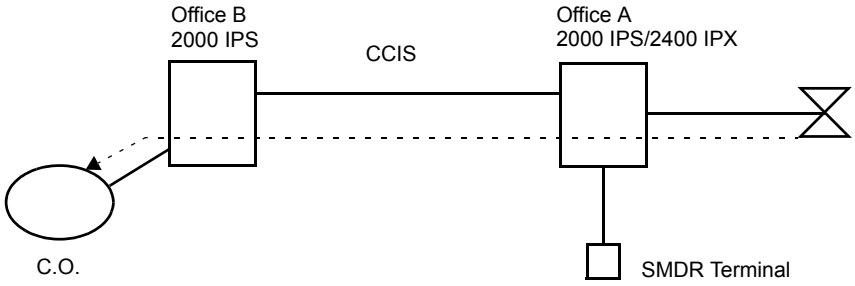
To SMDR 0: Setting of billing information from Center Office.
To SMDR 1: Setting of billing information from Local Offices.
Use two SMDR terminals, one for Port 0 and one for Port 1.

	CENTER OFFICE	LOCAL OFFICE A/B
CM05 Y=0>XX	: 04 (AP00)	04 (AP00)
CMD101>0000	: CCC (Data All Clear)	CCC
CMD001>179	: 1 (Center Office)	0 (Local Office)
CMD003>24	: No. of call record for SMDR 1	Desired setting
>26	: 0 (Not record)	No. of call record Local Office
>29	: 0 (Not record)	Desired setting
CMD102>0000	: CCC	CCC
CM08>800	: 1 (AP00)	1
>368	: 0 (Center Office)	1 (Local Office)
>378	: 1 (Not Local Office)	0 (Not Center Office)
CMA7 Y=03>0	: 1 (Distant Office is Local Office)	0 (Distant Office is Center Office)
=04>0	: NONE	Point Code of Center Office
CMD000>76	: 0 (Tandem Call to SMDR)	Default or desired setting
CMD001>239	: 2 (SMDR 1)	0 (Not Centralized Billing Office)
CM04 Y=01>06	: 3 (AP00 with AP00 program)	Default
>03	: 7 (Not sent)	Default
CMD001>20	: Data Speed (Port 0)	Default
>21	: Stop Bit (Port 0)	Default
>22	: Data Length (Port 0)	Default
>23	: Parity (Port 0)	Default
>24	: Data Speed (Port 1)	Default
>25	: Stop Bit (Port 1)	Default
>26	: Data Length (Port 1)	Default
>27	: Parity (Port 1)	Default
>80	: 4 (SMDR 0) (Port 0)	Default
>81	: 0 (Priority) (Port 0)	Default
>82	: 3 (2400 Format) (Port 0)	Default
>84	: 1 (Free Wheel) (Port 0)	Default
>85	: 48 (SA) (Port 0)	Default
>86	: 33 (UA) (Port 0)	Default
>100	: 5 (SMDR 1) (Port 1)	Default
>101	: 0 (Priority) (Port 1)	Default
>102	: 3 (2400 Format) (Port 1)	Default
>104	: 1 (Free Wheel) (Port 1)	Default
>105	: 48 (SA) (Port 1)	Default
>106	: 33 (UA) (Port 1)	Default
CMD015>XXXX	: XX (Station Class No.)	XX (Station Class No.)

	CENTER OFFICE	LOCAL OFFICE A/B
CMD016>XX31	: 0 (C.O. outgoing calls to SMDR)	1
>XX32	: 0 (Tie Line outgoing calls to SMDR)	1
>XX58	: 0 (C.O./Tie Line incoming calls to SMDR)	1
>XX16	: 1 (C.O./Tie Line incoming calls to SMDR 0)	Desired setting
>XX17	: 1 (C.O./Tie Line incoming calls to SMDR 1)	Desired setting
CMD000>70	: Desired setting	Desired setting
>77	: Desired setting	Desired setting
>79	: Desired setting	Desired setting

Example 2: Data Assignment of SMDR Call Record on a Tandem Call through CCIS

To provide one SMDR call record showing the office number and the station that made the call in Office A.



Data Assignment of Office B

CM08>040: 0 (Provides SMDR service for tandem calls)
CM08>377: 0 (Provides office number and station number from the tandem office)
CM35 Y=14>C.O. Route No.: 1 (To provide)
CMD000>76: 1 (To send)
CMD000>79: 0 (Only outgoing call information)

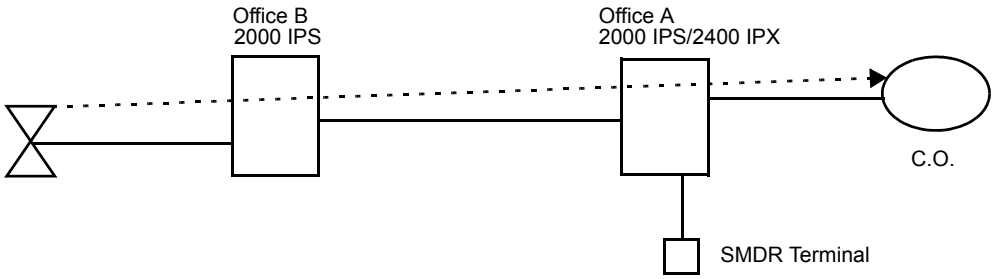
Data Assignment of Office A

CM35 Y=14>CCIS Route No.: 0 (Not provided)
CMA7 Y=06>CCH No.: 0000-9999 (Originating Office Number)

Data Assignment of Office A

ARTD CDN 10>CCIS Route No.: 0

To provide Tandem Centralized Billing without AP00 in the Local Office



Data Assignment of Office A

CM08>040: 0 (Provides SMDR service for tandem calls)
CM08>377: 0 (Provides office number and station number from the tandem office)
CM35 Y=14>C.O. Route No.: 0 (Not provided)
CMD000>76: 1 (To send)
CMD000>79: 0 (Only outgoing call information)

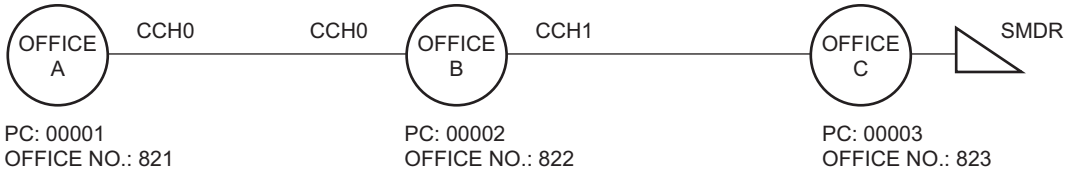
Data Assignment of Office A

ARTD CDN 10>CCIS Route No.: 0
ARTD CDN 16>CCIS Route No.: 0

Data Assignment of Office B

CM08>378: 1 (Not provided)
Do not install or program AP00

Example 3: Data Assignment of CMA7 Y=03, 04



PC : Point Code
CCH: Common Channel Handler

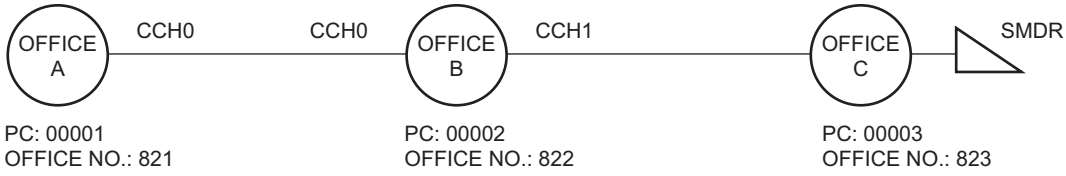
- Data Assignment of Office A

Command Code	1st Data	2nd Data	Remarks
CMA7 Y=03	0	0	To Center Office
CMA7 Y=04	0	00003	

- Data Assignment of Office B

Command Code	1st Data	2nd Data	Remarks
CMA7 Y=03	0	1	To Local Office
CMA7 Y=04	0	00003	
CMA7 Y=03	1	0	To Center Office
CMA7 Y=04	1	00003	

Example 4: Data Assignment of CMA7 Y=06 and CMD004>55



PC : Point Code
CCH: Common Channel Handler

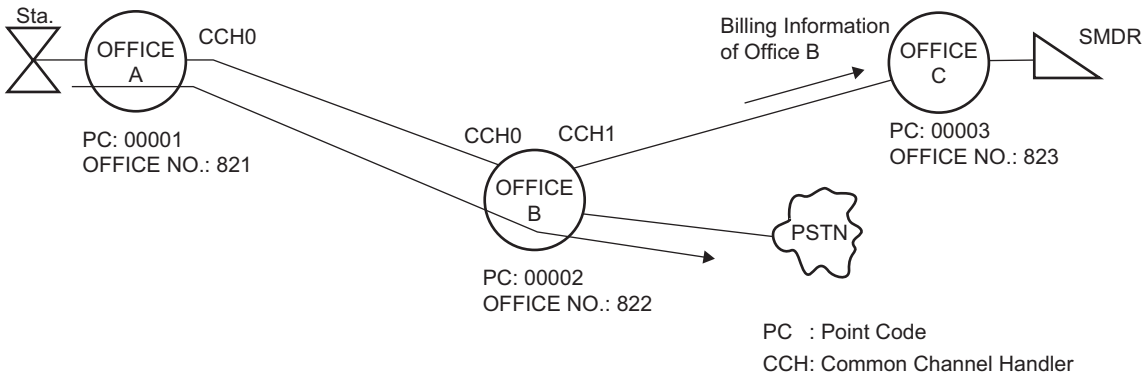
- Data Assignment of Office A

Command Code	1st Data	2nd Data	Remarks
CMA7 Y=06	0	821	
CMD004	55	821	

- Data Assignment of Office B

Command Code	1st Data	2nd Data	Remarks
CMA7 Y=06	0	822	
CMA7 Y=06	1	822	
CMD004	55	822	

Example 5: Data Assignment of CMD004>56



To specify the billing office (Office B) in center office (Office C) when a station of Office A make an outgoing call through Office B:

- Data Assignment of Office A

Command Code	1st Data	2nd Data	Remarks
CMD004	56	821	

- Data Assignment of Office B

Command Code	1st Data	2nd Data	Remarks
CMD004	56	822	

Operating Procedure

No manual operation is required. The call record outputs are produced automatically.

Example of the programming (PN-AP00-B/PN-AP00-D with MRCA program)

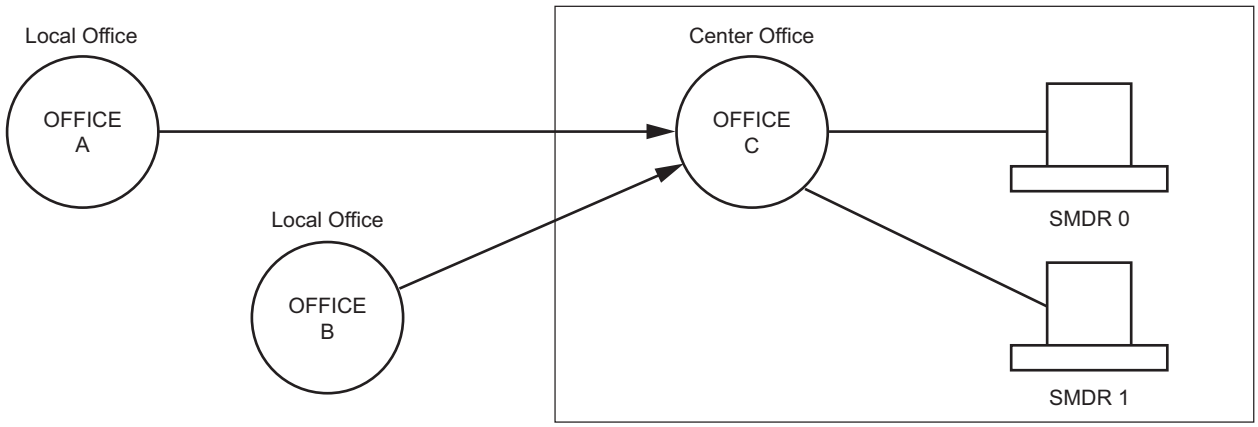
Example 1: Data Assignment of SMDR output for Center Office

In a Centralized Billing Office, the following four patterns of SMDR output can be selected.

(1) To SMDR 0 (Port 0): Sending of billing information from both a Center Office and Local Offices.
(2) To SMDR 1 (Port 0): Sending of billing information from both a Center Office and Local Offices.
(3) To SMDR 0 (Port 0): Sending of billing information from Local Offices.
To SMDR 1 (Port 1): Sending of billing information of a Center Office.
(4) To SMDR 0 (Port 0): Sending of billing information of a Center Office.
To SMDR 1 (Port 1): Sending of billing information from Local Offices.

- Data assignment of each pattern for Center Office

PATTERN	TO	FROM	CMDD01 >239	CMDD01 >100/101	CMDD10		CMDD04	
					000	100	XX00,XX06	XX02, XX07
1	SMDR 0	Center Office C and Local Office A/B	1	3	1		1	0
2	SMDR 1	Center Office C and Local Office A/B	2	3	2		0	1
3	SMDR 0	Local Office A/B	0					
	SMDR 1	Center Office C	2	3	1	2	0	1
4	SMDR 0	Center Office C	1		1	2	1	0
	SMDR 1	Local Office A/B	0	3				



Centralized Billing Programming Steps for Pattern 1

SMDR 0 Using Port 0
Local Office A, B uses AP00.

	CENTER OFFICE	LOCAL OFFICE A/B
CM05 Y=0>XX	: 45 (AP00)	45 (AP00)
CMDD99>0000	: CCC (Data All Clear)	CCC
CMDD00>3	: 1 (Center Office)	0 (Local Office)
CMDD02>0	: 0 (Not record)	Desired setting
>1	: No. of call record for SMDR 0	Desired setting
>2	: 0 (Not record)	No. of call record Local Office
CMDD98>0000	: CCC	CCC
CM08>800	: 1 (AP00)	1
>368	: 0 (Center Office)	1 (Local Office)
>378	: 1 (Not Local Office)	0 (Not Center Office)
CMA7 Y=03>0	: 1 (Distant Office is Local Office)	0 (Distant Office is Center Office)
=04>0	: NONE	Point Code of Center Office
CMDD01>239	: 1 (SMDR 0)	0 (Not Centralized Billing Office)
CM04 Y=01>09	: Default (Former NEAX 2400 IMS Format)	Not effective
>06	: 3 (AP00 with MRCA program)	Default
>03	: 2 (AP00 with MRCA program)	Default
CMDD01>100	: 3 (SMDR with NEAX 2400 IMS Format)	Default
CMDD10>000	: 1 (SMDR 0)	Default
>001	: Data Speed (Port 0)	Default
>002	: Stop Bit (Port 0)	Default
>003	: Data Length (Port 0)	Default
>004	: Parity (Port 0)	Default
>005	: 48 (Port 0)	Default
>006	: UA (Port 0)	Default
>010	: 0 (Port 0)	Default
CM12 Y=45	: XX (Station Class No.)	XX (Station Class No.)
CM60 Y=32	: XX (Class No.)	XX (Class No.)
CMDD04>XX00	: 1 (C.O./Tie Line outgoing calls to SMDR0)	Default
>XX02	: 0 (C.O./Tie Line outgoing calls to SMDR1)	Default
>XX04	: Default	1 (C.O./Tie Line outgoing calls to SMDR)
>XX08	: Default	1 (C.O./Tie Line incoming calls to SMDR)
>XX06	: 1 (C.O./Tie Line incoming calls to SMDR0)	Default
>XX07	: 0 (C.O./Tie Line incoming calls to SMDR1)	Default
CMDD00>0	: Desired setting	Desired setting
CM13 Y=06	: 1 (To provide)	1
CM35 Y=14	: 1 (To provide)	1
CM35 Y=44	: Desired setting	Desired setting
CM35 Y=49	: 0 (To provide)	0

	CENTER OFFICE	LOCAL OFFICE A/B
CMDD00>2	: Default	Desired setting
>7	: Default	Desired setting
>170	: Default	Desired setting
>171	: Default	Desired setting
>172	: Default	Desired setting
>173	: Default	Desired setting
>174	: Default	Desired setting

Centralized Billing Programming Steps for Pattern 2

SMDR 1 Using Port 0
Local Office A, B uses AP00.

	CENTER OFFICE	LOCAL OFFICE A/B
CM05 Y=0>XX	: 45 (AP00)	45 (AP00)
CMDD99>0000	: CCC (Data All Clear)	CCC
CMDD00>3	: 1 (Center Office)	0 (Local Office)
CMDD02>0	: No. of call record for SMDR 1	Desired setting
>1	: 0 (Not record)	Desired setting
>2	: 0 (Not record)	No. of call record Local Office
CMDD98>0000	: CCC	CCC
CM08>800	: 1 (AP00)	1
>368	: 0 (Center Office)	1 (Local Office)
>378	: 1 (Not Local Office)	0 (Not Center Office)
CMA7 Y=03>0	: 1 (Distant Office is Local Office)	0 (Distant Office is Center Office)
=04>0	: NONE	Point Code of Center Office
CMDD01>239	: 2 (SMDR 1)	0 (Not Centralized Billing Office)
CM04 Y=01>09	: Default (Former NEAX 2400 IMS Format)	Not effective
>06	: 3 (AP00 with MRCA program)	Default
>03	: 2 (AP00 with MRCA program)	Default
CMDD01>100	: 3 (SMDR with NEAX 2400 IMS Format)	Default
CMDD10>000	: 2 (SMDR 1)	Default
>001	: Data Speed (Port 0)	Default
>002	: Stop Bit (Port 0)	Default
>003	: Data Length (Port 0)	Default
>004	: Parity (Port 0)	Default
>005	: 48 (Port 0)	Default
>006	: UA (Port 0)	Default
>010	: 0 (Port 0)	Default
CM12 Y=45	: XX (Station Class No.)	XX (Station Class No.)
CM60 Y=32	: XX (Class No.)	XX (Class No.)
CMDD04>XX00	: 0 (C.O./Tie Line outgoing calls to SMDR0)	Default
>XX02	: 1 (C.O./Tie Line outgoing calls to SMDR1)	Default
>XX04	: Default	1 (C.O./Tie Line outgoing calls to SMDR)
>XX08	: Default	1 (C.O./Tie Line incoming calls to SMDR)
>XX06	: 0 (C.O./Tie Line incoming calls to SMDR0)	Default
>XX07	: 1 (C.O./Tie Line incoming calls to SMDR1)	Default
CMDD00>0	: Desired setting	Desired setting
CM13 Y=06	: 1 (To provide)	1
CM35 Y=14	: 1 (To provide)	1
CM35 Y=44	: Desired setting	Desired setting
CM35 Y=49	: 0 (To provide)	0

		CENTER OFFICE	LOCAL OFFICE A/B
CMDD00>2	: Default		Desired setting
>7	: Default		Desired setting
>170	: Default		Desired setting
>171	: Default		Desired setting
>172	: Default		Desired setting
>173	: Default		Desired setting
>174	: Default		Desired setting

Centralized Billing Programming Steps for Pattern 3

To SMDR 0: Setting of billing information from Local Offices.
To SMDR 1: Setting of billing information from Center Office.
Use two SMDR terminals, one for Port 0 and one for Port 1.

	CENTER OFFICE	LOCAL OFFICE A/B
CM05 Y=0>XX	: 45 (AP00)	45 (AP00)
CMDD99>0000	: CCC (Data All Clear)	CCC
CMDD00>3	: 1 (Center Office)	0 (Local Office)
CMDD02>0	: No. of call record for SMDR 1	Desired setting
>1	: 0 (Not record)	Desired setting
>2	: 0 (Not record)	No. of call record Local Office
CMDD98>0000	: CCC	CCC
CM08>800	: 1 (AP00)	1
>368	: 0 (Center Office)	1 (Local Office)
>378	: 1 (Not Local Office)	0 (Not Center Office)
CMA7 Y=03>0	: 1 (Distant Office is Local Office)	0 (Distant Office is Center Office)
=04>0	: NONE	Point Code of Center Office
CMDD01>239	: 2 (SMDR 1)	0 (Not Centralized Billing Office)
CM04 Y=01>09	: Default (Former NEAX 2400 IMS Format)	Not effective
>06	: 3 (AP00 with MRCA program)	Default
>03	: 2 (AP00 with MRCA program)	Default
CMDD01>100	: 3 (SMDR with NEAX 2400 IMS Format)	Default
>101	: 3 (SMDR with NEAX 2400 IMS Format)	Default
CMDD10>000	: 1 (SMDR 0)	Default
>100	: 2 (SMDR 1)	Default
>001	: Data Speed (Port 0)	Default
>101	: Data Speed (Port 1)	Default
>002	: Stop Bit (Port 0)	Default
>102	: Stop Bit (Port 1)	Default
>003	: Data Length (Port 0)	Default
>103	: Data Length (Port 1)	Default
>004	: Parity (Port 0)	Default
>104	: Parity (Port 1)	Default
>005	: 48 (Port 0)	Default
>105	: 48 (Port 1)	Default
>006	: UA (Port 0)	Default
>106	: UA (Port 1)	Default
>010	: 0 (Port 0)	Default
>110	: 0 (Port 1)	Default
CM12 Y=45	: XX (Station Class No.)	XX (Station Class No.)
CM60 Y=32	: XX (Class No.)	XX (Class No.)

	CENTER OFFICE	LOCAL OFFICE A/B
CMDD04>XX00	: 0 (C.O./Tie Line outgoing calls to SMDR0)	Default
>XX02	: 1 (C.O./Tie Line outgoing calls to SMDR1)	Default
>XX04	: Default	1 (C.O./Tie Line outgoing calls to SMDR)
>XX08	: Default	1 (C.O./Tie Line incoming calls to SMDR)
>XX06	: 0 (C.O./Tie Line incoming calls to SMDR0)	Default
>XX07	: 1 (C.O./Tie Line incoming calls to SMDR1)	Default
CMDD00>0	: Desired setting	Desired setting
CM13 Y=06	: 1 (To provide)	1
CM35 Y=14	: 1 (To provide)	1
CM35 Y=44	: Desired setting	Desired setting
CM35 Y=49	: 0 (To provide)	0
CMDD00>2	: Default	Desired setting
>7	: Default	Desired setting
>170	: Default	Desired setting
>171	: Default	Desired setting
>172	: Default	Desired setting
>173	: Default	Desired setting
>174	: Default	Desired setting

Centralized Billing Programming Steps for Pattern 4

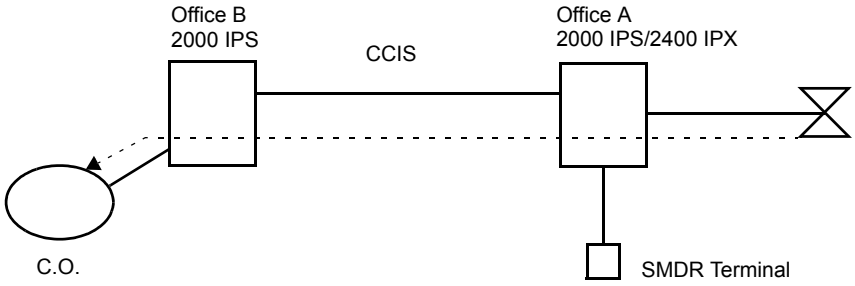
To SMDR 0: Setting of billing information from Center Offices.
To SMDR 1: Setting of billing information from Local Office.
Use two SMDR terminals, one for Port 0 and one for Port 1.

	CENTER OFFICE	LOCAL OFFICE A/B
CM05 Y=0>XX	: 45 (AP00)	45 (AP00)
CMDD99>0000	: CCC (Data All Clear)	CCC
CMDD00>3	: 1 (Center Office)	0 (Local Office)
CMDD02>0	: No. of call record for SMDR 1	Desired setting
>1	: 0 (Not record)	Desired setting
>2	: 0 (Not record)	No. of call record Local Office
CMDD98>0000	: CCC	CCC
CM08>800	: 1 (AP00)	1
>368	: 0 (Center Office)	1 (Local Office)
>378	: 1 (Not Local Office)	0 (Not Center Office)
CMA7 Y=03>0	: 1 (Distant Office is Local Office)	0 (Distant Office is Center Office)
=04>0	: NONE	Point Code of Center Office
CMDD01>239	: 1 (SMDR 0)	0 (Not Centralized Billing Office)
CM04 Y=01>09	: Default (Former NEAX 2400 IMS Format)	Not effective
>06	: 3 (AP00 with MRCA program)	Default
>03	: 2 (AP00 with MRCA program)	Default
CMDD01>100	: 3 (SMDR with NEAX 2400 IMS Format)	Default
>101	: 3 (SMDR with NEAX 2400 IMS Format)	Default
CMDD10>000	: 1 (SMDR 0)	Default
>100	: 2 (SMDR 1)	Default
>001	: Data Speed (Port 0)	Default
>101	: Data Speed (Port 1)	Default
>002	: Stop Bit (Port 0)	Default
>102	: Stop Bit (Port 1)	Default
>003	: Data Length (Port 0)	Default
>103	: Data Length (Port 1)	Default
>004	: Parity (Port 0)	Default
>104	: Parity (Port 1)	Default
>005	: 48 (Port 0)	Default
>105	: 48 (Port 1)	Default
>006	: UA (Port 0)	Default
>106	: UA (Port 1)	Default
>010	: 0 (Port 0)	Default
>110	: 0 (Port 1)	Default
CM12 Y=45	: XX (Station Class No.)	XX (Station Class No.)
CM60 Y=32	: XX (Class No.)	XX (Class No.)

	CENTER OFFICE	LOCAL OFFICE A/B
CMDD04>XX00	: 1 (C.O./Tie Line outgoing calls to SMDR0)	Default
>XX02	: 0 (C.O./Tie Line outgoing calls to SMDR1)	Default
>XX04	: Default	1 (C.O./Tie Line outgoing calls to SMDR)
>XX08	: Default	1 (C.O./Tie Line incoming calls to SMDR)
>XX06	: 1 (C.O./Tie Line incoming calls to SMDR0)	Default
>XX07	: 0 (C.O./Tie Line incoming calls to SMDR1)	Default
CMDD00>0	: Desired setting	Desired setting
CM13 Y=06	: 1 (To provide)	1
CM35 Y=14	: 1 (To provide)	1
CM35 Y=44	: Desired setting	Desired setting
CM35 Y=49	: 0 (To provide)	0
CMDD00>2	: Default	Desired setting
>7	: Default	Desired setting
>170	: Default	Desired setting
>171	: Default	Desired setting
>172	: Default	Desired setting
>173	: Default	Desired setting
>174	: Default	Desired setting

Example 2: Data Assignment of SMDR Call Record on a Tandem Call through CCIS

To provide one SMDR call record showing the office number and the station that made the call in Office A.



Data Assignment of Office B

CM08>040: 0 (Provides SMDR service for tandem calls)
CM08>377: 0 (Provides office number and station number from the tandem office)
CM35 Y=14>C.O. Route No.: 1 (To provide)
CMDD00>2: 1 (To send)

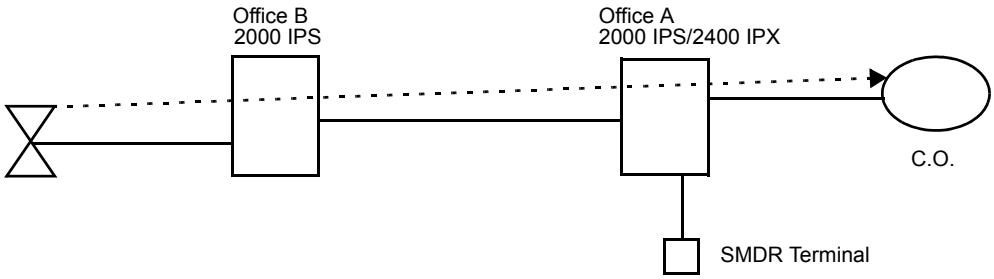
Data Assignment of Office A

CM35 Y=14>CCIS Route No.: 0 (Not provided)
CMA7 Y=06>CCH No.:0000-9999 (Originating Office Number)

Data Assignment of Office A

ARTD CDN 10>CCIS Route No.: 0

To provide Tandem Centralized Billing without AP00 in the Local Office



Data Assignment of Office A

CM08>040: 0 (Provides SMDR service for tandem calls)
CM08>377: 0 (Provides office number and station number from the tandem office)
CM35 Y=14>C.O. Route No.: 0 (Not provided)
CMDD00>2: 1 (To send)

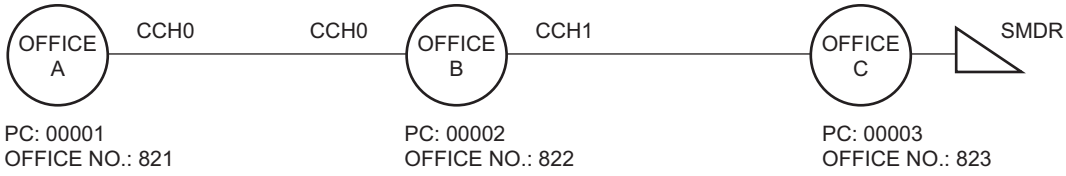
Data Assignment of Office A

ARTD CDN 10>CCIS Route No.: 0
ARTD CDN 16>CCIS Route No.: 0

Data Assignment of Office B

CM08>378: 1 (Not provided)
Do not install or program AP00

Example 3: Data Assignment of CMA7 Y=03, 04



PC : Point Code
CCH: Common Channel Handler

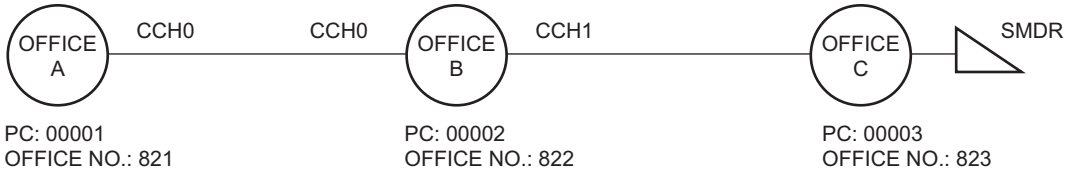
- Data Assignment of Office A

Command Code	1st Data	2nd Data	Remarks
CMA7 Y=03	0	0	To Center Office
CMA7 Y=04	0	00003	

- Data Assignment of Office B

Command Code	1st Data	2nd Data	Remarks
CMA7 Y=03	0	1	To Local Office
CMA7 Y=04	0	00003	
CMA7 Y=03	1	0	To Center Office
CMA7 Y=04	1	00003	

Example 4: Data Assignment of CMA7 Y=06 and CMDD03>55



PC : Point Code
CCH: Common Channel Handler

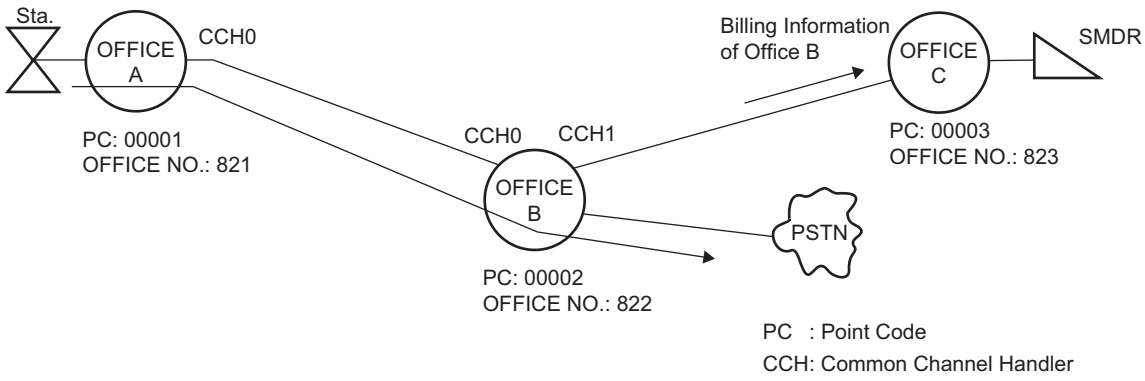
- Data Assignment of Office A

Command Code	1st Data	2nd Data	Remarks
CMA7 Y=06	0	821	
CMDD03	55	821	

- Data Assignment of Office B

Command Code	1st Data	2nd Data	Remarks
CMA7 Y=06	0	822	
CMA7 Y=06	1	822	
CMDD03	55	822	

Example 5: Data Assignment of CMDD03>56



To specify the billing office (Office B) in center office (Office C) when a station of Office A make an outgoing call through Office B:

- Data Assignment of Office A

Command Code	1st Data	2nd Data	Remarks
CMDD03	56	821	

- Data Assignment of Office B

Command Code	1st Data	2nd Data	Remarks
CMDD03	56	822	

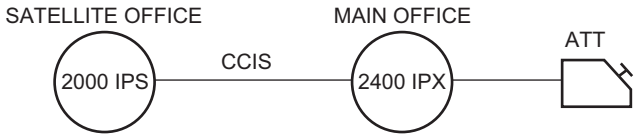
Operating Procedure

No manual operation is required. The call record outputs are produced automatically.

CENTRALIZED DAY/NIGHT MODE CHANGE-CCIS

General Description

This feature switches the Day/Night Mode of a remote office, linked to the main office (2400 IPX) via CCIS, in accordance with the Day/Night Mode switching on the Attendant Console at the main office.



- For Satellite Office
  If the Attendant Console is required in the Satellite Office, the following programming is required.

START	DESCRIPTION	DATA
CM60	Assign as ineffective Trunk Restriction Class change by NT (Night) switch on ATTCON/ DESKCON. (INITIAL)	• Y=02 (1) 0-7: ATTCON No. (2) 1◀: Ineffective
	Assign as ineffective outgoing call restriction on Night Mode by NT switch on ATTCON/ DESKCON. (INITIAL)	• Y=04 (1) 0-7: ATTCON No. (2) 1◀: Ineffective
	Assign as ineffective Day/Night Mode Change by NT switch on ATTCON/DESKCON. (INITIAL)	• Y=06 (1) 0-7: ATTCON No. (2) 1◀: Ineffective
END		

To provide an indication on external equipment when Day/Night Mode status is changed by the Attendant Console at the Main Office, do the following programming.

START	DESCRIPTION	DATA
CM10	Assign the DK card to the required LEN. **NOTE 1:** *We recommend the setting of DK card number by CM14, when using Series 3200 R6.2 software or later.* **NOTE 2:** *The DK card number must be assigned to the 1st LEN (Level 0) and the 3rd LEN (Level 2) of each LT slot.*	(1) 000-763: LEN (2) E800-E831: DK Card No. For PIM0/PIM1: E800-E807 For PIM2/PIM3: E808-E815 For PIM4/PIM5: E816-E823 For PIM6/PIM7: E824-E831 **NOTE 3:** *Circuit No. 3 of E831 is used for built-in External Equipment Interface of MP card by setting CM44.*
CM14	Assign the DK card to the required LEN. **[Series 3200 R6.2 software required]** **NOTE 1:** *The DK card number must be assigned to the 1st LEN (Level 0) and the 3rd LEN (Level 2) of each LT slot.*	(1) XX ZZZ (LEN) XX : 00-59: FP No. ZZZ: 000-127: Port No. (2) E800-E831: DK Card No. NONE◀: No data For FP No.00: E800-E807 For FP No.01: E808-E815 For FP No.02: E816-E823 For FP No.03: E824-E831 **NOTE 2:** *Circuit No.03 of E831 is used for built-in External Equipment Interface of MP card by setting CM44.*
CM44	Assign the function of CCIS Day/Night status Indication to the DK card.	(1) XX Y: Circuit No. XX: 00-31: DK Card No. assigned by CM10/CM14 E800-E831 Y : 0-3: Circuit No. 313: Built-in External Equipment Interface on MP card (2) 3601
END		

Hardware Required

DK card × 1/External Equipment Interface on the MP card
External Indicator (Bell, Lamp etc.) provided by the customer

For cross connection of the External Indicator, refer to the Installation Procedure Manual.

Operating Procedure

Main Office:

1. The Attendant executes Day/Night Mode changeover operation using the normal Attendant Consoles (no master) method or the master Attendant Console method.
2. After a specified time, the Day/Night Mode at the remote office is changed over.

Remote Office:

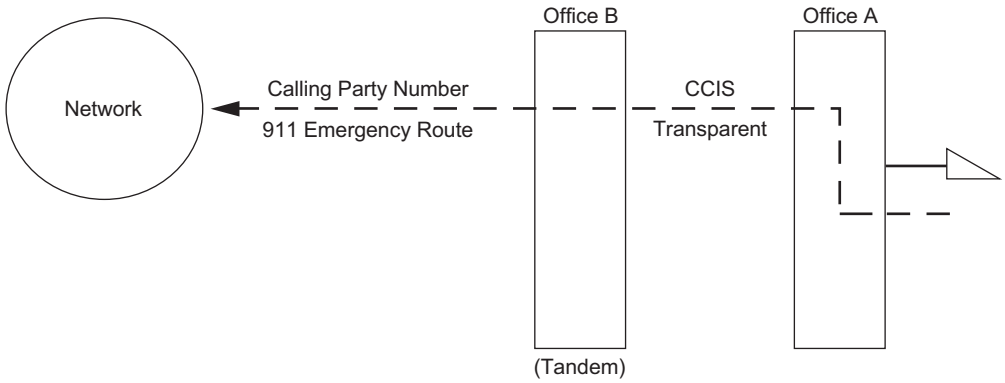
No manual operation required.

CENTRALIZED E911-CCIS

[North America Only]

General Description

This feature allows the system to transmit a calling party number to the 911 Emergency system over CCIS tandem connection.



Station Application

All stations and Attendant Consoles.

Programming

- For Calling Party Side Office (Office A)

START	DESCRIPTION	DATA
CM12	Assign the calling party number sent to the network. "*", "#" are not available for the sending number.	• Y=12 (1) X-XXXXXXXX: Station No. (2) X-XXXX: Sending No.
	Assign the Local Office Code Table number.	• Y=13 (1) X-XXXXXXXX: Station No. (2) 00-14: Local Office Code Table No. 00-14
A		

	DESCRIPTION	DATA
A		
CM50	Assign the Local Office Code sent to the network. "*", "#" is not available for the sending number.	• Y=05 (1) 00-14 : Local Office Code Table No. 00-14 (2) X-XXX...: Local Office Code (Maximum 12 digits)
CM20	Assign the LCR data for CCIS calls.	See "Least Cost Routing-3/6 digit" in the Feature Programming Manual.
CM81	This feature is available only when the calling party calls to CCIS route by the LCR.	
CM8A		
CM85		
CM35		
CM8A	Add the calling party number for Enhanced 911 calls via CCIS route.	• Y=5000-5255 LCR Pattern No. 000-255 (1) 165: Caller ID of outgoing call by CCIS (2) 0: To add
CM08	Provide the system with Caller ID Display feature for CCIS calls.	(1) 379 (2) 0: To provide
CMA7	Provide each CCH number with Name Display-CCIS feature.	• Y=26 (1) 0-7: CCH No. 0-7 (2) 0: To provide
	Provide the CCH number with Calling Party Information transferring service.	• Y=28 (1) 0-7: CCH No. 0-7 (2) 0: To provide
END		

- For Tandem Office (Office B)

START	DESCRIPTION	DATA
CM08	Provide the system with Caller ID Display feature for CCIS calls.	(1) 379 (2) 0: To provide
	Send ANI signal to the network on Enhanced 911 calls.	(1) 474: Enhanced 911 (2) 0: To send
CMA7	Provide each CCH number with Name Display-CCIS feature.	• Y=26 (1) 0-7: CCH No. 0-7 (2) 0: To provide
	Provide the CCH number with Calling Party Information transferring service.	• Y=28 (1) 0-7: CCH No. 0-7 (2) 0: To provide
CM35	Provide the Calling Party Information transferring service to the Enhanced 911 route.	• Y=145 (1) 00-63: Trunk Route No. (2) 0: To provide
END		

Operating Procedure

1. Lift the handset and receive a dial tone.
2. Dial the trunk access code and telephone number (e. g. 911).
3. The system automatically completes a call and sends the pre-assigned number: calling area code + calling station number.

CENTRALIZED MAT-CCIS

[Not used in North America]

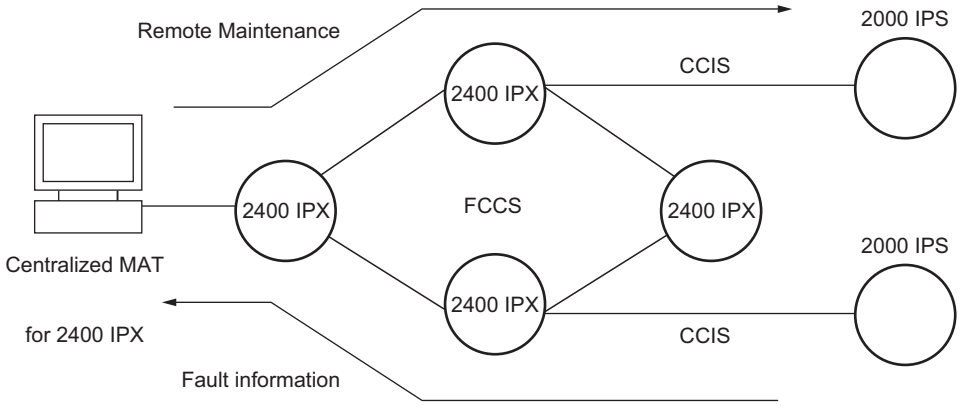
General Description

Centralized MAT is a Windows based application software, which provides a display of alarm information within the CCIS network, and interacts with MATWorX for remote maintenance over the CCIS network.

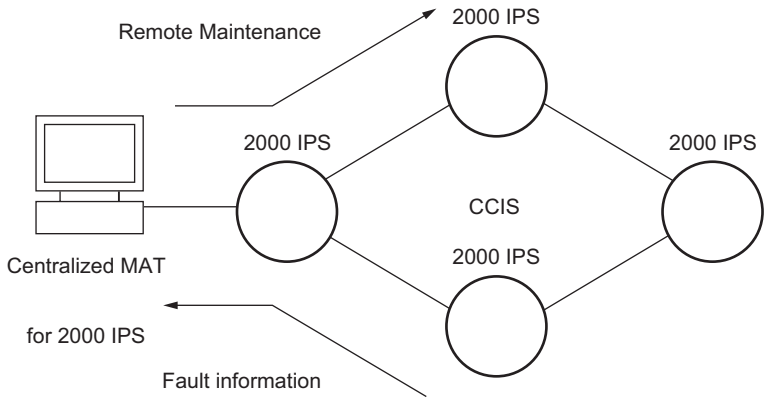
The network consisting of 2400 IPX systems with FCCS and 2000 IPS systems with CCIS can be maintained from the Centralized MAT connected to the 2400 IPX system (Centralized MAT for 2400 IPX). In this type of network, the 2000 IPS can be a local office only, which is connected to the 2400 IPX via CCIS.

The CCIS network consisting of 2000 IPS systems only can be maintained from the Centralized MAT for 2000 IPS. System data read/write/delete, save/load/verify, and AP program download are available.

Centralized MAT for 2400 IPX



Centralized MAT for 2000 IPS



Station Application

Not Applicable

Programming

START

CMEA

A

DESCRIPTION

Assign fault kind information and its external alarm kind.

Fault Kind number:
01 : System Initialization
04 : MP-FP/AP communication failure
08 : FP/AP card down
09 : Power failure
12 : CS/ZT fault occurred
16 : Periodic maintenance
20 : DTI Line failure
21 : DCH/BRT/PRT D-channel link connection failure
22 : CCH/IPT link connection failure
24 : Number of faulty trunks was more than predetermined number
25 : Number of lockout stations was more than predetermined number
26 : DLC card down
27 : Synchronism of DPC missed
28 : SMDR output buffer memory overflow
2B: CS/ZT fault occurred
18 : FP/AP card returned to normal condition
19 : Power failure returned to normal condition
30 : DTI Line returned to normal condition
31 : DCH/BRT/PRT D-channel link connection returned to the normal condition
32 : CCH/IPT link connection returned to normal condition
34 : Number of faulty trunks was less than predetermined number
35 : Number of lockout stations restored to less than predetermined number
36 : DLC card returned to normal condition
37 : Synchronism of DPC returned to normal condition
38 : SMDR output buffer memory returned to normal condition
3B: CS/ZT returned to normal condition

DATA

- Y=2

(1) Fault Kind No.: See left column
(2) External Alarm Kind
0: Fault Memory/No out put of External Alarm
1: Fault Memory/External Alarm is MN alarm
2: Fault Memory/External Alarm is MJ alarm
3: Fault Memory/External Alarm Kind is determined in standard data
NONE◀: No fault memory store/ No External Alarm output

	DESCRIPTION	DATA
A		
CMEA	Specify the external alarm kind which is automatically sent.	• Y=3 (1) 00-02: External Alarm Kind set by CMEA Y=2 (2) 0 : Send 1◀: Not sent
	Specify the contents which is sent to the Integrated Maintenance office as external alarm kind.	• Y=4 (1) 01: Kind of Information Transferred (2) 2: External Alarm Kind
	Specify the Point Code of the office, which the fault information is sent to.	• Y=4 (1) 05: Destination office's point code to which the fault information transferred (2) 1-16367: Point Code
	Assign the name of own office.	• Y=5 (1) 01: With Character Codes (2) 20-7F: Character Code (Maximum 32 digits, 16 characters) (See CM77 in the Command Manual.) (1) 02: With Characters (2) XX...XX: Office name (Maximum 16 characters)
END		

Operating Procedure

For Centralized MAT for 2400 IPX, refer to associated document of Centralized MAT for 2400 IPX.
For Centralized MAT for 2000 IPS, refer to Centralized MAT User Guide.

NOTE: *When a fault occurs, the external alarm kind registered in the 2000 IPS in the CCIS network is displayed on Centralized MAT on the 2400 IPX office as follows:*

```
DFTD          99/08/30        14:57     xxxxxxxxxxxxxxx
SYSTEM MESSAGE        15-0                    IVS MESSAGE
xxxxxxxxx                                        Aug  30  14:56
  LP00-0-ACT
1: 3F  EE  01  00  00  00  00  00 2:00  00  00  00  00  00  00  00  3:00  00  00  00  00  00  00  00
4: 00  00  00  00  00  00  00  00
5: 00  00  00  00  00  00  00  00 6:00  00  00  00  00  00  00  00  7:00  00  00  00  00  00  00  00
8: 00  00  00  00  00  00  00  00
```

DFTD 99/08/30 14:57 XXXXXXXXX : Date of external alarm message output

SYSTEM MESSAGE 15-0 IVS MESSAGE : Means that the fault information is transferred from the 2000 IPS.

1: 3F EE 01 00 00 00 00 00

3F EE : Point Code of a 2000 IPS which external alarm message outputs

01 : External alarm kind of fault information at the 2000 IPS
- 01: MJ alarm
- 02: MN alarm
- 04: --alarm

00 : Summary information (00 fixed)

For details, refer to the manuals for the 2400 IPX.

CONSULTATION HOLD-ALL CALLS-CCIS

General Description

This feature permits a station user, within the CCIS network, to hold any incoming or outgoing public network or Tie Line call while originating a call to another station within the CCIS network.

Programming

START	DESCRIPTION	DATA
CM12	Assign Service Restriction Class C to the required stations.	• Y=07 (1) X-XXXXXXXX: Station No. (2) XX: 00-15◀: Service Restriction Class C
CM15	Allow the Switch Hook Flash capability in Service Restriction Class C assigned by CM12 Y=07.	• Y=90, 91 Switch Hook Flash on External Call (1) 00-15: Service Restriction Class C assigned by CM12 Y=07 (2) 1◀: Allow (Special Dial Tone Connection)
CM08	When STA-A has a C.O. line on Consultation Hold and is talking to STA-B has hung-up.	(1) 117 (2) 0: Return to the original call.
END		

Operating Procedure

Single-Line Telephone

To hold the original call and place a second call from a Single-Line Telephone:

1. Press the hookswitch momentarily and receive Feature Dial Tone.
2. The original call is placed on hold and receives Music On Hold, if provided.
3. Dial the second station number and receive ringback tone.
4. The second station answers. The original call is now on Consultation Hold-All Calls-CCIS.

To return to the original call from a Single-Line Telephone:

1. In any of the following cases, the calling station can return to the original call by momentarily pressing the hookswitch:
   a. The second station called is busy.
   b. The calling station cannot gain access to the second station due to restriction.
   c. The second station dose not answer.
2. If the second party hangs up, the calling station will be automatically returned to the original call.
3. If the originating station momentarily presses the hookswitch, a three-way Conference will be initiated.

D^{term}

To hold the original call and place a second call from a D^{term}:

1. Press the **Transfer** key and receive Feature Dial Tone.
2. The original call is placed on hold and receives Music On Hold, if provided.
3. Dial the second station number and receive ringback tone.
4. The second station answers. The original call is now on Consultation Hold-All Calls-CCIS.

To return to the original call from a D^{term}:

1. In any of the following cases, the calling station can return to the original call by pressing the **Transfer** key:
   a. The second station called is busy.
   b. The calling station cannot gain access to the second station due to restriction.
   c. The second station does not answer.
2. If the second station hangs up, the calling station will be automatically returned to the original call.
3. If the second station remains in the conversation, pressing the **Transfer** or **Answer** key returns the original call to the D^{term} while the second call enters Consultation Hold-All Calls-CCIS.
4. By pressing the **Conf** key, a three-party conference will be initiated.

DATA LINE SECURITY-CCIS

General Description

This feature allows the lines which are used for data transmission through CCIS to be protected from interruptions such as Attendant Camp-On, Busy Verification-CCIS, Executive Right of Way, and Attendant Override.

Programming

START	DESCRIPTION	DATA
CM13	Assign the function of Analogue Data station (Single Line Station with FAX or MODEM.) to required stations.	• Y=07 (1) X-XXXXXXXX: Station No. (2) 0: Data station
END		

Operating Procedure

No manual operation is required.

DELUXE TRAVELING CLASS MARK-CCIS

General Description

This feature provides outgoing call restrictions within the CCIS network.

The following three types of restrictions are allowed:

- Deluxe Traveling Class Mark Restriction
- Route Restriction
- Numbering Restriction.

Programming

START	DESCRIPTION	DATA
CM12	Assign a Trunk Restriction Class to the required stations.	• Y=01 Trunk Restriction Class (1) X-XXXXXXXX: Station No. (2) X Z: Route Restriction Class X: 1-8: Trunk Restriction Class in Day Mode Z: 1-8: Trunk Restriction Class in Night Mode 1: Unrestricted (RCA) 2: Non-Restricted 1 (RCB) 3: Non-Restricted 2 (RCC) 4: Semi-Restricted 1 (RCD) 5: Semi-Restricted 2 (RCE) 6: Restricted 1 (RCF) 7: Restricted 2 (RCG) 8: Fully-Restricted (RCH)
A		

A

	DESCRIPTION	DATA
CM35	Specify to outgoing/incoming call capability on each Route Restriction Class (RCA-RCH) assigned by CM12 Y=01 to each route. **NOTE:** *For the route assigned as C.O. line by CM35 Y=56 (RCF), 57 (RCG), 58 (RCH) are automatically assigned to "Restricted".*	• Y=51 (RCA) • Y=52 (RCB) • Y=53 (RCC) • Y=54 (RCD) • Y=55 (RCE) • Y=56 (RCF) • Y=57 (RCG) • Y=58 (RCH) Restriction of Outgoing Connection • Y=61 (RCA) • Y=62 (RCB) • Y=63 (RCC) • Y=64 (RCD) • Y=65 (RCE) • Y=66 (RCF) • Y=67 (RCG) • Y=68 (RCH) Restriction of Incoming Connection (1) 00-63: Trunk Route No. (2) 0 : Restricted 1◀: Allow
CM36	To deny access to particular trunk groups from dial-repeating Tie trunks, specify the combination of trunk route restricting the Trunk-to-Trunk Connection.	• Y=0 (1) XX ZZ XX: 00-63 (Incoming Trunk [Tie Trunk] Route) ZZ : 00-63 (Outgoing Trunk [Miscellaneous Trunk] Route) (2) 0: Allow

END

When changing the initial setting (see **NOTE**), or when receiving the 2400 IPX Trunk Restriction Class (9-15) as a Deluxe Traveling Class Mark, execute the following programming.

START	DESCRIPTION	DATA
CM42	Assign the 2400 IPX Trunk Restriction Class to each 2000 IPS Trunk Restriction Class for the restriction class conversion from the 2000 IPS to the 2400 IPX, if required.	(1) 20: 2000 IPS TRK Restriction Class 1 (RCA) 21: 2000 IPS TRK Restriction Class 2 (RCB) 22: 2000 IPS TRK Restriction Class 3 (RCC) 23: 2000 IPS TRK Restriction Class 4 (RCD) 24: 2000 IPS TRK Restriction Class 5 (RCE) 25: 2000 IPS TRK Restriction Class 6 (RCF) 26: 2000 IPS TRK Restriction Class 7 (RCG) 27: 2000 IPS TRK Restriction Class 8 (RCH) (2) 00-15: 2400 IPX TRK Restriction Class (0-15)
	Assign the 2000 IPS Trunk Restriction Class to each 2400 IPX Trunk Restriction Class for the restriction class conversion from the 2400 IPX to the 2000 IPS, if required.	(1) 30: 2400 IPX TRK Restriction Class 0 31: 2400 IPX TRK Restriction Class 1 32: 2400 IPX TRK Restriction Class 2 33: 2400 IPX TRK Restriction Class 3 34: 2400 IPX TRK Restriction Class 4 35: 2400 IPX TRK Restriction Class 5 36: 2400 IPX TRK Restriction Class 6 37: 2400 IPX TRK Restriction Class 7 38: 2400 IPX TRK Restriction Class 8 39: 2400 IPX TRK Restriction Class 9 40: 2400 IPX TRK Restriction Class 10 41: 2400 IPX TRK Restriction Class 11 42: 2400 IPX TRK Restriction Class 12 43: 2400 IPX TRK Restriction Class 13 44: 2400 IPX TRK Restriction Class 14 45: 2400 IPX TRK Restriction Class 15 (2) 01-08: 2000 IPS TRK Restriction Class (1-8)
END		

NOTE: *If no data is set, the default setting is shown below.*

(1) 2000 IPS to 2400 IPX:

1ST DATA	2ND DATA
20: 2000 IPS TRK Restriction Class 1 (RCA)	01: 2400 IPX TRK Restriction Class 1
21: 2000 IPS TRK Restriction Class 2 (RCB)	02: 2400 IPX TRK Restriction Class 2
22: 2000 IPS TRK Restriction Class 3 (RCC)	03: 2400 IPX TRK Restriction Class 3
23: 2000 IPS TRK Restriction Class 4 (RCD)	04: 2400 IPX TRK Restriction Class 4
24: 2000 IPS TRK Restriction Class 5 (RCE)	05: 2400 IPX TRK Restriction Class 5
25: 2000 IPS TRK Restriction Class 6 (RCF)	06: 2400 IPX TRK Restriction Class 6
26: 2000 IPS TRK Restriction Class 7 (RCG)	07: 2400 IPX TRK Restriction Class 7
27: 2000 IPS TRK Restriction Class 8 (RCH)	08: 2400 IPX TRK Restriction Class 8

(2) 2400 IPX to 2000 IPS:

1ST DATA	2ND DATA
30 : 2400 IPX TRK Restriction Class 0	01: 2000 IPS TRK Restriction Class 1 (RCA)
31 : 2400 IPX TRK Restriction Class 1	01: 2000 IPS TRK Restriction Class 1 (RCA)
32 : 2400 IPX TRK Restriction Class 2	02: 2000 IPS TRK Restriction Class 2 (RCB)
33 : 2400 IPX TRK Restriction Class 3	03: 2000 IPS TRK Restriction Class 3 (RCC)
34 : 2400 IPX TRK Restriction Class 4	04: 2000 IPS TRK Restriction Class 4 (RCD)
35 : 2400 IPX TRK Restriction Class 5	05: 2000 IPS TRK Restriction Class 5 (RCE)
36 : 2400 IPX TRK Restriction Class 6	06: 2000 IPS TRK Restriction Class 6 (RCF)
37 : 2400 IPX TRK Restriction Class 7	07: 2000 IPS TRK Restriction Class 7 (RCG)
38-45: 2400 IPX TRK Restriction Class 8-15	08: 2000 IPS TRK Restriction Class 8 (RCH)

Operating Procedure

No manual operation is required.

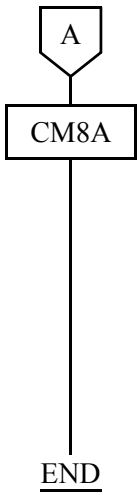
DIAL ACCESS TO ATTENDANT-CCIS

General Description

This feature allows a station user to call an Attendant Console by dialing an operator call code through the CCIS network.

Programming

START	DESCRIPTION	DATA
CM62	Specify the tenants to be handled by each ATTCON Group. (INITIAL) **NOTE:** *When marking a link with the 2400 IPX Tenant number should be assigned as 01-63, not 00.*	• Y=0-3: ATTCON Group 0-3 assigned by CM60 Y=00 (1) 00-63: Tenant No. (2) 0 : To handle 1◀: Not handled
CM20	Assign the digit 0 as an access code, to LCR Group 3 (A129).	• Y=0: Number Plan Group 0-3 (1) 0: Access Code (2) A129
CM8A	Assign an area code table to be used to select a route pattern table.	• Y=A000 (1) 0-3: LCR Group 0-3 (2) 4005-4007: Area Code Development Pattern No. 5-7
	Assign the digit 0 into the selected area code table.	• Y=4005-4007 (1) 0 (2) 0000-0255: Route Pattern No. 000-255
	Assign the next Route Pattern number to the Route Pattern number assigned by CM8A Y=4005-4007. **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.*	• Y=0000-0255 Route Pattern No.000-255 (1) 0: Designation of next table (2) 0000-0255: Next Route Pattern No.000-255
A		



DESCRIPTION	DATA
Assign the route pattern table with the desired properties and selection of appropriate routes.	• 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.)

Operating Procedure

To call an Attendant Console:

1. The station user dials the operator call code and receives ringback tone.
2. The **ATND** lamp for Incoming Call Identification flashes on the Attendant Console. The Attendant answers the call.

DIRECT-IN TERMINATION-CCIS

General Description

This feature automatically routes incoming exchange calls through CCIS to a preassigned station in the network, without Attendant assistance.

Programming

- When a release signal arrives on the incoming (IC) trunk

START	DESCRIPTION	DATA
CM30	Assign the data for terminating system in Day Mode, Night Mode, Mode A and Mode B of the trunk, respectively.	• Y=02 Day Mode • Y=03 Night Mode • Y=40 Mode A • Y=41 Mode B (1) 000-255: Trunk No. (2) 04: Direct-In Termination
	Assign the Abbreviated Code for System Speed Dialing to terminate the Satellite Office via CCIS by DTI in Day Mode, Night Mode, Mode A and Mode B, respectively.	• Y=04 Day Mode • Y=05 Night Mode • Y=42 Mode A • Y=43 Mode B (1) 000-255: Trunk No. (2) CXX XX: 00-31 (Abbreviated Code for System Speed Dialing assigned by CM71>66)
CM35	Assign trunk route data to the trunk route number (for IC route).	• Y=02 IC/BW (1) 00-63: Trunk Route No. (2) 1 : Incoming Trunk 3◀: Bothway Trunk • Y=05 Release Signal from Distant Office (1) 00-63: Trunk Route No. (2) 1◀: Arrive • Y=09 Incoming Connection Signaling (1) 00-63: Trunk Route No. (2) 15◀: Ring Down
A		

	DESCRIPTION	DATA
A		
CM36	Specify the combination of trunk routes allowing the Tandem connection.	• Y=0 (1) XX ZZ XX: 00-63 (Incoming Trunk Route) ZZ : 00-63 (Outgoing Trunk Route for CCIS) (2) 0: Allow
CM71	Assign the System Speed Dialing memory area used exclusively for DIT-Outside.	(1) 66: Exclusive for DIT-Outside (2) XXX YYY XXX: 000-299 (Starting Memory Slot No. in Block) YYY: 001-300 (No. of Slots to be assigned in Block) NONE◀: No data
CM72	Set the stored number to the Memory Slot number allocated by CM71.	• Y=0 (1) 000-299: Memory Slot No. (2) XXXX , YY...Y XXXX : Access Code (Maximum 4 digits) , : Separator Mark YY...Y : Calling Party's No. (Maximum 26 digits)
END		

- When no release signal arrives on the IC trunk.

START	DESCRIPTION	DATA
CM08	Provide the DIT-Outside feature. (In case of no release signal on IC trunk.)	(1) 324: DIT-Outside (2) 0: Allow (When both answer and release signal appear on the OG trunk)
CM30	Assign the data for terminating system in Day Mode, Night Mode, Mode A and Mode B for the trunk, respectively.	• Y=02 Day Mode • Y=03 Night Mode • Y=40 Mode A • Y=41 Mode B (1) 000-255: Trunk No. (2) 04: Direct-In Termination
	Assign the Abbreviated Code for System Speed Dialing to terminate to the other system via CCIS by DIT in Day Mode and Night Mode, Mode A and Mode B respectively.	• Y=04 Day Mode • Y=05 Night Mode • Y=42 Mode A • Y=43 Mode B (1) 000-255: Trunk No. (2) CXX XX: 00-31 (Abbreviated Code for System Speed Dialing Assigned by CM71>66)
CM35	Assign trunk route data to the trunk route number (for IC route).	• Y=02 IC/BW (1) 00-63: Trunk Route No. (2) 1 : Incoming Trunk 3◀: Bothway Trunk
		• Y=05 Release Signal from Distant Office (1) 00-63: Trunk Route No. (2) 0: Not arrive
		• Y=09 Incoming Connection Signaling (1) 00-63: Trunk Route No. (2) 15◀: Ring Down
A		

	DESCRIPTION	DATA
A		
CM35	Assign Trunk Route data to the trunk route number (for OG route).	• Y=04 Answer Signal from Distant Office (1) 00-63: Trunk Route No. (2) 2: Arrive • Y=05 Release Signal from Distant Office (1) 00-63: Trunk Route No. (2) 1◀: Arrive
CM36	Specify the combination of trunk routes allowing the Tandem connection.	• Y=00 (1) XX ZZ XX: 00-63 (Incoming Trunk Route) ZZ : 00-63 (Outgoing Trunk Route for CCIS) (2) 0: Allow
CM71	Assign the System Speed Dialing memory area used exclusively for DIT-Outside.	(1) 66: Exclusive for DIT-Outside (2) XXX YYY XXX: 000-299 (Starting Memory Slot No. in Block) YYY: 001-300 (No. of Slots to be assigned in Block) NONE◀: No data
CM72	Set the stored number to the Memory Slot number allocated by CM71.	• Y=0 (1) 000-299: Memory Slot No. (2) XXXX , YY...Y XXXX : Access Code (Maximum 4 digits) , : Separator Mark YY...Y : Calling Party's No. (Maximum 26 digits)
CM41	When no release signal arrives on the IC trunk, specify the timer for forced disconnection when the called party does not answer.	• Y=0 (1) 55 (2) 01-13: 8-60 seconds (4 second increments) If no data is set, the default setting is 20-24 seconds.
END		

Operating Procedure

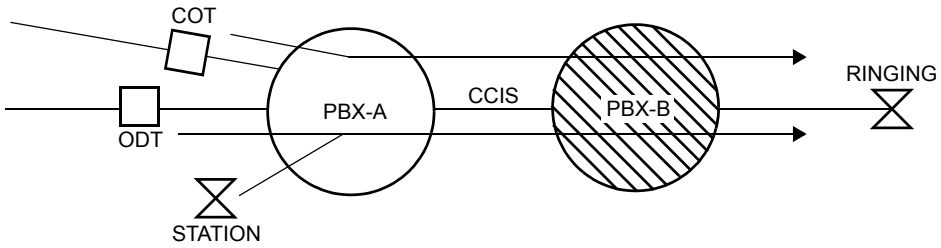
The outside calling party dials the telephone number, as usual. The call is answered at a predetermined station, within the CCIS network, by passing the Attendant Console.

DISTINCTIVE RINGING-CCIS

General Description

This feature provides distinctive station ringing patterns for terminated calls, through the CCIS network, so that a station user can distinguish between incoming internal and external calls.

Programming



The ringing pattern should be selected in PBX-B.

START

DESCRIPTION	DATA
CM08 Specify the interval of ringing for each type of incoming calls through the CCIS.	(1) 138: For CCIS call (2) See the table below

[North America Only]

CM08>138	For calls from station/Tie Line through CCIS	For calls from C.O. through CCIS
0	2 seconds ON-4 seconds OFF	1 second ON-2 seconds OFF
1◀	1 second ON-2 seconds OFF	2 seconds ON-4 seconds OFF

[Other than North America]

CM08>138	For calls from station/Tie Line through CCIS	For calls from C.O. through CCIS
0	As per CM08>392 pattern 1	As per CM08>396
1◀	As per CM08>396	As per CM08>392 pattern 1

A

A

DESCRIPTION	DATA
• CM08>392 pattern 1 0 : 2 seconds ON- 4 seconds OFF 1◀: 0.4 seconds ON- 0.2 seconds OFF- 0.4 seconds ON- 2 seconds OFF (INITIAL)	
• CM08>396 0 : 2 seconds ON- 4 seconds OFF (For D^{term}) 1 second ON- 5 seconds OFF (For SLT) 1◀: 1 second ON- 2 seconds OFF (INITIAL)	

END

Operating Procedure

No manual operation is required.

DO NOT DISTURB-CCIS

General Description

This feature allows a station user to establish the Do Not Disturb (DND) status on a temporary basis, during which time access to the station from incoming CCIS calls will be denied.

Station Application

Single Line Telephone, D^{term} and Attendant Console

Programming

START	DESCRIPTION	DATA
CM12	Assign Service Restriction Class A to the required stations.	• Y=02 (1) X-XXXXXXXX: Station No. (2) XX ZZ XX: 00-15◀: Service Restriction Class A
CM15	Allow Do Not Disturb in Service Restriction Class A assigned by CM12 Y=02.	• Y=19 (1) 00-15: Service Restriction Class A assigned by CM12 Y=02 (2) 1◀: Allow
CM13	Assign the Do Not Disturb group of stations. Do Not Disturb is set simultaneously for the stations assigned by this command, by operation from the Attendant Console.	• Y=00 (1) X-XXXXXXXX: Station No. (2) 0: To provide
CM20	Assign the access code for Do Not Disturb Set/ Cancel.	• Y=0-3 Numbering Plan Group 0-3 (1) X-XXXX: Access Code (2) A022: Do Not Disturb Set A023: Do Not Disturb Cancel
CM51	Assign the destination of the call when the called station is set to Do Not Disturb.	• Y=10 (1) 00-63: Tenant No. (2) X-XXXXXXXX: Station No. E000: Attendant Console
A		

	DESCRIPTION	DATA
A		
CM90	If the Attendant Console is assigned as the destination by CM51, assign a Call Forwarding-Intercept (ICPT) key to the console.	• Y=00 (1) My Line No. + [,] + Key No. (2) F6065: Call Forwarding-Intercept Key
	Assign a Do Not Disturb function key to the D^{term}, if required.	• Y=00 (1) My Line No. + [,] + Key No. (2) F0022: Do Not Disturb set/reset
	Assign Do Not Disturb and Do Not Disturb Override function keys to the ATTCON/ DESKCON.	• Y=00 (1) ATTCON No. (E000-E007) + [,] + Key No. (2) F6102: Do Not Disturb F6104: Reset
CM08	Specify the Call Forwarding-Busy Line/Station Hunting for a station with Do Not Disturb set.	(1) 240 (2) 0 : Available 1◀: Not available
	For a system with multiple-tenant, specify the destination of a call transferred in CM51 Y=10.	(1) 241 (2) 0 : Tenant of called station 1◀: Tenant of calling station
CM48	Select the Dial Tone on setting Do Not Disturb.	• Y=2 (1) 14: Dial Tone on setting Do Not Disturb (2) 0 : Special Dial Tone (Stutter Dial Tone) 1◀: Dial Tone
END		

To set an outside party through CCIS as a destination of transferred call

START	DESCRIPTION	DATA
CM11	Assign the Virtual Line station number to the required LEN.	(1) 000-255: Virtual LEN (2) X-XXXXXXXX: Virtual Line Station No.
CM12	Assign Service Restriction Class A to each station.	• Y=02 (1) X-XXXXXXXX: Virtual Line Station No. assigned by CM11 (2) XX ZZ XX: 00-15◀: Service Restriction Class A
CM15	Assign Call Forwarding-All Calls-Outside to Service Restriction Class A assigned by CM12 Y=02.	• Y=26 (1) 00-15: Service Restriction Class A assigned by CM12 Y=02 (2) 1◀: Allowed
CME6	Assign Call Forwarding-All Calls-Outside to the Virtual Line station number assigned by CM11.	• Y=00 Call Forwarding-All Calls (1) X-XXXXXXXX: Virtual Line Station No. assigned by CM11 (2) Destination No.: X-XXXX + , + YY···Y X-XXXX: Outgoing Trunk (1-4 digits) , : Separate Mark YY···Y : Called No. (Maximum 26 digits) NONE◀ : No data
CM08	For system with multiple-tenant, specify the tenant of calling station as the destination of a call transferred in CM51 Y=10.	(1) 241 (2) 1◀: Tenant of calling station
CM51	Assign the destination of the call when called station is set to Do Not Disturb as Virtual Line station assigned by CM11.	• Y=10 (1) 00-63: Tenant No. (2) X-XXXXXXXX: Virtual Line Station No. assigned by CM11
END		

To do Do Not Disturb Override-CCIS

START	DESCRIPTION	DATA
CM08	Specify the sending of the station status type of the destination office when the D^{term}/ ATTCON calls a station set the Do Not Disturb over CCIS. **[Series 3700 R12.1]**	(1) 669 (2) 0 : To send Do Not Disturb setting 1◀: To send the restriction
	Specify "DND" display on D^{term}/ATTCON when D^{term}/ATTCON calls a station set the Do Not Disturb over CCIS. **[Series 3600]**	(1) 699 (2) 0 : To provide 1◀: Not provided
CM90	Assign the key of Do Not Disturb Override to a D^{term}.	• Y=00 (1) My Line Number + , + Key No. (2) F1080: Do Not Disturb Override
	Assign the key of Do Not Disturb Override to a ATTCON/DESKCON.	• Y=00 (1) ATTCON/DESKCON No. (E030-E037) + , + Key No. (2) F6108: Do Not Disturb Override
END		

Operating Procedure

To set Do Not Disturb from a Single-Line Telephone or D^{term}:

1. Lift the handset and receive dial tone.
2. Dial the Do Not Disturb-CCIS feature access code and receive Service Set Tone.
3. Replace the handset.

To cancel Do Not Disturb from a Single-Line Telephone or D^{term}:

1. Lift the handset and receive dial tone.
2. Dial the Do Not Disturb-CCIS cancellation code and receive Service Set Tone.
3. Replace the handset.

To set Do Not Disturb-CCIS from a D^{term}:

1. Press the **Speaker** key and receive dial tone.
2. Press the Do Not Disturb feature key, and the associated LED lights. If the D^{term} is equipped with an LCD, the display will indicate **SET**.
3. Press the **Speaker** key.

To cancel Do Not Disturb-CCIS from a D^{term}:

1. Press the **Speaker** key and receive dial tone.
2. Press the Do Not Disturb feature key, and the associated LED goes out. If the D^{term} is equipped with an LCD, the display will indicate **CNCL**.
3. Press the **Speaker** key.

To do Do Not Disturb Override-CCIS from a D^{term}:
[Series 3700 R12.1 software required]

1. Lift the handset and receive dial tone.
2. Dial the number of the station set to DND.
3. Receive busy tone, and the LED of Do Not Disturb Override feature key flashes. If the D^{term} is equipped with an LCD, the display will indicate DND.
4. Press the Do Not Disturb Override feature key.
5. Receive ring back tone and the station set to DND rings.

NOTE 1: *During on Consultation Hold at overriding station, this feature is not available.*
NOTE 2: *In the case that the station set to DND is talking with another station, the overriding station automatically join the current conversation to form a three party conference.*

DUAL HOLD-CCIS

General Description

This feature allows two connected D^{term}s to be placed on hold simultaneously over the CCIS link. This enables the held parties to answer or originate a call from a secondary extension or the idle prime extension.

Programming

START	DESCRIPTION	DATA
CM12	Assign Service Restriction Class B to the required stations.	• Y=02 (1) X-XXXXXXXX: Station No. (2) XX ZZ ZZ: 00-15◀: Service Restriction Class B
CM15	Allow Dual Hold in Service Restriction Class B assigned by CM12 Y=02.	• Y=64 (1) 00-15: Service Restriction Class B assigned by CM12 Y=02. (2) 1◀: Allow
END		

Operating Procedure

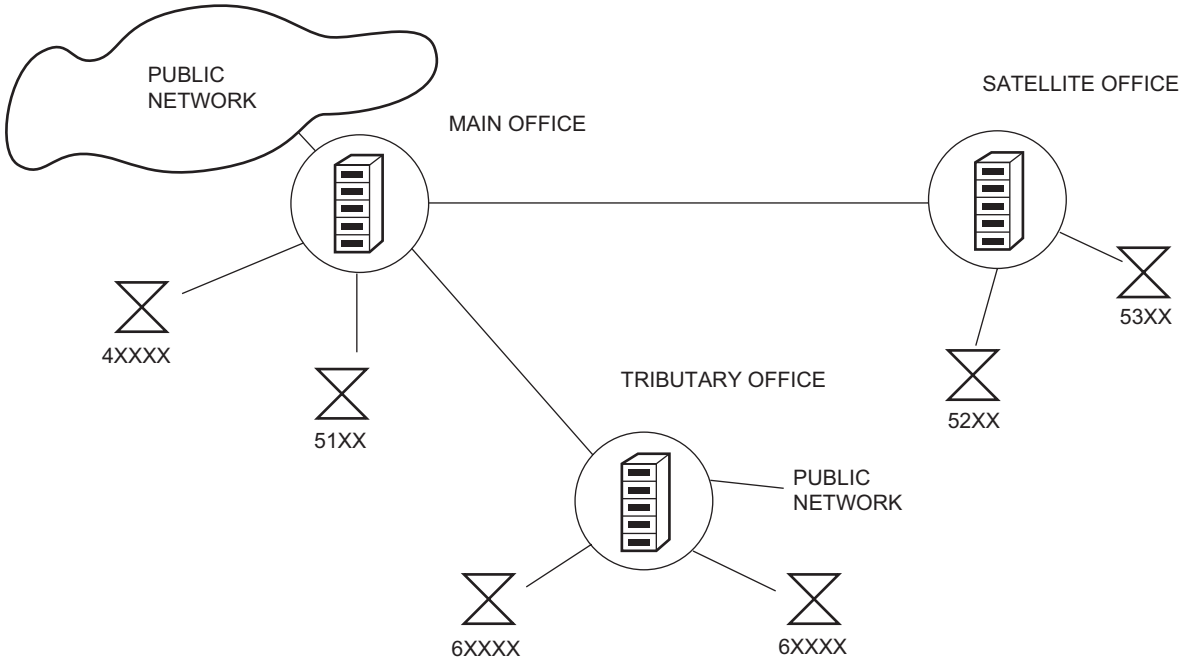
To operate Dual Hold-CCIS from a D^{term}:

1. The user at Station A presses the **Hold** key; the user at Station B is placed on hold.
2. The user at Station B presses the **Hold** key; the user at Station A is placed on hold.
3. Dual Hold-CCIS is now in progress.

FLEXIBLE NUMBERING OF STATIONS-CCIS

General Description

This feature allows voice and data station numbers to be assigned to any instrument in the CCIS network, based solely on numbering plan limitations.



Office location is indicated by all digits of the station number

Programming

START	DESCRIPTION	DATA
CM29	Assign a Numbering Plan Group to each Tenant.	(1) 00-63: Tenant No. (2) 710-713: Numbering Plan Group 0-3
CM20	Specify the number of digits for station numbers. Example: For setting station number "2XXX" (1) 2 (2) 804 **NOTE:** *To the following stations, 5 or more digits station number must not be assigned.* • *Stations observed by SMDR/ PMS/OAI* • *Front Desk Terminal/D^{term} TIMS*	• Y=0-3 Numbering Plan Group 0-3 (1) X: 1st digit of station No. (2) 801: 1 digit 802: 2 digits 803: 3 digits 804: 4 digits 805: 5 digits 806: 6 digits 807: 7 digits 808: 8 digits
CM10	Assign station number to the required LEN according to the Numbering Plan specified by CM20. **NOTE:** *We recommend the setting of station number by CM14, when using Series 3200 R6.2 software or later.*	(1) 000-763: LEN (2) X-XXXXXXXX: Station No.
CM14	Assign station number to the required LEN according to the Numbering Plan specified by CM20. **[Series 3200 R6.2 software required]**	(1) XX ZZZ (LEN) XX : 00-59: FP No. ZZZ: 000-127: Port No. (2) X-XXXXXXXX: Station No. NONE◀: No data
END		

Operating Procedure

No manual operation is required.

HOT LINE-CCIS

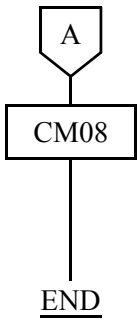
General Description

This feature allows two stations, at different nodes in the CCIS network, to be mutually associated on an automatic ring down basis through the CCIS network.

Programming

Use the Hot Line-Outside feature.

START	DESCRIPTION	DATA
CM12	Assign a Hot Line to the required stations.	• Y=03 (1) X-XXXXXXXX: Station No. (2) 04: Hot Line
CM71	Allocate memory area Hot Line-Outside calls. For example, to assign 10 Hot Line-Outside calls into No. 100 through No. 109 Memory Slots, 2nd data is "100010". Abbreviated Codes are automatically assigned as shown below: Memory Slot 100 — Abbrev. Code 00 〜 Memory Slot 109 — Abbrev. Code 09	(1) 65: For Hot Line-Outside (2) XXX ZZZ XXX: 000-299 (Stating Memory Slot No. in blocks) ZZZ : 001-300 (No. of Memory Slots to be assigned in blocks)
CM72	Assign the destination party's number to each Memory Slot number.	• Y=0 (1) 000-299: Memory Slot No. (2) XXXX , YY...Y XXXX : Access Code (Maximum 4 digits) , : Separator Mark YY...Y : Calling Party's No. (Maximum 26 digits)
CM52	Define the Hot Line pairs.	• Y=00-99 Hot Line Pair No. (1) 0: Calling Side 1: Called Outside Side (2) C XX (for Called Party) XX: 00-09 (Abbreviated Code given by CM71)
A		



DESCRIPTION	DATA
Specify the result of Switch Hook Flash on Hot Line station. To allow Hot Line stations to transfer a call or access a feature, set the data to"0".	(1) 057 (2) 0 : Special Dial Tone 1◀: Attendant Recall

Operating Procedure

To place a Hot Line-CCIS call:

1. The user at Station A lifts the handset.
2. Station B is rung.
3. The user at Station B lifts the handset and the connection is established.

HOUSE PHONE-CCIS

General Description

This feature allows selected stations to call an Attendant Console, through the CCIS network, simply by going off hook.

Programming

Use the Hot Line-Outside feature.

START	DESCRIPTION	DATA
CM12	Assign a Hot Line (House-phone) to the required station.	• Y=03 (1) X-XXXXXXXX: Station No. (2) 04: Hot Line (House-phone)
CM71	Allocate memory area for Hot Line-Outside calls. For example, to assign 10 Hot Line-Outside calls into No. 100 through No. 109 Memory Slots, 2nd data is "100010." Abbreviated Codes are automatically assigned as shown below: Memory Slot 100 — Abbrev. Code 00 〜 Memory Slot 109 — Abbrev. Code 09	(1) 65: For Hot Line-Outside (2) XXX ZZZ XXX: 000-299 (Starting Memory Slot No. in blocks) ZZZ : 001-300 (No. of Memory Slots to be assigned in blocks)
CM72	Assign the destination party's number to each Memory Slot number.	• Y=0 (1) 000-299: Memory Slot No. (2) XXXX , YY...Y XXXX : Access Code (Maximum 4 digits) , : Separator Mark YY...Y : Calling Party's No. (Maximum 26 digits)
CM52	Define the Hot Line (House-phone) pairs.	• Y=00-99 Hot Line Pair No. (1) 0: Calling Side (2) X-XXXXXXXX: Virtual Station No. (1) 1: Called Side (2) C XX (for Outside party) XX: 00-09 (Abbreviated Code given by CM71)
END		

Operating Procedure

To call an Attendant in another office:

1. The House Phone-CCIS user lifts the handset.
2. The Attendant in another office is automatically called. The **ATND** lamps on the Attendant Console flash and the console buzzer sounds.

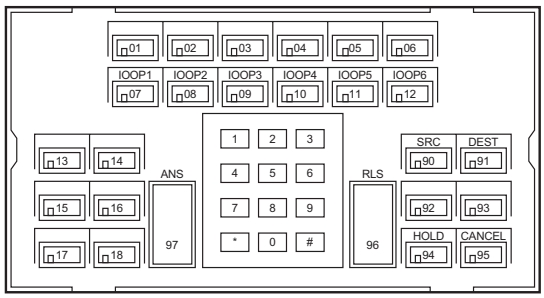
INCOMING CALL IDENTIFICATION-CCIS

General Description

This feature allows an Attendant to visually identify the type of service and/or trunk group which is arriving or waiting to be answered at the Attendant Console through the CCIS network.

Programming

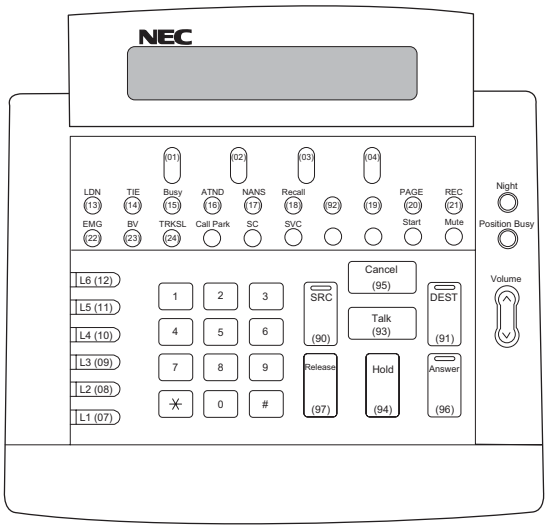
START	DESCRIPTION	DATA
CM35	Specify the ICI key to which an incoming call from each trunk route terminates.	• Y=15 (1) 00-63: Trunk Route No. (2) 75: No. 7 CCIS Call
CM90	Assign the ATT Call Selection keys required on the ATTCON. The following ATT Call Selection keys are initially set.	• Y=00 (1) ATTCON No. (E000-E007) + [›] + Key No. (2) F60XX XX: 00-07: C.O. Incoming Call 0-7 40-47: Tie Line Incoming Call 0-7 50-53: Special Operator Call 0-3 54: Priority Call 0 55: Priority Call 1 56: Emergency Call 60: Operator Call 61: Recall 62: Serial Call 63: Call Forwarding Don't Answer (-No Answer) 64: Call Forwarding Busy Line 65: Call Forwarding-Intercept 66: Off Hook Alarm 67: Interposition Calling/Transfer
	Assign the required Attendant Call Selection keys and ATTCON Function keys to each DESKCON, according to the Key label.	• Y=00 (1) ATTCON No. (E000-E007) + [›] + Key No. (2) F6000-F6067: Type of Calls to be assigned F6100-F6245: Functions to be assigned
A		



Key No.	Data	Description
16	F6061	Recall (RCL)
17	F6060 (ATND)	Operator Call
18	F6000 (LND0)	C.O. Incoming 0

A

DESCRIPTION **DATA**



Key No.	Data	Description (Key Label)	Default Data
13	F6000	C.O. Incoming Call 0 (LDN)	NONE
14	F6040	Tie Line Incoming Call 0 (TIE)	NONE
15	F6064	Call Forwarding-Busy Line (Busy)	NONE
16	F6060	Operator Call (ATND)	F6061 (Recall)
17	F6063	Call Forwarding-Don't Answer (-No Answer) (NANS)	F6060 (Operator Call)
18	F6061	Recall (Recall)	F6000 (C.O. Incoming 0)
90	F6200	Source (SRC)	F6200 (Source)
91	F6201	Destination (DEST)	F6201 (Destination)
93	F6203	Talk (Talk)	NONE
94	F6204	Hold (Hold)	F6204 (Hold)
95	F6202	Cancel (Cancel)	F6202 (Cancel)
96		Answer (Answer)	
97		Release (Release)	

NOTE: *When the DESKCON is used to set H/M features, the Reset key should be assigned to one of the feature keys (i.e key 21) in the Idle state mode.*

END

Operating Procedure

No manual operation is required.

LDN NIGHT CONNECTION-CCIS

General Description

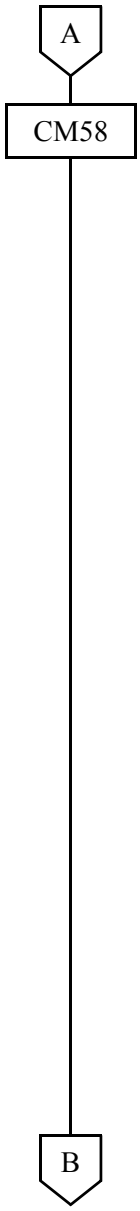
This feature routes Listed Directory Number (LDN) calls to a preselected station, in the CCIS network, when the Night Mode has been entered.

Programming

START	DESCRIPTION	DATA
CM08	Provide the system with Diversion Display.	(1) 204 (2) 0: To provide
CM35	Specify the Incoming Call Identification (ICI) key to which each LDN call from each trunk route will terminate.	• Y=15 (1) 00-63: Trunk Route No. (2) 00-07: C.O. Incoming Call 0-7
CM90	Assign the required number of LDN keys as ICI keys.	• Y=00 (1) E00X + [,] + 13-18 (Key No.) X: Attendant Console No. (2) F6000-F6007: LDN 0-7
CM50	Assign the indialed number to each LDN key assigned by CM90. The indialed number should be different from any numbers assigned by CM10 and CM11.	• Y=01 For DID (1) 0 : Effective data in CM35 Y=15 1-8: LDN Key No. 00-07 assigned by CM46. (2) X-XXXX: Indialed No.
END		

To provide the LDN Diversion feature, the following programming is also required.

START	DESCRIPTION	DATA
CM08	Provide the system with the LDN Diversion feature.	(1) 205 (2) 0: To provide
CM58	Assign the data for LDN Diversion to each in-dialed number assigned by CM50 Y=01.	• Y=00 Tenant No. of the LDN (1) 00 : Effective data in CM35 Y=15 01-08: LDN key No. 00-07 assigned by CM90. (2) 00-63: Tenant No.
	Note that a call is diverted to LDN 0-7 keys as specified by CM58 Y=02-07, even if CM50 Y=01, 1-8 has already been set.	• Y=01 TAS Group No. (1) Same as CM58 Y=00 (2) 00-63: TAS Group No.
		• Y=02 Day Mode destination of the LDN (1) Same as CM58 Y=00 (2) 00-07: LDN key 0-7 08 : To TAS 09 : To station/outside party assigned by CM58 Y=08.
		• Y=03 Night Mode destination (1) Same as CM58 Y=00 (2) 00-07: LDN key 0-7 08 : To TAS 09 : To station/outside party assigned by CM58 Y=09.
		• Y=04 Day Mode Diversion for busy destination station (1) Same as CM58 Y=00 (2) 00: To ATTCON (BUSY key) 08: To TAS 09: Camped on
A		



DESCRIPTION	DATA
	• Y=05 Night Mode Diversion for busy destination station (1) Same as CM58 Y=00 (2) Same as CM58 Y=04 • Y=06 Day Mode Diversion for non-answering destination station (1) Same as CM58 Y=00 (2) 00: To ATTCON (NANS key) 08: To TAS • Y=07 Night Mode Diversion for non-answering destination station (1) Same as CM58 Y=00 (2) Same as CM58 Y=06
If the 2nd data (09) is designated by CM58 Y=02, 03, assign the station/outside party number to be diverted.	• Y=08 Day Mode destination station/outside party (1) Same as CM58 Y=00 (2) X-XXXXXXXX: Station No. CXX: Abbreviated Code for Outside Party XX : 00-31 (Abbreviated Code) • Y=09 Night Mode destination station/outside party (1) Same as CM58 Y=00 (2) X-XXXXXXXX: Station No. CXX: Abbreviated Code for Outside Party XX : 00-31 (Abbreviated Code)

	DESCRIPTION	DATA
B		
CM36	If the 2nd data (CXX) is designated by CM58 Y=08, 09, specify the combination of trunk routes allowing the Tandem connection.	• Y=0 (1) XX ZZ XX: 00-63 (Incoming Trunk Route) ZZ : 00-63 (Outgoing Trunk Route for CCIS) (2) 0: Allow
CM71	If the 2nd data (CXX) is designated by CM58 Y=08, 09 assign the Speed Calling-System (System Speed Dialing) memory area exclusively for LDN-Outside.	(1) 66: Exclusive for LDN-Outside (2) XXX ZZZ XXX: 000-299 (Starting Memory Slot No. in Block) ZZZ : 001-300 (No. of Slots to be assigned in Block) NONE◀: No data
CM72	Set the stored number to the Memory Slot number allocated by CM71.	• Y=0 (1) 000-299: Memory Slot No. (2) XXXX , YY...Y XXXX : Access Code (Maximum 4 digits) , : Separator Mark YY...Y : Calling Party's No. (Maximum 26 digits)
END		

Operating Procedure

No manual operation is required.

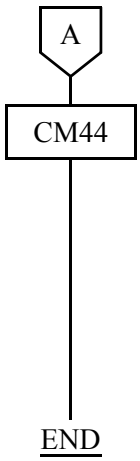
LINK ALARM DISPLAY-CCIS

General Description

This feature provides an indication on external equipment when the CCIS link is connected/disconnected, when the system is initialized, or when the CCH is in make busy.

Programming

START	DESCRIPTION	DATA
CM10	Assign the DK card to the required LEN. **NOTE 1:** *We recommend the setting of DK card number by CM14, when using Series 3200 R6.2 software or later.* **NOTE 2:** *The DK card number must be assigned to the 1st LEN (Level 0) and the 3rd LEN (Level 2) of each LT slot.*	(1) 000-763: LEN (2) E800-E831: DK Card No. For PIM0/PIM1: E800-E807 For PIM2/PIM3: E808-E815 For PIM4/PIM5: E816-E823 For PIM6/PIM7: E824-E831 **NOTE 3:** *Circuit No. 3 of E831 is used for built-in External Equipment Interface of MP card by setting CM44.*
CM14	Assign the DK card to the required LEN. **[Series 3200 R6.2 software required]** **NOTE 1:** *The DK card number must be assigned to the 1st LEN (Level 0) and the 3rd LEN (Level 2) of each LT slot.*	(1) XX ZZZ (LEN) XX : 00-59: FP No. ZZZ: 000-127: Port No. (2) E800-E831: DK Card No. NONE◀: No data For FP No.00: E800-E807 For FP No.01: E808-E815 For FP No.02: E816-E823 For FP No.03: E824-E831 **NOTE 2:** *Circuit No.03 of E831 is used for built-in External Equipment Interface of MP card by setting CM44.*
A		



DESCRIPTION	DATA
Assign the function of CCIS Link Alarm Indication to the DK.	(1) XX Y XX : 00-31 (Card No. assigned by CM10/ CM14>E800-E831) Y : 0-3 (Circuit No.) 313 : Built-in External Equipment Interface on MP card (2) 35 XX XX: 01-07 (CCIS CH No.)

Hardware Required

DK card × 1/External Equipment Interface on the MP card
External Indicator (Bell, Lamp etc.)
provided by the customer

For the cross connection of External Indicator, refer to Installation Procedure Manual.

Operating Procedure

No manual operation is required.

LINK RECONNECT-CCIS

General Description

This feature provides the system connected to CCIS network with the capability to release the redundant CCIS link connection and re-connect the link within the system for efficient usage of the CCIS links.

Station Application

Not Applicable

Programming

START	DESCRIPTION	DATA
CM08	Provide the Link Reconnect-CCIS.	(1) 606 (2) 1◀: To provide
	Provide the Link Reconnect-Peer-to-peer CCIS.	(1) 628 (2) 0: To provide
	Provide the CCIS link reconnection when a call is connected to the UCD Delay Announcement though CCIS.	(1) 607 (2) 0: To provide
END		

Operating Procedure

No manual operation is required.

MESSAGE WAITING LAMP SETTING-ATTENDANT-CCIS

General Description

This feature allows an Attendant, in the 2400 IPX, to set or cancel a Message Waiting lamp indication, through the CCIS network, on a station in 2000 IPS.

Programming

START	DESCRIPTION	DATA
CM13	Provide each station with Message Waiting service.	• Y=03 (1) X-XXXXXXXX: Station No. (2) 0: To provide
END		

Hardware Required

To provide a Single-Line Telephone with Message Waiting lamp:

- LC (PN-4LCD/4LCF) card

Operating Procedure

To set a Message Waiting indication:

1. Press an idle **LOOP** key and receive dial tone.
2. Dial the Message Waiting feature access code (maximum of three digits) and receive Feature Dial Tone.
3. Dial the station number and receive Service Set Tone.
4. Message Waiting indication is set.
5. Press the **RELEASE** key to return to an idle condition.

To cancel a Message Waiting indication:

1. Press an idle **LOOP** key and receive dial tone.
2. Dial the Message Waiting cancellation code (maximum of three digits) and receive Feature Dial Tone.
3. Dial the station number and receive Service Set Tone.
4. Message Waiting indication is canceled.
5. Press the **CANCL** key to return to an idle condition.

MESSAGE WAITING LAMP SETTING-STATION-CCIS

General Description

This feature allows a station user, in the 2400 IPX, to set or cancel a Message Waiting lamp indication, through the CCIS network, to a station in 2000 IPS with this feature.

Programming

START	DESCRIPTION	DATA
CM13	Provide each station with Message Waiting service.	• Y=03 (1) X-XXXXXXXX: Station No. (2) 0: To provide
END		

Hardware Required

To provide a Single-Line Telephone with Message Waiting lamp:

- LC (PN-4LCD/4LCF) card

Operating Procedure

To set a Message Waiting indication:

1. Lift the handset and receive dial tone.
2. Dial the Message Waiting feature access code (maximum of three digits) and receive Feature Dial Tone.
3. Dial the desired station number and receive Service Set Tone.
4. Message Waiting indication is set at the station.

To cancel a Message Waiting indication:

1. Lift the handset and receive dial tone.
2. Dial the Message Waiting cancellation code (maximum of three digits) and receive Feature Dial Tone.
3. Dial the desired station number and receive Service Set Tone.
4. Message Waiting indication at station is canceled.

MISCELLANEOUS TRUNK ACCESS-CCIS

General Description

This feature provides access to all types of external and customer-provided equipment/facilities, such as Tie Line and exchange network, along with Dictation, Paging Access-CCIS and Code Calling through the CCIS network.

Programming

Refer to Numbering Plan Assignment and assign the trunk access code using the LCR feature.

Operating Procedure

No manual operation is required.

MISCELLANEOUS TRUNK RESTRICTION-CCIS

General Description

This feature denies certain stations and dial-repeating tie trunks access to specific trunk groups, such as Tie Line, exchange network, Dictation or Paging Access-CCIS through the CCIS network.

Programming

Assign "1" (Restricted) as the 2nd Data of CM36 when programming the "DELUXE TRAVELING CLASS MARK-CCIS". ☞ *Page 258*

Operating Procedure

No manual operation is required.

MULTIPLE CONSOLE OPERATION-CCIS

General Description

This feature provides console operation where Attendant Consoles are installed in more than one node in the CCIS network.

Station Application

Attendant Console

Programming

START	DESCRIPTION	DATA
CM10	Assign the card number of interface circuit for the ATTCON/DESKCON to its associated LEN. **NOTE:** *We recommend the setting of ATTCON number by CM14, when using Series 3200 R6.2 software or later.*	(1) 000-763: LEN (2) E000-E007: ATTCON No.
CM14	Assign the card number of interface circuit for the ATTCON/DESKCON to its associated LEN. **[Series 3200 R6.2 software required]**	(1) XX ZZZ (LEN) XX : 00-59: FP No. ZZZ: 000-127: Port No. (2) E000-E007: ATTCON No. NONE◀: No data
CM30	Set the terminating system for the incoming calls to ATTCON/DESKCON.	• Y=02 Day Mode • Y=03 Night Mode • Y=40 Mode A • Y=41 Mode B (1) 000-254: Trunk No. (2) 14: Attendant Console
CM90	Assign the required Attendant Call Selection keys, and Function keys to each ATTCON/DESKCON. If no data is set, the default setting is as next page.	• Y=00 (1) ATTCON No. (E000-E007) + , + Key No. (2) F6000-F6067: Type of Calls to be assigned F6100-F6245: Functions to be assigned
A		

A

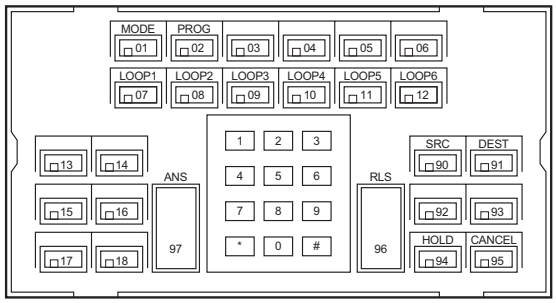
CM90

B

DESCRIPTION

DATA

- For SN708/SN709/SN712/SN741 AT-TCON



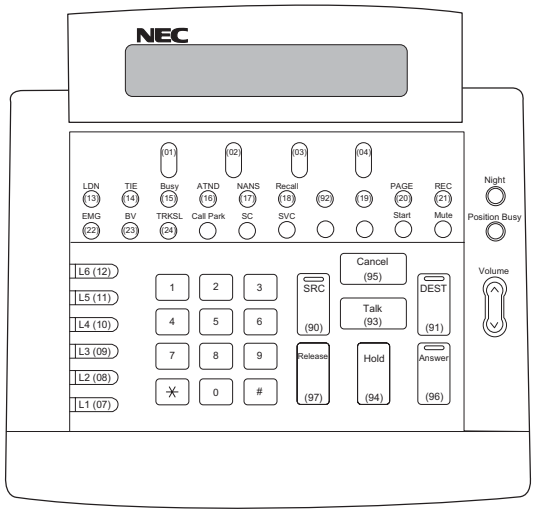
Key No.	Data	Description
01	F6110	MODE
02	F6111	Programming
07-12	F6240-F6245	Loop 1-Loop 6
16	F6061	Recall
17	F6060	Operator Call
18	F6000	C.O. Incoming 0
90	F6200	Source
91	F6201	Destination
94	F6204	Hold
95	F6202	Cancel
96		Answer
97		Release

B

CM90

DESCRIPTION | **DATA**

- For SN716 DESKCON



Key No.	Data	Description (Key Label)	Default Data
13	F6000	C.O. Incoming 0 (LDN)	NONE
14	F6040	Tie Line Incoming 0 (TIE)	NONE
15	F6064	Call Forwarding-Busy Line (Busy)	NONE
16	F6060	Operator Call (ATND)	F6061 (Recall)
17	F6063	Call Forwarding-Don't Answer (NANS)	F6060 (Operator Call)
18	F6061	Recall (Recall)	F6000 (C.O. Incoming 0)
90	F6200	Source (SRC)	F6200 (Source)
91	F6201	Destination (DEST)	F6201 (Destination)
93	F6203	Talk (Talk)	NONE
94	F6204	Hold (Hold)	F6204 (Hold)
95	F6202	Cancel (Cancel)	F6202 (Cancel)
96		Answer (Answer)	
97		Release (Release)	

NOTE: *When the DESKCON is used to set hotel features, the Reset key should be assigned to one of the feature keys (i.e key 21) in the Idle state mode.*

C

C

	DESCRIPTION	DATA
CM60	Specify the kind of the Attendant Console. INITIAL	• Y=22 (1) 0-7: ATTCON No. (2) 0 : DESKCON 1◀: ATTCON
	Allocate the ATT Group number to each ATTCON/DESKCON. INITIAL	• Y=00 (1) 0-7: ATTCON No. (2) 0-3: ATT Group 0-3
	Specify the Master ATTCON/DESKCON within the ATT Group assigned by CM60 Y=00. INITIAL	• Y=01 (1) 0-7: ATTCON No. (2) 0 : Master ATT 1◀: Not Master ATT
	When providing 2nd Ringing feature on the DESKCON, make Off-Hook Ringing effective. (for DESKCON only) INITIAL	• Y=16 (1) 0-7: ATTCON No. (2) 0: Effective
	Allow or restrict the system to keep the volume level changed by the volume button on DESKCON, after the call is finished. (for DESKCON only) INITIAL	• Y=23 (1) 0-7: ATTCON No. (2) 0 : Allow 1◀: Restricted
CM62	Specify the tenants to be handled by each ATT Group. INITIAL	• Y=0-3 ATT Group 0-3 (1) 00-63: Tenant No. (2) 0 : To handle 1◀: Not handled

D

D

CM04

END

DESCRIPTION	DATA
Display language to display on LCD. (System base) (INITIAL) **NOTE:** *When using Series 3600 software or later, a reset of the MP card is not required. When changing the data with online, the data is valid after the DLC card is unplugged and plugged in or pull out and reconnect the modular connector of the D^{term}.*	• Y=00 (1) 00 (2) 00 : Japanese 01 : English 02 : French (Canadian French) 03 : Spanish (Latin Spanish) 04 : Portuguese (Brazilian Portuguese) 05 : German 06 : Italian 07 : Netherlandish 08 : French (Europe) 09 : Spanish (Europe) 10 : Portuguese (Europe) 11 : Swedish 12 : Danish 31◀: English

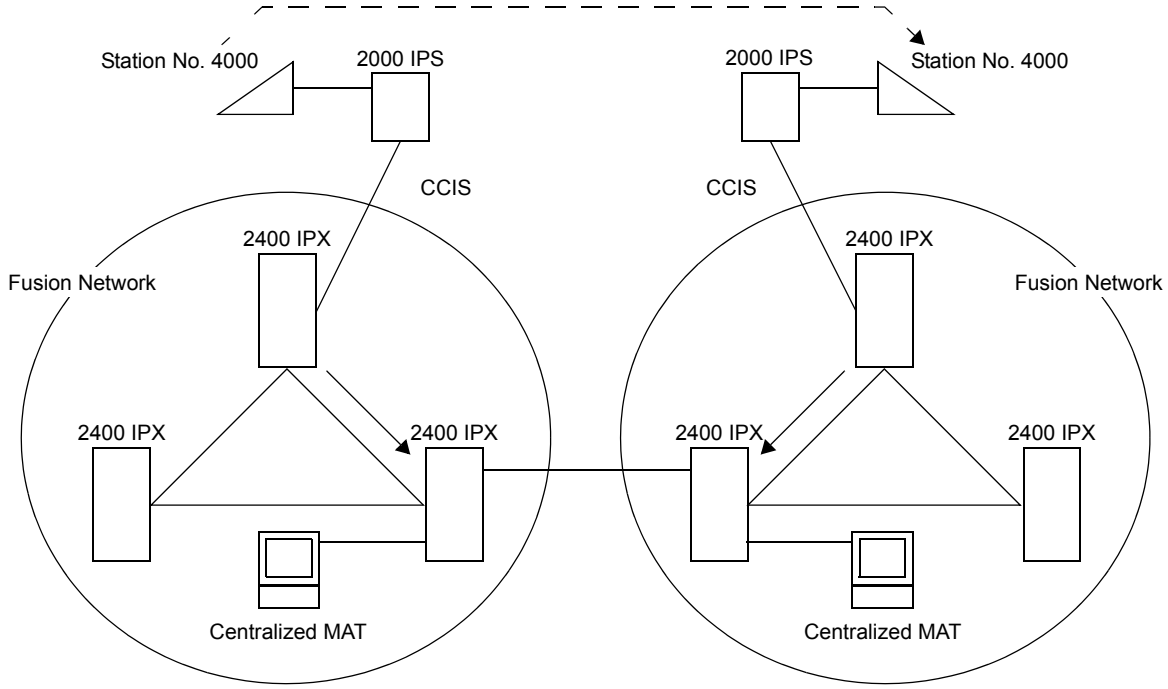
Operating Procedure

No manual operation is required.

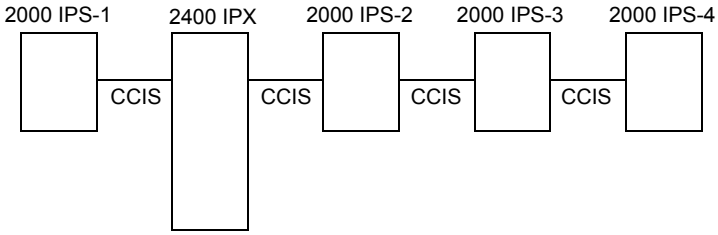
NETWORK STATION NUMBER-CCIS (FCCS)

General Description

When the 2000 IPS is connected to a 2400 IPX via CCIS link, Network Station Number can be moved to other office within the network by a simple command operation from the Centralized MAT in the 2400 IPX.



- The 2000 IPS must be a subordinate office.
- A network must include one 2400 IPX at least. An network station (NS) can be accommodated to 2400 IPX and its neighboring 2000 IPS. The connection via Event based CCIS is not available.



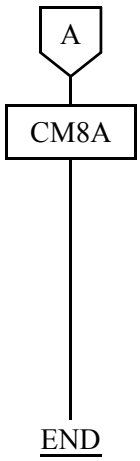
×: Available
–: Not available

FUNCTION	2000 IPS-1	2400 IPX	2000 IPS-2	2000 IPS-3	2000 IPS-4
Accommodate NS	×	×	×	–	–
Call NS	×	×	×	×	×

- For the network station number in integrated numbering plan through CCIS network, the access code for network station number must be set by CM20>811-818.

Programming

START	DESCRIPTION	DATA
CM10	Assign a network station number to the required LEN. **NOTE:** *We recommend the setting of network station number by CM14, when using Series 3200 R6.2 software or later.*	(1) 000-763: LEN (2) X-XXXXXXXX: Network station No.
CM14	Assign a network station number to the required LEN. **[Series 3200 R6.2 software required]**	(1) XX ZZZ (LEN) XX : 00-59: FP No. ZZZ: 000-127: Port No. (2) X-XXXXXXXX: Network station No. NONE◀: No data
CM20	Assign the Access Code for the number of digits of the network station number.	• Y=0-3: Numbering Plan Group 0-3 (1) X-XXXX: Access Code (2) 811-818: 1-8 digits network station No.
CM8A	Assign the Area Code Development Pattern number for LCR Group.	• Y=A000 (1) 0-3: LCR Group No. 0-3 (2) 4005-4007: Area Code Development Pattern No. 5-7
	Assign the Route Pattern number to each area code for the Area Code Development Pattern number assigned by CM8A Y=A000.	• Y=4005-4007: Area Code Development Pattern No. 5-7 (1) X-XXXXXXXX: Area Code (2) 0000-0255: Route Pattern No. 000-255
	Assign the next Route Pattern number to the Route Pattern number assigned by CM8A Y=4005-4007. **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.*	• Y=0000-0255 Route Pattern No.000-255 (1) 0: Designation of next table (2) 0000-0255: Next Route Pattern No.000-255
A		



DESCRIPTION	DATA
Specify the order of LCR selection for Route Pattern number assigned by CM8A Y=4000-4007.	• Y=0000-0255: Route Pattern No. 000-255 (1) 1: 1st 2: 2nd 3: 3rd 4: 4th (2) XXX ZZ XXX: 000-255: LCR Pattern No. ZZ : 00-63: Trunk Route No.

Operating Procedure

Normal operating procedures apply.

Example for Data Assignment:

- Network station number for a D^{term} on the 2000 IPS office: 60000
- Network station number for a D^{term} on the 2400 IPX office: 60001
- Area Code Development Pattern number: 0
- Trunk route number: 01

Command Code	1st Data	2nd Data	Description
10	000-763	60000	Network station No. 60000 (Assignment for a network station No. 60001 to the LEN is not necessary.)
20 Y=0-3	6	815	5 digits network station
8A Y=A000	3	4005	Area Code Development Pattern No. 5
8A Y=4000-4007	6	0000	Route Pattern No. 000
8A Y=0000-0255	1	00001	LCR Pattern No. 000 + trunk route No. 01

NIGHT CONNECTION-FIXED-CCIS

General Description

This feature routes calls normally directed to the Attendant Console to a preselected station in another office, through the CCIS network, when the Night mode has been entered.

Programming

Refer to "DIRECT-IN TERMINATION-CCIS". ☞ *Page 264*

Operating Procedure

To answer a Night Connection-Fixed-CCIS call:

1. An incoming call to the Attendant Console in Night mode is automatically transferred to a preselected Night Connection station belonging to a different office.
2. The calling party hears ring back tone.
3. Ring signal is sent to the Night Connection station.
4. The Night Connection station lift the handset to answer the incoming call.

NIGHT CONNECTION-FLEXIBLE-CCIS

General Description

This feature provides an inter-office night connection service, via the CCIS network, when the calling station and the night station belong to different offices.

Programming

Refer to "DIRECT-IN TERMINATION-CCIS". ☞ *Page 264*

Operating Procedure

To set the Night Connection-Flexible-CCIS:

1. The Attendant or fixed night station user in the destination office sets Call Forwarding-All Calls-CCIS to a station in another office.

To answer Night Connection-Flexible-CCIS calls:

1. In the Night mode, incoming calls to the Attendant Console are automatically transferred to a pre-selected Night Connection station belonging to a different office.
2. The calling party hears ring back tone.
3. Ring signal is sent to the Night Connection station.
4. The Night Connection station lift the handset to answer the incoming call.

OUTGOING TRUNK QUEUING-CCIS

General Description

This feature allows a CCIS network station, upon encountering an all trunks busy signal, to dial a specified access code and enter a first-in, first-out queue. As soon as a CCIS trunk becomes available, stations in the queue will be called back on a first-come, first-served basis.

NOTE: *This feature applies to the tie line trunks between the two PBX systems and not to the outgoing trunks at the remote PBX.*

Programming

START	DESCRIPTION	DATA
CM12	Assign Service Restriction Class A to the required stations.	• Y=02 (1) X-XXXXXXXX: Station No. (2) XX ZZ XX: 00-15◀: Service Restriction Class A
CM15	Allow Outgoing Trunk Queuing in Service Restriction Class A assigned by CM12 Y=02.	• Y=02 (1) 00-15: Service Restriction Class A assigned by CM12 Y=02 (2) 1◀: Allow
CM20	Assign access code for setting and resetting this service.	• Y=0-3 Numbering Plan Group 0-3 (1) X-XXXX: Access Code (2) • Different access code from Call Back A000: Set A001: Reset • Same access code as Call Back A004: Set A005: Reset
CM90	Assign the Trunk Queuing-OG (Call Back) key to the required D^{term}.	• Y=00 (1) My Line No. + [›] + Key No. (2) F0004
CM35	Specify the Trunk Queuing-Outgoing capability to each trunk route.	• Y=28 (1) 00-63: Trunk Route No. (2) 0 : Restricted 1◀: Allow
END		

Operating Procedure

To activate Outgoing Trunk Queuing-CCIS:

1. Dial the trunk access code and receive dial tone.
2. Dial the desired number and receive busy tone.
3. Press the hookswitch momentarily and receive Feature Dial Tone.
4. Dial the Outgoing Trunk Queuing-CCIS feature access code and receive Service Set Tone.
5. Replace the handset.

To cancel Outgoing Trunk Queuing-CCIS:

1. Dial the Outgoing Trunk Queuing-CCIS cancellation code and receive Service Set Tone.

PAGING ACCESS-CCIS

General Description

This feature provides dial access to paging equipment from an Attendant Console or station, through the CCIS network.

Programming

START	DESCRIPTION	DATA
CM10	Assign the Paging Trunk (COT card and DK card) to the required LEN. **NOTE 1:** *We recommend the setting of COT/DK card number by CM14, when using Series 3200 R6.2 software or later.* **NOTE 2:** *The DK card number must be assigned to the first LEN (Level 0) and the third LEN (Level 2) of each LT slot.*	(1) 000-763: LEN (2) D000-D254: COT card E800-E831 : DK Card For PIM0/1 : E800-E807 For PIM2/3 : E808-E815 For PIM4/5 : E816-E823 For PIM6/7 : E824-E831 **NOTE 3:** *Circuit No. 3 of E831 is used for built-in External Equipment Interface on the MP card by setting CM44.*
CM14	Assign the Paging Trunk (COT card and DK card) to the required LEN. **[Series 3200 R6.2 software required]** **NOTE 1:** *The DK card number must be assigned to the 1st LEN (Level 0) and the third LEN (Level 2) of each LT slot.*	(1) XX ZZZ (LEN) XX : 00-59: FP No. ZZZ: 000-127: Port No. (2) D000-D254 E800-E831 : DK Card No. NONE◀: No data For FP No.00: E800-E807 For FP No.01: E808-E815 For FP No.02: E816-E823 For FP No.03: E824-E831 **NOTE 2:** *Circuit No.03 of E831 is used for built-in External Equipment Interface of MP card by setting CM44.*
A		

	DESCRIPTION	DATA
A		
CM44	Assign the paging function to the DK card or external equipment interface on the MP card.	(1) XX Y XX: 00-31 (DK Card No. assigned by CM10/CM14 [E800-E831]) Y : 0-3 (Circuit No. of DK card) 313: Built-in External Equipment Interface (2) 02 XX: Speak Paging start XX : 00-09 (Speaker Paging Zone 0-9)
CM08	Specify the conditions for paging access.	(1) 094: Paging Access Tone (2) 0 : To send 1◀: Not sent out
CM20	Assign the access code for paging access.	• Y=0-3 Numbering Plan Group 0-3 (1) X-XXXX: Access Code (2) 100-163: For Paging Access (Route 00-63)
CM30	Assign paging trunk route to the trunk number assigned by CM10/CM14.	• Y=00 Trunk Route Allocation (1) 000-254: Trunk No. (2) 00-63: Trunk Route No.
	Assign Paging Answer Zone and Kind of Paging to the trunk number assigned by CM10/CM14.	• Y=28 Zone/Kind of Paging (1) 000-254: Trunk No. (2) X Z X: 0-9 (Paging Answer Zone 0-9) Z: 0 (No answer)
CM35	Specify the trunk route assigned by CM30 Y=00 as a paging trunk route.	• Y=00 (1) 00-63: Trunk Route No. (2) 05: Paging Trunk • Y=08 Dial Pulse Sending Capability (1) 00-63: Trunk Route No. (2) 1: No Dial Pulse is sent out
CM36	Specify the combination of trunk routes allowing a Tandem connection.	• Y=0 (1) XX ZZ XX: 00-63 (Incoming Trunk Route for CCIS) ZZ : 00-63 (Outgoing Paging Trunk Route) (2) 0: Allow
END		

Hardware Required

Paging trunk (PN-4COT) × n/4 (n: Number of external paging zones)
DK card

Paging equipment provided locally.
For cross connection of the Paging Equipment, refer to the Installation Procedure Manual.

Operating Procedure

To access paging equipment through CCIS:

1. Lift the handset and receive dial tone.
2. Dial the paging feature access code.
3. The connection to paging equipment is established.

RESTRICTION FROM OUTGOING CALLS-CCIS

General Description

This feature automatically restricts users of preselected stations from placing outgoing calls and/or certain miscellaneous trunk calls through CCIS, without Attendant assistance.

Programming

Refer to "DELUXE TRAVELING CLASS MARK-CCIS". ☞ *Page 258*

Operating Procedure

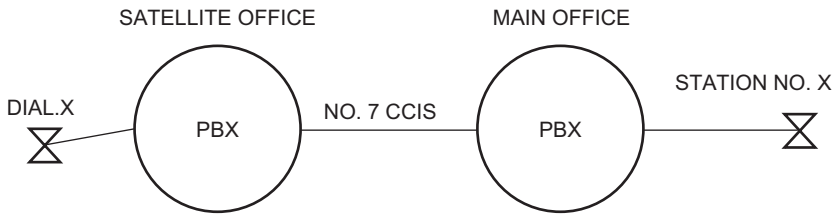
No manual operation is required.

SINGLE-DIGIT STATION CALLING-CCIS

General Description

This feature allows the assignment of Single-Digit Station numbers.

Programming



- For Satellite Office

START	DESCRIPTION	DATA
CM20	Assign the single-digit station number to LCR Group 3 (A129).	• Y=0-3 Number Plan Group 0-3 (1) X-XXXX: Access Code (2) A129: LCR Group 3
CM8A	Assign an area code table to be used to select a route pattern table.	• Y=A000 (1) 3 (2) 4005-4007: Area Code Development Pattern No. 5-7
	Assign the same digit which was assigned as the access code (in CM20) into the selected area code table.	• Y=4005-4007 (1) X-XXXX: Access Code (2) 0000-0255: Route Pattern No. 000-255
	Assign the next Route Pattern number to the Route Pattern number assigned CM8A Y=4005-4007. **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.*	• Y=0000-0255 Route Pattern No. 000-255 (1) 0: Designation of next table (2) 0000-0255: Next Route Pattern No. 000-255
	Assign the route pattern table with the desired properties and selection of appropriate routes.	• Y=0000-0255 (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.)
END		

Operating Procedure

1. Lift the handset and receive dial tone.
2. Dial the Single-Digit preprogrammed station number.
3. The called station will be rung.

STATION-TO-STATION CALLING-CCIS

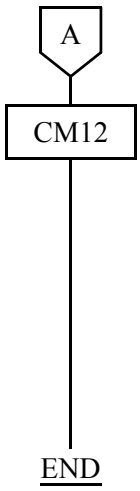
General Description

This feature permits any station user to dial another station directly, through CCIS, without Attendant assistance.

Programming

In addition to the programming of flexible station numbering, perform the following programming:

START	DESCRIPTION	DATA
CM10	Assign a station number to each LEN. **NOTE 1:** *We recommend the setting of station number by CM14, when using Series 3200 R6.2 software or later.* **NOTE 2:** *To the following stations, 5 or more digits station number must not be assigned.* • *Stations observed by SMDR/ PMS/OAI* • *Front Desk Terminal/D^{term} TIMS (CIS)*	(1) 000-763: LEN (2) X-XXXXXXXX: Station No.
CM14	Assign a station number to each LEN. **[Series 3200 R6.2 software required]** **NOTE:** *To the following stations, 5 or more digits station number must not be assigned.* • *Stations observed by SMDR/ PMS/OAI* • *Front Desk Terminal/D^{term} TIMS (CIS)*	(1) XX ZZZ (LEN) XX : 00-59: FP No. ZZZ: 000-127: Port No. (2) X-XXXXXXXX: Station No. NONE◀: No data
A		



DESCRIPTION	DATA
Assign the station type to each station. **NOTE:** *For providing the DTMF station, DTMF Receivers (PN-8RST) are required.*	• Y=00 Telephone types (1) X-XXXXXXXX: Station No. (2) 1 : DP-10PPS 2 : DTMF 3◀: DTMF/DP • Y=03 Kind of Telephone (1) X-XXXXXXXX: Station No. (2) 15◀: Ordinary station

Operating Procedure

To place a Station-to-Station call:

1. Lift the handset and receive dial tone.
2. Dial the desired station number.

TOLL RESTRICTION-3/6 DIGITS-CCIS

General Description

This feature allows the system to be programmed to restrict outgoing calls, through CCIS, according to specific Areas and/or Office codes. This restriction is determined on the basis of a three-digit Area Code or six-digit Area and Office Code numbering plan.

Programming

START	DESCRIPTION	DATA
CM08	Provide the system with the Toll Restriction feature for an outgoing call by Speed Calling-System (System Speed Dialing)/Speed Calling-Station (Station Speed Dialing), if desired.	(1) 035: Speed Calling-Station (Station Speed Dialing) (2) 0 : Not provided 1◀: To provide
		(1) 044: Speed Calling-System (System Speed Dialing) (2) 0 : Not provided 1◀: To provide
	Provide the system with Toll Diversion or Toll Denial.	(1) 119 (2) 0 : Toll Diversion (Routed to "ICPT" key on ATTCON) 1◀: Toll Denial (Routed to Reorder Tone)
CM12	Assign a Trunk Restriction Class to each station.	• Y=01 (1) X-XXXXXXXX: Station No. (2) X Z: Trunk Restriction Class X: 1-8: In Day Mode Z: 1-8: In Night Mode 1: Unrestricted (RCA) 2: Non-Restricted 1 (RCB) 3: Non-Restricted 2 (RCC) 4: Semi-Restricted 1 (RCD) 5: Semi-Restricted 2 (RCE) 6: Restricted 1 (RCF) 7: Restricted 2 (RCG) 8: Fully-Restricted (RCH)
A		

A

	DESCRIPTION	DATA
CM35	Provide the Toll Restriction feature to the required trunk routes.	• Y=11 (1) 00-63: Trunk Route No. (2) 0: To provide
	Specify the route access capability for each restriction class.	• Y=51-55 (1) 00-63: Trunk Route No. (2) 0 : Restricted 1◀: Allow
	Assign the Area Code Development Pattern number for Toll Restriction Analysis and Maximum Digit Analysis to each trunk route.	• Y=76 (1) 00-63: Trunk Route No. (2) 00-04: Area Code Development Pattern No. 0-4
CM81	Assign the Toll Restriction Patterns with five kinds of Trunk Restriction Classes assigned by CM35 Y=97. Toll Restriction Pattern 00-15 have already been programmed as shown below. If a new Restriction Pattern is required, change the data for Restriction Patterns 01-13 (00, 14 and 15 are fixed).	• Y=01-13 Toll Restriction Pattern No. 01-13 (1) 1-8: Trunk Restriction Class (2) 0: Restricted 3: Allowed

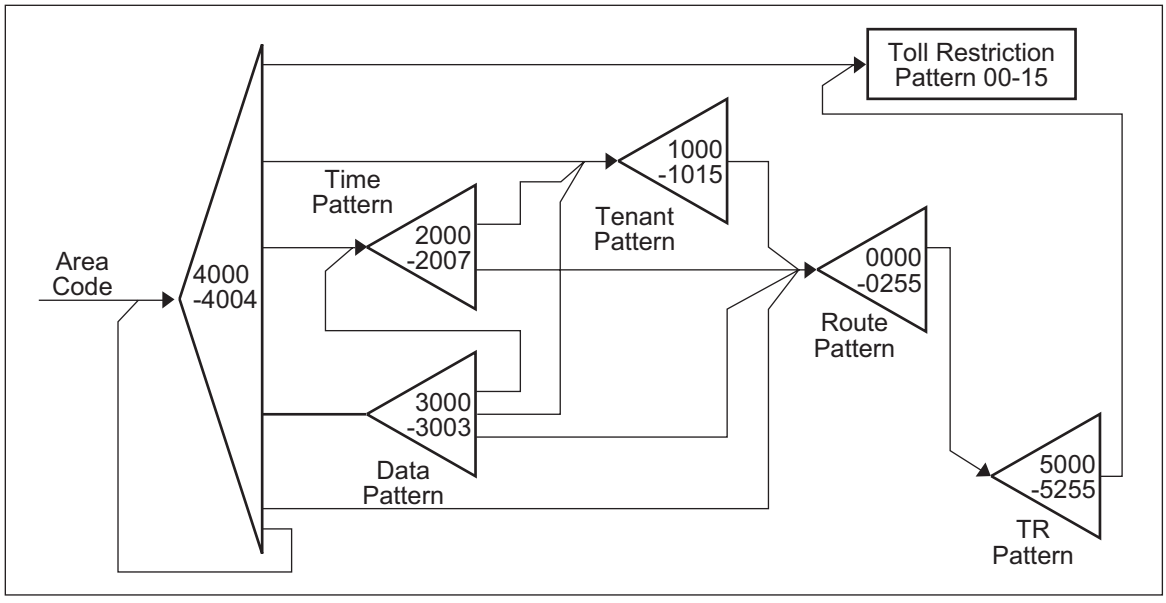
TRUNK RESTRICTION CLASS		Y															
		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	00
		TOLL RESTRICTION PATTERN NUMBER ON EACH TRUNK RESTRICTION CLASS															
		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	00
1	RCA	3	0	3	3	3	0	0	0	3	3	3	3	3	0	3	0
2	RCB	3	0	3	3	0	0	0	0	3	3	0	0	0	0	3	0
3	RCC	3	0	3	0	0	0	0	0	3	0	0	0	0	0	3	0
4	RCD	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
5	RCE	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
6	RCF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
7	RCG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
8	RCH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0

0: Restricted
3: Allowed

B

B

	DESCRIPTION	DATA
CM85	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.	• Y=0-4 Area Code Development Pattern No. 0-4 assigned by CM8A Y=A000 (1) X-X...X: Area Code dialed (Maximum 8 digits) (2) 01-24◀: 1-24 digits 25-79 : 25-79 digits
CM8A	Assign the area code to be restricted and the Toll Restriction Pattern number assigned by CM81 to the Area Code Development Pattern number assigned by CM35 Y=76. For example, to provide the Trunk Restriction Class RCB, RCC, RCD, RCE, RCF, RCG and RCH with the Toll Restriction for Area Code "00": • Area Code=00 • Toll Restriction Pattern=05 (See Toll Restriction Pattern Table on CM81.) If the Toll Restriction Pattern for the same area code is changed according to the Tenant, Date, and Time, add the required patterns (Tenant, Date, and Time) to the area code.	• Y=4000-4004 Area Code Development Pattern No. 0-4 (1) X-X...X: Area Code (Maximum 8 digits) (2) B000-B015: Toll Restriction Pattern No. 00-15



C

C

CM8A

DESCRIPTION	DATA
To add the Tenant Pattern:	
STEP 1 Assign the area code to be restricted and a Tenant Pattern number to the Area Code Development Pattern number assigned by CM35 Y=76.	• Y=4000-4004 Area Code Development Pattern No. 0-4 (1) X-X...X: Area Code (Maximum 8 digits) (2) 1000-1015: Tenant Pattern No. 00-15
STEP 2 Assign a Tenant number and a Route Pattern number to the Tenant Pattern number assigned by Step 1.	• Y=1000-1015 Tenant Pattern No. 00-15 (1) 00-63: Tenant No. 00-63 (2) 0000-0255: Route Pattern No. 000-255
STEP 3 Assign a TR Pattern number to the Route Pattern number assigned by Step 2.	• Y=0000-0255 Route Pattern No. 000-255 (1) 1 (2) XXX: 000-255: TR Pattern No.
STEP 4 Assign a Toll Restriction Pattern number (assigned by CM81) to the TR Pattern number assigned by Step 3.	• Y=5000-5255 TR Pattern No. 000-255 (1) 000 (2) 00-15◀: Toll Restriction Pattern No. 0-15
To add the Time and Data Pattern:	
STEP 1 Assign an area code to be restricted and a Date Pattern number to the Area Code Development Pattern number assigned by CM35 Y=76.	• Y=4000-4004 Area Code Development No. 0-4 (1) X-X...X: Area Code (Maximum 8 digits) (2) 3000-3003: Date Pattern No. 0-3
STEP 2 Assign a data to apply Toll Restriction and a Time Pattern number 0-7 to the Date Pattern number assigned by Step 1. Set the data for all dates, one by one to apply Toll Restriction.	• Y=3000-3003 Date Pattern No. 0-3 (1) 0-6 (Date) 0: Sunday 1: Monday 2: Tuesday 3: Wednesday 4: Thursday 5: Friday 6: Saturday (2) 2000-2007: Time Pattern No. 0-7

D

D

CM8A

END

DESCRIPTION	DATA
STEP 3 Assign the starting time for the Toll Restriction and Route Pattern number to the Time Pattern number assigned by Step 2. Set the Starting Time as shown below. **Example:** To set the 7:00 AM to 9:00 PM for the Toll Restriction, enter the following starting times one by one. 0700 (7:00 AM-7:30 AM) 0730 (7:30 AM-8:00 AM) 0800 (8:00 AM-8:30 AM) ⋮ 2030 (8:30 AM-9:00 AM)	• Y=2000-2007 Time Pattern No. 0-7 (1) XX ZZ (Starting Time) XX: 00-23 (Hours) ZZ : 00/30 (Minutes) (2) 0000-0255: Route Pattern No. 000-255 If Tenant Pattern is required, set 1000-1015 (Tenant Pattern No. 0-15).
STEP 4 Assign a TR Pattern number to the Route Pattern number assigned by Step 3.	• Y=0000-0255 Route Pattern No. 000-255 (1) 1 (2) XXX: 000-255: TR Pattern No.
STEP 5 Assign a Toll Restriction Pattern number assigned by CM81 to the TR Pattern number assigned by Step 4.	• Y=5000-5255 TR Pattern No. 000-255 (1) 000 (2) 00-15◀: Toll Restriction Pattern No. 00-15

Operating Procedure

No manual operation is required.

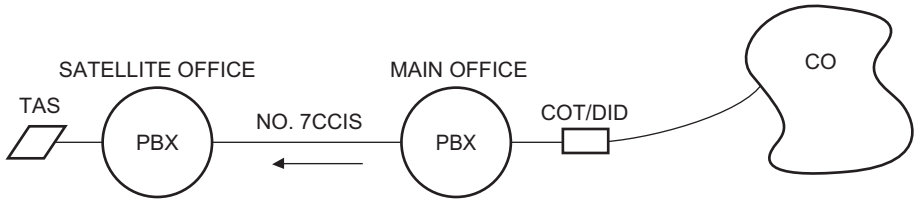
TRUNK ANSWER FROM ANY STATION-CCIS

General Description

This feature allows any station, not restricted from incoming calls, to answer incoming calls when the network is in Night mode.

When this feature is activated, incoming exchange network calls will activate a common alert Trunk Answer from Any Station (TAS) signal at the customer premises. By dialing a specified code, any station may answer the call and extend it to any other station, through the CCIS network, using Call Transfer-All Calls-CCIS.

Programming



The Main Office sends dial code as LDN number to the Satellite Office

- For the Satellite Office
  Use the LDN Diversion feature.

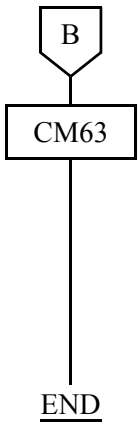
START	DESCRIPTION	DATA
CM12	Assign a Trunk Restriction Class to each station.	• Y=01 (1) X-XXXXXXXX: Station No. (2) X Z Z: 1-8: Trunk Restriction Class in Night Mode 1: Unrestricted (RCA) 2: Non-Restricted 1 (RCB) 3: Non-Restricted 2 (RCC) 4: Semi-Restricted 1 (RCD) 5: Semi-Restricted 2 (RCE) 6: Restricted 1 (RCF) 7: Restricted 2 (RCG) 8: Fully-Restricted (RCH)
	Assign Service Restriction Class B to the required stations.	• Y=02 (1) X-XXXXXXXX: Station No. (2) XX ZZ ZZ: 00-15◀: Service Restriction Class B
CM15	Allow Trunk Answer From Any Station in Service Restriction Class B assigned by CM12 Y=02.	• Y=53 (1) 00-15: Service Restriction Class B assigned by CM12 Y=02 (2) 1◀: Allow
CM08	Provide the system with the Diversion Display and the LDN Diversion features.	(1) 204: Diversion Display (2) 0: To provide (1) 205: LDN Diversion (2) 0: To provide
CM50	Assign the indialed number to each TIE key on the ATTCON. But, the ATTCON should not be equipped in the Satellite Office. The indialed number should be different from any numbers assigned by CM10/CM14 and CM11.	• Y=02 (1) 1-8: TIE key No. (2) X-XXXX: Indialed No.
A		

A

	DESCRIPTION	DATA
CM58	Assign the data for LDN Diversion to each in-dialed number assigned by CM50 Y=02.	• Y=00 Tenant No. of the LDN (1) 01-08: TIE 0-7 assigned by CM50 Y=02 (2) 00-63: Tenant No. • Y=01 TAS Group No. (1) Same as CM58 Y=00 (2) 00-63: TAS Group No. • Y=02 Day Mode Destination (1) Same as CM58 Y=00 (2) 08: To TAS • Y=03 Night Mode Destination (1) Same as CM58 Y=00 (2) 08: To TAS
CM53	Specify the function of each type of TAS within a system.	• Y=0-4 TAS Answer A-E (1) 1: Tie Line/Dial-in (2) 0 : Cannot be answered 1◀: Can be answered (1) 7: A call terminated to a different tenant (2) 0 : Can be answered 1◀: Cannot be answered
CM20	Assign the access code for each type of TAS (TAS Answer A-E) assigned by CM53.	• Y=0-3 Numbering Plan Group 0-3 (1) X-XXXX: Access Code (2) A047: TAS Answer A A048: TAS Answer B A049: TAS Answer C A050: TAS Answer D A051: TAS Answer E

Y \ (1)		1	7
0	TAS Answer A	0/1◀	0/1◀
1	TAS Answer B	0/1◀	0/1◀
2	TAS Answer C	0/1◀	0/1◀
3	TAS Answer D	0/1◀	0/1◀
4	TAS Answer E	0/1◀	0/1◀

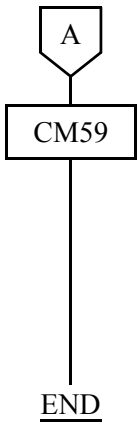
B



DESCRIPTION	DATA
Specify the tenants allowing TAS Answer between them.	• Y=0 (1) XX ZZ XX: 00-63 (Tenant No. of TAS Answer station) ZZ: 00-63 (Tenant No. of Trunk) (2) 0 : Allow 1◀: Restricted

To provide an External TAS Indicator via the DK card:

START	DESCRIPTION	DATA
CM10	Assign the DK card number to the required LEN. **NOTE 1:** *We recommend the setting of DK card number by CM14, when using Series 3200 R6.2 software or later.* **NOTE 2:** *The DK card number must be assigned to the 1st LEN (Level 0) and the 3rd LEN (Level 2) of each LT slot.*	(1) 000-763: LEN (2) E800-E831 : DK Card No. For PIM0/1 : E800-E807 For PIM2/3 : E808-E815 For PIM4/5 : E816-E823 For PIM6/7 : E824-E831 **NOTE 3:** *Circuit No.03 of E831 is used for built-in External Equipment Interface of MP card by setting CM44.*
CM14	Assign the DK card to the required LEN. **[Series 3200 R6.2 software required]** **NOTE 1:** *The DK card number must be assigned to the 1st LEN (Level 0) and the 3rd LEN (Level 2) of each LT slot.*	(1) XX ZZZ (LEN) XX : 00-59: FP No. ZZZ: 000-127: Port No. (2) E800-E831: DK card No. NONE◀: No data For FP No.00: E800-E807 For FP No.01: E808-E815 For FP No.02: E816-E823 For FP No.03: E824-E831 **NOTE 2:** *Circuit No.03 of E831 is used for built-in External Equipment Interface of MP card by setting CM44.*
CM44	Assign the TAS Group number assigned by CM30 Y=17 to a circuit number on the DK card. **NOTE:** *Built-in External Equipment Interface is not available for External TAS indicator connection.*	(1) XX Y: Circuit No. XX : 00-31: DK Card No. assigned by CM10/CM14 E800-E831 Y : 0-3: Circuit No. 313 : Built-in External Equipment Interface on MP card (2) 13 XX XX: 00-63 (TAS Group No. assigned by CM30 Y=17)
A		



DESCRIPTION	DATA
Specify the indication pattern for the External TAS Indicator.	(1) 00 (2) 01: 30 IPM 02: 60 IPM 03: 120 IPM 07: Steady on NONE◀: 120 IPM (0.25 seconds ON/OFF)

To provide the telephone set for TAS Indication:

START	DESCRIPTION	DATA
CM10	Assign the TAS Buzzer number (Telephone set for TAS Indication) to the required LEN. The TAS Buzzer number must correspond with the TAS Group number assigned by CM30 Y=17. E600-E663 ⟶ TAS Group 00-63 **NOTE:** *We recommend the setting of TAS Buzzer number by CM14, when using Series 3200 R6.2 software or later.*	(1) 000-763: LEN (2) E600-E663: TAS Buzzer No.
CM14	Assign the TAS Buzzer number (Telephone set for TAS Indication) to the required LEN. The TAS Buzzer number must correspond with the TAS Group number assigned by CM30 Y=17. E600-E663 ⟶ TAS Group 00-63 **[Series 3200 R6.2 software required]**	(1) XX ZZZ (LEN) XX : 00-59: FP No. ZZZ: 000-127: Port No. (2) E600-E663: TAS Buzzer No. NONE◀: No data
END		

- For Main Office

COT: When using a COT interface between the Central Office and a Main Office, set up programming to the Main Office by using the DIT-CCIS feature, and send the dial code as an LDN to the Satellite Office. Refer to programming of DIT-CCIS in this chapter for details.

DID: When using a DID interface between the Central Office and the Main Office, there are two programming patterns:

Pattern 1 When an incoming LDN call is diverted to a Satellite Office in both Day Mode and Night Mode, program by using the LCR and uniform numbering features. Refer to Numbering Plan Assignment.

Pattern 2 When an incoming LDN call is diverted to a Satellite Office in either Day Mode or Night Mode (not both), the following programming for the LDN Diversion-Outside feature is required.

START	DESCRIPTION	DATA
CM08	Provide the system with the Diversion Display and the LDN Diversion features.	(1) 204: Diversion Display (2) 0: To provide (1) 205: LDN Diversion (2) 0: To provide
CM50	Assign the indialed number to each TIE key on the ATTCON. The indialed number should be different from any numbers assigned by CM10/CM14 and CM11.	• Y=01 (1) 1-8: LDN key No. (2) X-XXXX: Indialed No.
CM58	Assign the data for LDN Diversion to each indialed number assigned by CM50 Y=01.	• Y=00 Tenant No. (1) 01-08: LDN 0-7 assigned by CM50 Y=01 (2) 00-63: TAS Group • Y=02 Day Mode Destination (1) 01-08: LDN 0-7 assigned by CM50 Y=01 (2) 09: LDN Diversion-Outside (Assigned by CM58 Y=08)
A		

	DESCRIPTION	DATA
A		
CM58		• Y=03 Night Mode Destination (1) Same as CM58 Y=02 (2) 09: LDN Diversion-Outside (Assigned by CM58 Y=09)
	Assign the Abbreviated Code for System Speed Dialing to terminate the Satellite Office via CCIS by DID in Day Mode and Night Mode, respectively.	• Y=08 Day Mode • Y=09 Night Mode (1) Same as CM58 Y=02 (2) CXX XX: Abbreviated Code for System Speed Dialing Assigned by CM71>66
CM71	Assign the System Speed Dialing memory area exclusively for LDN Diversion-Outside.	(1) 66: Exclusive for LDN Diversion-Outside (2) XXX YYY XXX: 000-299 (Starting Memory Slot No. in Block) YYY: 001-300 (No. of Slots to be assigned in Block) NONE◀: No data
CM72	Set the stored number into the Memory Slot number allocated by CM71.	• 000-299: Memory Slot No. (1) XXXX , YY...Y (2) XXXX: Access Code (Maximum 4 digits) , : Separator Mark YY...Y: Calling Party's No. (Maximum 26 digits)
CM36	Specify the combination of Trunk Routes allowing a Tandem connection.	• Y=0 (1) XX ZZ XX: 00-63 (Incoming Trunk Route) ZZ : 00-63 (Outgoing Trunk Route for CCIS) (2) 0: Allow
END		

Hardware Required

To provide the External TAS Indicator:

- DK card (Four Indicators per card can be equipped)
- Indicator
  Requirement to External Indicator
  Control Method: Loop/Ground/Battery (-27 V) (Maximum 125 mA)
  Type : Visual and/or Audible type with volume control

For cross connection of the TAS indicator, refer to the Installation Procedure Manual.

To provide the telephone set for TAS Indication:

- PN-4LC card (Two telephone sets per card can be equipped.)
- Conventional telephone sets

Operating Procedure

To answer an incoming call in Night mode:

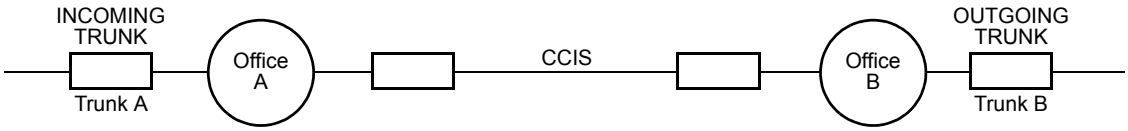
1. The TAS signal (bell, buzzer, etc.) sounds indicate an incoming call.
2. Lift the handset and receive dial tone.
3. Dial the TAS access code.
4. Connect to the incoming call.

TRUNK-TO-TRUNK RESTRICTION-CCIS

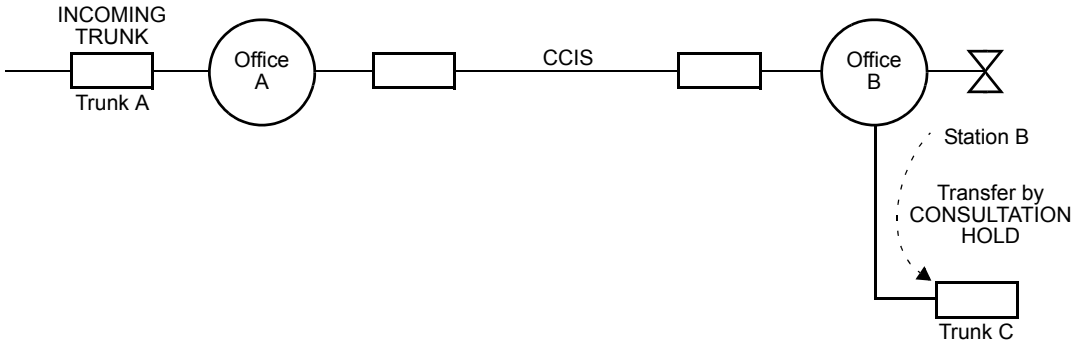
General Description

This feature allows Trunk-to-Trunk tandem restriction by caller's information sent from each office (e.g., caller is a trunk) through the CCIS network.

Case 1: A tandem connection at the following office can be restricted by Trunk Restriction Class of Trunk A and Outgoing Connection Restriction data of Trunk B.



Case 2: When Station B transfers an Incoming Call through CCIS to Trunk C, a Trunk-to-Trunk connection can be restricted by Trunk Restriction Class of Trunk A and Outgoing Connection Restriction data of Trunk C.



Programming

START	DESCRIPTION	DATA
CM35	Assign the Trunk Restriction Class to the required trunk route.	• Y=97 (1) 00-63: Route No. (2) X Z X: 1-8: Day Class Z : 1-8: Night Class 1: Unrestricted (RCA) 2: Non-Restricted 1 (RCB) 3: Non-Restricted 2 (RCC) 4: Semi-Restricted 1 (RCE) 5: Semi-Restricted 2 (RCE) 6: Restricted 1 (RCF) 7: Restricted 2 (RCG) 8: Fully-Restricted (RCH)
	Assign the Area Code Development Pattern number to the required trunk route.	• Y=76 (1) 00-63: Trunk Route No. (2) 0-7: Area Code Development Pattern No. 0-7
A		

A

	DESCRIPTION	DATA
CM81	Assign the Toll Restriction Patterns with eight kinds of Trunk Restriction Classes assigned by CM35 Y=97. Toll Restriction Pattern 00-15 have already been programmed as shown below. If a new Restriction Pattern is required, change the data for Restriction Patterns 01-13 (00, 14 and 15 are fixed).	• Y=01-13 Toll Restriction Pattern No. 01-13 (1) 1-8: Trunk Restriction Class (2) 0: Restricted 3: Allowed

TRUNK RESTRICTION CLASS		Y															
		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	00
		TOLL RESTRICTION PATTERN NUMBER ON EACH TRUNK RESTRICTION CLASS															
		01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	00
1	RCA	3	0	3	3	3	0	0	0	3	3	3	3	3	0	3	0
2	RCB	3	0	3	3	0	0	0	0	3	3	0	0	0	0	3	0
3	RCC	3	0	3	0	0	0	0	0	3	0	0	0	0	0	3	0
4	RCD	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
5	RCE	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
6	RCF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
7	RCG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0
8	RCH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0

0: Restricted
3: Allowed

CM85	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.	• Y=0-7 Area Code Development Pattern No. 0-7 assigned by CM8A Y=A000 (1) X-X...X: Area Code dialed (Maximum 8 digits) (2) 01-24◀: 1-24 digits 25-79 : 25-79 digits

B

B

CM8A

DESCRIPTION

Assign the area code to be restricted and the Toll Restriction Pattern number assigned by CM81 to the Area Code Development Pattern number assigned by CM35 Y=76. For example, to provide the Trunk Restriction Class RCB, RCC, RCD, RCE, RCF, RCG and RCH with the Toll Restriction for Area Code "00":

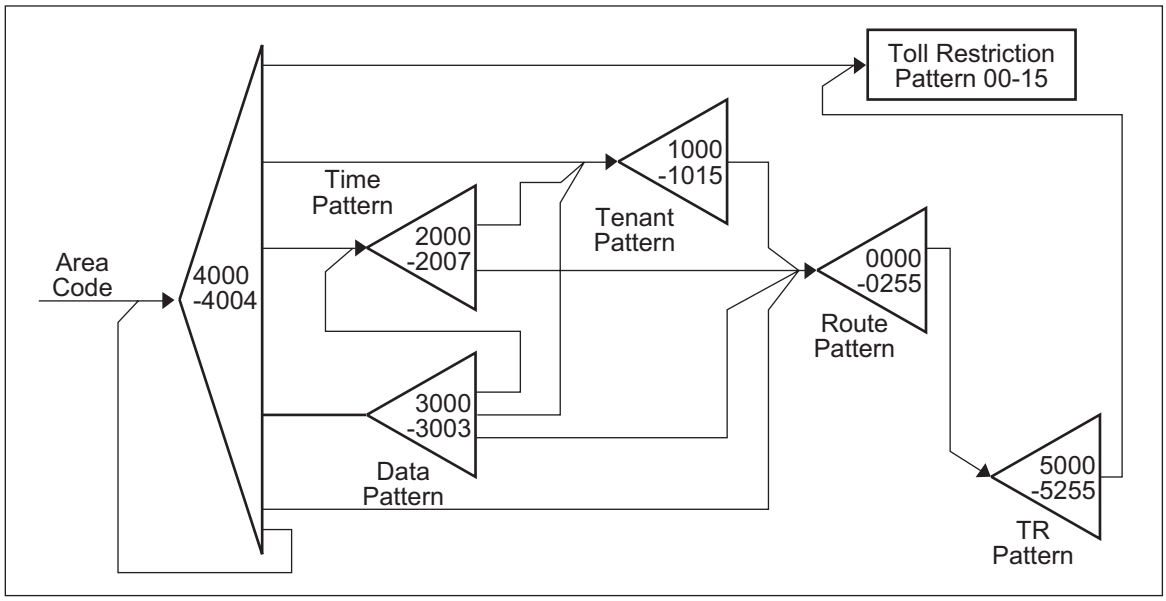
- Area Code=00
- Toll Restriction Pattern=05
  (See Toll Restriction Pattern Table on CM81.)

If the Toll Restriction Pattern for the same area code is changed according to the Tenant, Date, and Time, add the required patterns (Tenant, Date, and Time) to the area code.

DATA

- Y=4000-4004
  Area Code Development No. 0-4

(1) X-X...X: Area Code (Maximum 8 digits)
(2) B000-B015: Toll Restriction Pattern 00-15



C

C

CM8A

DESCRIPTION	DATA
To add the Tenant Pattern:	
STEP 1 Assign the area code to be restricted and the Tenant Pattern number to the Area Code Development Pattern number assigned by CM35 Y=76.	• Y=4000-4004 Area Code Development Pattern No. (1) X-X...X: Area Code (Maximum 8 digits) (2) 1000-1015: Tenant Pattern No. 00-15
STEP 2 Assign the Tenant number and the Route Pattern number to Tenant Pattern number assigned by Step 1.	• Y=1000-1015 Tenant Pattern No. 00-15 (1) 00-63: Tenant No. 00-63 (2) 0000-0255: Route Pattern No. 000-255
STEP 3 Assign the TR Pattern number to Route Pattern number assigned by Step 2.	• Y=0000-0255 Route Pattern No. 000-255 (1) 1 (2) XXX 00 (TR Pattern No.) XXX: 000-255: TR Pattern No.
STEP 4 Assign the Toll Restriction Pattern number assigned by CM81 to TR Pattern number assigned by Step 3.	• Y=5000-5255 TR Pattern No. (1) 000 (2) 00-15◀: Toll Restriction Pattern No. 0-15
To add the Time and Date Pattern:	
STEP 1 Assign the area code to be restricted and the Date Pattern number to the Area Code Development Pattern number assigned by CM35 Y=76.	• Y=4000-4004 (1) X-X...X: Area Code (Maximum 8 digits) (2) 3000-3003: Date Pattern No. 0-3
STEP 2 Assign a date to be applied to Toll Restriction and Time Pattern number 0-7 to the Date Pattern number assigned by Step 1. Set the data for all dates, one by one, to be applied Toll Restriction.	• Y=3000-3003 Date Pattern No. 0-3 (1) 0-6 (Date) 0: Sunday 1: Monday 2: Tuesday 3: Wednesday 4: Thursday 5: Friday 6: Saturday (2) 2000-2007: Time Pattern No. 0-7

D

D

CM8A

DESCRIPTION	DATA
STEP 3 Assign the starting time for the Toll Restriction and Route Pattern number to the Time Pattern number assigned by Step 2. Set the Starting Time as shown below. **Example:** To Set the 7:00 AM to 9:00 PM for the Toll Restriction, enter the following starting times one by one. 0700 (7:00 AM-7:30 AM) 0730 (7:30 AM-8:00 AM) 0800 (8:00 AM-8:30 AM) ⋮ 2030 (8:30 AM-9:00 AM)	• Y=2000-2007 Time Pattern No. 00-07 (1) XX ZZ (Starting Time) XX : 00-23 (Hours) ZZ : 00/30 (Minutes) (2) 0000-0255 (Route Pattern No. 000-255) If Tenant Pattern is required, set 1000-1015 (Tenant Pattern No. 00-15).
STEP 4 Assign the TR Pattern number to the Route Pattern number assigned by Step 3.	• Y=0000-0255 Route Pattern No.000-255 (1) 1 (2) XXX 00 (TR Pattern No.) XXX: 000-255: TR Pattern No.
STEP 5 Assign the Toll Restriction pattern number (assigned by CM81) to TR Pattern number assigned by Step 4.	• Y=5000-5255 TR Pattern No. 000-255 (1) 000 (2) 00-15◀: Toll Restriction Pattern No. 00-15

END

When changing the initial setting (See **NOTE** on next page.), or when receiving the 2400 IPX Trunk Restriction Class (0-15), execute the following programming.

START	DESCRIPTION	DATA
CM42	Assign the 2400 IPX Trunk Restriction Class to each 2000 IPS Trunk Restriction Class for the restriction class conversion from the 2000 IPS to 2400 IPX, if required.	(1) 20: 2000 IPS TRK Restriction Class 1 (RCA) 21: 2000 IPS TRK Restriction Class 2 (RCB) 22: 2000 IPS TRK Restriction Class 3 (RCC) 23: 2000 IPS TRK Restriction Class 4 (RCD) 24: 2000 IPS TRK Restriction Class 5 (RCE) 25: 2000 IPS TRK Restriction Class 6 (RCF) 26: 2000 IPS TRK Restriction Class 7 (RCG) 27: 2000 IPS TRK Restriction Class 8 (RCH) (2) 00-15: 2400 IPX TRK Restriction Class (0-15)
	Assign the 2000 IPS Trunk Restriction Class to each 2400 IPX Trunk Restriction Class for the restriction class conversion from 2400 IPX to 2000 IPS, if required.	(1) 30: 2400 IPX TRK Restriction Class 0 31: 2400 IPX TRK Restriction Class 1 32: 2400 IPX TRK Restriction Class 2 33: 2400 IPX TRK Restriction Class 3 34: 2400 IPX TRK Restriction Class 4 35: 2400 IPX TRK Restriction Class 5 36: 2400 IPX TRK Restriction Class 6 37: 2400 IPX TRK Restriction Class 7 38: 2400 IPX TRK Restriction Class 8 39: 2400 IPX TRK Restriction Class 9 40: 2400 IPX TRK Restriction Class 10 41: 2400 IPX TRK Restriction Class 11 42: 2400 IPX TRK Restriction Class 12 43: 2400 IPX TRK Restriction Class 13 44: 2400 IPX TRK Restriction Class 14 45: 2400 IPX TRK Restriction Class 15 (2) 01-08: 2000 IPS TRK Restriction Class (1-8)
END		

NOTE: *If no data is set, the initial setting is shown below.*

(1) 2000 IPS to 2400 IPX

1ST DATA	2ND DATA
20: 2000 IPS TRK Restriction Class 1 (RCA)	01: 2400 IPX TRK Restriction Class 1
21: 2000 IPS TRK Restriction Class 2 (RCB)	02: 2400 IPX TRK Restriction Class 2
22: 2000 IPS TRK Restriction Class 3 (RCC)	03: 2400 IPX TRK Restriction Class 3
23: 2000 IPS TRK Restriction Class 4 (RCD)	04: 2400 IPX TRK Restriction Class 4
24: 2000 IPS TRK Restriction Class 5 (RCE)	05: 2400 IPX TRK Restriction Class 5
25: 2000 IPS TRK Restriction Class 6 (RCF)	06: 2400 IPX TRK Restriction Class 6
26: 2000 IPS TRK Restriction Class 7 (RCG)	07: 2400 IPX TRK Restriction Class 7
27: 2000 IPS TRK Restriction Class 8 (RCH)	08: 2400 IPX TRK Restriction Class 8

(2) 2400 IPX to 2000 IPS

1ST DATA	2ND DATA
30 : 2400 IPX TRK Restriction Class 0	01: 2000 IPS TRK Restriction Class 1 (RCA)
31 : 2400 IPX TRK Restriction Class 1	01: 2000 IPS TRK Restriction Class 1 (RCA)
32 : 2400 IPX TRK Restriction Class 2	02: 2000 IPS TRK Restriction Class 2 (RCB)
33 : 2400 IPX TRK Restriction Class 3	03: 2000 IPS TRK Restriction Class 3 (RCC)
34 : 2400 IPX TRK Restriction Class 4	04: 2000 IPS TRK Restriction Class 4 (RCD)
35 : 2400 IPX TRK Restriction Class 5	05: 2000 IPS TRK Restriction Class 5 (RCE)
36 : 2400 IPX TRK Restriction Class 6	06: 2000 IPS TRK Restriction Class 6 (RCF)
37 : 2400 IPX TRK Restriction Class 7	07: 2000 IPS TRK Restriction Class 7 (RCG)
38-45: 2400 IPX TRK Restriction Class 8-15	08: 2000 IPS TRK Restriction Class 8 (RCH)

Operating Procedure

No manual operation is required.

UNIFORM NUMBERING PLAN-CCIS

General Description

In a CCIS network, a Uniform Numbering Plan enables a station user to call any other station in the network. Two alternative numbering plans are provided. In the first plan, the station user dials any digits station number from three to eight. The location of the office is identified by the first one-, two-, or three-digit of the station number. In the second plan, the station user dials a one-, two-, or three-digit office code and any digit station number from two to eight.

Programming

Refer to “Numbering Plan Assignment”.

Operating Procedure

To call a station located in another office by using Numbering Plan 1:

1. Lift the handset and receive dial tone.
2. Dial any digit station number three to eight.
3. The call is routed to another office according to programmed routing information, and the called station rings.
4. The called station answers and the parties are connected.

To call a station located in another office by using Numbering Plan 2:

1. Lift the handset and receive dial tone.
2. Dial the access code for CCIS.
3. Dial the one-, two- or three-digit office code and any digit station number from two to eight.
4. The call is routed to the office designated by the office code. The called station rings.
5. The called station answers and the parties are connected.

VOICE CALL-CCIS

General Description

This feature provides a voice path, through the CCIS network, between a D^{term} in one office and a D^{term} in another office. This path is established from the calling party to the called party's built-in speaker. If the called party's **MIC** lamp is on, the called party can have a conversation in hands-free.

Programming

START	DESCRIPTION	DATA
CM90	Assign a Voice Call key to the D^{term}.	• Y=00 (1) My Line No. + [,] + Key No. (2) F1002: Voice Call
END		

Operating Procedure

From a D^{term} to another D^{term}:

1. The originating D^{term} user dials the desired station number in another office, and receives ring back tone.
2. The calling party presses the Voice Call feature key.
   A signal tone is transmitted over the CCIS network to the called party's speaker.
   The calling party's LCD shows:

VOICE CALL XXXX **(TIME DISPLAY)**

Called D^{term}

3. The called party presses the **MIC** key (if the **MIC** LED is not lit) to allow two-way conversation with the calling party.

VOICE MAIL INTEGRATION-CCIS

General Description

This feature allows any station user in the CCIS network to utilize the Voice Mail System (VMS) with the Message Center Interface (MCI).

Programming

Refer to Feature Programming Manual.

Operating Procedure

To record a message into the VMS:

1. Lift the handset and receive dial tone.
2. Dial the voice mail station number and receive ringback tone.
3. Follow the instructions given by the VMS.

To retrieve a message from the VMS:

1. Lift the handset and receive dial tone.
2. Dial the voice mail station number and receive ringback tone.
   The LCD shows:
   [xxx]
   VMS: Voice mail station number
3. Follow the instructions given by the VMS.

To set call forwarding to the VMS:

- Call Forwarding-All Calls
- Call Forwarding-Busy Line
- Call Forwarding-Don't Answer
- Split Call Forwarding-All Calls
- Split Call Forwarding-Busy Line
- Split Call Forwarding-Don't Answer

1. Lift the handset and receive dial tone.
2. Dial the Call Forwarding or Split Call Forwarding feature access code, and receive Special Dial Tone.
3. Dial the voice mail station number and receive Service Set Tone.
   The LCD shows:
   [SET xxxx]
   VMS: Voice mail station number

To call a station number whose call forwarding is set to the VMS:

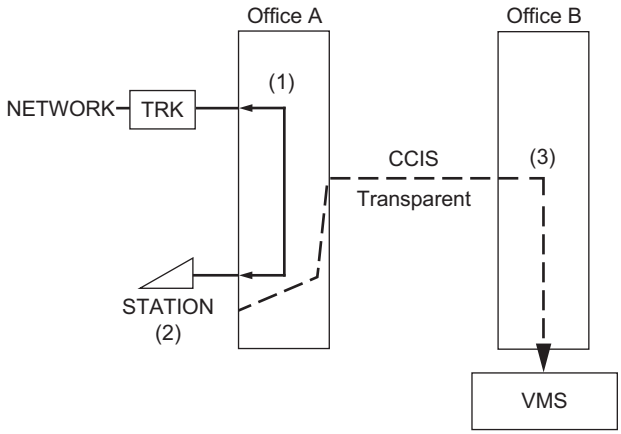
1. Lift the handset and receive dial tone.
2. Dial the desired station number and receive ringback tone.
   The LCD shows:
   [FDA xxx]
   VMS: Voice mail station number
3. Follow the instructions given by the VMS.

VOICE MAIL LIVE RECORD-CCIS

[Series 3700 R12.1 software required]

General Description

This feature allows any station user in the CCIS network to record one's own conversation over the station into the VMS and play it simply by pushing the function key of the D^{term}.



(1): Conversation starts.
(2): Push the function key to record the conversation.
(3): The VMS starts recording it.

Programming

- For a office where a station is set to Voice Mail Live Record (Office A)

START

CM90

A

DESCRIPTION	DATA
Assign the Record/End/Play key for Voice Mail Live Record-CCIS to a D^{term}.	• Y=00 (1) My Line Number + [,] + Key No. (2) F5026: Record F5027: End F5028: Play

A

	DESCRIPTION	DATA
CM08	Specify the use of Record key assigned by CM90 Y=00: F5026 for Voice Mail Live Record-CCIS.	(1) 578 (2) 0 : Used as Record key and End key 1◀: Used as Record key
	Specify the Mail Box number to hear a message when the Play key for Voice Mail Live Record-CCIS is pressed while seizing a Sub Line.	(1) 675 (2) 0 : Mail Box number for My Line 1◀: Mail Box number for Sub Line
	Specify sending of confirmation tone from the VMS to the calling and called party while Voice Mail Live Record-CCIS is executed.	(1) 579 (2) 0 : To send 1◀: Not sent
	Specify a kind of MSG displayed on the D^{term}. **NOTE:** *In this feature, regardless of the number of accumulated messages, X is always 1.*	(1) 025 (2) 0 : MSG (only) 1◀: MSG X (X: No. of messages)
CM71	Assign the System Speed Dialing memory area used exclusively for Voice mail station number. **NOTE:** *This memory area is shared with Route Advance feature from Tie line to C.O. line. Therefore, assign the area as little as possible.*	(1) 66: Exclusive for Voice mail station No. (2) XXX YYY XXX: 000-299 (Starting Memory Slot No. in block) YYY: 001-099 (No. of Memory Slots to be assigned in block)
CM72	Assign the Voice mail station number to the memory slot number in slot allocated by CM71. **NOTE:** *If the Voice mail station number is set in open numbering system, you should set "Access Code + Area Code of the Voice mail station + the Voice mail station number".*	• Y=0 (1) 001-099: Memory Slot No. in block (2) XXXX [,] YY...Y XXXX: Access Code (Maximum 4 digits) [,] : Separator Mark YY...Y : Voice mail station No. (Maximum 8 digits)
CM50	Assign the abbreviated code of Voice mail station number for the Voice Mail Live Record-CCIS.	• Y=10 (1) 0 (2) 00-99 : Abbreviated code NONE◀: No data

END

- For a VMS office (Office B)

START	DESCRIPTION	DATA
CM13	Provide Voice Mail Live Record-CCIS. **NOTE:** *Set the second data to "0" for all the VMS ports performing Voice Mail Live Record-CCIS.*	• Y=57 (1) X-XXXXXXXX: Voice mail station No. (2) 0: To provide
CM08	Specify whether a Live Record Start signal that includes caller information (such as station number and a kind of calling party) is sent to the VMS.	(1) 702 (2) 0: To send
	Specify whether a release signal is sent to the VMS, when a station/trunk hangs up while accessing the VMS	(1) 704 (2) 0: To send
	Specify whether MW lamp control on a station of an opposite office from the VMS via CCIS is available. **NOTE:** *1st data=0 is effective only when CM08>702: 0.*	(1) 706 (2) 0 : Available 1◀: Not available
END		

Operating Procedure

To record and stop one's own conversation into the VMS:

1. Push the function key assigned by CM90 Y=00: F5026 during conversation. If your station connects to the VMS, then start recording. If not, the recording function is not available.
2. To stop recording, push the function key assigned by CM90 Y=00: F5026 (CM08>578: 0 is set) or CM90 Y=00: F5027 (CM08>578: 1 is set) or release the line, and the recording automatically stops.
3. After you stop recording, D^{term} returns to the normal status.

NOTE 1: *While recording, the operations such as hooking/holding is not available at both sides.*
NOTE 2: *Though the opposite side releases the line, the recording continues as long as the recording side doesn't stop recording.*

To play a record from the VMS:
There are two ways to play it.
One way is the same as VOICE MAIL INTEGRATION-CCIS. See that of Operating Procedure.
☞ *Page 342*

The other way is as follows.

1. Lift the handset and receive dial tone.
2. Push the function key assigned by CM90 Y=00, then you can hear the record from the VMS.

To clear a record from the VMS:
To forward a record to another station in the VMS:

1. Lift the handset and receive dial tone.
2. Dial the voice station number and receive ringback tone.
   The LCD shows:
   [xxx]
   VMS: Voice mail station number
3. Follow the instructions given by the VMS.

VOICE MAIL PRIVATE PASSWORD-CCIS

General Description

Voice Mail Password can be prevented from displaying in LCD of D^{term} when connected to the voice mail system via CCIS

Station Application

All D^{term} with LCD

Programming

- For VMS office

START	DESCRIPTION	DATA
CM12	Assign Service Restriction Class A to the VMS stations. **NOTE 1:** *This Service Restriction Class set to the VMS station is sent to the calling office when the VMS answers the call via CCIS.* *The calling office judges the called party as the VMS by the Service Restriction Class sent from the VMS office.* **NOTE 2:** *VMS pilot and ports must be in a different Service Restriction Class than all other stations in that office.*	• Y=02 (1) X-XXXXXXXX: VMS Station No. (2) XX ZZ XX: 00-15◀: Service Restriction Class A
END		

- For call originating office

START	DESCRIPTION	DATA
CM15	Allow Voice Mail Private Password-CCIS to Service Restriction Class A of the VMS on the opposite office. **NOTE:** *CM15 Y=147 is not effective for the Service Restriction Class of own office.*	• Y=147 (1) 00-15: Service Restriction Class A (2) 0: Allow
CM65	Allow Voice Mail Private Password to each tenant.	• Y=30 (1) 00-63: Tenant No. (2) 0: Allow
END		

Operating Procedure

Normal password entry to Voice Mail System.

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CHAPTER 4

CIRCUIT CARD INFORMATION

This chapter explains the mounting location, the meaning of lamp indications, and the switch settings of each CCIS circuit card.

HOW TO READ THIS CHAPTER

This chapter explains the following items about each circuit card used in this system. Explanations are given in alphabetical order of the circuit card names within each circuit card category (Control, Application Processor, and Line/Trunk).

(1) Locations of Lamps, Switches, and Connectors

The locations of lamps, switches, and connectors of each circuit card are shown by a face layout.

(2) Lamp Indications

The name, color, and functions of each indicator lamp equipped on each circuit card are described in a table.

(3) Switch Settings

The name, settings, and functions of each switch equipped on each circuit card are described in a table.

Each switch setting table has a “CHECK” column. Make necessary entries in the CHECK column during and/or after the system installation and maintenance, and use each table as a reference for subsequent system maintenance and operations.

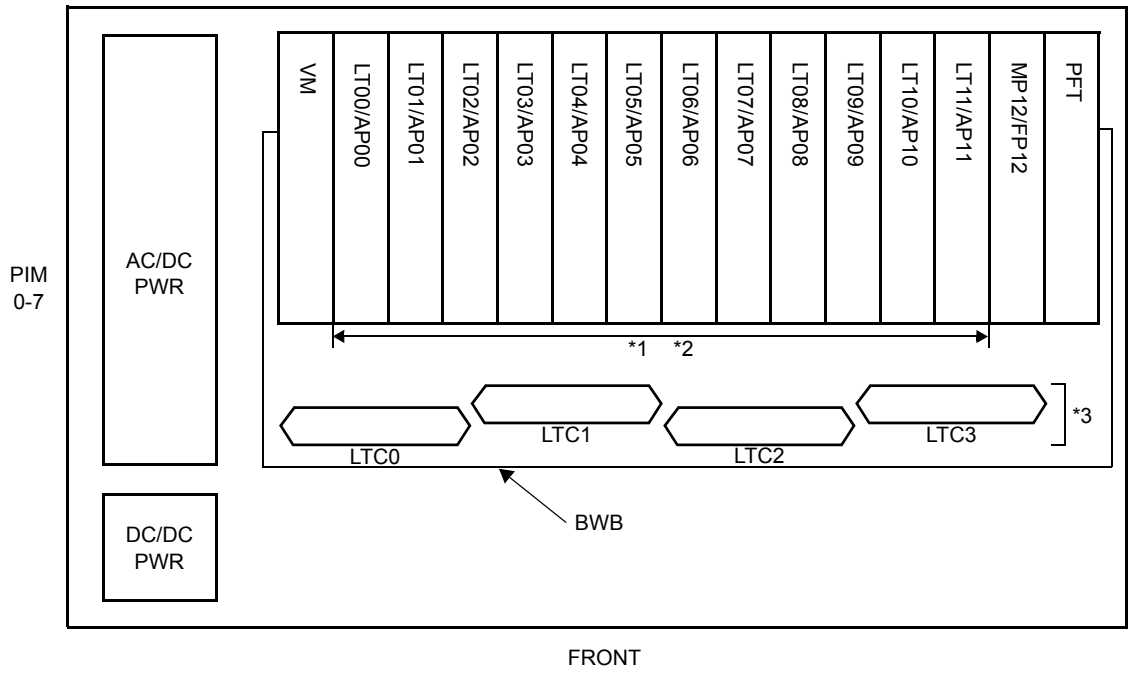
MOUNTING LOCATION OF CIRCUIT CARDS

This section explains the location for mounting circuit cards for the CCIS.

Regular PIM

The figure below shows circuit card mounting slots allocated in the regular PIM.

Circuit Card Mounting Slots (Regular PIM)



LT00-LT11	: Line/Trunk card mounting slots	FP12	: PN-CP15 mounting slot
AP00-AP11	: Application Processor card mounting slots	VM	: PZ-VM00/VM00-M/VM10-M mounting slot
		PFT	: PZ-8PFTB mounting slot
MP12	: PN-CP24-A/PN-CP24-B/PN-CP24-C/ PN-CP24-D mounting slot	AC/DC PWR	: PZ-PW121/PW126 mounting slot
		DC/DC PWR	: PZ-PW122 mounting slot

***1** The following application processor cards are mounted in the AP00-AP11 slots of PIM0-7.
PN-SC00 (CCH), PN-AP00-B (AP00), PN-24CCTA/PN-30CCTA/PN-DTA/PN-DTB (CCT), PN-24DTA-C (DTI), PN-30DTC-C (DTI)
PZ-M537 (EXPMEM) card is mounted on the PN-AP00-B (AP00) card.

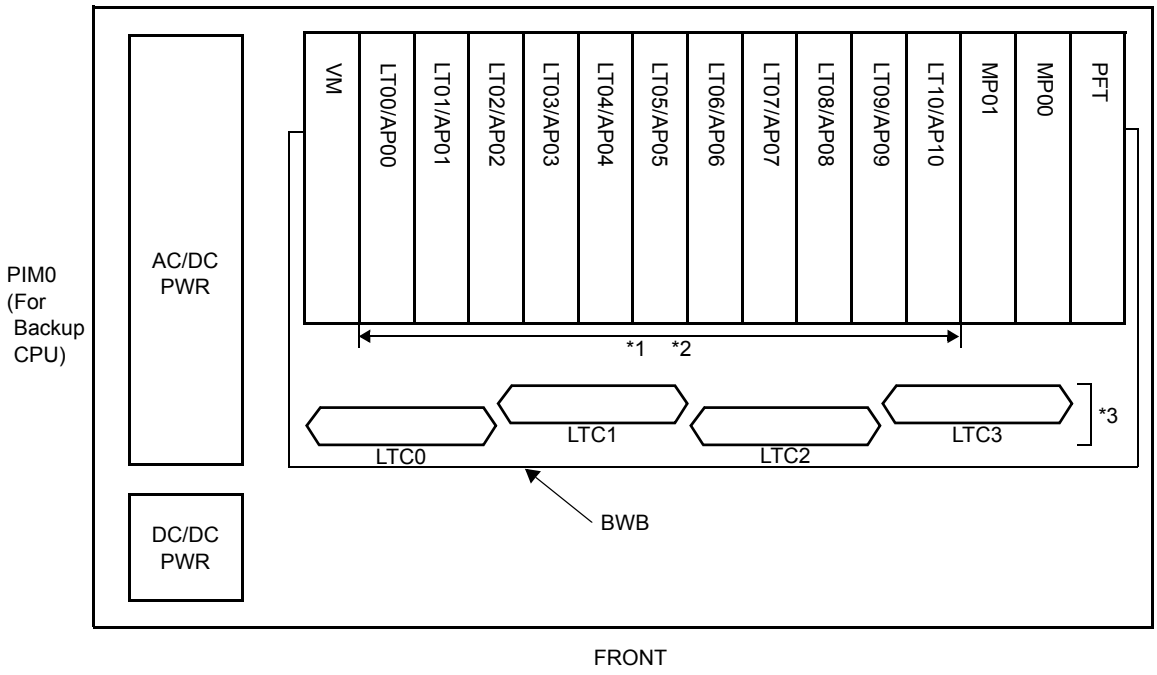
***2** The following line/trunk cards are mounted in the LT00-LT11 slots of PIM0-7.
PN-M10 (M10), PN-2LDTA/PN-4LDTA (LDT), PN-2ODTA/PN-2ODTB (ODT)

***3** PZ-M542/PZ-M557 (CONN) card is mounted into the LTC0-LTC3 connectors on the PIM which accommodates the 30DTI/30CCT card.

PIM for Backup CPU System

The figure below shows circuit card mounting slots allocated in the PIM for Backup CPU System.

Circuit Card Mounting Slots (Backup CPU)



LT00-LT10 : Line/Trunk card mounting slots
AP00-AP10 : Application Processor card mounting slots
MP00/MP01 : PN-CP27-A/PN-CP27-B mounting slot
VM : PZ-VM00/VM00-M/VM10-M mounting slot
PFT : PZ-8PFTB mounting slot
AC/DC PWR: PZ-PW121/PW126 mounting slot
DC/DC PWR: PZ-PW122 mounting slot

***1** The following application processor cards are mounted in the AP00-AP10 slots of PIM0-7.
PN-SC00 (CCH), PN-AP00-B (AP00), PN-24CCTA/PN-30CCTA/PN-DTA/PN-DTB (CCT), PN-24DTA-C (DTI), PN-30DTC-C (DTI)
PZ-M537 (EXPMEM) card is mounted on the PN-AP00-B (AP00) card.

***2** The following line/trunk cards are mounted in the LT00-LT10 slots of PIM0-7.
PN-M10 (M10), PN-2LDTA/PN-4LDTA (LDT), PN-2ODTA/PN-2ODTB (ODT)

***3** PZ-M542/PZ-M557 (CONN) card is mounted into the LTC0-LTC3 connectors on the PIM which accommodates the 30DTI/30CCT card.

LIST OF REQUIRED CARDS

The table below shows the required cards to be explained in this section.

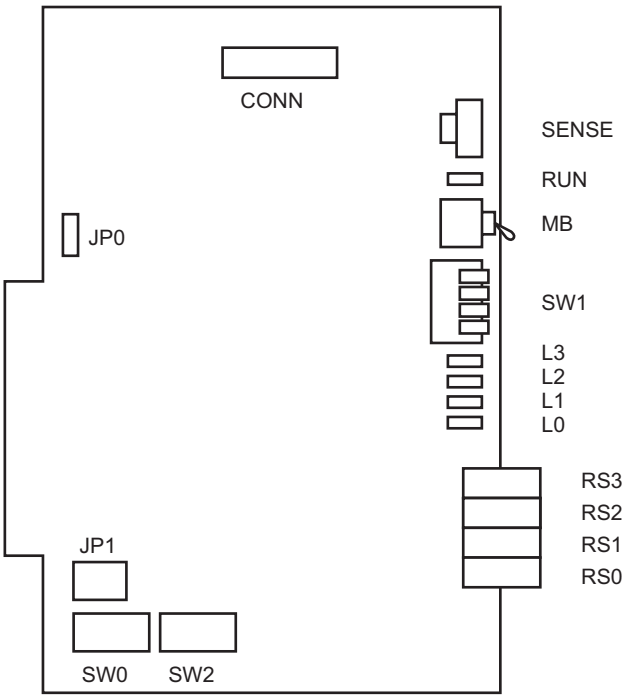
List of Required Cards

NAME (FUNCTIONAL NAME)	LAMP ×: PROVIDED –: NOT PROVIDED	SWITCH ×: PROVIDED –: NOT PROVIDED	EXTRACTION/ INSERTION WITH POWER ON ×: ALLOWED Δ: ALLOWED AFTER MB* –: NOT ALLOWED	REFERENCE PAGE
PN-AP00-B (AP00)	×	×	Δ	*Page 356*
PN-AP00-D (AP00)	×	×	Δ	*Page 362*
PN-24CCTA (CCT)	×	×	Δ	*Page 368*
PN-30CCTA (CCT)	×	×	Δ	*Page 374*
PN-DTA (CCT)	×	×	Δ	*Page 381*
PN-DTB (CCT)	×	×	Δ	*Page 388*
PN-24DTA-C (DTI)	×	×	Δ	*Page 395*
PN-30DTC-C (DTI)	×	×	Δ	*Page 402*
PN-SC00 (CCH)	×	×	Δ	*Page 408*
PZ-M537 (EXPMEM)	–	×	–	*Page 411*
PZ-M542 (CONN)	–	×	×	*Page 414*
PZ-M557 (CONN)	–	×	×	*Page 416*
PN-2LDTA (LDT)	×	–	×	*Page 418*
PN-4LDTA (LDT)	×	–	×	*Page 419*
PN-M10 (M10)	×	×	×	*Page 420*
PN-2ODTA (ODT)	×	–	×	*Page 422*
PN-2ODTB (ODT)	×	–	×	*Page 423*

*MB = Make Busy

PN-AP00-B (AP00)

Locations of Lamps, Switches, and Connectors

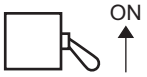


CONN: To CONNR connector on PZ-M537 (EXPMEM)

Lamp Indications

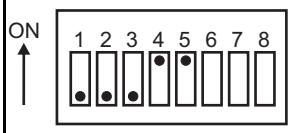
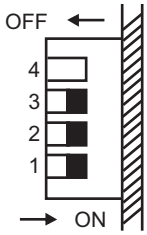
LAMP NAME	COLOR	FUNCTION	
RUN	Green	Flashes at 120 IPM while this card is operating normally.	
L0-L3	Green	Second data setting value for CMD001 > 250	
		0	1 (port0)-3 (port2)
L3		Indication of transmitting status of port0	Indication of CTS signal status on port0-2
L2		Indication of transmitting status of port1	Indication of DCD signal status on port0-2
L1		Indication of transmitting status of port2	Indication of TXD signal status on port0-2
L0		Indication of transmitting status of port3	Indication of RXD signal status on port0-2

Switch Settings

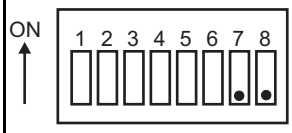
SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SENSE (Rotary SW)  **NOTE 1**	0-3	Not used		
	4-F	Set the switch to match the AP Number (04-31) to be set by CM05.		
MB (Toggle SW)  **NOTE 2**		UP	For make-busy	
		DOWN	For normal operation	

AP No.	SW1-4: ON	04	05	06	07	08	09	10	11	12	13	14	15
	SW1-4: OFF	20	21	22	23	24	25	26	27	28	29	30	31
SW No.		4	5	6	7	8	9	A	B	C	D	E	F

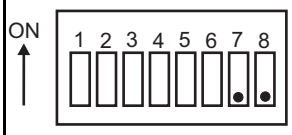
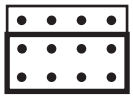
Continued on next page

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW0 (Dip SW) 	1-3	ON	Not used	
		OFF	For normal operation	
	4, 5	ON	For normal operation	
		OFF	Not used	
	6 **NOTE 3**	ON	Sets No. 0 Port forcibly in a state which DSR signal is always provided.	
		OFF	Receives DSR signal from the DCE on No. 0 Port.	
	7 **NOTE 3**	ON	Sets No. 1 Port forcibly in a state which DSR signal is always provided.	
		OFF	Receives DSR signal from the DCE on No. 1 Port.	
	8 **NOTE 3**	ON	Sets No. 2 Port forcibly in a state which DSR signal is always provided.	
		OFF	Receives DSR signal from the DCE on No. 2 Port.	
SW1 (Piano Key SW) 	1	ON	For normal operation	
		OFF	Not used	
	2	ON	For normal operation	
		OFF	For AP data clearing by CMD100/ CMD101	
	3	ON	For normal operation	
		OFF	For AP data clearing by CMD100/ CMD101	
	4	ON	AP No. 4-15	
		OFF	AP No. 20-31	

Continued on next page

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW2 (Dip SW) 	1 **NOTE 3**	ON	Sets No. 3 Port forcibly in a state which DSR signal is always provided.	
		OFF	Receives DSR signal from the DCE on No. 3 Port.	
	2	ON	Enables the receive clock from the DCE (Modem) when No. 1 Port is synchronous. (Clock is received at the RXC terminal)	
		OFF	• Uses internal clock as the receive clock when No. 1 Port is synchronous. • When No. 1 Port is asynchronous.	
	3	ON	Enables transmit clock from the DCE (Modem) when No. 1 Port is synchronous. (Clock is received at the TXC (2) terminal.)	
		OFF	• Uses internal clock as the send clock when No. 1 Port is synchronous. • When No. 1 Port is asynchronous.	
	4	ON	Transmit the send clock from the DTE (this card) when No. 1 Port is synchronous. (Clock is transmitted from the TXC (1) terminal)	
		OFF	• Not transmit the send clock from the DTE (this card) when No. 1 Port is synchronous. • When No. 1 Port is asynchronous.	
	5	ON	When No. 1 Port is asynchronous.	
		OFF	When No. 1 Port is synchronous.	

Continued on next page

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW2 (Dip SW) 	6 **NOTE 4**	ON	• Uses internal clock as the receive clock when No. 1 Port is synchronous. • When No. 1 Port is asynchronous.	
		OFF	Enables receive clock from the DCE (Modem) when No. 1 Port is synchronous. (Clock is received at the RXC terminal)	
	7	(OFF)	Not used	
	8	(OFF)	Not used	
JP0 (Jumper SW) 		(UP)	For normal operation (Battery backup ON)	
		DOWN	Not used (Battery backup OFF)	
JP1 (Jumper SW) 		UP	Not used	
		(DOWN)	For normal operation	

The figure in the SWITCH NAME column and the position of ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

NOTE 1: *Set the groove on the switch to the desired position.*

NOTE 2: *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

NOTE 3: *When the DCE connected to the port does not provide a function to send the DSR signals, set the switch to ON. In this case, the AP00 card cannot recognize the actual state of the DCE, so that the call records or system messages will not be stored in the memory buffer on the AP00 card even if the cable is disconnected from the DCE.*
When the switch is set to OFF, the call records or system messages will be stored when the cable is disconnected, and will be sent when the cable is re-connected.

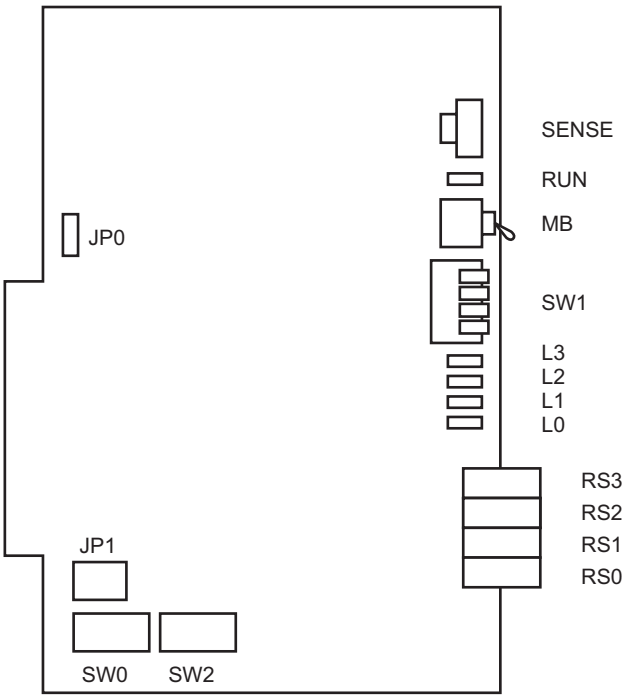
Continued on next page

NOTE 4: *The use of the external clock (from the distant end) or the internal clock is determined by the following table:*

CLOCK	SW2	
	2	6
External	ON	OFF
Internal	OFF	ON

PN-AP00-D (AP00)

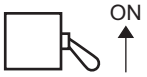
Locations of Lamps, Switches, and Connectors



Lamp Indications

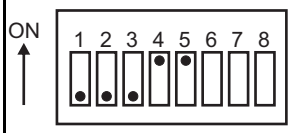
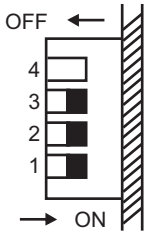
LAMP NAME	COLOR	FUNCTION	
RUN	Green	Flashes at 120 IPM while this card is operating normally.	
L0-L3	Green	Second data setting value for CMD001 > 250	
		0	1 (port0)-3 (port2)
L3		Indication of transmitting status of port0	Indication of CTS signal status on port0-2
L2		Indication of transmitting status of port1	Indication of DCD signal status on port0-2
L1		Indication of transmitting status of port2	Indication of TXD signal status on port0-2
L0		Indication of transmitting status of port3	Indication of RXD signal status on port0-2

Switch Settings

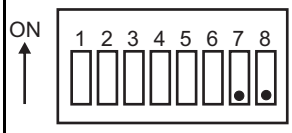
SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SENSE (Rotary SW)  **NOTE 1**	0-3	Not used		
	4-F	Set the switch to match the AP Number (04-31) to be set by CM05.		
MB (Toggle SW)  **NOTE 2**		UP	For make-busy	
		DOWN	For normal operation	

AP No.	SW1-4: ON	04	05	06	07	08	09	10	11	12	13	14	15
	SW1-4: OFF	20	21	22	23	24	25	26	27	28	29	30	31
SW No.		4	5	6	7	8	9	A	B	C	D	E	F

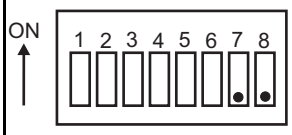
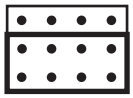
Continued on next page

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW0 (Dip SW)  	1-3	ON	Not used	
		OFF	For normal operation	
	4, 5	ON	For normal operation	
		OFF	Not used	
	6 **NOTE 3**	ON	Sets No. 0 Port forcibly in a state which DSR signal is always provided.	
		OFF	Receives DSR signal from the DCE on No. 0 Port.	
	7 **NOTE 3**	ON	Sets No. 1 Port forcibly in a state which DSR signal is always provided.	
		OFF	Receives DSR signal from the DCE on No. 1 Port.	
	8 **NOTE 3**	ON	Sets No. 2 Port forcibly in a state which DSR signal is always provided.	
		OFF	Receives DSR signal from the DCE on No. 2 Port.	
SW1 (Piano Key SW)  	1	ON	For normal operation	
		OFF	Not used	
	2	ON	For normal operation	
		OFF	For AP data clearing by CMD100/ CMD101	
	3	ON	For normal operation	
		OFF	For AP data clearing by CMD100/ CMD101	
	4	ON	AP No. 4-15	
		OFF	AP No. 20-31	

Continued on next page

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW2 (Dip SW)  	1 **NOTE 3**	ON	Sets No. 3 Port forcibly in a state which DSR signal is always provided.	
		OFF	Receives DSR signal from the DCE on No. 3 Port.	
	2	ON	Enables the receive clock from the DCE (Modem) when No. 1 Port is synchronous. (Clock is received at the RXC terminal)	
		OFF	• Uses internal clock as the receive clock when No. 1 Port is synchronous. • When No. 1 Port is asynchronous.	
	3	ON	Enables transmit clock from the DCE (Modem) when No. 1 Port is synchronous. (Clock is received at the TXC (2) terminal.)	
		OFF	• Uses internal clock as the send clock when No. 1 Port is synchronous. • When No. 1 Port is asynchronous.	
	4	ON	Transmit the send clock from the DTE (this card) when No. 1 Port is synchronous. (Clock is transmitted from the TXC (1) terminal)	
		OFF	• Not transmit the send clock from the DTE (this card) when No. 1 Port is synchronous. • When No. 1 Port is asynchronous.	
	5	ON	When No. 1 Port is asynchronous.	
		OFF	When No. 1 Port is synchronous.	

Continued on next page

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW2 (Dip SW) 	6 **NOTE 4**	ON	• Uses internal clock as the receive clock when No. 1 Port is synchronous. • When No. 1 Port is asynchronous.	
		OFF	Enables receive clock from the DCE (Modem) when No. 1 Port is synchronous. (Clock is received at the RXC terminal)	
	7	(OFF)	Not used	
	8	(OFF)	Not used	
JP0 (Jumper SW) 		(UP)	For normal operation (Battery backup ON)	
		DOWN	Not used (Battery backup OFF)	
JP1 (Jumper SW) 		UP	Not used	
		(DOWN)	For normal operation	

The figure in the SWITCH NAME column and the position of ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

NOTE 1: *Set the groove on the switch to the desired position.*

NOTE 2: *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

NOTE 3: *When the DCE connected to the port does not provide a function to send the DSR signals, set the switch to ON. In this case, the AP00 card cannot recognize the actual state of the DCE, so that the call records or system messages will not be stored in the memory buffer on the AP00 card even if the cable is disconnected from the DCE.*
When the switch is set to OFF, the call records or system messages will be stored when the cable is disconnected, and will be sent when the cable is re-connected.

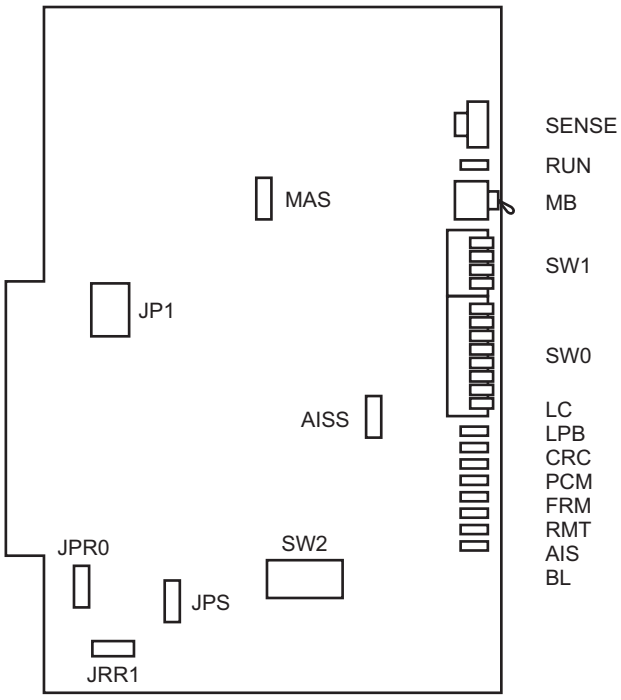
Continued on next page

NOTE 4: *The use of the external clock (from the distant end) or the internal clock is determined by the following table:*

CLOCK	SW2	
	2	6
External	ON	OFF
Internal	OFF	ON

PN-24CCTA (CCT)

Locations of Lamps, Switches, and Connectors



Lamp Indications

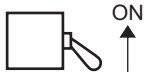
LAMP NAME	COLOR	FUNCTION
RUN	Green	Flashes at 120 IPM while this card is operating normally.
LC	Green	Remains lit when communications are normally ongoing with the common signaling channel data links connected.
LPB	Green	Remains lit when a loopback test is in progress.
CRC	Red	Remains lit when detecting Cyclic Redundancy Checking (CRC) errors.
PCM	Red	Remains lit when detecting PCM signal loss.
FRM	Red	Remains lit when detecting Frame Alignment signal loss.
RMT	Red	Remains lit when receiving Frame Alignment signal loss alarm from a distant office.
AIS	Red	Remains lit when a pattern of consecutive "1" is received. The distant office transmits this signal for a loopback test.
BL	Red	B channel status ON : More than 10 channels are busy OFF : All channels are idle Flash (60 IPM) : Only one channel is busy Flash (120 IPM): 2 through 10 channels are busy

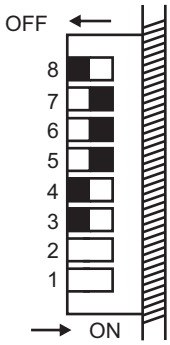
Switch Settings

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="2">SENSE
(Rotary SW)
 

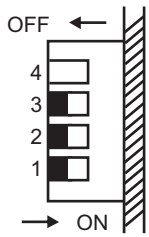
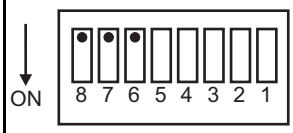
NOTE 1</td><td>0-3</td><td colspan="2">Not used</td><td></td></tr>
<tr><td>4-F</td><td colspan="2">Set the switch to match the AP Number (04-31) to be set by CM05.
<table><tr><td rowspan="2">AP No.</td><td>SW1-4: ON</td><td>04</td><td>05</td><td>06</td><td>07</td><td>08</td><td>09</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr><tr><td>SW1-4: OFF</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td><td>31</td></tr><tr><td colspan="2">SW No.</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td></tr></table></td><td></td></tr>
</table>

Continued on next page

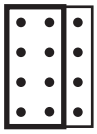
<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="2">MB (Toggle SW)
 

NOTE 2</td><td rowspan="2"></td><td>UP</td><td>For make-busy</td><td></td></tr>
<tr><td>DOWN</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="16">SW0
(Piano Key SW)
 
</td><td rowspan="2">1
NOTE 3
NOTE 4</td><td>ON</td><td>Source clock signal from network is sent to the PLO0 input on MP card.</td><td></td></tr>
<tr><td>OFF</td><td>Source clock signal from network is not sent to the PLO0 input on MP card.</td><td></td></tr>
<tr><td rowspan="2">2
NOTE 3
NOTE 4</td><td>ON</td><td>Source clock signal from network is sent to the PLO1 input on MP card.</td><td></td></tr>
<tr><td>OFF</td><td>Source clock signal from network is not sent to the PLO1 input on MP card.</td><td></td></tr>
<tr><td rowspan="2">3
NOTE 7</td><td>ON</td><td>Remote loopback</td><td></td></tr>
<tr><td>OFF</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="2">4
NOTE 7</td><td>ON</td><td>Local loopback (AIS send)</td><td></td></tr>
<tr><td>OFF</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="2">5
NOTE 7</td><td>ON</td><td rowspan="8">Set equalizer according to the cable length between the PBX and the CSU.
<table><tr><th>SW0-5</th><th>SW0-6</th><th>SW0-7</th><th>CABLE LENGTH</th></tr><tr><td>ON</td><td>ON</td><td>ON</td><td>0-40 m (0-131.2 ft.)</td></tr><tr><td>ON</td><td>ON</td><td>OFF</td><td>40-80 m (131.2-262.5 ft.)</td></tr><tr><td>ON</td><td>OFF</td><td>ON</td><td>80-120 m (262.5-394 ft.)</td></tr><tr><td>ON</td><td>OFF</td><td>OFF</td><td>120-160 m (394-525 ft.)</td></tr><tr><td>OFF</td><td>ON</td><td>ON</td><td>160-200 m (525-656 ft.)</td></tr><tr><td>OFF</td><td>OFF</td><td>OFF</td><td>Signal is not sent</td></tr></table></td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">6
NOTE 7</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">7
NOTE 7</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td>8</td><td>OFF</td><td>Not used</td><td></td></tr>
</table>

Continued on next page

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="5">SW1
(Piano Key SW)
  </td><td>1</td><td>OFF</td><td>Not used</td><td></td></tr>
<tr><td>2</td><td>OFF</td><td>Not used</td><td></td></tr>
<tr><td>3</td><td>OFF</td><td>Not used</td><td></td></tr>
<tr><td rowspan="2">4</td><td>ON</td><td>AP No. 04-15</td><td></td></tr>
<tr><td>OFF</td><td>AP No. 20-31</td><td></td></tr>
<tr><td rowspan="11">SW2 (Dip SW)
  </td><td rowspan="2">1</td><td>ON</td><td rowspan="11">• Common channel signaling data transmission speed (For Digital Interface)
<table><tr><th>TRANSMISSION SPEED</th><th>SW 2-1</th><th>SW 2-2</th><th>SW 2-3</th><th>SW 2-4</th><th>SW 2-5</th></tr><tr><td>48 Kbps NOTE 6</td><td>ON</td><td>ON</td><td>OFF</td><td>OFF</td><td>ON</td></tr><tr><td>48 Kbps NOTE 6</td><td>ON</td><td>ON</td><td>ON</td><td>OFF</td><td>ON</td></tr><tr><td>56 Kbps</td><td>ON</td><td>ON</td><td>OFF</td><td>ON</td><td>ON</td></tr><tr><td>64 Kbps</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td></tr></table></td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">2</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">3</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">4</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">5</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td>6</td><td>OFF</td><td>Not used (Always set to OFF)</td><td></td></tr>
<tr><td>7</td><td>OFF</td><td>Not used (Always set to OFF)</td><td></td></tr>
<tr><td>8</td><td>OFF</td><td>Not used (Always set to OFF)</td><td></td></tr>
</table>

Continued on next page

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
JPR0 (Jumper pin) 		UP	Neutral grounding on the receiving line is provided.	
		(DOWN)	Neutral grounding on the receiving line is not provided.	
JPR1 (Jumper pin) 		(RIGHT)	Line impedance: 100 Ω	
		LEFT	Line impedance: 110 Ω	
JPS (Jumper pin) 		UP	Neutral grounding on the transmitting line is provided.	
		(DOWN)	Neutral grounding on the transmitting line is not provided.	
MAS (Jumper pin) 		(DOWN)	Always set to DOWN	
AISS (Jumper pin) 		(UP)	AIS signal is sent out when make-busy or power on.	
		DOWN	AIS signal is not sent out when make-busy or power on.	
JP1 (Jumper pin) 		(LEFT)	Always set to LEFT	

The figure in the SWITCH NAME column and the position of ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

NOTE 1: *Set the groove on the switch to the desired position.*

Continued on next page

NOTE 2: *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

NOTE 3: *Set SW0-1 and SW0-2 as follows:*

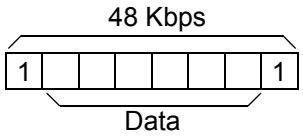
CONDITIONS	CCT0		CCT1		CCT2		· · · · ·		CCT7		REMARKS
	SW 0-1	SW 0-2	SW 0-1	SW 0-2	SW 0-1	SW 0-2			SW 0-1	SW 0-2	
When one CCT is provided.	ON	OFF	–	–	–	–			–	–	MP card will receive the clock signal from CCT0 at its PLO0 input.
When more than one CCT is provided.	ON	OFF	OFF	ON	OFF	OFF			OFF	OFF	MP card will receive the clock signal from CCT0 at its PLO0 input, under normal conditions. Should a clock failure occur with CCT0, MP card will automatically switch to the PLO1 input which gets clock from CCT1.

NOTE 4: *When the PBX is a clock source office, set the SW0-1 and SW0-2 on all the CCT cards mounted in PIM0 to "OFF".*

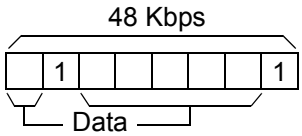
NOTE 5: *Mount the CCT card which receives a source clock signal into PIM0.*

NOTE 6: *The following two kinds of rate adaptation method are available in 48 Kbps data transmission. The rate adaptation method must be set to match the rate adaptation of clock source office.*

- SW2-3: OFF



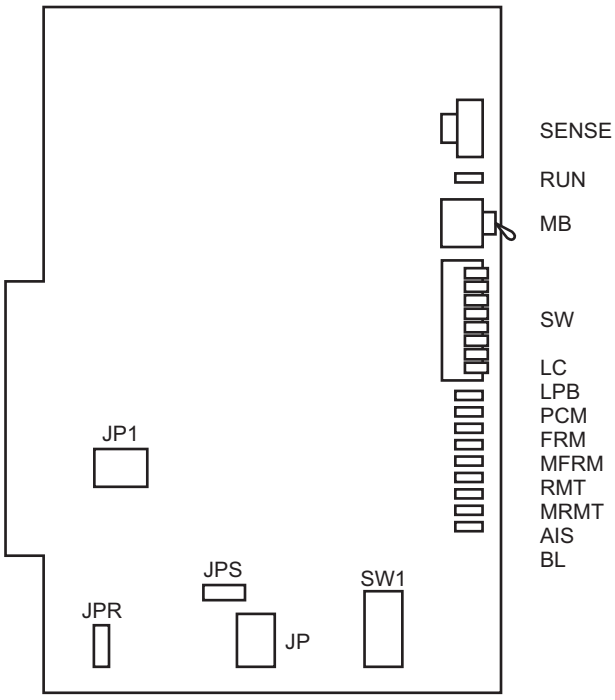
- SW2-3: ON



NOTE 7: *This card must be reset after the SW0-3 to SW0-7 switch settings. Set the MB switch to UP and then DOWN.*

PN-30CCTA (CCT)

Locations of Lamps, Switches, and Connectors

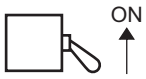


Lamp Indications

LAMP NAME	COLOR	FUNCTION
RUN	Green	Flashes at 120 IPM when this card is normally operating.
LC	Green	Remains lit when communications are normally ongoing with the common signaling channel data links connected.
LPB	Green	Remains lit when a loopback test is in progress.
PCM	Red	Remains lit when detecting PCM signal loss.
FRM	Red	Remains lit when detecting Frame Alignment signal loss.
MFRM	Red	Remains lit when detecting Multi-Frame Alignment signal loss on time slot 16.
RMT	Red	Remains lit when receiving the alarm from a distant office because Frame Alignment signal loss has been detected at the distant office.
MRMT	Red	Remains lit when receiving the alarm from a distant office because Multi-Frame Alignment signal loss has been detected at the distant office.
AIS	Red	Remains lit when indicating that the pattern of consecutive “1” is being received. The distant office transmits this signal for a loopback test.
BL	Red	B channel status ON : More than 10 channels are busy OFF : All channels are idle Flash (60 IPM) : Only one channel is busy Flash (120 IPM): 2 to 10 channels are busy

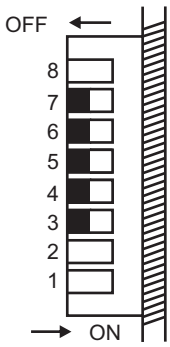
Switch Settings

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="2">SENSE
(Rotary SW)
 

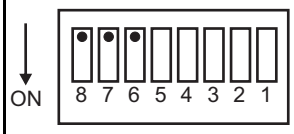
NOTE 1</td><td>4-F</td><td colspan="3">Set the switch to match the AP Number (04-31) to be set by CM05.
<table><tr><td rowspan="2">AP No.</td><td>SW-8: ON</td><td>04</td><td>05</td><td>06</td><td>07</td><td>08</td><td>09</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr><tr><td>SW-8: OFF</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td><td>31</td></tr><tr><td colspan="2">SW No.</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td></tr></table></td><td></td></tr>
<tr><td>0-3</td><td colspan="2">Not used</td><td></td></tr>
<tr><td>MB (Toggle SW)
 

NOTE 2</td><td></td><td>UP</td><td>For make-busy</td><td></td></tr>
<tr><td></td><td>DOWN</td><td>For normal operation</td><td></td></tr>
</table>

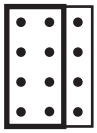
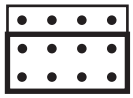
Continued on next page

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW (Piano Key SW)  	1 **NOTE 3** **NOTE 4**	ON	Source clock signal from network is sent to the PLO0 input on MP card.	
		OFF	Source clock signal from network is not sent to the PLO0 input on MP card.	
	2 **NOTE 3** **NOTE 4**	ON	Source clock signal from network is sent to the PLO1 input on MP card.	
		OFF	Source clock signal from network is not sent to the PLO1 input on MP card.	
	3	ON	Remote loopback	
		OFF	For normal operation	
	4	ON	Local loopback (AIS send)	
		OFF	For normal operation	
	5	ON	Transmission line cable: Coaxial cable (75 Ω)	
		OFF	Transmission line cable: Twisted-pair cable (120 Ω)	
	6	ON	Loopback test	
		OFF	For normal operation	
	7	OFF	Not used (Always set to OFF)	
	8	ON	AP No. 04-15	
		OFF	AP No. 20-31	

Continued on next page

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="11">SW1(Dip SW)
 
</td><td rowspan="2">1</td><td>ON</td><td rowspan="10">• Common channel signaling data transmission speed (For Digital Interface)
<table><tr><th>TRANSMISSION SPEED</th><th>SW 1-1</th><th>SW 1-2</th><th>SW 1-3</th><th>SW 1-4</th><th>SW 1-5</th></tr><tr><td>48 Kbps NOTE 5</td><td>ON</td><td>ON</td><td>OFF</td><td>OFF</td><td>ON</td></tr><tr><td>48 Kbps NOTE 5</td><td>ON</td><td>ON</td><td>ON</td><td>OFF</td><td>ON</td></tr><tr><td>56 Kbps</td><td>ON</td><td>ON</td><td>OFF</td><td>ON</td><td>ON</td></tr><tr><td>64 Kbps</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td></tr></table></td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">2</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">3</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">4</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">5</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td>6</td><td>OFF</td><td>Not used (Always set to OFF)</td><td></td></tr>
<tr><td>7</td><td>OFF</td><td>Not used (Always set to OFF)</td><td></td></tr>
<tr><td>8</td><td>OFF</td><td>Not used (Always set to OFF)</td><td></td></tr>
</table>

Continued on next page

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
JPS (Jumper pin) 		(RIGHT)	Balanced transmission (For twisted-pair cable)	
		LEFT	TA is grounded on the transmission line (For coaxial cable)	
JPR (Jumper pin) 		(UP)	Balanced transmission (For twisted-pair cable)	
		DOWN	RA is grounded on the transmission line (For coaxial cable)	
JP (Jumper pin) 		RIGHT	Line impedance: 75 Ω (For coaxial cable)	
		(LEFT)	Line impedance: 120 Ω (For twisted-pair cable)	
JP1 (Jumper pin) 		(DOWN)	Always set to DOWN	

The figure in the SWITCH NAME column and the position of ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

NOTE 1: *Set the groove on the switch to the desired position.*

NOTE 2: *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

Continued on next page

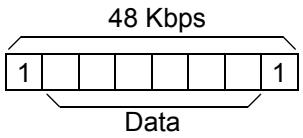
NOTE 3: *Set SW-1 and SW-2 as follows:*

CONDITIONS	CCT0		CCT1		CCT2		· · · · ·		CCT7		REMARKS
	SW -1	SW -2	SW -1	SW -2	SW -1	SW -2			SW -1	SW -2	
When one CCT is provided.	ON	OFF	–	–	–	–			–	–	MP card will receive the clock signal from CCT0 at its PLO0 input.
When more than one CCT is provided.	ON	OFF	OFF	ON	OFF	OFF			OFF	OFF	MP card will receive the clock signal from CCT0 at its PLO0 input, under normal conditions. Should a clock failure occur with CCT0, MP card will automatically switch to the PLO1 input which gets clock from CCT1.

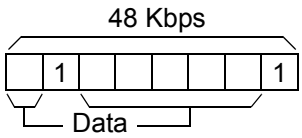
NOTE 4: *When the PBX is a clock source office, set the SW-1 and SW-2 on all the CCT cards mounted in PIM0 to "OFF".*

NOTE 5: *The following two kinds of rate adaptation method are available in 48 Kbps data transmission. The rate adaptation method must be set to match the rate adaptation of clock source office.*

- SW1-3: OFF



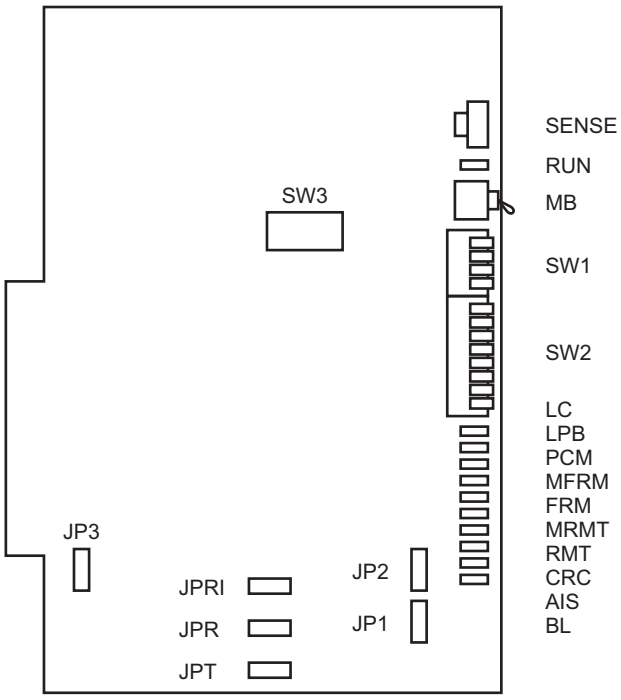
- SW1-3: ON



NOTE 6: *Mount the CCT card which receives a source clock signal into PIM0.*

PN-DTA (CCT)

Locations of Lamps, Switches, and Connectors



Lamp Indications

LAMP NAME	COLOR	FUNCTION
RUN	Green	Flashes at 120 IPM while this card is operating normally.
LC	Green	Remains lit when communications are normally ongoing with the common signaling channel data links connected.
LPB	Green	Remains lit when loopback test is in progress.
PCM	Red	Remains lit when detecting PCM signal loss.
MFRM	Red	Remains lit when detecting Multi-Frame Alignment signal loss on time solt 16 (Only for E1).
FRM	Red	Remains lit when detecting Frame Alignment signal loss.
MRMT	Red	Remains lit when receiving the alarm from a distant office because Multi-Frame Alignment signal loss has been detected at the distant office (Only for E1).
RMT	Red	Remains lit when receiving Frame Alignment signal loss alarm from a distant office.
CRC	Red	Remains lit when detecting Cyclic Redundancy Checking (CRC) errors (Only for T1).
AIS	Red	Remains lit when a pattern of consecutive "1" is received. The distant office transmits this signal for a loopback test.
BL	Red	B channel status ON : More than 10 channels are busy OFF : All channels are idle Flash (60 IPM) : Only one channel is busy Flash (120 IPM): 2 through 10 channels are busy

NOTE: *The following table shows the lamps of PN-DTA card used for T1/E1 interface.*

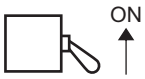
×: Used –: Not used

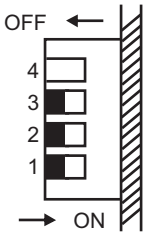
LAMP	CCT (T1)	CCT (E1)
RUN	×	×
LC	×	×
LPB	×	×
PCM	×	×
MFRM	–	×
FRM	×	×

LAMP	CCT (T1)	CCT (E1)
MRMT	–	×
RMT	×	×
CRC	×	–
AIS	×	×
BL	×	×

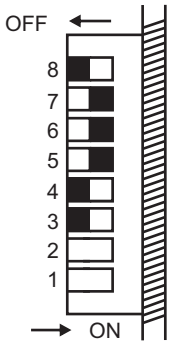
Switch Settings

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="2">SENSE
(Rotary SW)
 

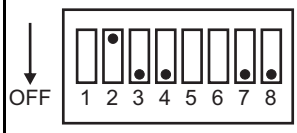
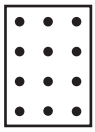
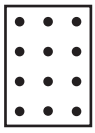
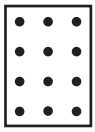
NOTE 1</td><td>0-3</td><td colspan="2">Not used</td><td></td></tr>
<tr><td>4-F</td><td colspan="2">Set the switch to match the AP Number (04-31) to be set by CM05.
<table><tr><td rowspan="2">AP No.</td><td>SW1-4: ON</td><td>04</td><td>05</td><td>06</td><td>07</td><td>08</td><td>09</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr><tr><td>SW1-4: OFF</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td><td>31</td></tr><tr><td colspan="2">SW No.</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td></tr></table></td><td></td></tr>
<tr><td>MB (Toggle SW)
 

NOTE 2</td><td></td><td>UP</td><td>For make-busy</td><td></td></tr>
<tr><td></td><td>DOWN</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="8">SW1
(Piano Key SW)
 
</td><td>1</td><td>OFF</td><td>Not used</td><td></td></tr>
<tr><td>2</td><td>OFF</td><td>Not used</td><td></td></tr>
<tr><td rowspan="4">3</td><td colspan="2">[North America only]</td><td></td></tr>
<tr><td>ON</td><td>DS-1
(T1 with CSU function)</td><td></td></tr>
<tr><td>OFF</td><td>DSX-1
(T1 without CSU function)</td><td></td></tr>
<tr><td colspan="2">[Hong Kong/Taiwan]</td><td></td></tr>
<tr><td rowspan="2">4</td><td>OFF</td><td>Not used</td><td></td></tr>
<tr><td>ON</td><td>AP No. 04-15</td><td></td></tr>
<tr><td></td><td>OFF</td><td>AP No. 20-31</td><td></td></tr>
</table>

Continued on next page

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="16">SW2
(Piano Key SW)
 
</td><td rowspan="2">1
NOTE 3
NOTE 4</td><td>ON</td><td>Source clock signal from network is sent to the PLO0 input on MP card.</td><td></td></tr>
<tr><td>OFF</td><td>Source clock signal from network is not sent to the PLO0 input on MP card.</td><td></td></tr>
<tr><td rowspan="2">2
NOTE 3
NOTE 4</td><td>ON</td><td>Source clock signal from network is sent to the PLO1 input on MP card.</td><td></td></tr>
<tr><td>OFF</td><td>Source clock signal from network is not sent to the PLO1 input on MP card.</td><td></td></tr>
<tr><td rowspan="2">3
NOTE 6</td><td>ON</td><td>Remote loopback</td><td></td></tr>
<tr><td>OFF</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="2">4
NOTE 6</td><td>ON</td><td>Local loopback (AIS send)</td><td></td></tr>
<tr><td>OFF</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="2">5
NOTE 6</td><td>ON</td><td rowspan="6">Set equalizer according to the cable length between the PBX and the C.O. or CSU.
• For DS-1 (SW1-3 ON)
<table><tr><th>SW2-5</th><th>SW2-6</th><th>SW2-7</th><th>CABLE LENGTH TO CSU (0.5 ϕ)</th></tr><tr><td>ON</td><td>ON</td><td>ON</td><td>1199-1758 m (3930-5764 ft.)</td></tr><tr><td>OFF</td><td>ON</td><td>ON</td><td>599-1199 m (1965-3930 ft.)</td></tr><tr><td>ON</td><td>OFF</td><td>ON</td><td>0-599 m (0-1965 ft.)</td></tr><tr><td>OFF</td><td>OFF</td><td>ON</td><td>Not used</td></tr><tr><td>OFF</td><td>OFF</td><td>OFF</td><td>Signal is not sent</td></tr></table>• For DSX-1/Hong Kong/Taiwan (SW1-3 OFF)
<table><tr><th>SW2-5</th><th>SW2-6</th><th>SW2-7</th><th>CABLE LENGTH TO CSU (0.65 ϕ)</th></tr><tr><td>ON</td><td>ON</td><td>ON</td><td>0-40 m (0-131.2 ft.)</td></tr><tr><td>ON</td><td>ON</td><td>OFF</td><td>40-80 m (131.2-262.5 ft.)</td></tr><tr><td>ON</td><td>OFF</td><td>ON</td><td>80-120 m (262.5-394 ft.)</td></tr><tr><td>ON</td><td>OFF</td><td>OFF</td><td>120-160 m (394-525 ft.)</td></tr><tr><td>OFF</td><td>ON</td><td>ON</td><td>160-200 m (525-656 ft.)</td></tr><tr><td>OFF</td><td>OFF</td><td>OFF</td><td>Signal is not sent</td></tr></table></td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">6
NOTE 6</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">7
NOTE 6</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td>8</td><td>OFF</td><td>Not used</td><td></td></tr>
</table>

Continued on next page

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="10">SW3 (Dip SW)
 
</td><td rowspan="2">1</td><td>ON</td><td>T1 mode</td><td></td></tr>
<tr><td>OFF</td><td>E1 mode</td><td></td></tr>
<tr><td rowspan="2">2</td><td>ON</td><td>CCT mode</td><td></td></tr>
<tr><td>OFF</td><td>DTI mode</td><td></td></tr>
<tr><td>3</td><td>OFF</td><td>Not used (Always set to OFF)</td><td></td></tr>
<tr><td>4</td><td>OFF</td><td>Not used (Always set to OFF)</td><td></td></tr>
<tr><td rowspan="2">5</td><td>ON</td><td rowspan="4">Common channel signaling data transmission speed (For Digital Interface)
<table><tr><th>TRANSMISSION SPEED</th><th>SW 3-5</th><th>SW 3-6</th></tr><tr><td>48 Kbps (1) NOTE 7</td><td>OFF</td><td>ON</td></tr><tr><td>48 Kbps (2) NOTE 7</td><td>OFF</td><td>OFF</td></tr><tr><td>56 Kbps</td><td>ON</td><td>OFF</td></tr><tr><td>64 Kbps</td><td>ON</td><td>ON</td></tr></table></td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">6</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td>7</td><td>OFF</td><td>Not used (Always set to OFF)</td><td></td></tr>
<tr><td>8</td><td>OFF</td><td>Not used (Always set to OFF)</td><td></td></tr>
<tr><td rowspan="2">JP1 (Jumper pin)
  </td><td rowspan="2"></td><td>RIGHT</td><td rowspan="4">Line impedance is set by combing JP1 and JP2.
<table><tr><th>JP1</th><th>JP2</th><th>LINE IMPEDANCE</th></tr><tr><td>LEFT</td><td>RIGHT</td><td>100 Ω (for T1)</td></tr><tr><td>LEFT</td><td>LEFT</td><td>110 Ω (for T1)</td></tr><tr><td>RIGHT</td><td>RIGHT</td><td>120 Ω (for E1)</td></tr><tr><td>RIGHT</td><td>LEFT</td><td>75 Ω (for E1)</td></tr></table></td><td></td></tr>
<tr><td>LEFT</td><td></td></tr>
<tr><td rowspan="2">JP2 (Jumper pin)
  </td><td rowspan="2"></td><td>RIGHT</td><td></td></tr>
<tr><td>LEFT</td><td></td></tr>
<tr><td rowspan="2">JP3 (Jumper pin)
  </td><td rowspan="2"></td><td>RIGHT</td><td>Balanced transmission (For twisted-pair cable) (for T1/E1)</td><td></td></tr>
<tr><td>LEFT</td><td>Unbalanced transmission (For coaxial cable) (for E1)</td><td></td></tr>
</table>

Continued on next page

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
JPRI (Jumper pin) 		(LEFT)	Not used	
JPR (Jumper pin) 		RIGHT	Neutral grounding on the receiving line is provided	
		(LEFT)	Neutral grounding on the receiving line is not provided	
JPT (Jumper pin) 		RIGHT	Neutral grounding on the transmitting line is provided	
		(LEFT)	Neutral grounding on the transmitting line is not provided	

The figure in the SWITCH NAME column and the position of ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

NOTE 1: *Set the groove on the switch to the desired position.*

NOTE 2: *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

Continued on next page

NOTE 3: *Set SW2-1 and SW2-2 as follows:*

CONDITIONS	CCT0		CCT1		CCT2		· · · · ·		CCT7		REMARKS
	SW 2-1	SW 2-2	SW 2-1	SW 2-2	SW 2-1	SW 2-2			SW 2-1	SW 2-2	
When one CCT is provided.	ON	OFF	–	–	–	–			–	–	MP card will receive the clock signal from CCT0 at its PLO0 input.
When more than one CCT is provided.	ON	OFF	OFF	ON	OFF	OFF			OFF	OFF	MP card will receive the clock signal from CCT0 at its PLO0 input, under normal conditions. Should a clock failure occur with CCT0, MP card will automatically switch to the PLO1 input which gets clock from CCT1.

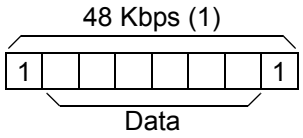
NOTE 4: *When the PBX is a clock source office, set the SW2-1 and SW2-2 on all the CCT cards mounted in PIM0 to "OFF".*

NOTE 5: *Mount the CCT card which receives a source clock signal into PIM0.*

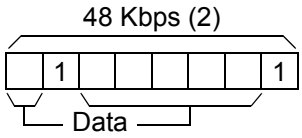
NOTE 6: *This card must be reset after the SW2-3 to SW2-7 switch settings. Set the MB switch to UP and then DOWN.*

NOTE 7: *The following two kinds of rate adaptation method are available in 48 Kbps data transmission. The rate adaptation method must be set to match the rate adaptation of clock source office.*

- SW3-6: ON

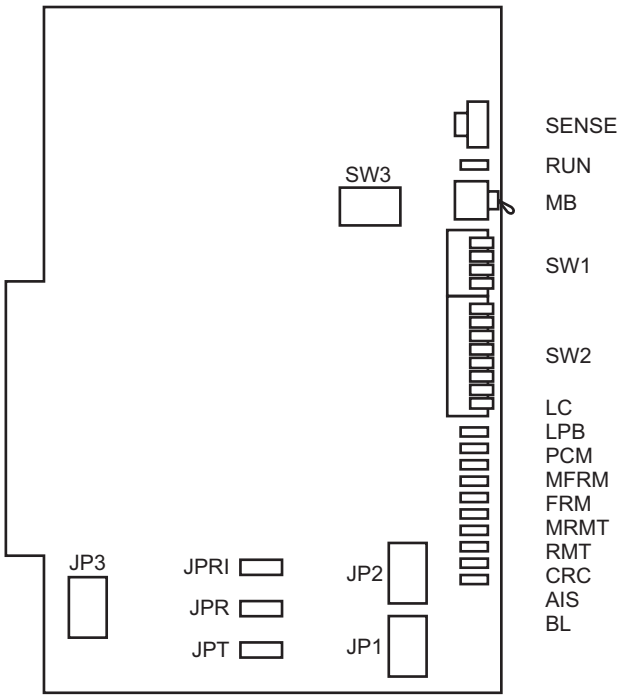


- SW3-6: OFF



PN-DTB (CCT)

Locations of Lamps, Switches, and Connectors



Lamp Indications

LAMP NAME	COLOR	FUNCTION
RUN	Green	Flashes at 120 IPM while this card is operating normally.
LC	Green	Remains lit when communications are normally ongoing with the common signaling channel (CCT) data links connected.
LPB	Green	Remains lit when a loopback is in progress.
PCM	Red	Remains lit when detecting PCM signal loss.
MFRM	Red	Remains lit when detecting Multi-Frame Alignment signal loss on time slot 16 (Only for E1).
FRM	Red	Remains lit when detecting Frame Alignment signal loss.
MRMT	Red	Remains lit when receiving the alarm from a distant office because Multi-Frame Alignment signal loss has been detected at the distant office (Only for E1).
RMT	Red	Remains lit when receiving Frame Alignment signal loss alarm from a distant office.
CRC	Red	Remains lit when detecting Cyclic Redundancy Checking (CRC) errors (Only for T1).
AIS	Red	Remains lit when a pattern of consecutive "1" is received.
BL	Red	B channel status ON : More than 10 channels are busy OFF : All channels are idle Flash (60 IPM) : Only one channel is busy Flash (120 IPM): 2 through 10 channels are busy

NOTE: *The following table shows the lamps of PN-DTB card used for T1/E1 interface.*

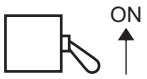
×: Used –: Not used

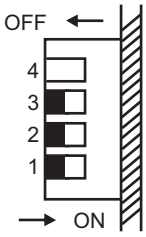
LAMP	CCT (T1)	CCT (E1)
RUN	×	×
LC	×	×
LPB	×	×
PCM	×	×
MFRM	–	×
FRM	×	×

LAMP	CCT (T1)	CCT (E1)
MRMT	–	×
RMT	×	×
CRC	×	–
AIS	×	×
BL	×	×

Switch Settings

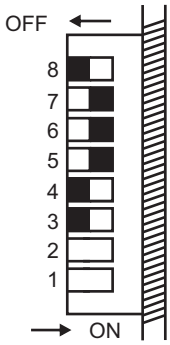
<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="2">SENSE
(Rotary SW)
 

NOTE 1</td><td>0-3</td><td colspan="2">Not used</td><td></td></tr>
<tr><td>4-F</td><td colspan="2">Set the switch to match the AP Number (04-31) to be set by CM05.
<table><tr><td rowspan="2">AP No.</td><td>SW1-4: ON</td><td>04</td><td>05</td><td>06</td><td>07</td><td>08</td><td>09</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr><tr><td>SW1-4: OFF</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td><td>31</td></tr><tr><td colspan="2">SW No.</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td></tr></table></td><td></td></tr>
<tr><td>MB (Toggle SW)
 

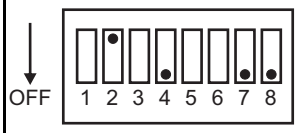
NOTE 2</td><td></td><td>UP</td><td>For make-busy</td><td></td></tr>
<tr><td></td><td>DOWN</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="8">SW1
(Piano Key SW)
 

NOTE 3</td><td>1</td><td>OFF</td><td>Not used</td><td></td></tr>
<tr><td>2</td><td>OFF</td><td>Not used</td><td></td></tr>
<tr><td rowspan="4">3</td><td colspan="2">[North America only]</td><td></td></tr>
<tr><td>ON</td><td>DS-1
(T1 with CSU function)</td><td></td></tr>
<tr><td>OFF</td><td>DSX-1
(T1 without CSU function)</td><td></td></tr>
<tr><td colspan="2">[Hong Kong/Taiwan]</td><td></td></tr>
<tr><td rowspan="2">4</td><td>OFF</td><td>Not used</td><td></td></tr>
<tr><td>ON</td><td>AP No. 04-15</td><td></td></tr>
<tr><td></td><td>OFF</td><td>AP No. 20-31</td><td></td></tr>
</table>

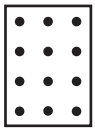
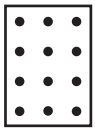
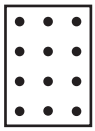
Continued on next page

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="16">SW2
(Piano Key SW)
 
</td><td rowspan="2">1
NOTE 3
NOTE 4</td><td>ON</td><td>Source clock signal from network is sent to the PLO0 input on MP card.</td><td></td></tr>
<tr><td>OFF</td><td>Source clock signal from network is not sent to the PLO0 input on MP card.</td><td></td></tr>
<tr><td rowspan="2">2
NOTE 3
NOTE 4</td><td>ON</td><td>Source clock signal from network is sent to the PLO1 input on MP card.</td><td></td></tr>
<tr><td>OFF</td><td>Source clock signal from network is not sent to the PLO1 input on MP card.</td><td></td></tr>
<tr><td rowspan="2">3
NOTE 6</td><td>ON</td><td>Remote loopback</td><td></td></tr>
<tr><td>OFF</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="2">4
NOTE 6</td><td>ON</td><td>Local loopback (AIS send)</td><td></td></tr>
<tr><td>OFF</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="2">5
NOTE 6</td><td>ON</td><td rowspan="6">Set equalizer according to the cable length between the PBX and the C.O. or CSU.
• For DS-1 (SW1-3 ON)
<table><tr><th>SW2-5</th><th>SW2-6</th><th>SW2-7</th><th>CABLE LENGTH TO CSU (0.5 ϕ)</th></tr><tr><td>ON</td><td>ON</td><td>ON</td><td>1199-1758 m (3930-5764 ft.)</td></tr><tr><td>OFF</td><td>ON</td><td>ON</td><td>599-1199 m (1965-3930 ft.)</td></tr><tr><td>ON</td><td>OFF</td><td>ON</td><td>0-599 m (0-1965 ft.)</td></tr><tr><td>OFF</td><td>OFF</td><td>ON</td><td>Not used</td></tr><tr><td>OFF</td><td>OFF</td><td>OFF</td><td>Signal is not sent</td></tr></table>• For DSX-1/Hong Kong/Taiwan (SW1-3 OFF)
<table><tr><th>SW2-5</th><th>SW2-6</th><th>SW2-7</th><th>CABLE LENGTH TO CSU (0.65 ϕ)</th></tr><tr><td>ON</td><td>ON</td><td>ON</td><td>0-40 m (0-131.2 ft.)</td></tr><tr><td>ON</td><td>ON</td><td>OFF</td><td>40-80 m (131.2-262.5 ft.)</td></tr><tr><td>ON</td><td>OFF</td><td>ON</td><td>80-120 m (262.5-394 ft.)</td></tr><tr><td>ON</td><td>OFF</td><td>OFF</td><td>120-160 m (394-525 ft.)</td></tr><tr><td>OFF</td><td>ON</td><td>ON</td><td>160-200 m (525-656 ft.)</td></tr><tr><td>OFF</td><td>OFF</td><td>OFF</td><td>Signal is not sent</td></tr></table></td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">6
NOTE 6</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">7
NOTE 6</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td>8</td><td>OFF</td><td>Not used</td><td></td></tr>
</table>

Continued on next page

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="10">SW3 (Dip SW)
 
</td><td rowspan="2">1</td><td>ON</td><td>T1 mode</td><td></td></tr>
<tr><td>OFF</td><td>E1 mode</td><td></td></tr>
<tr><td rowspan="2">2</td><td>ON</td><td>CCT mode</td><td></td></tr>
<tr><td>OFF</td><td>DTI mode</td><td></td></tr>
<tr><td rowspan="2">3</td><td>ON</td><td>A-law/μ-law conversion (for Taiwan)
NOTE 8, NOTE 9</td><td></td></tr>
<tr><td>OFF</td><td>For normal operation</td><td></td></tr>
<tr><td>4</td><td>OFF</td><td>Not used</td><td></td></tr>
<tr><td rowspan="2">5</td><td>ON</td><td rowspan="4">Common channel signaling data transmission speed (For Digital Interface)
<table><tr><th>TRANSMISSION SPEED</th><th>SW 3-5</th><th>SW 3-6</th></tr><tr><td>48 Kbps (1) NOTE 7</td><td>OFF</td><td>ON</td></tr><tr><td>48 Kbps (2) NOTE 7</td><td>OFF</td><td>OFF</td></tr><tr><td>56 Kbps</td><td>ON</td><td>OFF</td></tr><tr><td>64 Kbps</td><td>ON</td><td>ON</td></tr></table></td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">6</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td>7</td><td>OFF</td><td>Not used</td><td></td></tr>
<tr><td>8</td><td>OFF</td><td>Not used</td><td></td></tr>
</table>

Continued on next page

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="2">JP1 (Jumper pin)
  </td><td rowspan="2"></td><td>RIGHT</td><td rowspan="2">Set the line impedance.
<table><tr><th>JP1</th><th>JP2</th><th>LINE IMPEDANCE</th></tr><tr><td>LEFT</td><td>RIGHT</td><td>100 Ω (for T1)</td></tr><tr><td>LEFT</td><td>LEFT</td><td>110 Ω (for T1)</td></tr><tr><td>RIGHT</td><td>RIGHT</td><td>120 Ω (for E1)</td></tr><tr><td>RIGHT</td><td>LEFT</td><td>75 Ω (for E1)</td></tr></table></td><td></td></tr>
<tr><td>LEFT</td><td></td></tr>
<tr><td rowspan="2">JP2 (Jumper pin)
  </td><td rowspan="2"></td><td>RIGHT</td><td></td></tr>
<tr><td>LEFT</td><td></td></tr>
<tr><td rowspan="2">JP3 (Jumper pin)
  </td><td rowspan="2"></td><td>RIGHT</td><td>Balanced transmission
(For twisted-paire cable) (for T1/E1)</td><td></td></tr>
<tr><td>LEFT</td><td>Unbalanced transmission
(For coaxial cable) (for E1)</td><td></td></tr>
<tr><td>JPRI (Jumper pin)
  </td><td></td><td>LEFT</td><td>Not used</td><td></td></tr>
<tr><td rowspan="2">JPR (Jumper pin)
  </td><td rowspan="2"></td><td>RIGHT</td><td>Neutral grounding on the receiving line is provided.</td><td></td></tr>
<tr><td>LEFT</td><td>Neutral grounding on the receiving line is not provided.</td><td></td></tr>
<tr><td rowspan="2">JPT (Jumper pin)
  </td><td rowspan="2"></td><td>RIGHT</td><td>Neutral grounding on the transmitting line is provided.</td><td></td></tr>
<tr><td>LEFT</td><td>Neutral grounding on the transmitting line is not provided.</td><td></td></tr>
</table>

The figure in the SWITCH NAME column and the position of ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

Continued on next page

NOTE 1: *Set the groove on the switch to the desired position.*

NOTE 2: *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

NOTE 3: *When the PBX is a clock source office, set the SW2-1 and SW2-2 on all the CCT cards mounted in PIM0 to "OFF".*

NOTE 4: *Set SW2-1 and SW2-2 as follows:*

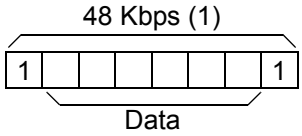
CONDITIONS	CCT0		CCT1		CCT2		· · · · ·		CCT7		REMARKS
	SW 2-1	SW 2-2	SW 2-1	SW 2-2	SW 2-1	SW 2-2			SW 2-1	SW 2-2	
When one CCT is provided.	ON	OFF	–	–	–	–			–	–	MP card will receive the clock signal from CCT0 at its PLO0 input.
When more than one CCT is provided.	ON	OFF	OFF	ON	OFF	OFF			OFF	OFF	MP card will receive the clock signal from CCT0 at its PLO0 input, under normal conditions. Should a clock failure occurs with CCT0, MP card will automatically switch to the PLO1 input which gets clock from CCT1.

NOTE 5: *Mount the CCT card which receives a source clock signal into PIM0.*

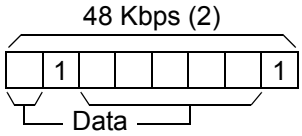
NOTE 6: *This card must be reset after the SW2-3 to SW2-7 switch settings. Set the MB switch to UP and then DOWN.*

NOTE 7: *The following two kinds of rate adaptation method are available in 48 Kbps data transmission. The rate adaptation method must be set to match the rate adaptation of clock source office.*

- SW3-6: ON



- SW3-6: OFF

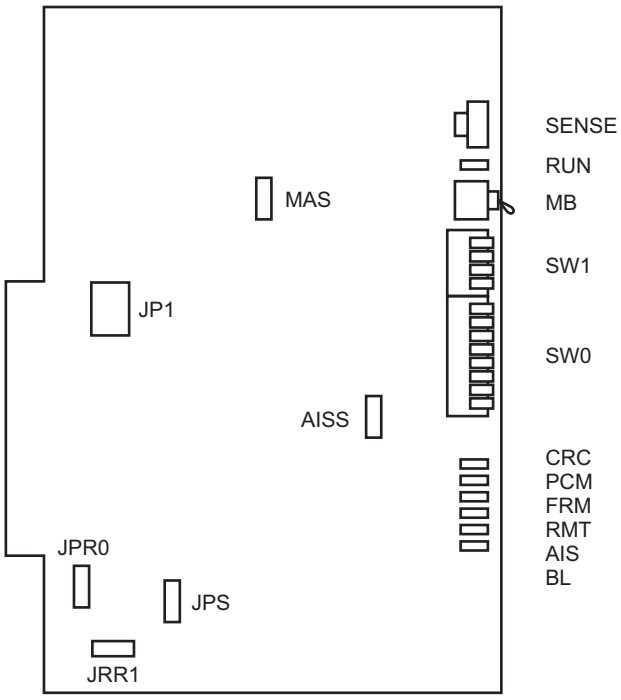


NOTE 8: *This switch setting is required when providing A-law/μ-law conversion for CCT/DTI/PRT in Taiwan. And for PRT, A-law/μ-law setting by CMAA Y=17 is required in addition to the switch setting (Setting SW3-3 to ON).*

NOTE 9: *To provide A-law/μ-law conversion for CCT, firmware program SC-3729 IPS CCHDA PROG-B1 or later and MP program (No limitation) are required.*

PN-24DTA-C (DTI)

Locations of Lamps, Switches, and Connectors

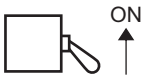


Lamp Indications

LAMP NAME	COLOR	FUNCTION
RUN	Green	Flashes at 120 IPM while this card is operating normally.
CRC	Red	Remains lit when detecting Cyclic Redundancy Checking (CRC) errors.
PCM	Red	Remains lit when detecting PCM signal loss.
FRM	Red	Remains lit when detecting Frame Alignment signal loss.
RMT	Red	Remains lit when receiving Frame Alignment signal loss alarm from a distant office.
AIS	Red	Remains lit when a pattern of consecutive "1" is received. The distant office transmits this signal for a loopback test.
BL	Red	B channel status ON : More than 10 channels are busy OFF : All channels are idle Flash (60 IPM) : Only one channel is busy Flash (120 IPM): 2 through 10 channels are busy

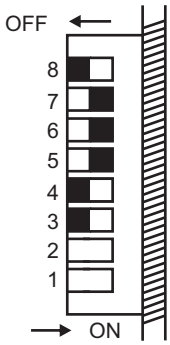
Switch Settings

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="2">SENSE
(Rotary SW)
 

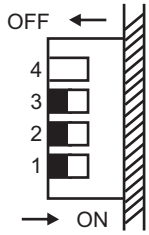
NOTE 1</td><td>0-3</td><td colspan="2">Not used</td><td></td></tr>
<tr><td>4-F</td><td colspan="2">Set the switch to match the AP Number (04-31) to be set by CM05.
<table><tr><td rowspan="2">AP No.</td><td>SW1-4: ON</td><td>04</td><td>05</td><td>06</td><td>07</td><td>08</td><td>09</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr><tr><td>SW1-4: OFF</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td><td>31</td></tr><tr><td colspan="2">SW No.</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td></tr></table></td><td></td></tr>
<tr><td rowspan="2">MB (Toggle SW)
 

NOTE 2</td><td rowspan="2"></td><td>UP</td><td>For make-busy</td><td></td></tr>
<tr><td>DOWN</td><td>For normal operation</td><td></td></tr>
</table>

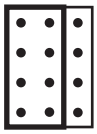
Continued on next page

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="16">SW0
(Piano Key SW)
 
</td><td rowspan="2">1
NOTE 3
NOTE 4</td><td>ON</td><td>Source clock signal from network is sent to the PLO0 input on MP card.</td><td></td></tr>
<tr><td>OFF</td><td>Source clock signal from network is not sent to the PLO0 input on MP card.</td><td></td></tr>
<tr><td rowspan="2">2
NOTE 3
NOTE 4</td><td>ON</td><td>Source clock signal from network is sent to the PLO1 input on MP card.</td><td></td></tr>
<tr><td>OFF</td><td>Source clock signal from network is not sent to the PLO1 input on MP card.</td><td></td></tr>
<tr><td rowspan="2">3
NOTE 6</td><td>ON</td><td>Remote loopback</td><td></td></tr>
<tr><td>OFF</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="2">4
NOTE 6</td><td>ON</td><td>Local loopback (AIS send)</td><td></td></tr>
<tr><td>OFF</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="2">5
NOTE 6</td><td>ON</td><td rowspan="8">Set equalizer according to the cable length/loss between the PBX and the C.O. or CSU.
• For DS-1 (SW1-3 ON)<table><tr><th>SW0-5</th><th>SW0-6</th><th>SW0-7</th><th>CABLE LOSS TO C.O. (AT 772 Hz)</th></tr><tr><td>ON</td><td>ON</td><td>ON</td><td>0 dB</td></tr><tr><td>OFF</td><td>ON</td><td>ON</td><td>7.5 dB</td></tr><tr><td>ON</td><td>OFF</td><td>ON</td><td>15 dB</td></tr><tr><td>OFF</td><td>OFF</td><td>ON</td><td>22.5 dB</td></tr><tr><td>OFF</td><td>OFF</td><td>OFF</td><td>Signal is not sent</td></tr></table>• For DSX-1/Hong Kong/Taiwan (SW1-3 OFF)<table><tr><th>SW0-5</th><th>SW0-6</th><th>SW0-7</th><th>CABLE LENGTH TO CSU (0.5 ϕ)</th></tr><tr><td>ON</td><td>ON</td><td>ON</td><td>0-40 m (0-131.2 ft.)</td></tr><tr><td>ON</td><td>ON</td><td>OFF</td><td>40-80 m (131.2-262.5 ft.)</td></tr><tr><td>ON</td><td>OFF</td><td>ON</td><td>80-120 m (262.5-394 ft.)</td></tr><tr><td>ON</td><td>OFF</td><td>OFF</td><td>120-160 m (394-525 ft.)</td></tr><tr><td>OFF</td><td>ON</td><td>ON</td><td>160-200 m (525-656 ft.)</td></tr><tr><td>OFF</td><td>OFF</td><td>OFF</td><td>Signal is not sent</td></tr></table></td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">6
NOTE 6</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">7
NOTE 6</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td>8</td><td>OFF</td><td>Not used</td><td></td></tr>
</table>

Continued on next page

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW1 (Piano Key SW)  **NOTE 4**	1	OFF	Not used	
	2	OFF	Not used	
	3	**[North America only]**		
		ON	DS-1 (T1 with CSU function)	
		OFF	DSX-1 (T1 without CSU function)	
		[Hong Kong/Taiwan]		
		OFF	Not used	
	4	ON	AP No. 04-15	
		OFF	AP No. 20-31	
JPR0 (Jumper pin) 		UP	Neutral grounding on the receiving line is provided.	
		DOWN	Neutral grounding on the receiving line is not provided.	
JPR1 (Jumper pin) 		RIGHT	Line impedance: 100 Ω	
		LEFT	Line impedance: 110 Ω	
JPS (Jumper pin) 		UP	Neutral grounding on the transmitting line is provided.	
		DOWN	Neutral grounding on the transmitting line is not provided.	

Continued on next page

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
MAS (Jumper pin) 		(DOWN)	Always set to DOWN	
AISS (Jumper pin) 		(UP)	AIS signal is sent out when make-busy or power on.	
		DOWN	AIS signal is not sent out when make-busy or power on.	
JP1 (Jumper pin) 		(LEFT)	Always set to LEFT	

The figure in the SWITCH NAME column and the position of ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

Continued on next page

NOTE 1: *Set the groove on the switch to the desired position.*

NOTE 2: *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

NOTE 3: *Set SW0-1 and SW0-2 as follows:*

CONDITIONS	DTI0		DTI1		DTI2		· · · · ·		DTI7		REMARKS
	SW 0-1	SW 0-2	SW 0-1	SW 0-2	SW 0-1	SW 0-2			SW 0-1	SW 0-2	
When one DTI is provided.	ON	OFF	–	–	–	–			–	–	MP card will receive the clock signal from DTI0 at its PLO0 input.
When more than one DTI is provided.	ON	OFF	OFF	ON	OFF	OFF			OFF	OFF	MP card will receive the clock signal from DTI0 at its PLO0 input, under normal conditions. Should a clock failure occur with DTI0, MP card will automatically switch to the PLO1 input which gets clock from DTI1.

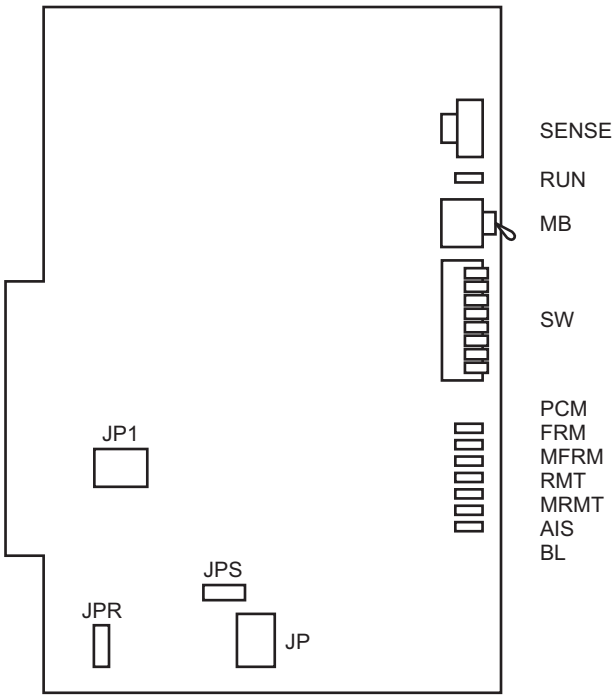
NOTE 4: *When the PBX is a clock source office, set the SW0-1 and SW0-2 on all the DTI cards mounted in PIM0 to "OFF".*

NOTE 5: *Mount the DTI card which receives a source clock signal into PIM0.*

NOTE 6: *This card must be reset after the SW0-3 to SW0-7 switch settings. Set the MB switch to UP and then DOWN.*

PN-30DTC-C (DTI)

Locations of Lamps, Switches, and Connectors

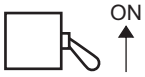


Lamp Indications

LAMP NAME	COLOR	FUNCTION
RUN	Green	Flashes at 120 IPM when this card is normally operating.
PCM	Red	Remains lit when detecting PCM signal loss.
FRM	Red	Remains lit when detecting Frame Alignment signal loss.
MFRM	Red	Remains lit when detecting Multi-Frame Alignment signal loss on time slot 16.
RMT	Red	Remains lit when receiving the alarm from a distant office because Frame Alignment signal loss has been detected at the distant office.
MRMT	Red	Remains lit when receiving the alarm from a distant office because Multi-Frame Alignment signal loss has been detected at the distant office.
AIS	Red	Remains lit when indicating that the pattern of consecutive “1” is being received. The distant office transmits this signal for a loopback test.
BL	Red	B channel status ON : More than 10 channels are busy OFF : All channels are idle Flash (60 IPM) : Only one channel is busy Flash (120 IPM): 2 to 10 channels are busy

Switch Settings

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="2">SENSE
(Rotary SW)
 

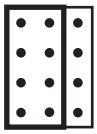
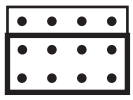
NOTE 1</td><td>4-F</td><td colspan="3">Set the switch to match the AP Number (04-31) to be set by CM05.
<table><tr><td rowspan="2">AP No.</td><td>SW-8: ON</td><td>04</td><td>05</td><td>06</td><td>07</td><td>08</td><td>09</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr><tr><td>SW-8: OFF</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td><td>31</td></tr><tr><td colspan="2">SW No.</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td></tr></table></td><td></td></tr>
<tr><td>0-3</td><td colspan="2">Not used</td><td></td></tr>
<tr><td rowspan="2">MB (Toggle SW)
 

NOTE 2</td><td rowspan="2"></td><td>UP</td><td>For make-busy</td><td></td></tr>
<tr><td>DOWN</td><td>For normal operation</td><td></td></tr>
</table>

Continued on next page

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW (Piano Key SW)  	1 **NOTE 3** **NOTE 4**	ON	Source clock signal from network is sent to the PLO0 input on MP card.	
		OFF	Source clock signal from network is not sent to the PLO0 input on MP card.	
	2 **NOTE 3** **NOTE 4**	ON	Source clock signal from network is sent to the PLO1 input on MP card.	
		OFF	Source clock signal from network is not sent to the PLO1 input on MP card.	
	3	ON	Remote loopback	
		OFF	For normal operation	
	4	ON	Local loopback (AIS send)	
		OFF	For normal operation	
	5	ON	Transmission line cable: Coaxial cable (75 Ω)	
		OFF	Transmission line cable: Twisted-pair cable (120 Ω)	
	6	OFF	Not used (Always set to OFF)	
	7	OFF		
	8	ON	AP No. 04-15	
		OFF	AP No. 20-31	

Continued on next page

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
JPS (Jumper pin) 		(RIGHT)	Balanced transmission (For twisted-pair cable)	
		LEFT	TA is grounded on the transmission line (For coaxial cable)	
JPR (Jumper pin) 		(UP)	Balanced transmission (For twisted-pair cable)	
		DOWN	RA is grounded on the transmission line (For coaxial cable)	
JP (Jumper pin) 		RIGHT	Line impedance: 75 Ω (For coaxial cable)	
		(LEFT)	Line impedance: 120 Ω (For twisted-pair cable)	
JP1 (Jumper pin) 		(DOWN)	Always set to DOWN	

The figure in the SWITCH NAME column and the position of ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

NOTE 1: *Set the groove on the switch to the desired position.*

NOTE 2: *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

Continued on next page

NOTE 3: *Set the SW-1 and SW-2 as follows:*

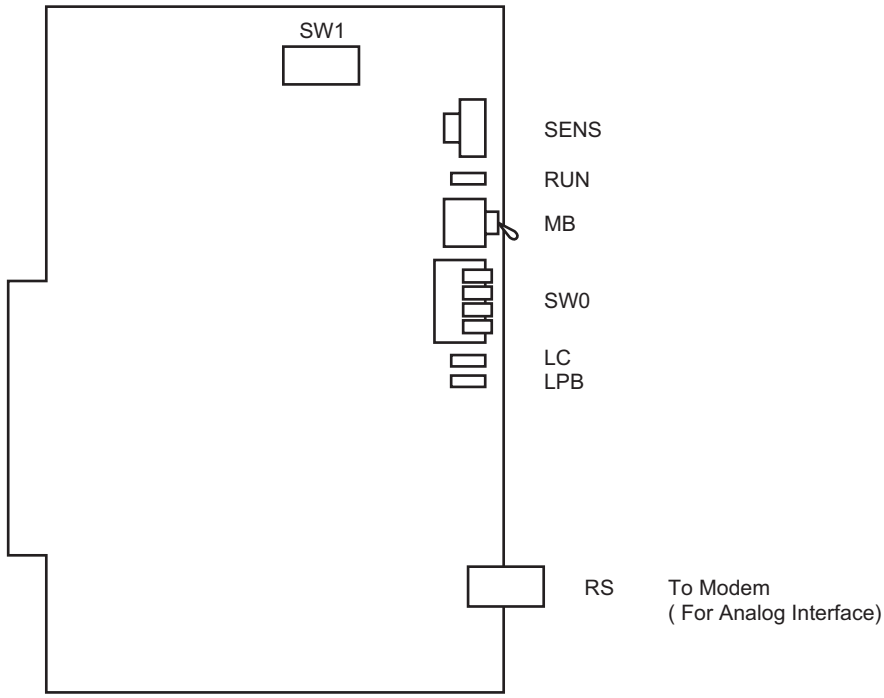
CONDITIONS	DTI0		DTI1		DTI2		· · · · ·		DTI7		REMARKS
	SW -1	SW -2	SW -1	SW -2	SW -1	SW -2			SW -1	SW -2	
When one DTI is provided.	ON	OFF	–	–	–	–			–	–	MP card will receive the clock signal from DTI0 at its PLO0 input.
When more than one DTI is provided.	ON	OFF	OFF	ON	OFF	OFF			OFF	OFF	MP card will receive the clock signal from DTI0 at its PLO0 input, under normal conditions. Should a clock failure occur with DTI0, MP card will automatically switch to the PLO1 input which gets from DTI1.

NOTE 4: *When the PBX is a clock source office, set the SW-1 and SW-2 on all the DTI cards mounted in PIM0 to "OFF".*

NOTE 5: *Mount the DTI card which receives a source clock signal into PIM0.*

PN-SC00 (CCH)

Locations of Lamps, Switches, and Connectors

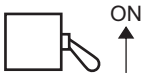


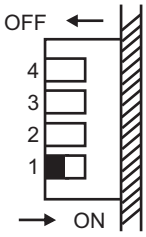
Lamp Indications

LAMP NAME	COLOR	FUNCTION
RUN	Green	Flashes at 120 IPM while this card is operating normally.
LC	Green	Remains lit when communications are normally ongoing with the common signaling channel data links connected.
LPB	Green	Remains lit when a loopback test is in progress.

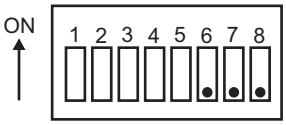
Switch Settings

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td>SENS
(Rotary SW)
 

NOTE 1</td><td>4-F</td><td colspan="2">Set the switch to match the AP Number (04-31) to be set by CM05.
<table><tr><td rowspan="2">AP No.</td><td>SW0-4: ON</td><td>04</td><td>05</td><td>06</td><td>07</td><td>08</td><td>09</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr><tr><td>SW0-4: OFF</td><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td><td>31</td></tr><tr><td colspan="2">SW No.</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td></tr></table></td><td></td></tr>
<tr><td></td><td>0-3</td><td colspan="2">Not used</td><td></td></tr>
<tr><td>MB (Toggle SW)
 

NOTE 2</td><td></td><td>UP</td><td>For make-busy</td><td></td></tr>
<tr><td></td><td></td><td>DOWN</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="8">SW0
(Piano Key SW)
 
</td><td rowspan="2">1</td><td>ON</td><td>Loopback test</td><td></td></tr>
<tr><td>OFF</td><td>For normal operation</td><td></td></tr>
<tr><td rowspan="2">2</td><td>ON</td><td>Analog interface</td><td></td></tr>
<tr><td>OFF</td><td>Digital interface</td><td></td></tr>
<tr><td rowspan="2">3</td><td>ON</td><td>RS-232C RTS signal (to MODEM) ON
NOTE 3</td><td></td></tr>
<tr><td>OFF</td><td>RS-232C RTS signal (to MODEM) OFF</td><td></td></tr>
<tr><td rowspan="2">4</td><td>ON</td><td>AP No. 04-15</td><td></td></tr>
<tr><td>OFF</td><td>AP No. 20-31</td><td></td></tr>
</table>

Continued on next page

<table>
<tr><th>SWITCH NAME</th><th>SWITCH NUMBER</th><th>SETTING POSITION</th><th>FUNCTION</th><th>CHECK</th></tr>
<tr><td rowspan="10">SW1 (Dip SW)
 
</td><td rowspan="2">1</td><td>ON</td><td rowspan="10">• Common channel signaling data transmission speed (For Digital Interface)
<table><tr><th>TRANSMISSION SPEED</th><th>SW 1-1</th><th>SW 1-2</th><th>SW 1-3</th><th>SW 1-4</th><th>SW 1-5</th></tr><tr><td>48 Kbps NOTE 4</td><td>ON</td><td>ON</td><td>OFF</td><td>OFF</td><td>ON</td></tr><tr><td>48 Kbps NOTE 4</td><td>ON</td><td>ON</td><td>ON</td><td>OFF</td><td>ON</td></tr><tr><td>56 Kbps</td><td>ON</td><td>ON</td><td>OFF</td><td>ON</td><td>ON</td></tr><tr><td>64 Kbps</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td></tr></table>
• Common channel signaling data transmission speed (For Analog Interface)

Set switches (SW1-1 - SW1-5) to OFF.</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">2</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">3</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">4</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td rowspan="2">5</td><td>ON</td><td></td></tr>
<tr><td>OFF</td><td></td></tr>
<tr><td>6</td><td>OFF</td><td>Not used</td><td></td></tr>
<tr><td>7</td><td>OFF</td><td>Always set to OFF</td><td></td></tr>
<tr><td>8</td><td>OFF</td><td>Always set to OFF</td><td></td></tr>
</table>

The figure in the SWITCH NAME column and the position of ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

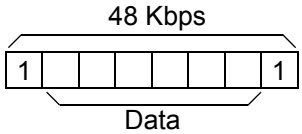
NOTE 1: *Set the groove on the switch to the desired position.*

NOTE 2: *When the power is on, flip the MB switch to ON (UP position) before plugging/unplugging the circuit card.*

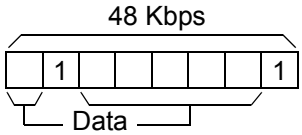
NOTE 3: *This setting is available when SW0-2 is set to ON (Analog Interface).*

NOTE 4: *The following two kinds of rate adaptation method are available in 48 Kbps data transmission. The rate adaptation method must be set to match the rate adaptation of clock source office.*

• SW1-3: OFF



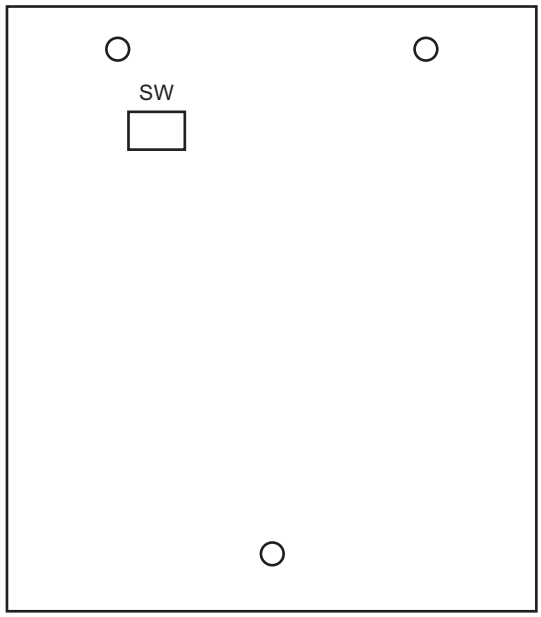
• SW1-3: ON



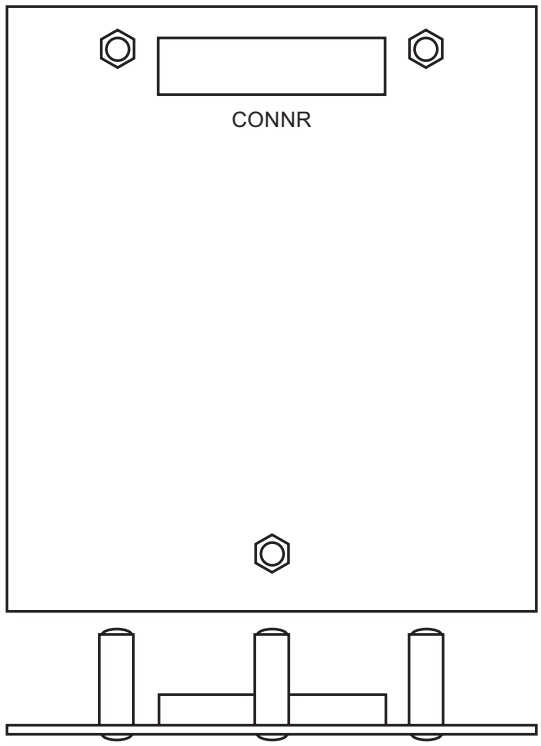
PZ-M537 (EXPMEM)

Locations of Lamps, Switches, and Connectors

FACE



REAR

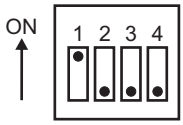


CONNR: To CONN connector on PN-AP00-B (AP00)

Lamp Indications

This card has no lamps.

Switch Settings

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW (Dip SW) 	1	ON	For normal operation (Battery backup ON)	
		OFF	Not used (Battery backup OFF)	
	2	OFF	Not used	
	3	OFF	Not used	
	4	OFF	Not used	

The figure in the SWITCH NAME column and the position of ( ) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and ( ), the setting of the switch varies with the system concerned.

Mounting PZ-M537 Card

When mounting the EXPMEM card on the AP00 card, do the following procedure.

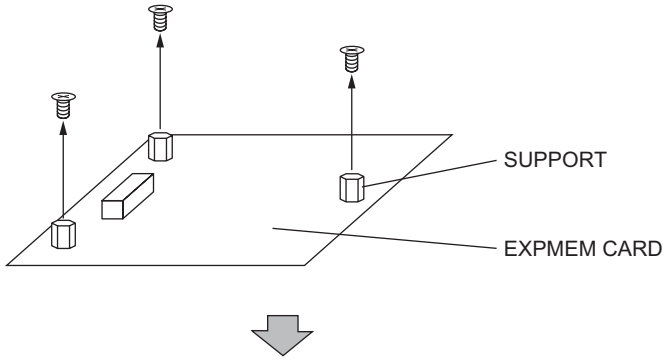
STEP1: Take off three screws from the rear side of EXPMEM support.

NOTE: *Supports and screws are attached to the EXPMEM card.*

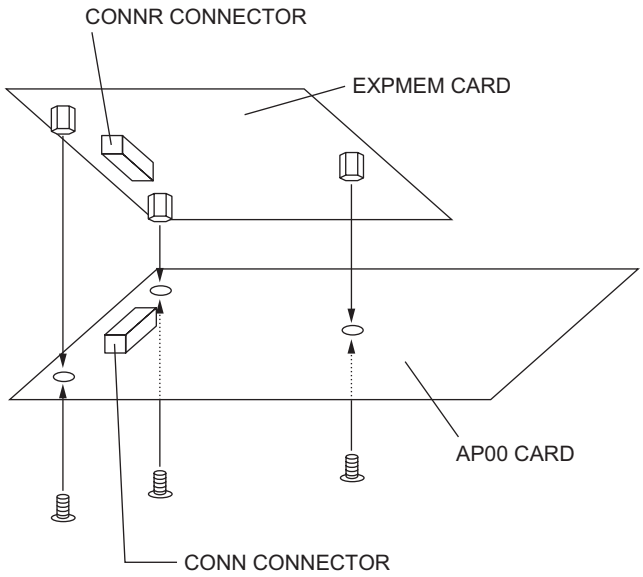
STEP2: Connect the CONNR connector on the EXPMEM card and the CONN connector on the AP00 card.

STEP3: Secure the EXPMEM card to the AP00 card with three screws which have been taken off by STEP1.

Taking off Screws

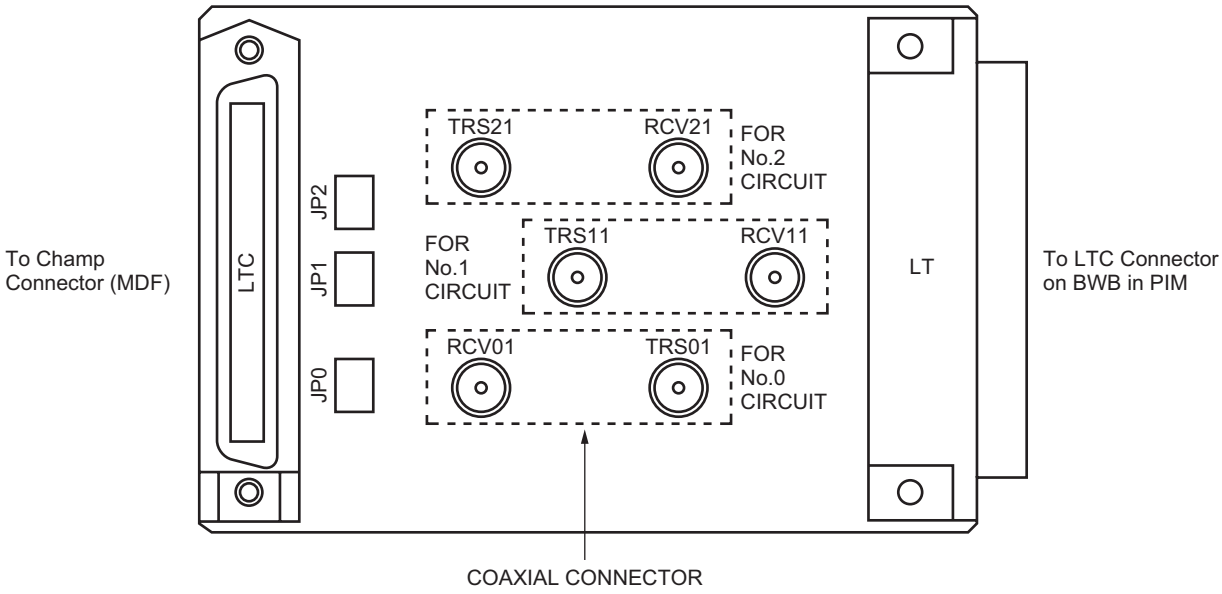


Mounting EXPMEM Card on AP00 Card



PZ-M542 (CONN)

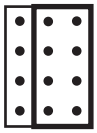
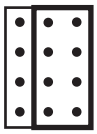
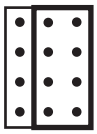
Locations of Lamps, Switches, and Connectors



Lamp Indications

This card has no lamps.

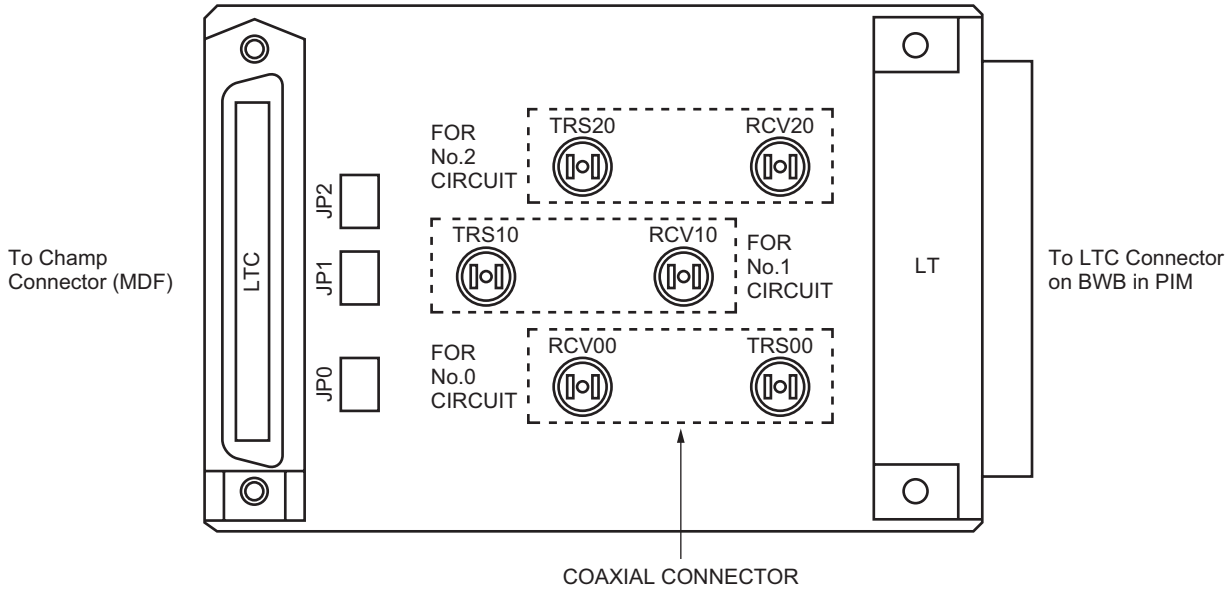
Switch Settings

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
JP0 		(RIGHT)	For coaxial connectors (No.0 circuit)	
		LEFT	For champ connector (LT connector) (No.0 circuit)	
JP1 		(RIGHT)	For coaxial connectors (No.1 circuit)	
		LEFT	For champ connector (LT connector) (No.1 circuit)	
JP2 		(RIGHT)	For coaxial connectors (No.2 circuit)	
		LEFT	For champ connector (LT connector) (No.2 circuit)	

The figure in the SWITCH NAME column and the position of (RIGHT) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and (RIGHT), the setting of the switch varies with the system concerned.

PZ-M557 (CONN)

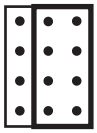
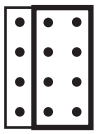
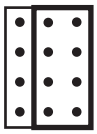
Locations of Lamps, Switches, and Connectors



Lamp Indications

This card has no lamps.

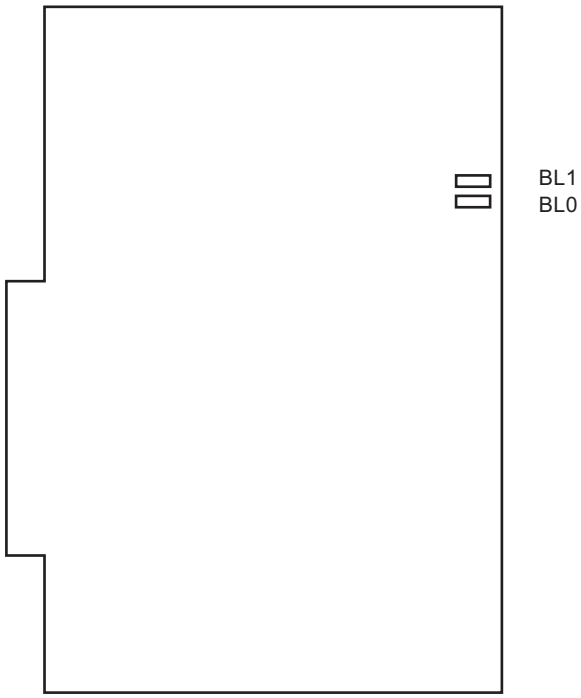
Switch Settings

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
JP0 		(RIGHT)	For coaxial connectors (No.0 circuit)	
		LEFT	For champ connector (LT connector) (No.0 circuit)	
JP1 		(RIGHT)	For coaxial connectors (No.1 circuit)	
		LEFT	For champ connector (LT connector) (No.1 circuit)	
JP2 		(RIGHT)	For coaxial connectors (No.2 circuit)	
		LEFT	For champ connector (LT connector) (No.2 circuit)	

The figure in the SWITCH NAME column and the position of (RIGHT) in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and (RIGHT), the setting of the switch varies with the system concerned.

PN-2LDTA (LDT)

Locations of Lamps, Switches, and Connectors



Lamp Indications

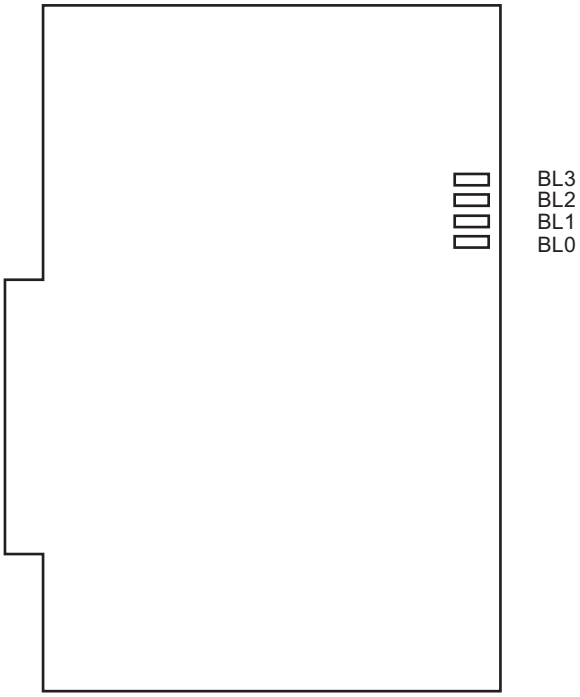
LAMP NAME	COLOR	FUNCTION
BL0, 1	Red	• Remains lit when the corresponding circuit is in use. • Flashes at 60 IPM when the corresponding circuit is in make-busy state or the system data for this card is not assigned.

Switch Settings

This card has no switches.

PN-4LDTA (LDT)

Locations of Lamps, Switches, and Connectors



Lamp Indications

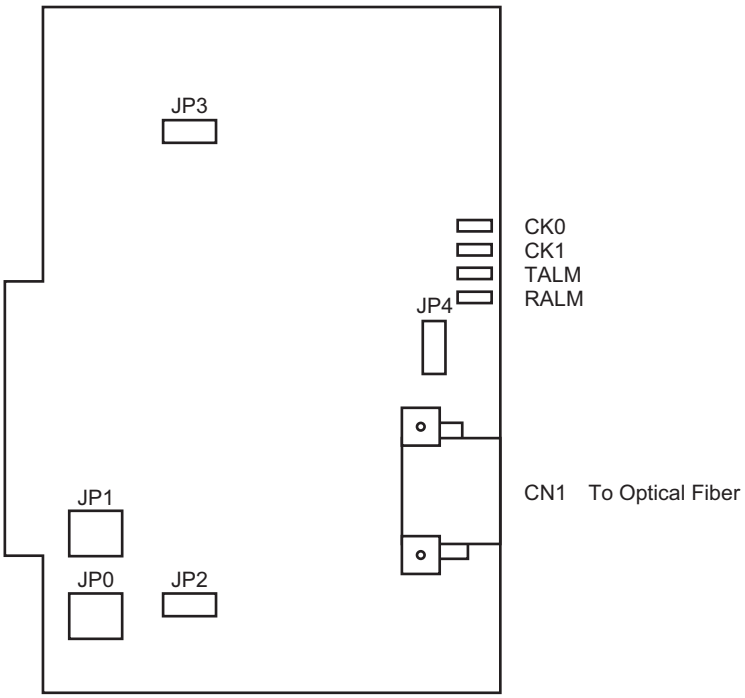
LAMP NAME	COLOR	FUNCTION
BL0-3	Red	• Remains lit when the corresponding circuit is in use. • Flashes at 60 IPM when the corresponding circuit is in make-busy state or the system data for this card is not assigned.

Switch Settings

This card has no switches.

PN-M10 (M10)

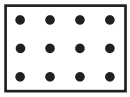
Location of Lamps, Switches and Connectors



Lamp Indications

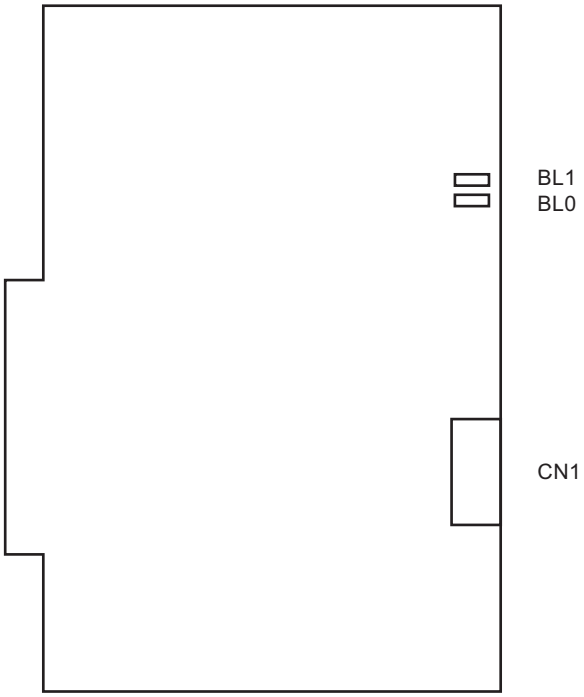
LAMP NAME	COLOR	FUNCTION
CK0	Green	Remains lit when a Digital Trunk Interface is connected to No. 0 circuit on this card.
CK1	Green	Remains lit when a Digital Trunk Interface is connected to No. 1 circuit on this card.
TALM	Red	Remains lit when optical output is stopped.
RALM	Red	Remains lit when optical input is lost or stopped.

Switch Settings

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
JP0, 1 (Jumper pin) 		UP	When connected to E1 (2 M) Digital Trunk Interface	
		DOWN	When connected to T1 (1.5 M) Digital Trunk Interface	
JP2 (Jumper pin) 		RIGHT	Line code: B8ZS* is provided (For T1 interface) *B8ZS: Bipolar Eight Zero Substitution	
		LEFT	Line code: B8ZS* is not provide (For T1 interface) *B8ZS: Bipolar Eight Zero Substitution	
JP3 (Jumper pin) 		RIGHT	When connected to E1 (2 M) Digital Trunk Interface	
		LEFT	When connected to T1 (1.5 M) Digital Trunk Interface	
JP4 (Jumper pin) 		UP	When connected to E1 (2 M) Digital Trunk Interface	
		DOWN	When connected to T1 (1.5 M) Digital Trunk Interface	

PN-2ODTA (ODT)

Locations of Lamps, Switches, and Connectors



Lamp Indications

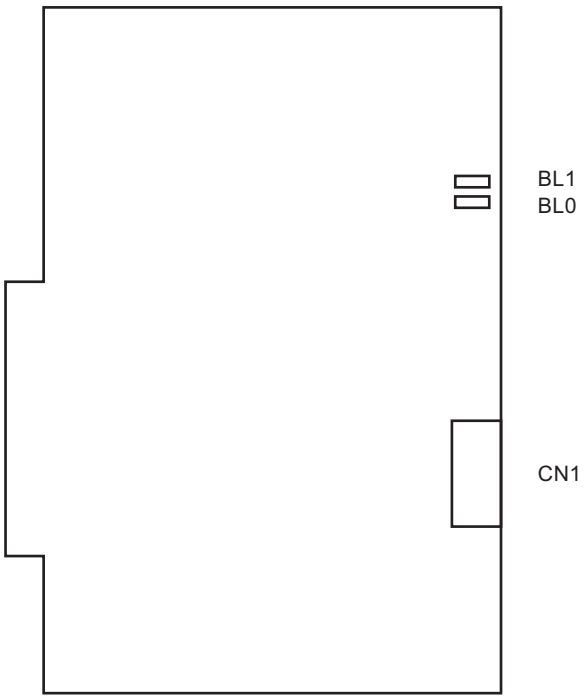
LAMP NAME	COLOR	FUNCTION
BL0, 1	Red	• Remains lit when the corresponding circuit is in use. • Flashes at 60 IPM when the corresponding circuit is in make-busy state or the system data for this card is not assigned.

Switch Settings

This card has no switches.

PN-2ODTB (ODT)

Locations of Lamps, Switches, and Connectors



Lamp Indications

LAMP NAME	COLOR	FUNCTION
BL0, 1	Red	• Remains lit when the corresponding circuit is in use. • Flashes at 60 IPM when the corresponding circuit is in make-busy state or the system data for this card is not assigned.

Switch Settings

This card has no switches.

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CHAPTER 5

OPERATION TEST

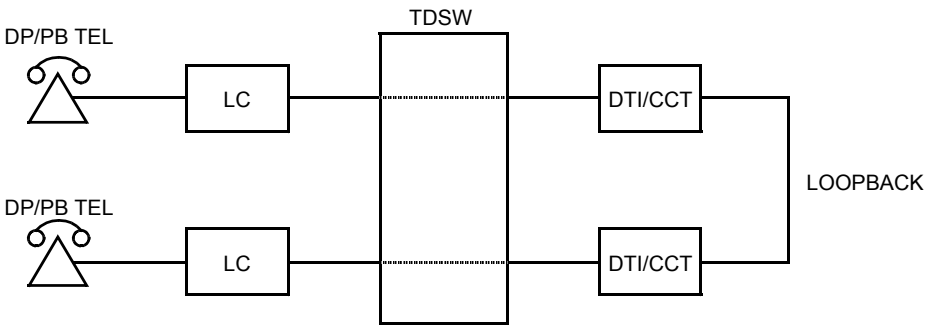
This chapter explains inter-office test procedure for basic DTI/CCT functions.

LOOPBACK TEST

A loopback test is performed on the DTI/CCT card. At least two DTI/CCT cards are necessary. Operational tests are performed by the clock within the MP.

STEP1: Assign the system data for a performance test as follows.

Loopback Test

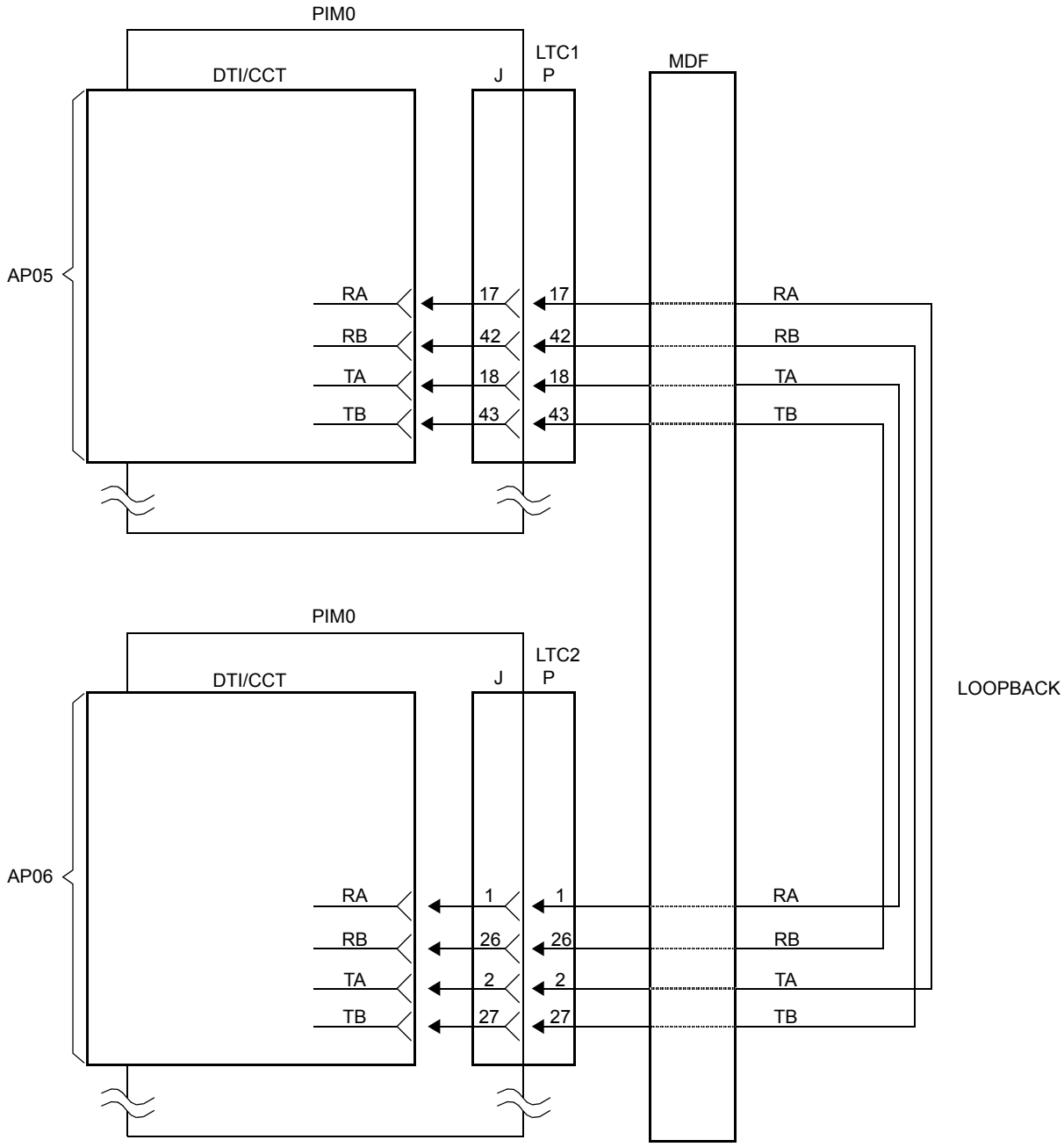


STEP2: Connect the cable for loopback test.

(1) When using a twisted-pair cable:

This figure shows an example of the cable connection when the DTI/CCT cards are mounted in the AP05 and AP06 slot of PIM0.

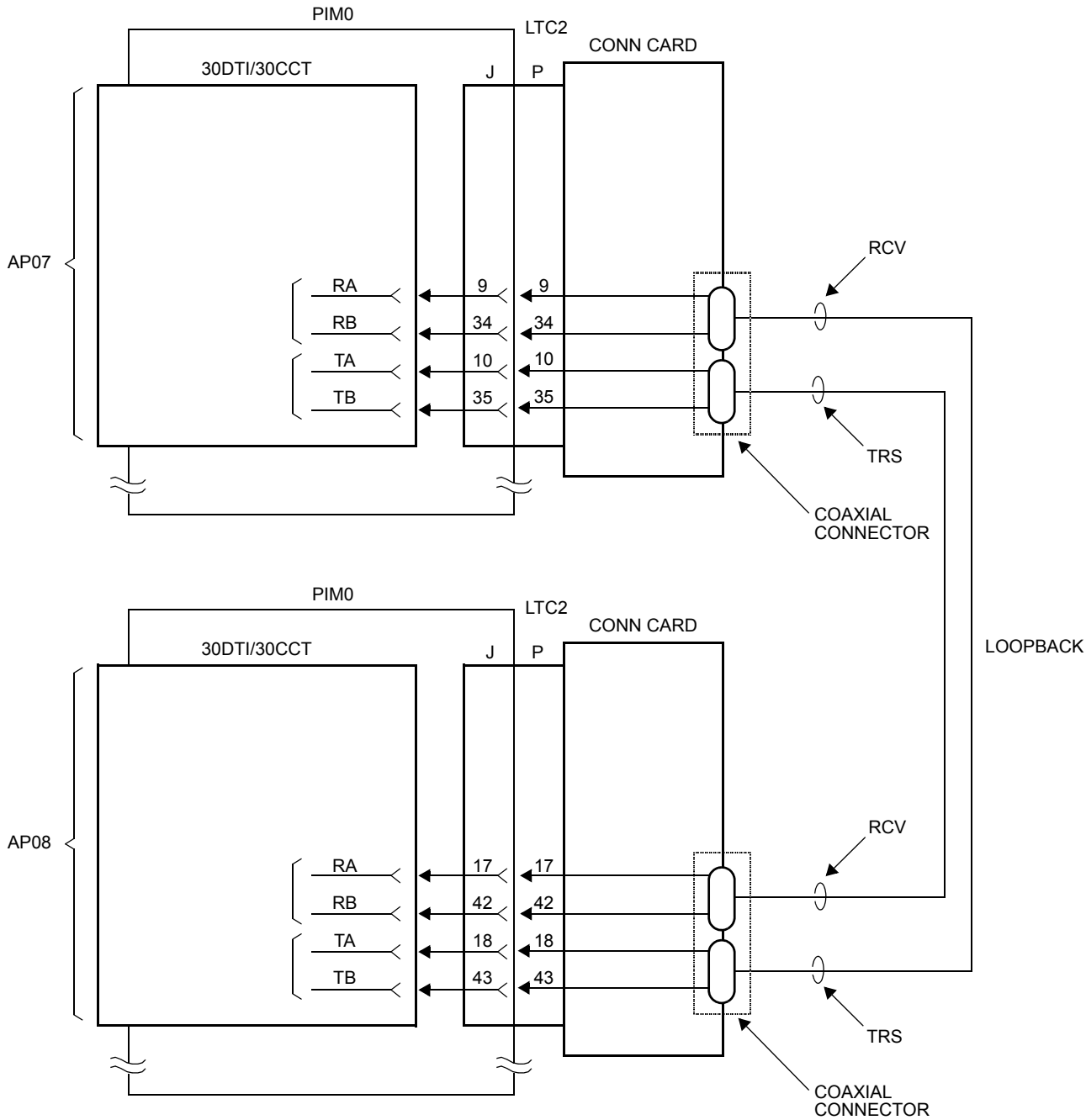
Loopback Test Connection for Twisted-Pair Cable



(2) When using a coaxial cable:

This figure shows an example of the cable connection when the 30DTI/30CCT cards are mounted in the AP07 and AP08 slot of PIM0.

Loopback Test Connection for Coaxial Cable



STEP3: Turn on the operating power. Confirm the state of the lamps on the two 24DTI/24CCT cards or 30DTI/30CCT cards. See the following tables.

- Alarm Indications on 24DTI ☞ *Page 430*
- Alarm Indications on 30DTI ☞ *Page 431*
- Alarm Indications on 24CCT ☞ *Page 433*
- Alarm Indications on 30CCT ☞ *Page 435*

STEP4: With respect to channels assigned as trunks, perform call origination and call termination tests. Prior to the performance test, make busy all trunks other than the test trunk by CME5.
Dial the trunk route access code and a station number. In the case of a loopback test, the same BL lamp lights up on the calling side DTI/CCT card and the called side DTI/CCT card. At the same time, the LPB lamp lights up on the called and calling side CCT cards. Talk with the called side and confirm that there is no noise nor distortion. Perform this test from both digital and analog stations if available.

STEP5: Reassign the system data, as needed.

STEP6: Turn off the operating power and disconnect the loopback test cable. Then, connect the transmission line cable.

Alarm Indications on 24DTI

LED	LED INDICATION		FAULT	
	NORMAL	FAULT	CAUSE	ACTION
RUN	Flash (120 IPM)	On or Off	Abnormal operation of DTI card	① Confirm the programming data: CM05 Y=0/Y=1, CM07 Y=01. ② Check to see if the SENSE switch is set as per the AP number (04-15, 20-31) assigned by CM05 Y=0. ③ Reset the MB switch (Down→Up→Down) ④ If the fault cannot be cleared, replace the card.
CRC	Off	On	Bit Error Rate exceeds the predetermined value	① Check the receive line and external equipment. ② Replace the remote DTI card.
PCM	Off	On	No PCM signals arrive from the distant office	① Check to see if the line is correctly connected to the DTI card. ② Plug and unplug the DTI card. Repeat this two or three times.
FRM	Off	On	Frame Alignment signals from the distant office cannot be received	① Check the receive line and external equipment. ② Replace the remote DTI card.
RMT	Off	On	Frame Alignment signals cannot be sent to the remote PBX	① Check the transmission line and external equipment. ② Replace the DTI card.
AIS	Off	On	Remote PBX is in the local loopback state	Check the switch settings of the remote DTI card.

Alarm Indications on 30DTI

LED	LED INDICATION		FAULT	
	NORMAL	FAULT	CAUSE	ACTION
RUN	Flash (120 IPM)	On or Off	Abnormal operation of DTI card	① Confirm the programming data: CM05 Y=0/Y=1, CM07 Y=01. ② Check to see if the SENSE switch is set as per the AP number (04-15, 20-31) assigned by CM05 Y=0. ③ Reset the MB switch (Down→Up→Down) ④ If the fault cannot be cleared, replace the card.
PCM	Off	On	No PCM signals arrive from the distant office	① Check to see if the line is correctly connected to the DTI card. ② Plug and unplug the DTI card. Repeat this two or three times.
FRM	Off	On	Frame Alignment signals from the distant office cannot be received	① Check the receive line and external equipment. ② Replace the remote DTI card.
MFRM	Off	On	Multi Frame Alignment signals from the distant office cannot be received	① Check the receive line and external equipment. ② Replace the remote DTI card.
RMT	Off	On	Frame Alignment signals cannot be sent to the remote PBX	① Check the transmission line and external equipment. ② Replace the DTI card.

Continued on next page

Alarm Indications on 30DTI

LED	LED INDICATION		FAULT	
	NORMAL	FAULT	CAUSE	ACTION
MRMT	Off	On	Multi Frame Alignment signals cannot be sent to the remote PBX	① Confirm the switch setting on the DTI card indicating an alarm. ② Replace the DTI card not indicating an alarm, with a spare.
AIS	Off	On	Remote PBX is in the local loopback state	Check the switch settings of the remote DTI card.

Alarm Indications on 24CCT

LED	LED INDICATION		FAULT	
	NORMAL	FAULT	CAUSE	ACTION
RUN	Flash (120 IPM)	On or Off	Abnormal operation of CCT card	① Confirm the programming data: CM05 Y=0/Y=1, CM07 Y=01. ② Check to see if the SENSE switch is set as per the AP number (04-15, 20-31) assigned by CM05 Y=0. ③ Reset the MB switch (Down→Up→Down) ④ If the fault can not be cleared, replace the card.
LC	On	Off	CCH link connection failure	① Check the local office line or public network line.
CRC	Off	On	Bit Error Rate exceeds the predetermined value	① Check the receive line and external equipment. ② Replace the remote CCT card.
PCM	Off	On	No PCM signals arrive from the distant office	① Check to see if the line is correctly connected to the CCT card. ② Plug and unplug the CCT card. Repeat this two or three times.
FRM	Off	On	Frame Alignment signals from the distant office cannot be received	① Check the receive line and external equipment. ② Replace the remote CCT card.

Continued on next page

Alarm Indications on 24CCT

LED	LED INDICATION		FAULT	
	NORMAL	FAULT	CAUSE	ACTION
RMT	Off	On	Frame Alignment signals cannot be sent to the remote PBX	① Check the transmission line and external equipment. ② Replace the CCT card.
AIS	Off	On	Remote PBX is in the local loopback state	Check the switch settings of the remote CCT card.

Alarm Indications on 30CCT

LED	LED INDICATION		FAULT	
	NORMAL	FAULT	CAUSE	ACTION
RUN	Flash (120 IPM)	On or Off	Abnormal operation of CCT card	① Confirm the programming data: CM05 Y=0/Y=1, CM07 Y=01. ② Check to see if the SENSE switch is set as per the AP number (04-15, 20-31) assigned by CM05 Y=0. ③ Reset the MB switch (Down→Up→Down) ④ If the fault cannot be cleared, replace the card.
LC	On	Off	CCH link connection failure	① Check the local office line or public network line.
PCM	Off	On	No PCM signals arrive from the distant office	① Check to see if the line is correctly connected to the CCT card. ② Plug and unplug the CCT card. Repeat this two or three times.
FRM	Off	On	Frame Alignment signals from the distant office cannot be received	① Check the receive line and external equipment. ② Replace the remote CCT card.
MFRM	Off	On	Multi Frame Alignment signals from the distant office cannot be received	① Check the receive line and external equipment. ② Replace the remote CCT card.
RMT	Off	On	Frame Alignment signals cannot be sent to the remote PBX	① Check the transmission line and external equipment. ② Replace the CCT card.

Continued on next page

Alarm Indications on 30CCT

LED	LED INDICATION		FAULT	
	NORMAL	FAULT	CAUSE	ACTION
MRMT	Off	On	Multi Frame Alignment signals cannot be sent to the remote PBX	① Confirm the switch setting on the CCT card indicating an alarm. ② Replace the CCT card not indicating an alarm, with a spare.
AIS	Off	On	Remote PBX is in the local loopback state	Check the switch settings of the remote CCT card.

INTEROFFICE TRANSMISSION LINE TEST

To confirm inter-office synchronization and speech quality using “In-Service” transmission lines, do the following steps.

STEP1: Connect the transmission line to the MDF or CONN card.

STEP2: Make busy the channels except the channel tested by CME5.

STEP3: Confirm indication lamps on the DTI/CCT card, as per the following table.

- Alarm Indications on 24DTI ☞ *Page 430*
- Alarm Indications on 30DTI ☞ *Page 431*
- Alarm Indications on 24CCT ☞ *Page 433*
- Alarm Indications on 30CCT ☞ *Page 435*

STEP4: Originate an outgoing call via trunk.

STEP5: After an outgoing connection via trunks has been established, confirm the inter-office synchronization as follows:

- On the DTMF telephone set, keep pressing any dial button.
- Check to see if there are noise or abnormal tones.
- Do the above test again in the opposite direction.

STEP6: Repeat the test for all channels. When completed, make idle all channels by CME5.

PLO OPERATION TEST

To confirm the PLO operation, do the following tests.

- Clock Signal Generation Test
- Clock Signal Synchronization Test — To be tested when the PBX is a clock receiver office.
- Interoffice Synchronization Test
- Source Office Mode Test — To be tested when the PBX is a clock source office.

Clock Signal Generation Test

This test checks to see if the PLO keeps generating clock signals at the frequency of the last source clock, when the source clock signals from network have stopped. Do the following steps using "In Service" transmission lines.

STEP1: On all the DTI/CCT cards mounted in PIM0, set the switches as follows to stop the external clock signal input.
- 30DTI/30CCT card: SW-1 and SW-2 to OFF
- 24DTI/24CCT card: SW0-1 and SW0-2 to OFF

– The CLK lamp on the MP card goes out.

STEP2: Originate an outgoing call via trunks.

STEP3: After an outgoing connection via trunks has been established, confirm interoffice synchronization and speech quality as follows:
- On the DTMF telephone set, keep pressing any dial button.
- Check to see if noise periodically occurs on the DTMF signals coming from the calling station in the opposite office.
- Do the above test again in the opposite direction.

STEP4: On all the DTI/CCT cards mounted in PIM0, restore the switches as the state before testing to input the external clock signals.

– The CLK lamp on the MP card lights.

NOTE: *If noise periodically occurs, replace the MP card after checking the switch settings on the MP card, and do the above test again.*

Clock Signal Synchronization Test

This test checks to see if the PLO keeps synchronizing with the external clock signals, when the external clock signals from network have input again after they have stopped once. Do the following steps using "In Service" transmission lines.

(1) When providing one clock supply route

STEP1: On the DTI0/CCT0 card extracting clock signals, set the switches as follows to stop the external clock signal input.
- 30DTI0/30CCT0 card: SW-1 and SW-2 to OFF
- 24DTI0/24CCT0 card: SW0-1 and SW0-2 to OFF

– The CLK lamp on the MP card goes out.

STEP2: Originate an outgoing call via trunk.

STEP3: After an outgoing connection via trunk has been established, confirm interoffice synchronization and speech quality as follows:
- On the DTMF telephone set, keep pressing any dial button.
- Check to see if noise periodically occurs on the DTMF signals coming from the calling station in the opposite office.
- Do the above test again in the opposite direction.

STEP4: On the DTI0/CCT0 card, restore the switches as the state before testing to input the external clock signals.
- 30DTI0/30CCT0 card: SW-1 to ON, SW-2 to OFF
- 24DTI0/24CCT0 card: SW0-1 to ON, SW0-2 to OFF

– The CLK lamp on the MP card lights.

STEP5: Originate an outgoing call via trunks.

STEP6: After an outgoing connection via trunks has been established, confirm interoffice synchronization and speech quality with the procedure shown in STEP 3.

NOTE: *If noise periodically occurs, replace the MP card after checking the switch settings on the MP card, and do the above test again.*

(2) When providing two clock supply routes

STEP1: On the DTI/CCT cards extracting clock signals, set the switches as follows to change the clock supply route from 0 to 1.
- 30DTI0/30CCT0 card: SW-1 to OFF, SW-2 to OFF
- 30DTI1/30CCT1 card: SW-1 to OFF, SW-2 to ON
- 24DTI0/24CCT0 card: SW0-1 to OFF, SW0-2 to OFF
- 24DTI1/24CCT1 card: SW0-1 to OFF, SW0-2 to ON

STEP2: Originate an outgoing call via trunks.

STEP3: After an outgoing connection via trunks has been established, confirm interoffice synchronization and speech quality as follows:
- On the DTMF telephone set, keep pressing any dial button.
- Check to see if noise periodically occurs on the DTMF signals coming from the calling station in the opposite office.
- Do the above test again in the opposite direction.

STEP4: On the DTI/CCT cards, set the switches as follows to stop the external clock signal input.
- 30DTI0/1 or 30CCT0/1 card: SW-1 and SW-2 to OFF
- 24DTI0/1 or 24CCT0/1 card: SW0-1 and SW0-2 to OFF

– The CLK lamp on the MP card goes out.

STEP5: Repeat the procedure shown in STEP 2 and STEP 3.

STEP6: On the DTI0/1 or CCT0/1 cards, set the switches as shown in STEP 1 to input clock signals from the clock supply route 1.

STEP7: Repeat the procedure shown in STEP 2 and STEP 3.

STEP8: On the DTI/CCT cards, set the switches as follows to change the clock supply route from 1 to 0.
- 30DTI0/30CCT0 card: SW-1 to ON, SW-2 to OFF
- 30DTI1/30CCT1 card: SW-1 to OFF, SW-2 to ON
- 24DTI0/24CCT0 card: SW0-1 to ON SW0-2 to OFF
- 24DTI1/24CCT1 card: SW0-1 to OFF, SW0-2 to ON

– The CLK lamp on the MP card lights.

STEP9: Repeat the procedure shown in STEP 2 and STEP 3.

NOTE: *If noise periodically occurs, replace the MP card after checking the switch settings on the MP card, and do the above test again.*

Interoffice Synchronization Test

This test checks to see if noise occurs while calling with the opposite office, by difference of the clock signal frequency between the offices. Do the following steps using "In Service" transmission lines.

STEP1: Originate an outgoing call via trunks.

STEP2: Check the speech quality (if noise, distortion or click occurs during a few minutes) with the opposite office mutually.

STEP3: On the DTMF telephone set, keep pressing any dial button, and check to see if noise periodically occurs on the DTMF signals coming from the calling station in the opposite office.

STEP4: Do the above test again in the opposite direction.

NOTE: *If noise periodically occurs, replace the MP card after checking the switch settings on the MP card, and do the above test again.*

Source Office Mode Test

When the PBX is operated as a clock source office, do the following steps using "In Service" transmission lines.

STEP1: Confirm that the following switches on all the DTI/CCT cards mounted in PIM0 are set to "OFF".

- 30DTI/30CCT card: SW-1 and SW-2 to OFF
- 24DTI/24CCT card: SW0-1 and SW0-2 to OFF

STEP2: Confirm the following switches on the MP card are set to "OFF".

- SW2-2 and SW2-3 to OFF
- SW4-2 and SW4-3 to OFF

STEP3: Confirm indication lamps on the MP card.

NOTE: *When the CLK IN lamp lights on the MP card, the clock signal is not generated from the MP card. Check the switch settings on the DTI/CCT and MP card.*

STEP4: Originate an outgoing call via trunks.

STEP5: After an outgoing connection via trunk has been established, confirm interoffice synchronization and speech quality as follows:

- On the DTMF telephone set, keep pressing any dial button.
- Check to see if noise periodically occurs on the DTMF signals coming from the calling station in the opposite office.
- Do the above test again in the opposite direction.

NOTE: *If noise periodically occurs, replace the MP card after checking the switch settings on the DTI/CCT and MP card, and do the above test again.*