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NEAX[®]2000 IVS²
INTEGRATED VOICE SERVER
CCIS System Manual

MAY, 2000

NEC America, Inc.

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INTRODUCTION

PURPOSE

This manual explains the installation and programming procedure for providing No. 7 Common Channel Inter-Office Signaling (No. 7 CCIS) system to the NEAX2000 IVS²/NEAX7400 ICS M100MX/NEAX2000 INTEGRATED VOICE SERVER.

OUTLINE OF THIS MANUAL

This manual consists of five chapters. The contents of CHAPTER 1 through 5 are outlined below.

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 conditions for CCIS system.

CHAPTER 2 INSTALLATION

This chapter explains the required equipment and installation procedure.

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.

CHAPTER 4 CIRCUIT CARD INFORMATION

This chapter explains the mounting location, the meaning of lamp indications, and the method of switch settings of each circuit card for the No. 7 CCIS system.

CHAPTER 5 OPERATION TEST

This chapter explains inter-office test procedure relating to the basic DTI functions.

TERMS IN THIS MANUAL

Usually, PBX system is designated as “PBX” or “system”.

When we must distinguish between the PBX systems, they are designated as follows.

IVS: NEAX2000 IVS²/NEAX7400 ICS M100MX/NEAX2000 INTEGRATED VOICE SERVER

IMX: NEAX2400 IMS (IMX)/NEAX7400 ICS M140MX or more/NEAX7400 IMX M240 or more

REFERENCE MANUAL

During installation, refer also to the manuals below:

Command Manual	Describes Customer Administration Terminal (CAT) operation, command function and setting data required for programming the system, and Resident System Program.
Office Data Programming Manual	Contains the Customer Specification Sheet and Office Data Programming Sheet.
MATWorX Studio User's Guide	Describes the Maintenance Administration Terminal (MATWorX Studio) program operation.
Maintenance Manual	Describes maintenance service features and the recommended trouble shooting procedure.
Installation Procedure Manual	Describes the installation procedure for the PBX system.

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

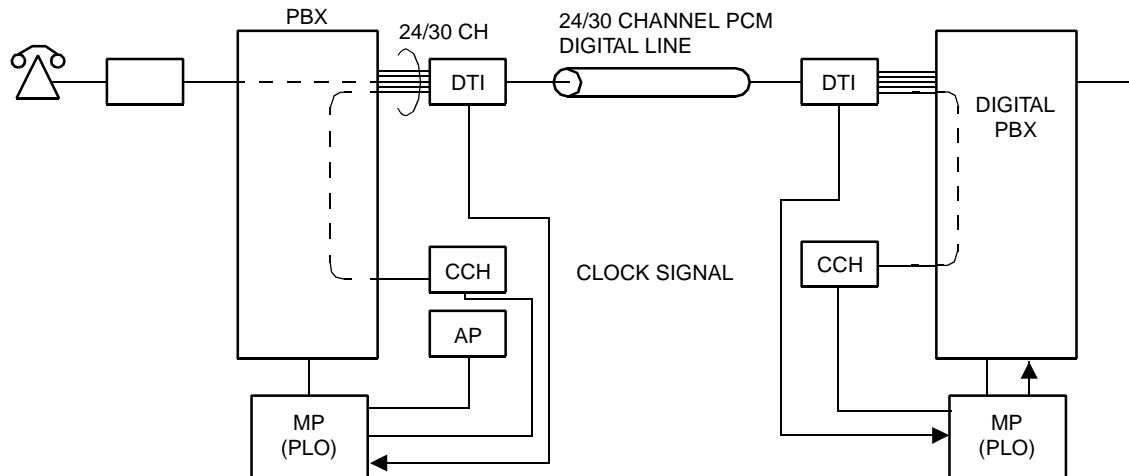
The PBX can be interfaced with a Public Network or Tie Line Network by No. 7 CCIS Signaling. For adding No. 7 CCIS to the system, it is necessary to install the 24/30 channel Digital Trunk Interface (DTI) for a digital network or LDT (Loop Dial Trunk)/ODT (2 wire E&M or 4 wire E&M Trunk) for an analog network via a MODEM, and a Phase Locked Oscillator (PLO) for network synchronization. Also, it is necessary to install a Common Channel Handler (CCH).

The CCH receives/transmits common signaling data from/to the distant office. In each local office, the PBX can provide Centralized Billing function in addition to a variety of inter-office service features.

NOTE: Centralized Day/Night Mode Change, Centralized MAT and Number Portability feature require CCIS No. 7 networking with the IMX.

For addition of the Centralized Billing function, an Application Processor (AP) or Built-in SMDR of MP card (for Local Office only) is required. [Figure 1-1](#) shows the system outline of No. 7 CCIS for the PBX.

Figure 1-1 No. 7 CCIS System Outline



AP : Application Processor for Centralized Billing
CCH: Common Channel Handler
DTI : 24/30 Channel Digital Trunk Interface
PLO : Phase Locked Oscillator

DTI

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

For 24-DTI:

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

For 30-DTI:

- Unipolar/Bipolar Conversion (HDB3 Format)
- Signaling Insertion/Extraction
- Alarm Detection/Insertion
- Digital PAD on Voice Signal Transmission
- Cyclic Redundancy Checking (based on ITU-T Rec. G704)
- Channel Associated Signaling (based on ITU-T Rec. 0421 Digital R2 Signaling Code)

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

CCH

The Common Channel Handler (CCH) card provides a common channel signal 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.

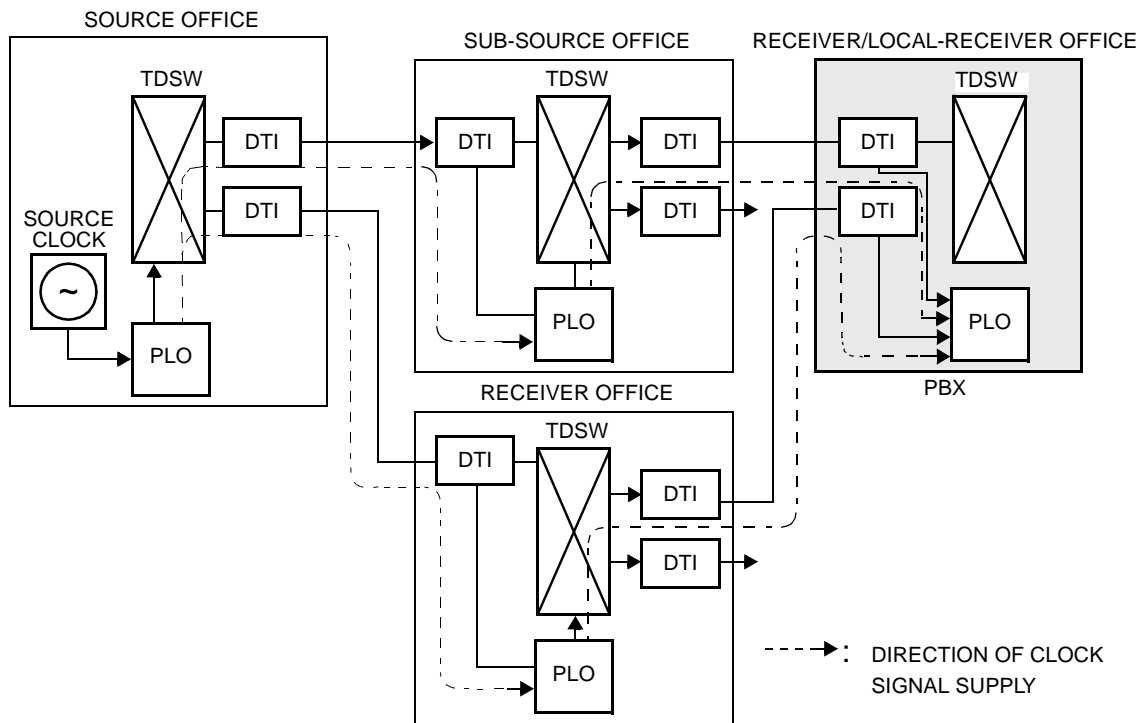
PLO

The Phase Locked Oscillator (PLO) is responsible for providing synchronization between the TDSW and another office. In this system, the internal PLO equipped with the MP card is used.

The PLO generates a synchronized clock signal according to the source clock signals supplied from the source office within the network, and supplies the generated clock signal to the TDSW. The PLO is supplied with clock signals extracted from the DTI. The PLO can be equipped with two clock supply routes; one is the route from the source office, and the other is a standby route from a sub-source office. When no clock signals from the source and the sub-source office arrive due to a transmission line failure, the PLO keeps generating the clock signals in phase with the previous source clock.

Figure 1-2 shows an example of clock supply route configuration.

Figure 1-2 Clock Supply Route



No. 7 CCIS

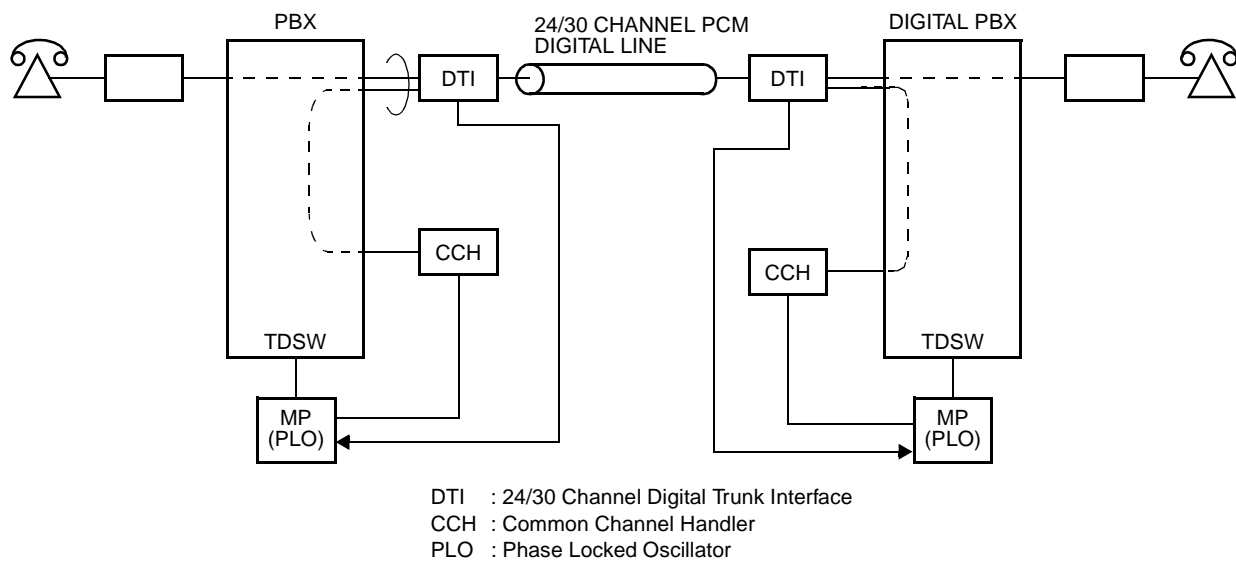
The PBX can provide No. 7 CCIS via either a digital network or an analog network. Regardless of the relevant network being a digital network or an analog network, CCH (Common Channel Handler) to control the common signaling channel is required.

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.

Figure 1-3 shows the system configuration of No. 7 CCIS provided via a digital network.

Figure 1-3 No. 7 CCIS with DTI



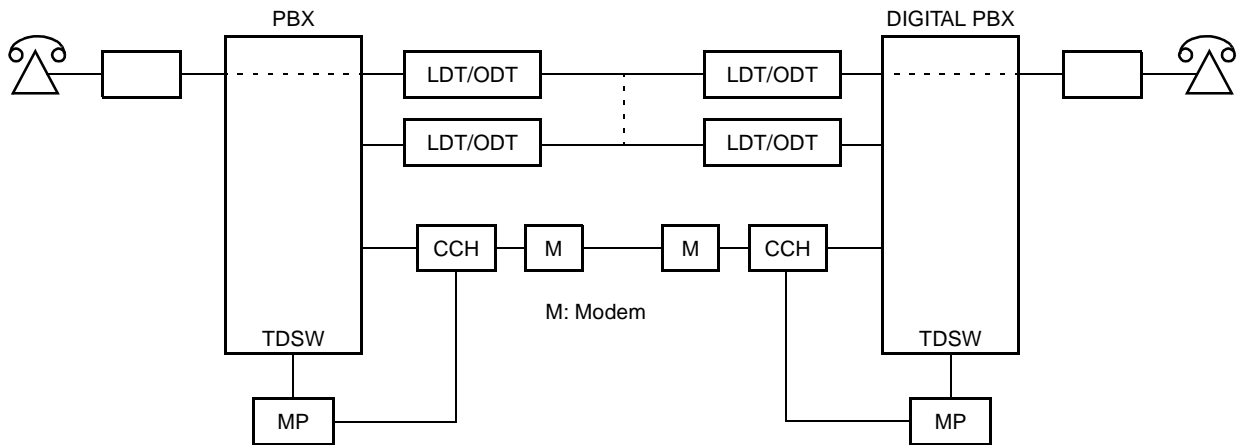
ANALOG NETWORK

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).

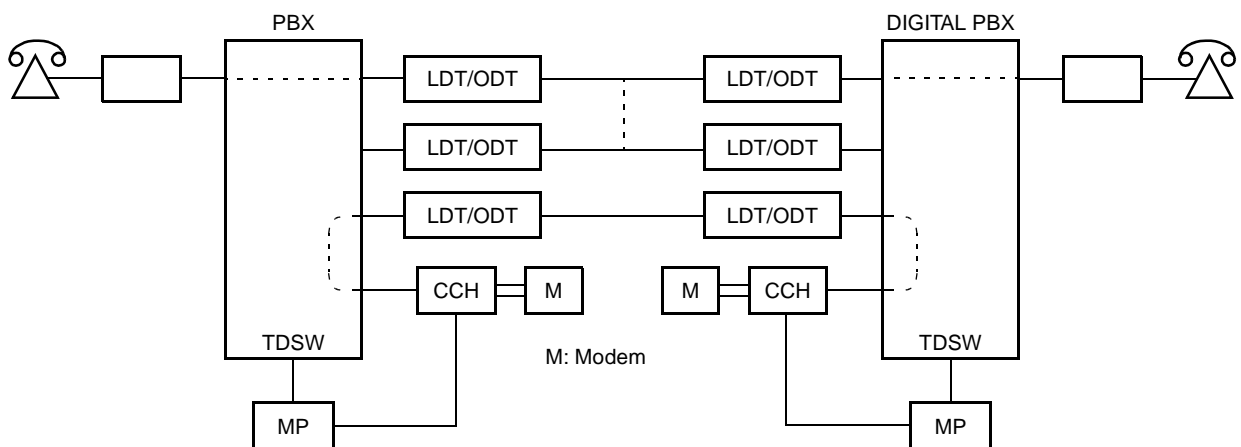
Figure 1-4 shows the system configuration of No. 7 CCIS provided via analog network.

Figure 1-4 No. 7 CCIS with LDT/ODT

- Common Signaling Data Link via MODEM



- Common Signaling Data Link via LDT/ODT



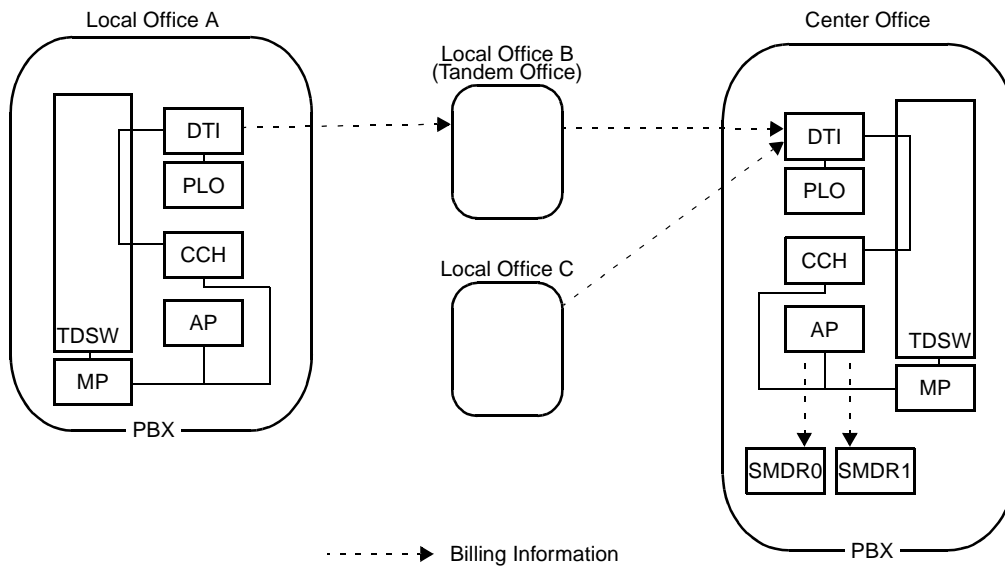
CENTRALIZED BILLING

Centralized Billing is a function that transmits billing information at each associated office to the central office within the same network through the common signaling channels of No. 7 CCIS. In the No. 7 CCIS of the PBX, the system can transmit, as a local office, its own billing information to the centralized office or transfer the billing information from other offices to the centralized office.

For transmitting the billing information of the local office to the centralized office, an Application Processor (AP) or Built-in SMDR of MP card is required for each office. Built-in SMDR can not be used for Centralized Billing in centralized office.

The AP in a centralized office can send out the billing information to two SMDR terminals (SMDR0/SMDR1). [Figure 1-5](#) shows an example of the centralized billing system configuration.

Figure 1-5 Centralized Billing



Service Conditions for Centralized Billing

If all the PBXs within the network are the IVS, the PBX can be a centralized billing office. In that case, there are the following conditions:

For Center Office;

- Built-in SMDR cannot be used.
- The output format of the billing information sent to SMDR is the NEAX 2400IMS format.
- The RS port of AP00 can be used to send a billing information to SMDR.
(The RS port of Built-in SMDR can not be used.)
- Billing information of Center Office can be sent to the SMDR.
- Maximum number of Center Office is 1 within a network.
- Maximum number of Local Office which is connected to a Center Office is 8.
- Maximum number of call records which can be received from Local Office is 3600 per hour.
- If exceeds 3600 calls per hour, the call records are stored in the memory buffer on the Local Office's MP or AP00.
- If the AP00 cannot send the call records to the SMDR, due to such as a failure of SMDR, the call records are stored in the memory buffer on the AP. Moreover, if the memory buffer is filled, the call records are stored in the memory buffer on the Local Office's MP or AP00.
- The memory capacity of AP00 to store the call record from Local Office/Tandem Office is 512 calls.

For Local Office using Built-in SMDR;

- Built-in SMDR cannot be used when AP00 is provided in the own office
(CM05 Y=0>04~15 >04).
20~31
- Billing information of local office cannot be sent to the SMDR of the local office.
- Maximum number of call records which can be sent to Center Office is 3600 per hour.
- If the link between Local Office and Center Office is down, due to such as a failure of Center Office, the call records are stored in the memory buffer on the MP. The call records will be cleared by MP reset.
- The memory capacity of MP as follows.
Basic Memory: 256 calls
Basic Memory + Expansion Memory (PZ-M537): 1024 calls
- If local office has outgoing trunks other than CCIS, Built-in SMDR cannot be used.

For Local Office using AP00;

- AP00 cannot be used when Built-in SMDR is provided in the local office (CM08>800: 0).
- Billing information of local office cannot be sent to the SMDR of the local office.
- Maximum number of call records which can be sent to Center Office is 3600 per hour.
- When the link between Local Office and Center Office is down, due to such as a failure of Center Office, the call records are stored in the memory buffer on the AP00. The call record will not be cleared by MP reset or power off.
- The memory capacity of AP00 is as follows.
Basic Memory: 1600 calls
Basic Memory + Expansion Memory (PZ-M537):
27000 calls (When CMD003>28 is set to 0)
26000 calls (When CMD003>28 is set to other than 0)

For Tandem Office;

- Maximum number of Local Office which is connected to Tandem Office is 7.
- Maximum number of call records which can be received from Local Office is 3600 per hour. If exceeds 3600 calls per hour, the call records are stored in the memory buffer on the Local Office's MP or AP00.

Other service conditions are the same as 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

Table 1-1 shows the circuit card name and function for No. 7 CCIS.

Table 1-1 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, CS report functions. One card per system.
PN-CP14	MP	Main Processor Card Provides Memory, TDSW (1024CH × 1024CH), 16-line CFT, PB sender, Clock, PLO 2 ports (receiver mode/ source mode), two RS-232C ports, 2-line DAT (Recording duration: Max. 128sec.), DK, 4-line PB receiver, Modem for remote maintenance (19.2kbps), internal Music-on-Hold tone source and BUS interface. BUS interface functions as a driver/receiver of various signals, adjusts gate delay timing and cable delay timing, monitors I/O Bus and PCM BUS. One card is required per system.
PN-24DTA-C	DTI	Digital Trunk Interface (23B + D, 1.5 Mbps) Card Accommodates 24-channel PCM digital lines.
PN-30DTC-A	DTI	Digital Trunk Interface (2 Mbps) Card Accommodates 30-channel PCM digital lines.
PN-2LDTA [For Australia/ Other Countries]	LDT	2-line Loop Dial Trunk Card Line resistance: Max. 2500 ohms (including internal resistance of the distant office equipment) Equipped with -48V DC-DC on-board power supply.
PN-M03	M03	V.35 Data Terminal Equipment Interface Card Used together with the PN-2DPCB card to provide the V.35 interface.

Table 1-1 Card Name and Function (Continued)

EQUIPMENT NAME	FUNCTIONAL NAME	FUNCTION
PN-M10	M10	Optical Interface Card Provides internal optical modem for digital network 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 N.Z.]	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-SC00	CCH	Common Channel Handler Card Transmits/receives signals on the common signalling channel of No. 7 CCIS.

Table 1-1 Card Name and Function (Continued)

EQUIPMENT NAME	FUNCTIONAL NAME	FUNCTION																																																									
PZ-M537	EXPMEM	<p>Memory Expansion Card for MP/AP00 Card The system capacity is expanded as follows: When mounted on PN-CP14 (MP) card:</p> <table border="1"> <thead> <tr> <th>System Capacity</th> <th>w/o EXPMEM</th> <th>with EXPMEM</th> </tr> </thead> <tbody> <tr><td>Line/Trunk</td><td>384</td><td>768</td></tr> <tr><td>DID dial conversion</td><td>500</td><td>1000</td></tr> <tr><td>IP trunk</td><td>1</td><td>4</td></tr> <tr><td>Station</td><td>384</td><td>512</td></tr> <tr><td>D^{term}</td><td>256</td><td>512</td></tr> <tr><td>Station + D^{term}</td><td>384</td><td>512</td></tr> <tr><td>Dterm (24/32 button)</td><td>256</td><td>512</td></tr> <tr><td>PS</td><td>128</td><td>256</td></tr> <tr><td>ISDN terminal</td><td>64</td><td>128</td></tr> <tr><td>Data station</td><td>64</td><td>128</td></tr> <tr><td>Call Forwarding-Outside set</td><td>240</td><td>496</td></tr> <tr><td>Authorization Code/ Forced Account Code/ Remote Access to System (DISA) Code</td><td>1000</td><td>3000</td></tr> <tr><td>Message Reminder set</td><td>512</td><td>1024</td></tr> <tr><td>Name Display/ Guest Name Display</td><td>256</td><td>512</td></tr> <tr><td>Speed Calling-Station (Station Speed Dial) set</td><td>4000</td><td>10000</td></tr> <tr><td>MP built-in SMDR call record</td><td>256</td><td>1024</td></tr> </tbody> </table> <p>When mounted on PN-AP00-B (AP00) card:</p> <table border="1"> <thead> <tr> <th>System Capacity</th> <th>w/o EXPMEM</th> <th>with EXPMEM</th> </tr> </thead> <tbody> <tr> <td>SMDR call record</td> <td>1600</td> <td>27000</td> </tr> </tbody> </table>	System Capacity	w/o EXPMEM	with EXPMEM	Line/Trunk	384	768	DID dial conversion	500	1000	IP trunk	1	4	Station	384	512	D ^{term}	256	512	Station + D ^{term}	384	512	Dterm (24/32 button)	256	512	PS	128	256	ISDN terminal	64	128	Data station	64	128	Call Forwarding-Outside set	240	496	Authorization Code/ Forced Account Code/ Remote Access to System (DISA) Code	1000	3000	Message Reminder set	512	1024	Name Display/ Guest Name Display	256	512	Speed Calling-Station (Station Speed Dial) set	4000	10000	MP built-in SMDR call record	256	1024	System Capacity	w/o EXPMEM	with EXPMEM	SMDR call record	1600	27000
System Capacity	w/o EXPMEM	with EXPMEM																																																									
Line/Trunk	384	768																																																									
DID dial conversion	500	1000																																																									
IP trunk	1	4																																																									
Station	384	512																																																									
D ^{term}	256	512																																																									
Station + D ^{term}	384	512																																																									
Dterm (24/32 button)	256	512																																																									
PS	128	256																																																									
ISDN terminal	64	128																																																									
Data station	64	128																																																									
Call Forwarding-Outside set	240	496																																																									
Authorization Code/ Forced Account Code/ Remote Access to System (DISA) Code	1000	3000																																																									
Message Reminder set	512	1024																																																									
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Speed Calling-Station (Station Speed Dial) set	4000	10000																																																									
MP built-in SMDR call record	256	1024																																																									
System Capacity	w/o EXPMEM	with EXPMEM																																																									
SMDR call record	1600	27000																																																									
PZ-M542 [For Other Countries]	CONN	<p>Coaxial Cable Connection Card Used to connect a coaxial cable for the Digital Trunk Interface. Max. two cards can be connected to LTC connector of each PIM.</p>																																																									

SYSTEM CAPACITY

No. 7 CCIS with Digital Interface

Table 1-2 System Capacity for No. 7 CCIS with Digital Interface

DESCRIPTION	CAPACITY	
	24DTI	30DTI
DTI Card	8	4
CCH Card	8	4
AP00 Card (for Centralized Billing)	1	1
Trunks for DTI	192	124
DTI Trunk Routes	64	64
Trunks per DTI Card	24	31

No. 7 CCIS with Analog Interface

Table 1-3 System Capacity for No. 7 CCIS with Analog Interface

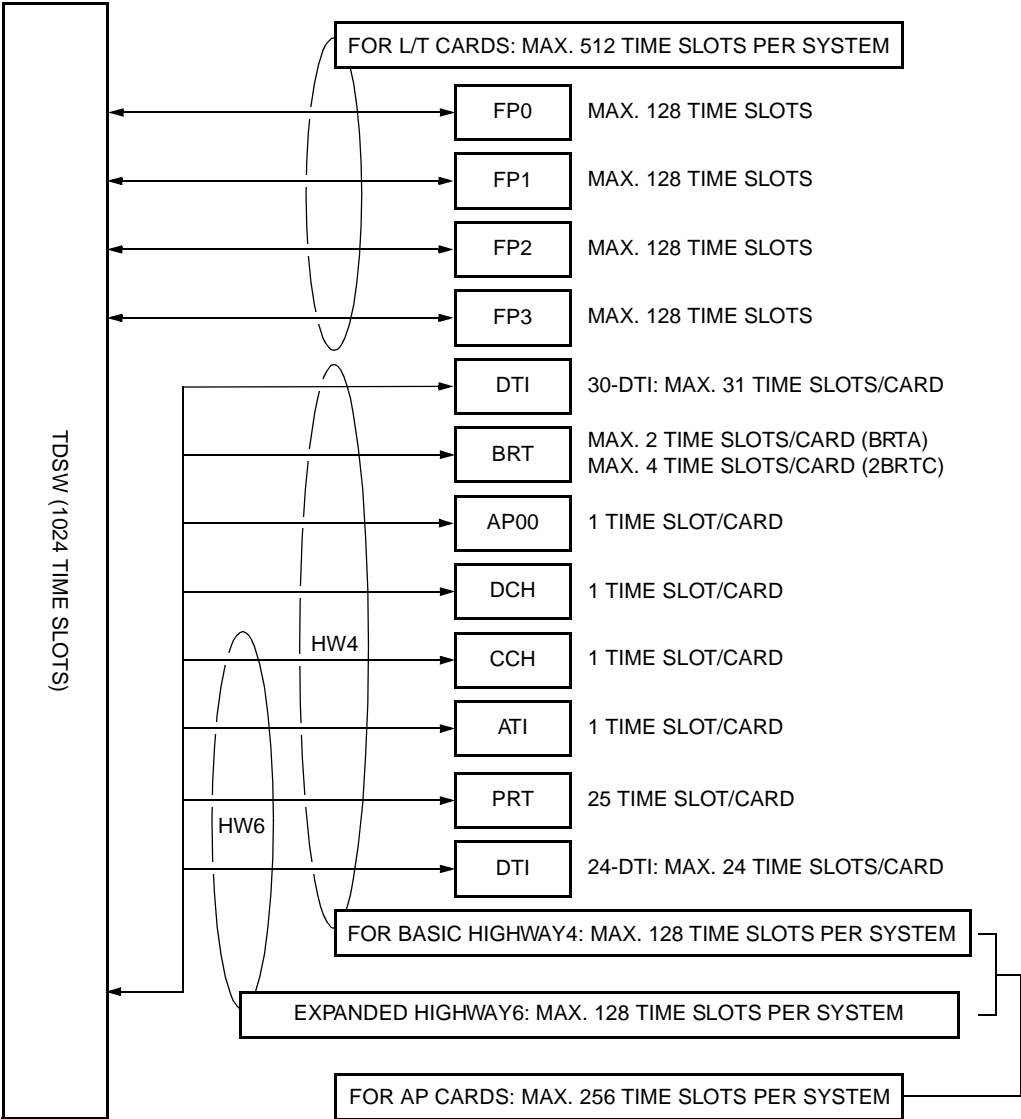
DESCRIPTION	CAPACITY
CCH Card	8
AP00 Card (for Centralized Billing)	1
LDT/ODT Card	128
LDT/ODT Trunks	254

TIME SLOT ASSIGNMENT CONDITION

As shown in Figure 1-6, the 30-DTI/CCH cards uses the time slots on the basic highway 4. However, the following conditions are required on the time slot assignment.

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

Figure 1-6 Accommodation of DTI/CCH into TDSW

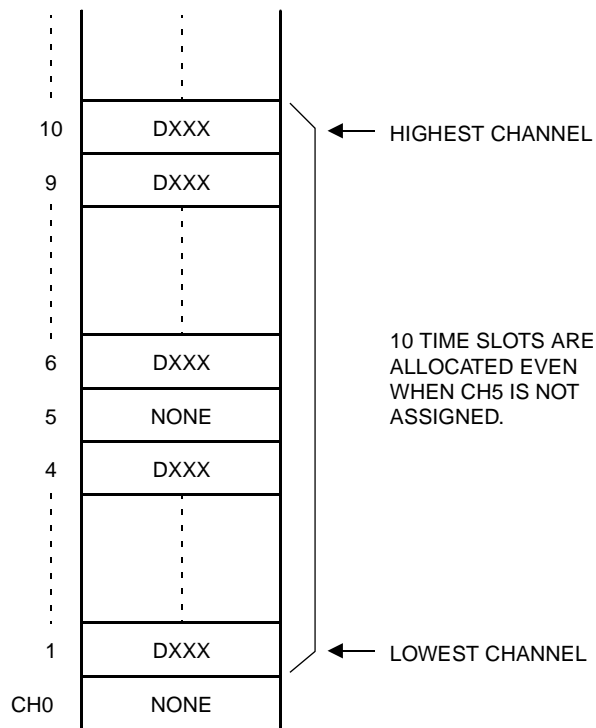


Time Slot Allocation for DTI Card

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 in [Figure 1-7](#), when Channel 1 through Channel 10 have been assigned by system data programming (CM07 YY=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.

Figure 1-7 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.

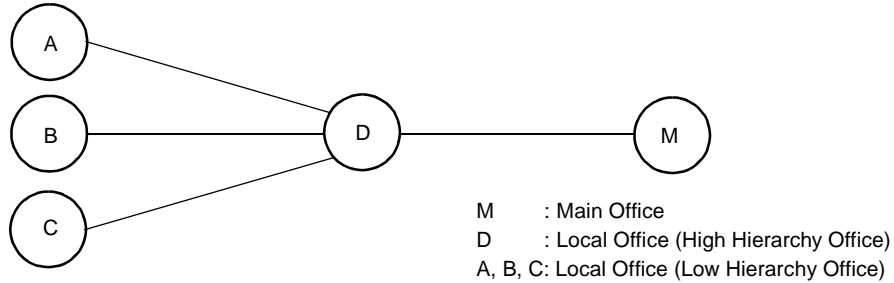
AP00→MP→CCH

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

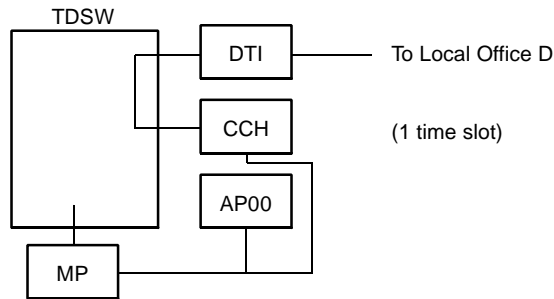
Figure 1-8 shows the CCH time slot assignment for CCIS with Digital Interface.

Figure 1-8 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:

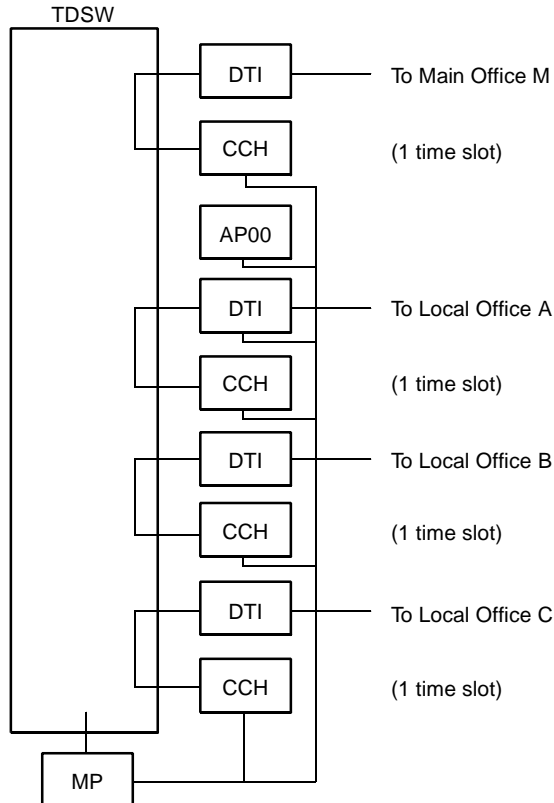
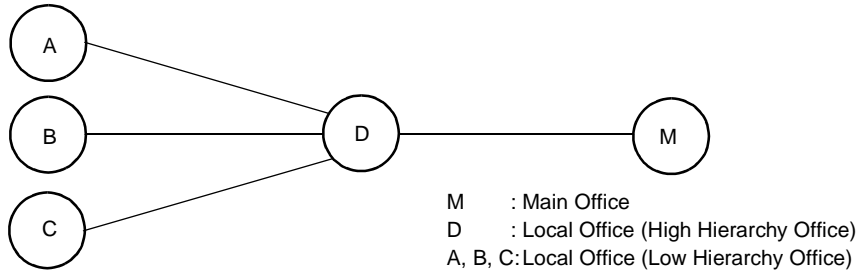


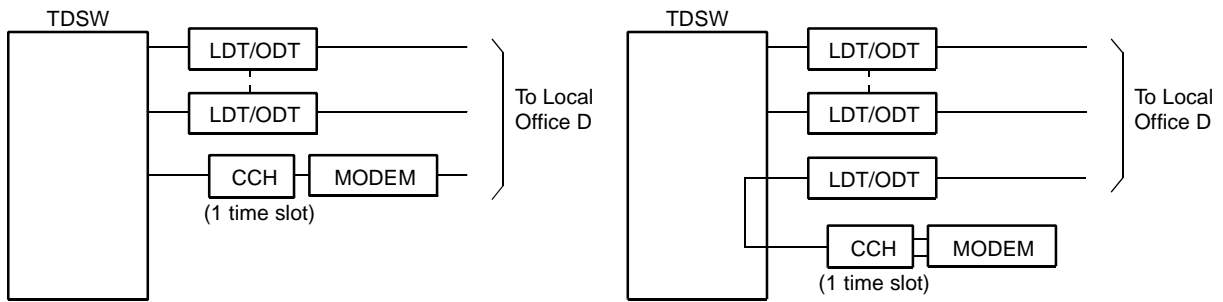
Figure 1-9 shows the CCH time slot assignment for No. 7 CCIS with Analog Interface.

Figure 1-9 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:

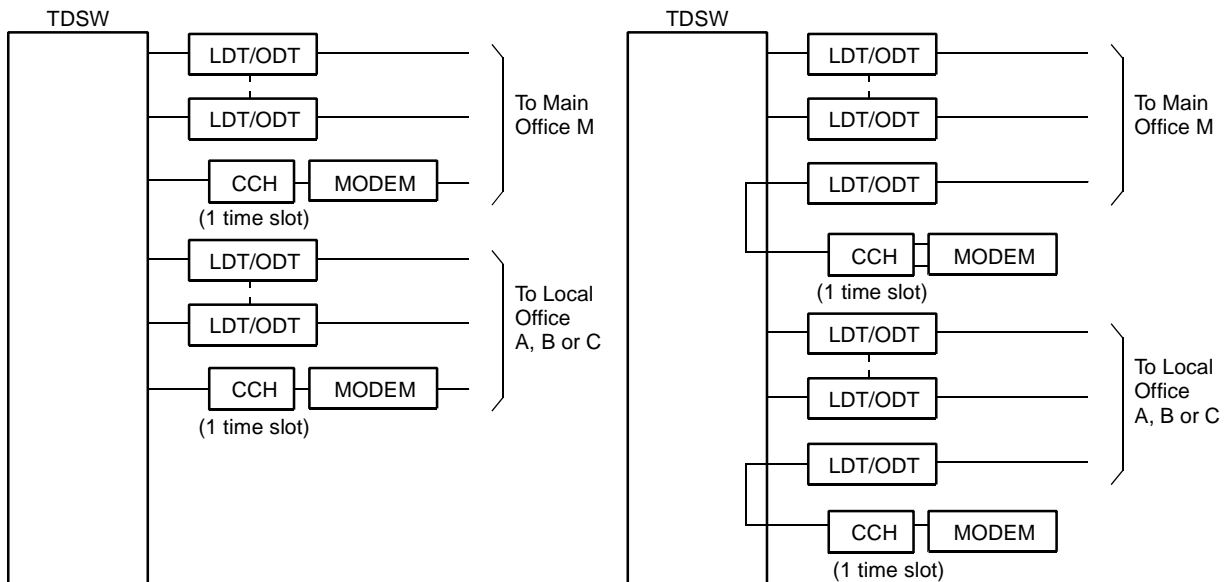


Table 1-4 shows the number of time slots for each of the cards required for No. 7 CCIS with Digital Interface and Table 1-5 shows the number of time slots for each of the cards required for No. 7 CCIS with Analog Interface.

**Table 1-4 Number of Time Slots Required per DTI/CCH/AP00 Card
 (for No. 7 CCIS with Digital Interface)**

CARD	NUMBER OF TIME SLOTS PER CARD	REMARKS
PN-24DTA-C	1-24	<ul style="list-style-type: none"> • Number of CCIS channels (the number of CCH) + number of trunks assigned
PN-30DTC-A	1-31	
PN-SC00	1	<ul style="list-style-type: none"> • For a distant Main Office <ul style="list-style-type: none"> – Common Signaling Channel: 1 time slot
	1	<ul style="list-style-type: none"> • For a distant Local Office <ul style="list-style-type: none"> – Common Signaling Channel: 1 time slot
PN-AP00-B	0	

**Table 1-5 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	<ul style="list-style-type: none"> • For a distant Main Office <ul style="list-style-type: none"> – Common Signaling Channel: 1 time slot
	1	<ul style="list-style-type: none"> • For a distant Local Office <ul style="list-style-type: none"> – Common Signaling Channel: 1 time slot
PN-AP00-B	0	

DTI SPECIFICATIONS

Transmission Characteristics

Table 1-6 Transmission Characteristics

CHARACTERISTICS	24-CHANNEL	30-CHANNEL
(1) Output		
• Line Rate	1.544 Mbps \pm 50 ppm	2.048 Mbps \pm 50 ppm
• Line Code	AMI with ZCS/B8ZS*	HDB3 (High Density Bipolar 3)
• Line Impedance	100 ohms	75 ohms + 100 μ H (Coaxial Cable) 120 ohms + 160 μ H (Twisted-Pair Cable)
• Pulse Amplitude (Base to Peak)	3 volts \pm 0.6 volts	2.37 volts nominal (Coaxial Cable) 3 volts nominal (Twisted-Pair Cable)
• Pulse Width	324 ns \pm 30 ns	244 ns nominal
(2) Input		
• Line Rate	1.544 Mbps \pm 200 bps (130 ppm)	2.048 Mbps \pm 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	Max. 200 m (MAX 656.2 ft.) [with 0.65 ϕ (22 ABAM) twisted- pair cable]	Max. 400 m (MAX 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 24-DTI

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). [Figure 1-10](#) shows the frame configuration, and [Table 1-7](#) shows frame bit assignment.

Figure 1-10 Frame Configuration of 24-DTI (12-Multi Frame)

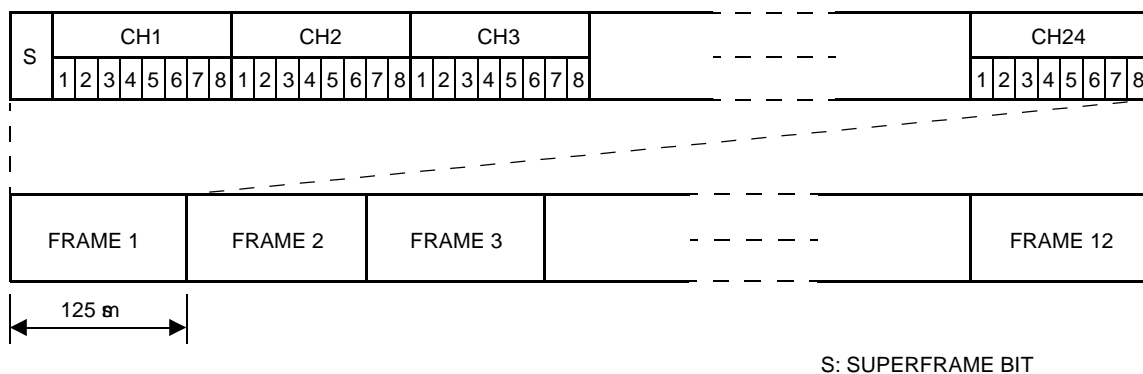


Table 1-7 12-Multi Frame Bit Assignment

FRAME No.	S BIT		BIT No. OF EACH CHANNEL (CH1-CH12)		SIGNAL CHANNEL
	TERMINAL SYNCHRONIZATION (FT)	SIGNAL SYNCHRONIZATION (FS)	INFORMATION SIGNAL BIT	CONTROL SIGNAL BIT	
1	1		1-8		
2		0	1-8		
3	0		1-8		
4		0	1-8		
5	1		1-8		
6		1	1-7	8	A
7	0		1-8		
8		1	1-8		
9	1		1-8		
10		1	1-8		
11	0		1-8		
12		0	1-7	8	B

- * The S-bit is the first bit in each frame.
- * Frames are repeated in the order shown above.
- * Frames 6 and 12 become signal frames.

(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). [Figure 1-11](#) shows the frame configuration, and [Table 1-8](#) shows frame bit assignment.

Figure 1-11 Frame Configuration of 24-DTI (24-Multi Frame)

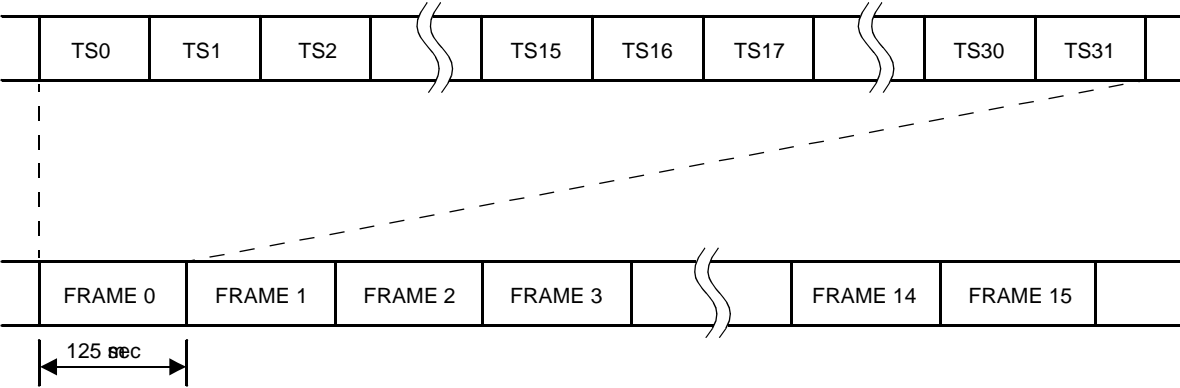


Table 1-8 24-Multi Frame Bit Assignment

FRAME No.	S BIT			BIT No. OF EACH CHANNEL (CH1-CH24)		SIGNAL CHANNEL
	FRAME SYNCHRONIZATION	4 Kbps DATA LINK	CRC	INFORMATION SIGNAL BIT	CONTROL SIGNAL BIT	
1		m		1-8		
2			CB1	1-8		
3		m		1-8		
4	0			1-8		
5		m		1-8		
6			CB2	1-7	8	A
7		m		1-8		
8	0			1-8		
9		m		1-8		
10			CB3	1-8		
11		m		1-8		
12	1			1-7	8	B
13		m		1-8		
14			CB4	1-8		
15		m		1-8		
16	0			1-8		
17		m		1-8		
18			CB5	1-7	8	C
19		m		1-8		
20	1			1-8		
21		m		1-8		
22			CB6	1-8		
23		m		1-8		
24	1			1-7	8	D

- * The S-bit is the first bit in each frame.
- * Frames are repeated in the order shown above.
- * Frames 6, 12 and 24 become signal frames.
- * The letter “m” in the “4 Kbps Data Link” column means that the frame is usually assigned to 1.

Frame Configuration of 30-DTI

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

Figure 1-12 shows the frame configuration, and Table 1-9 shows the details of time slot assignment.

Figure 1-12 Frame Configuration of 30-DTI

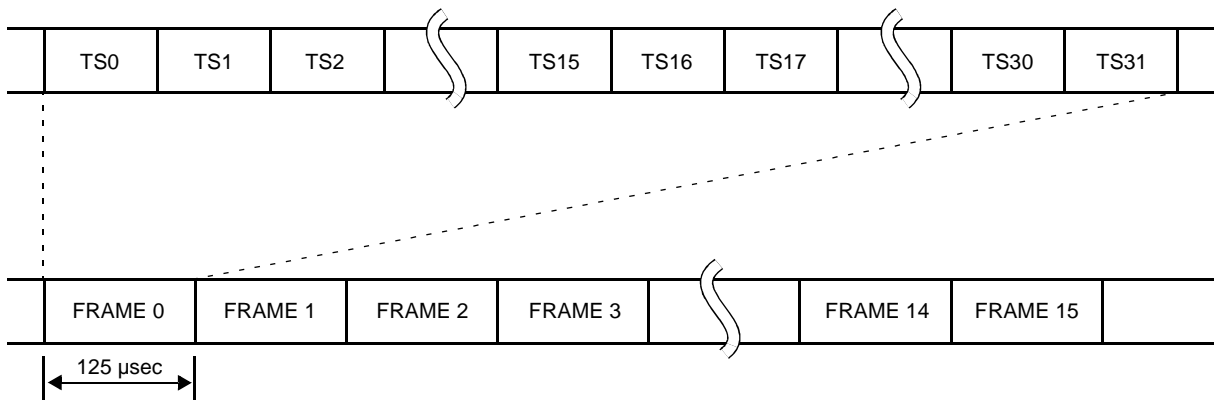
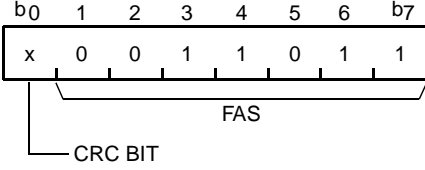
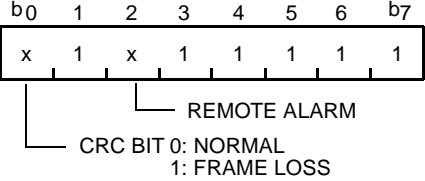


Table 1-9 Time Slot Assignment of 30-DTI

TIME SLOT No.	EVEN No. FRAME	ODD No. FRAME
TS0	Frame Alignment Signal (FAS) 	
TS1-TS15	Voice Channel CH1-CH15	
TS16	<ul style="list-style-type: none"> 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

Table 1-10 List of No. 7 CCIS Service Features

SERVICE FEATURES	REMARKS
Attendant Camp-On with Tone Indication-CCIS	
Attendant Controlled Conference-CCIS	NOTE 1
Brokerage-Hot Line-CCIS	
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 Transfer-All Calls-CCIS	
Call Transfer-Attendant-CCIS	
Calling Name Display-CCIS	
Calling Number Display-CCIS	
Centralized Billing-CCIS	
Centralized Day/Night Mode Change-CCIS	NOTE 3
Centralized MAT-CCIS	NOTE 3
Consultation Hold-All Calls-CCIS	
Data Line Security-CCIS	
Deluxe Traveling Class Mark-CCIS	
Dial Access to Attendant-CCIS	
Direct-in Termination-CCIS	
Distinctive Ringing-CCIS	
Do Not Disturb-CCIS	
Dual Hold-CCIS	

Table 1-10 List of No. 7 CCIS Service Features (Continued)

SERVICE FEATURES	REMARKS
Elapsed Time Display-CCIS	
Flexible Numbering of Stations-CCIS	
Hands-Free Answer back-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	
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	
Night Connection-Fixed-CCIS	
Night Connection-Flexible-CCIS	
Number Portability-CCIS	NOTE 3
Outgoing Trunk Queuing-CCIS	
Paging Access-CCIS	
Restriction from Outgoing Calls-CCIS	
Single-Digit Station Calling-CCIS	
Station Controlled Conference-CCIS	NOTE 1
Station-to-Station Calling-CCIS	
Station-to-Station Calling-Operator Assistance-CCIS	

Table 1-10 List of No. 7 CCIS Service Features (Continued)

SERVICE FEATURES	REMARKS
Toll Restriction-3/6 Digits-CCIS	
Trunk Answer from Any Station (TAS)-CCIS	
Trunk-to-Trunk Restriction-CCIS	
Uniform Numbering Plan-CCIS	
Voice Call-CCIS	
Voice Mail Integration-CCIS	

NOTE 1: An attendant/extension of the IMX 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 IVS.

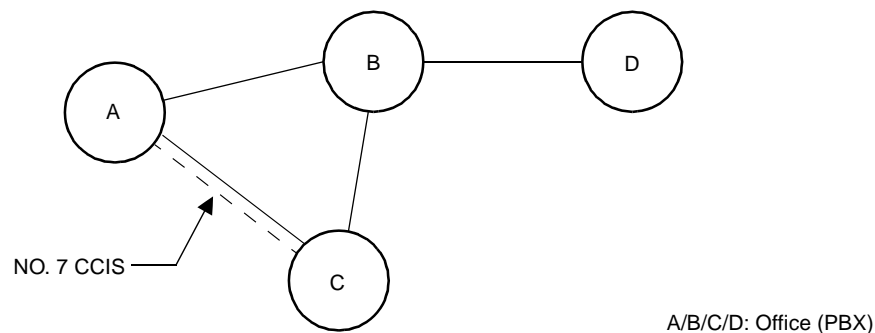
NOTE 4: This service is available when the Attendant Console is provided at the IMX on the network.

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.

Figure 1-13 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 (24-DTI/30-DTI)
- 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

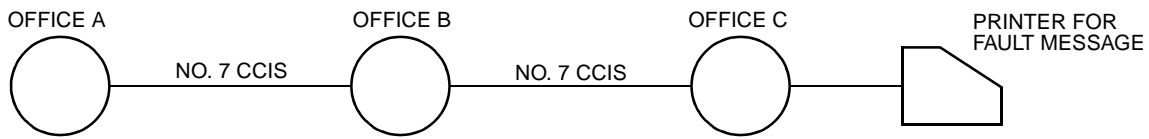
When using No. 7 CCIS, the following features require establishing a clear relationship between the Main and Satellite offices:

- 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 IMX. This feature can be set only from the Main Office IMX: The IVS's Attendant Console cannot set this feature. The IVS provides the feature when instructed by the Main Office.

- Centralized Billing-CCIS
- Centralized Fault Message
Main office: IMX only
The IVS can pass information, but cannot generate alarm information and send over CCIS.
- Centralized MAT-CCIS
Main office: IMX only
Number Portability-CCIS
Main office: IMX only

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



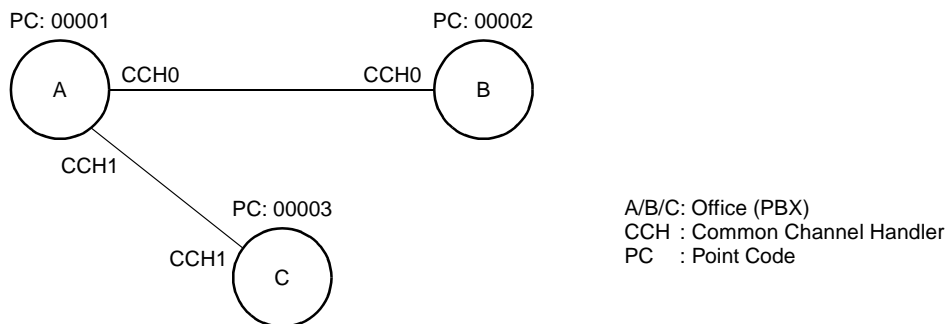
When Office A and Office C are IMX and Office B is a PBX, a fault message from Office A can be printed out at the printer located in Office C.

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.)

For example: Point Code Assignment



- Data Assignment of Office A

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

- Data Assignment of Office B

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

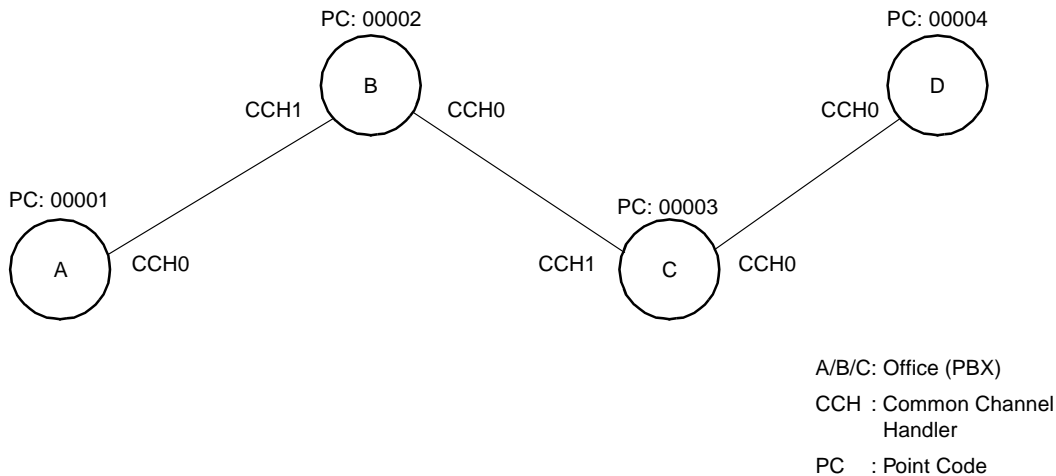
- Data Assignment of Office C

Command Code	1st Data	2nd Data	Remarks
CMA7 YY=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	

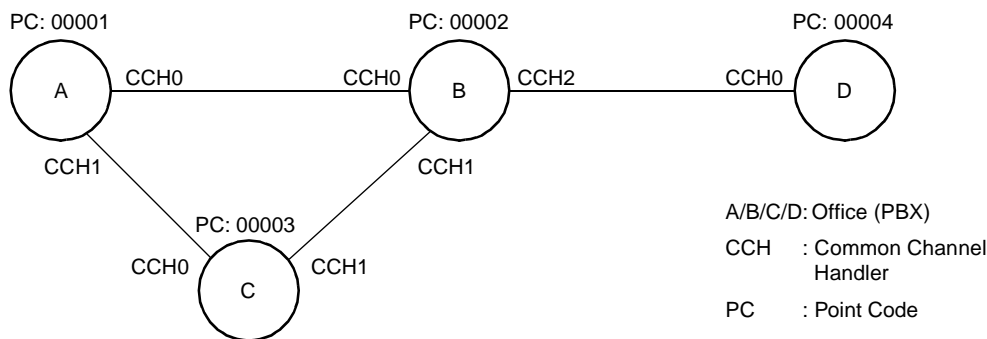
• Data Assignment of Office C

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 LCR (Least-Cost Routing) 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

<u>Command Code</u>	<u>1st Data</u>	<u>2nd Data</u>	<u>Remarks</u>
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

<u>Command Code</u>	<u>1st Data</u>	<u>2nd Data</u>	<u>Remarks</u>
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

<u>Command Code</u>	<u>1st Data</u>	<u>2nd Data</u>	<u>Remarks</u>
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.

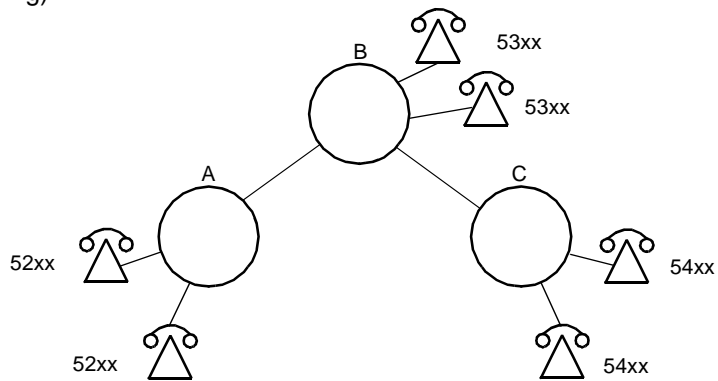
- Station Number (Closed Numbering)
- Office Code and Station Number (Open Numbering)

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 YY=06 and the station number assigned in CM10 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).

[Figure 1-14](#) and [Figure 1-15](#) show an example of the Station Number (Closed Numbering) and Office Code and Station Number (Open Numbering) respectively.

Figure 1-14 Example of Station Number (Closed Numbering)

Station Number
 (Closed Numbering):



- When originating a call from Office A to Office C

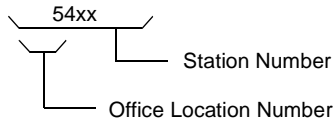
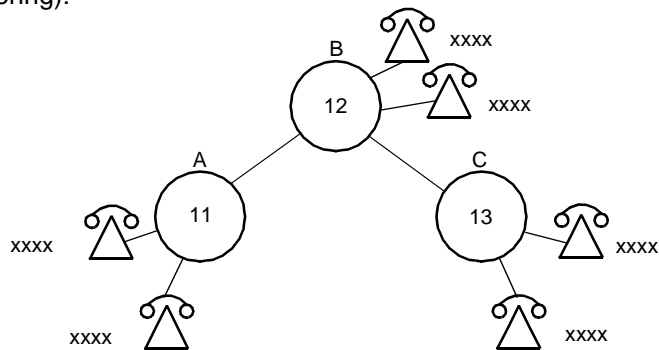
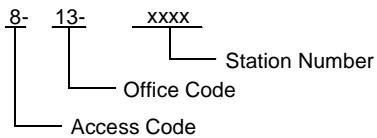


Figure 1-15 Example of Office Code and Station Number (Open Numbering)

Office Code and Station Number
 (Open Numbering):



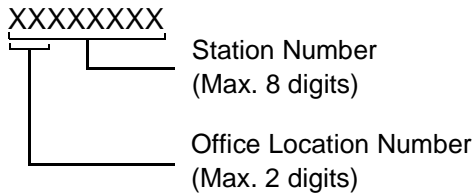
- When originating a call from Office A to Office C



Limitations on developing the Uniform Numbering Plan are as follows:

(1) Station Number (Closed Numbering)

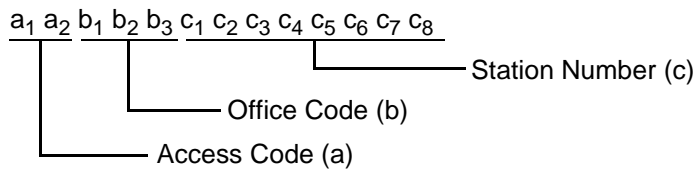
- The dialing number must be formed as follows:



- When providing 3-digit or 4-digit station numbering within the No. 7 CCIS network, the data assignment of the Originating Office Number (CMA7 YY=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.

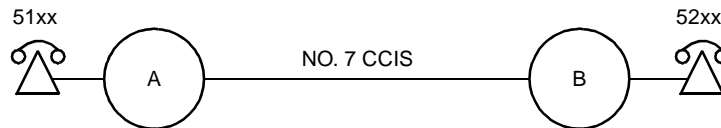


- (a) ≤2 digits
- (a) + (b) ≤4 digits
- (c) ≤8 digits
- a₁ ≠ c₁

- 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)

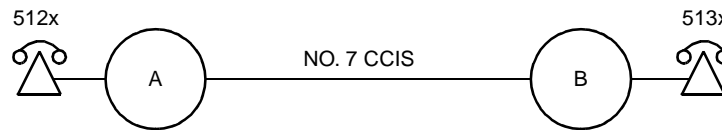
- When the office location number is distinguished by the 1st or 2nd digit of the dialed station number:



- 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 YYYY=A000	3	4007	Area code Development Pattern No. 7
CM8A YYYY=4007	52	0000	Route Pattern 000
CM8A YYYY=0000	1	00010	Route 10 access by dialing 52XX
CM8A YYYY=5000	100	CCC	No digit addition
CM8A YYYY=5000	153	CCC	No digit deletion
CM10	XXX	51XX	Originating station number
CMA7 YY=06	0	NONE	No originating office number
CM85 Y=7	52	04	Maximum number of digits dialed "4"

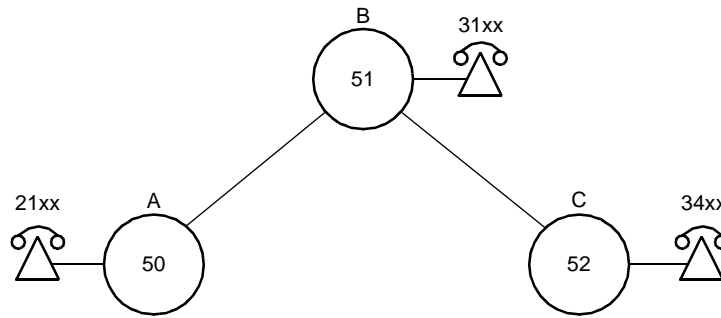
- When the office location number is distinguished by the 3rd digit of the dialed station number:



- Data Assignment of Office A

Command Code	1st Data	2nd Data	Remarks
CM20 Y=0	5	A129	LCR Group 3
CM8A YYYY=A000	3	4007	Area Code Development Pattern No. 7
CM8A YYYY=4007	512	8004	4-digit Intra-Office Station
CM8A YYYY=4007	513	0000	Route Pattern 000
CM8A YYYY=0000	1	00010	Route 10 access by dialing 513X
CM8A YYYY=5000	100	CCC	No digit addition
CM8A YYYY=5000	153	CCC	No digit deletion
CM10	XXX	512X	Originating station number
CMA7 YY=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 : 50 (Office A)
 51 (Office B)
 52 (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 YYYY=A000	0	4005	Area Code Development Pattern No. 5
CM8A YYYY=4005	50	8000	Intra Office Termination
CM8A YYYY=4005	51	0000	Route Pattern No. 000
CM8A YYYY=4005	52	0000	Route Pattern No. 000
CM8A YYYY=0000	1	00010	Route 10 access by dialing 31XX/34XX
CM8A YYYY=5000	100	00	Digit Addition Pattern No. 00
CM8A YYYY=5000	153	CCC	No digit deletion
CM8A YYYY=9000	0	8	Addition of digit "8"
CMA7 YY=06	0	820	Originating office number
CM10	XXX	21XX	Originating station number
CM85 Y=5	51	07	Maximum number of digits dialed "7"
	52	07	

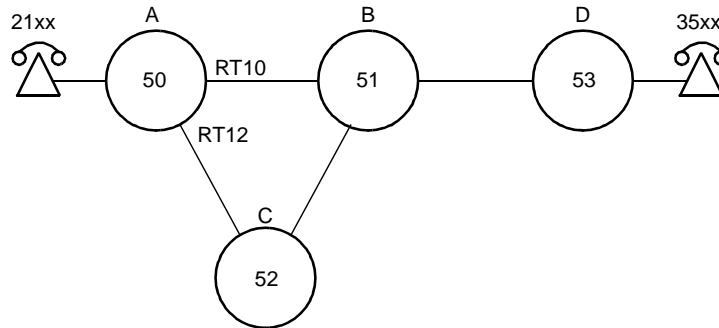
- Pattern 2 (Used when not receiving pseudo dial tone.)

Command Code	1st Data	2nd Data	Remarks
CM20 Y=0	8	A129	LCR Group 3
CM8A YYYY=A000	3	4007	Area Code Development Pattern No. 7
CM8A YYYY=4007	850	8000	Intra Office Termination
CM8A YYYY=4007	851	0000	Route Pattern No. 000
CM8A YYYY=4007	852	0000	Route Pattern No. 000
CM8A YYYY=0000	1	00010	Route 10 access by dialing 851XXXX/852XXXX
CM8A YYYY=5000	100	CCC	No digit addition
CM8A YYYY=5000	153	CCC	No digit deletion
CMA7 YY=06	0	820	Originating office number
CM10	XXX	21XX	Originating station number
CM85 Y=5	851	07	] Maximum number of digits dialed "7"
	852	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:



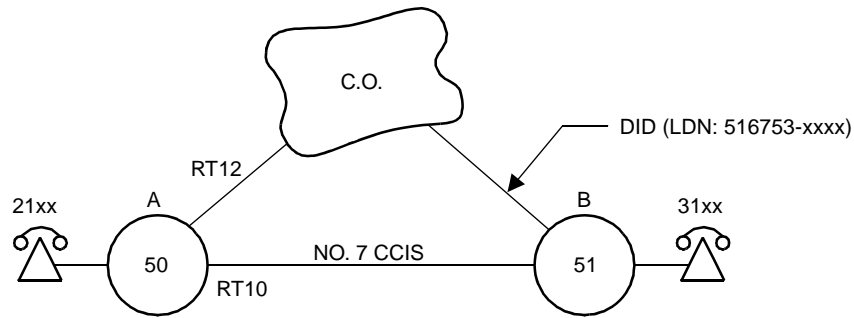
CONDITIONS:

- Office Code and Station Number (Open Numbering)
- Access Code: 8
- Office Code: 50 (Office A)
51 (Office B)
52 (Office C)
53 (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 YYYY=A000	3	4007	Area Code Development Pattern No. 7
CM8A YYYY=4007	853	0000	Route Pattern 000
CM8A YYYY=0000	1	00010	LCR Pattern 000, Route 10
CM8A YYYY=0000	2	00012	LCR Pattern 000, Route 12
CM8A YYYY=5000	100	CCC	No digit addition
CM8A YYYY=5000	153	CCC	No digit deletion
CMA7 YY=06	0	820	Originating office number (to Route 0)
CMA7 YY=06	1	820	Originating office number (to Route 1)
CM10	XXX	21XX	Originating station number
CM85 Y=5	853	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:



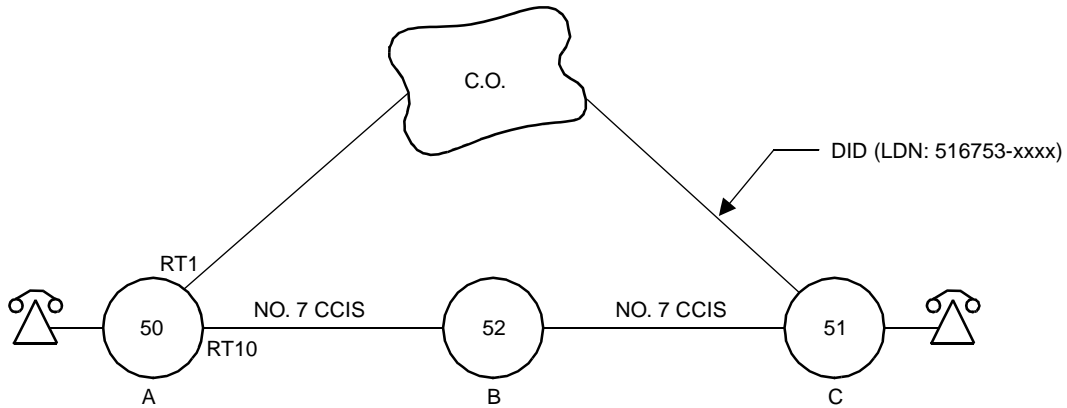
CONDITIONS:

- Office Code and Station Number (Open Numbering)
- Access Code: 8
- Office Code: 50 (Office A)
51 (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 YYYY=A000	3	4007	Area Code Development Pattern No. 7
CM8A YYYY=4007	851	0000	Route Pattern 000
CM8A YYYY=0000	1	00010	LCR Pattern 000, Route 10
CM8A YYYY=0000	2	00101	LCR Pattern 001, Route 01
CM8A YYYY=5000	100	CCC	No digit addition
CM8A YYYY=5000	153	CCC	No digit deletion
CM8A YYYY=5001	100	00	Digit Addition Pattern No. 00
CM8A YYYY=5001	153	03	Reading 3 digits deletion
CM8A YYYY=9000	0	516753	Digit code to be added: 516753
CMA7 YY=06	0	821	Originating office number (to Route 10)
CM10	XXX	21XX	Originating station number
CM85 Y=7	851	07	Maximum number of digits dialed "7" (to Route 10)
CM85 Y=7	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 in 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 in Example 2.

Network Construction with IMX

The Tenant Number and the Trunk Restriction Class are different between the PBX and the IMX as indicated below.

	<u>PBX</u>	<u>IMX</u>
• Tenant No.	00-63 (CM12 YY=04, CM30 YY=01)	01-255
• Trunk Restriction class	1-8 (CM12 YY=01)	1-15

Based on these differences, care must be taken to ensure that proper programming is completed to accommodate the differences between the PBX and the IMX.

- (1) In the PBX, 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 PBX is equal to the Attendant Group (0-3) to which the attendant is assigned in CM60 YY=00. Remember that Tenant 00 is not available in the IMX, so an Attendant Group of 1-3 must be used.
- (3) For ensuring proper restriction classes throughout the network, programming in the PBX allows equating the restriction classes of the PBX with the restriction classes available in the IMX. For details, refer to ["Deluxe Traveling Class Mark-CCIS" on Page 188](#).
 When an Attendant Console operator in the PBX originates a call through the CCIS network, the PBX transmits a restriction class of zero (RSC=0) to the distant office.

This page is for your notes.

CHAPTER 2

INSTALLATION

This chapter explains the required equipment and installation procedure.

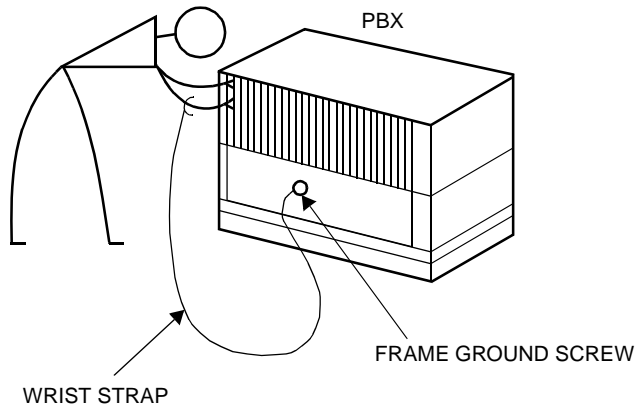
PRECAUTIONS

Static Electricity Guard

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

Figure 2-1 Static Electricity Guard

- WHEN PLUGGING/UNPLUGGING A CIRCUIT CARD



- WHEN HOLDING A CIRCUIT CARD

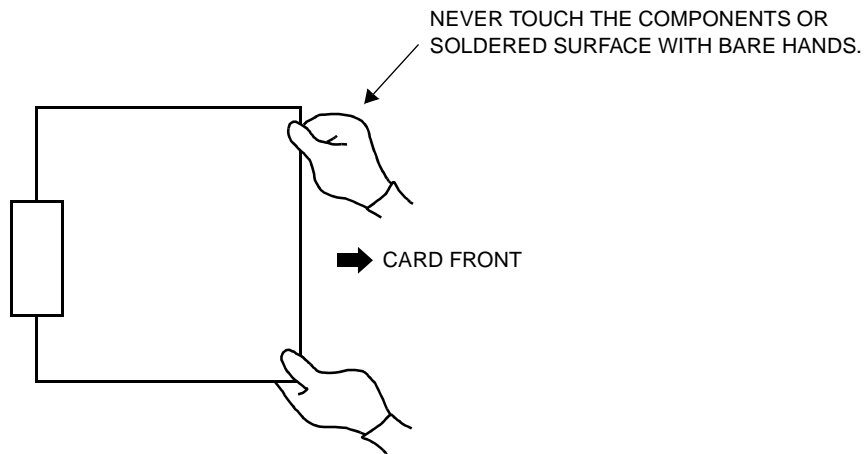
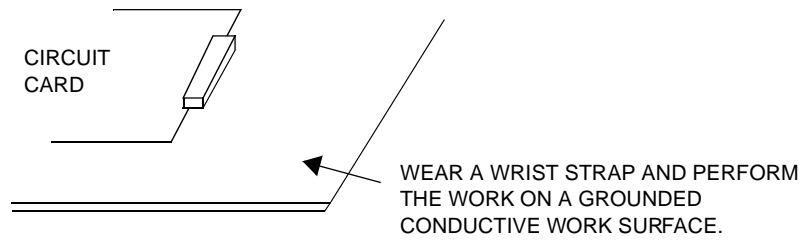
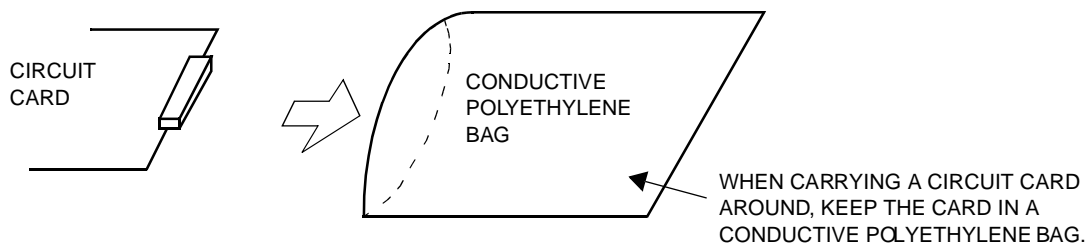


Figure 2-2 Static Electricity Guard

- WHEN MAKING A SWITCH SETTING ON A CIRCUIT CARD



- WHEN CARRYING A CIRCUIT CARD

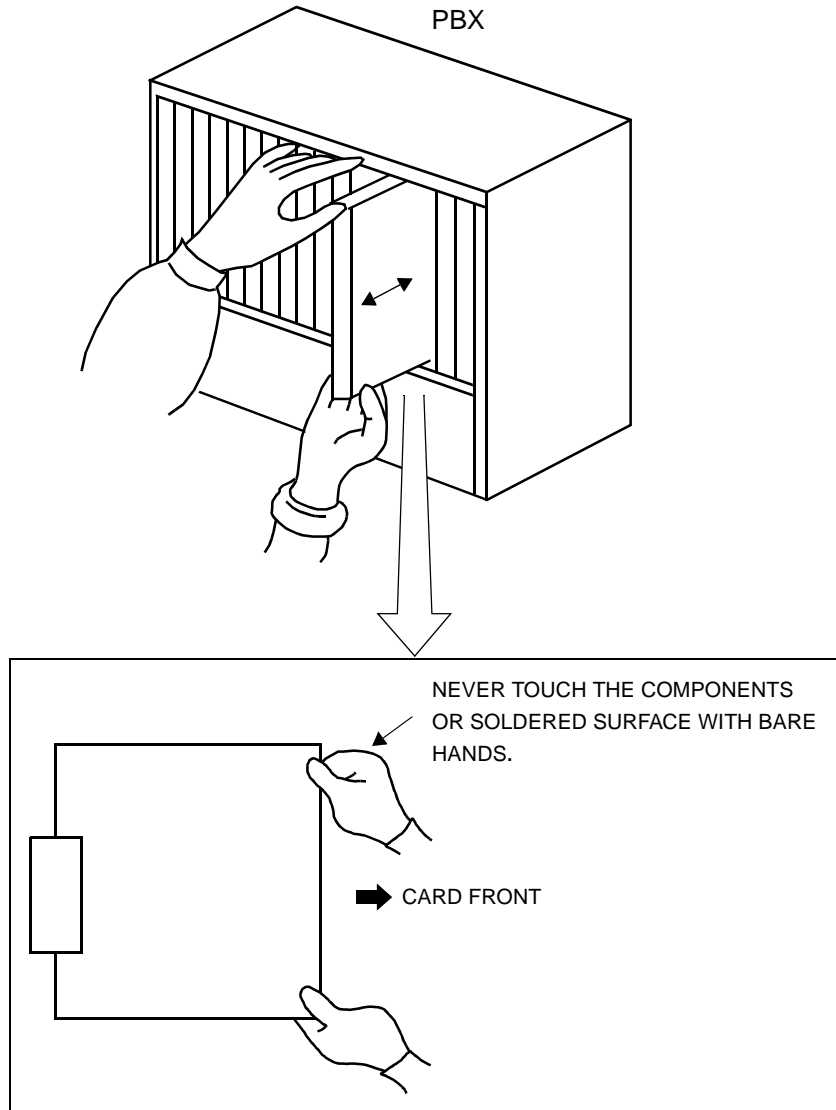


The mark shown below is attached to the sheet for the work in which circuit cards are handled. When engaging in such work, the installer must be careful not to cause damage by static electricity.



CAUTION

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.



REQUIRED EQUIPMENT

Table 2-1 shows the equipment required when providing No. 7 CCIS with digital interface to the system.

Table 2-1 Required Equipment for No. 7 CCIS with Digital Interface

EQUIPMENT	DESCRIPTION	QUANTITY	REMARKS
• PN-24DTA-C	24 Channels DTI Card	1-8	
• PN-30DTC-A	30 Channels DTI Card	1-4	
• PZ-M542/557	Connection Card for Coaxial Cable	1-4	2 cards/PIM
• PN-M10	Optical Interface Card	1-4	2 DTIs/card
• PN-SC00	Common Channel Handler Card	1-8 1-4	When using 24DTA When using 30DTC
• PN-AP00-B	Application Processor Card for Centralized Billing	1	
• PZ-M537	Expansion Memory Card	1	

Table 2-2 shows the equipment and cables required when providing No. 7 CCIS with analog interface.

Table 2-2 Required Equipment and Cable for No. 7 CCIS with Analog Interface

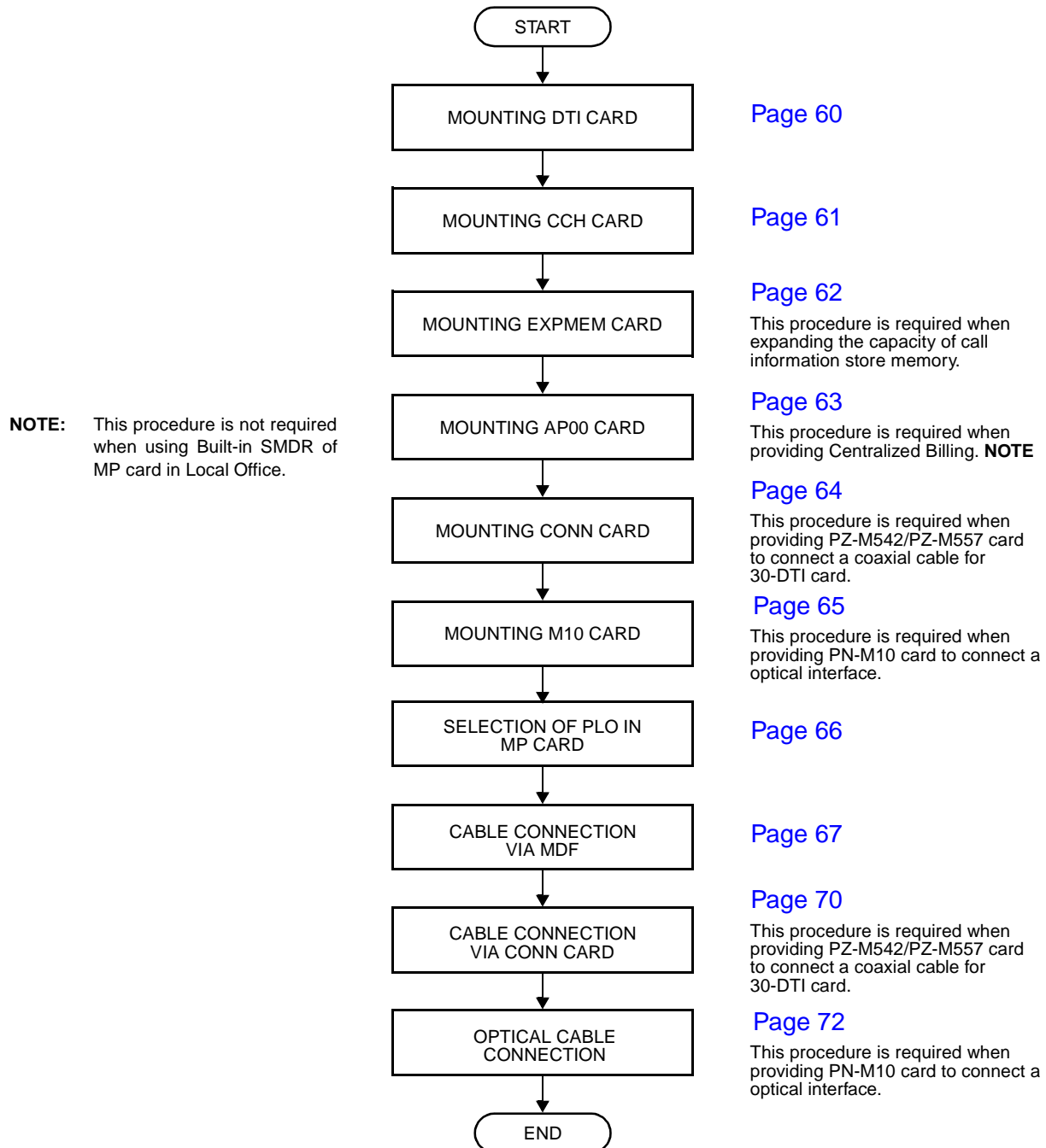
EQUIPMENT/ CABLE	DESCRIPTION	QUANTITY	REMARKS
• PN-2LDT or PN-2ODT	Loop Dial Trunk or 2-wire E&M/4-wire E&M Trunk	1-128	
• PN-SC00	Common Channel Handler Card	1-8	
• PN-AP00-B	Application Processor Card for Centralized Billing	1	
• PZ-M537	Expansion Memory Card	1	
• MODEM	For Common Signaling Channel	N	N: Number of PN- SC00 cards (Should be provided with customer.)
• RS NORM- 4 CA-A/RS NORM-4S CA-A	Connecting cables between PN- SC00 and MODEM	N	N: Number of PN- SC00 cards Length: 4 m (13.1 ft.)
• LINE Cable	Connecting cable between MODEMs	N	N: Number of PN- SC00 cards (Should be provided with customer.)

INSTALLATION PROCEDURE

No. 7 CCIS with Digital Interface

Install the equipment according to the procedures shown in [Figure 2-3](#).
For installation of the PBX, refer to the Installation Procedure Manual.

Figure 2-3 Installation Procedure for No. 7 CCIS with Digital Interface



Mounting DTI Card

- (1) Before mounting the DTI (PN-24DTA-C/PN-30DTC-A) card, set the MB switch to UP position, and set the other switches to appropriate position. See [CHAPTER 4 on Page 259](#).
- (2) Mount the DTI card in the following AP slot in PIM0 through PIM7.
PIM0: AP00-AP10
PIM1-7: AP00-AP11

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 on Page 259](#).
- (2) Mount the CCH card in the following AP slot of PIM0 through PIM7.
PIM0: AP00-AP10
PIM1-7: AP00-AP11
- (3) After mounting the card, set the MB switch to DOWN position to put the card in service.



Mounting EXPMEM Card

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

- (1) Confirm the correct switch setting. See [CHAPTER 4 on Page 259](#).
- (2) Mount the EXPMEM card on the AP00 card.
- (3) Mount the AP00 card into AP slots. (See "[Mounting AP00 Card](#)" on Page 63.)



Mounting AP00 Card

- (1) Before mounting the AP00 (PN-AP00-B) card, set the MB switch to UP position, and set the other switches to appropriate position.
See [CHAPTER 4 on Page 259](#).
- (2) Mount the AP00 card in any one of AP slot on each PIM.
- (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/M557) card to connect a coaxial cable for 30-DTI card, do the following installation.

- (1) Confirm the correct switch settings.
See [CHAPTER 4 on Page 259](#).
- (2) Mount the CONN card on LTC connector of each PIM.
For details, refer to the Installation Procedure Manual.



Mounting M10 Card

- (1) Confirm the correct switch settings.
See [CHAPTER 4 on Page 259](#).
- (2) Mount the M10 card in any one of LT slot on each PIM.



Selection of PLO in MP Card

- (1) Confirm the correct switch settings.
See [CHAPTER 4 on Page 259](#).
- (2) Mount the MP (PN-CP14) 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 in [Figure 2-4](#).

Figure 2-4 DTI Cable Connection via MDF

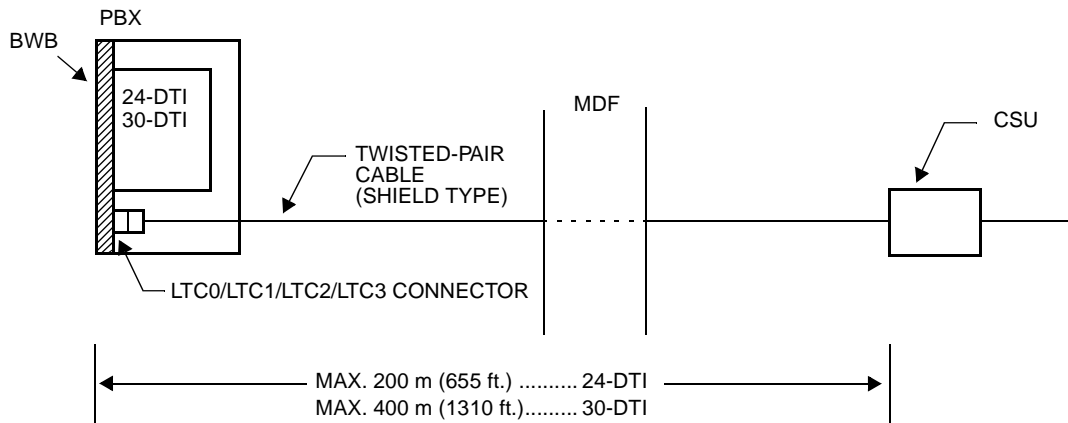


Figure 2-5 shows LTC connectors with corresponding AP slots and DTI pin assignment for each AP slot.

Figure 2-5 Location of the AP Slots and the LTC Connectors for DTI

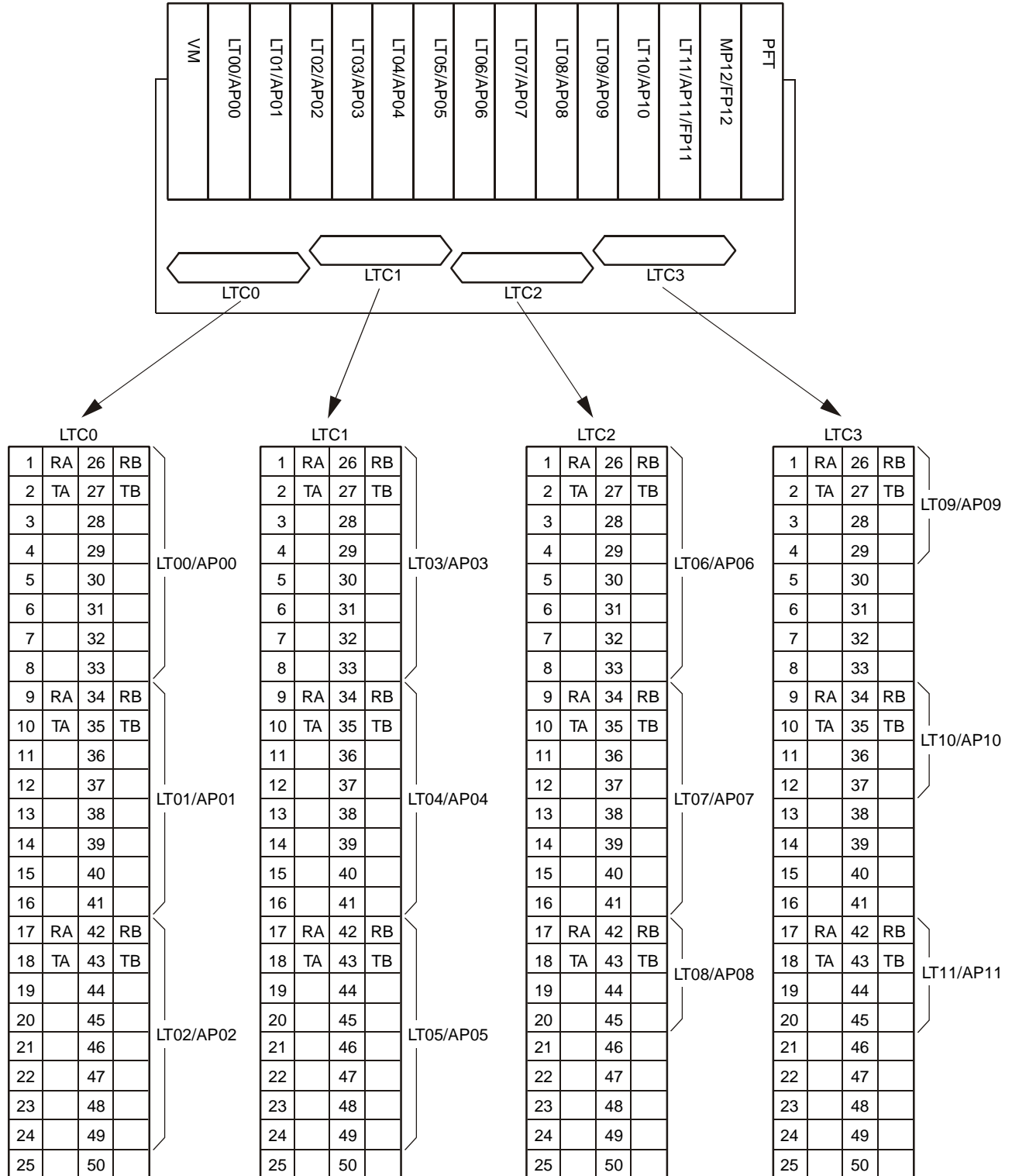
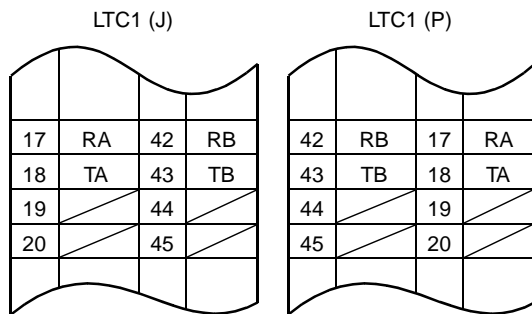
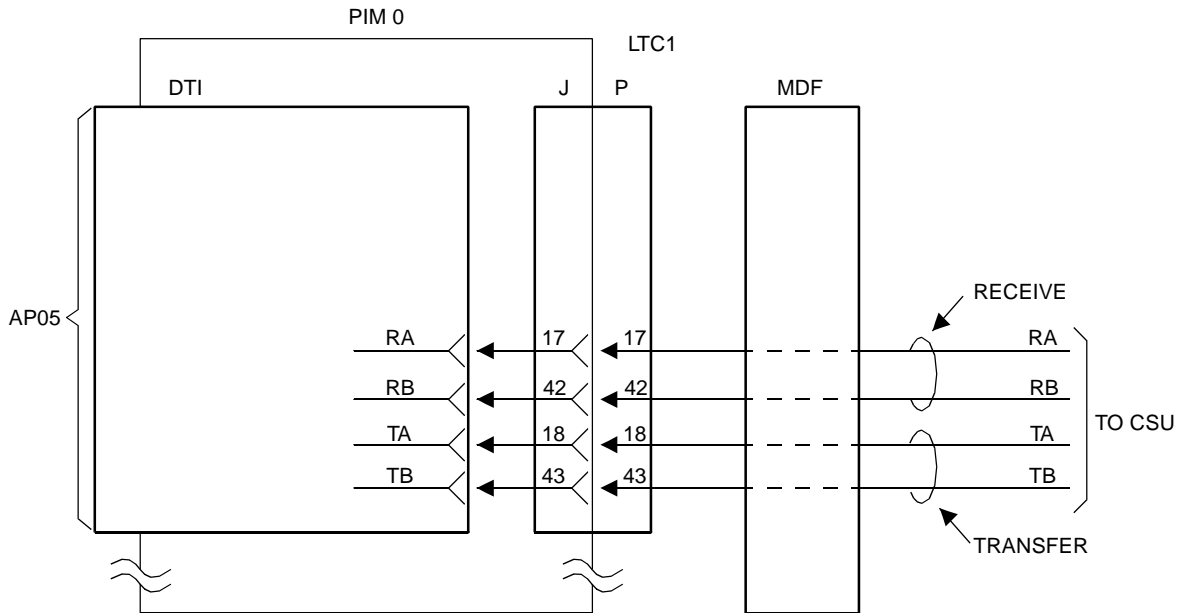


Figure 2-6 shows an example of the cable connection when the DTI card is mounted in the AP05 slot of PIM0.

Figure 2-6 Example of Cable Connection via MDF



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 in [Figure 2-7](#).

Figure 2-7 DTI Cable Connection via CONN Card

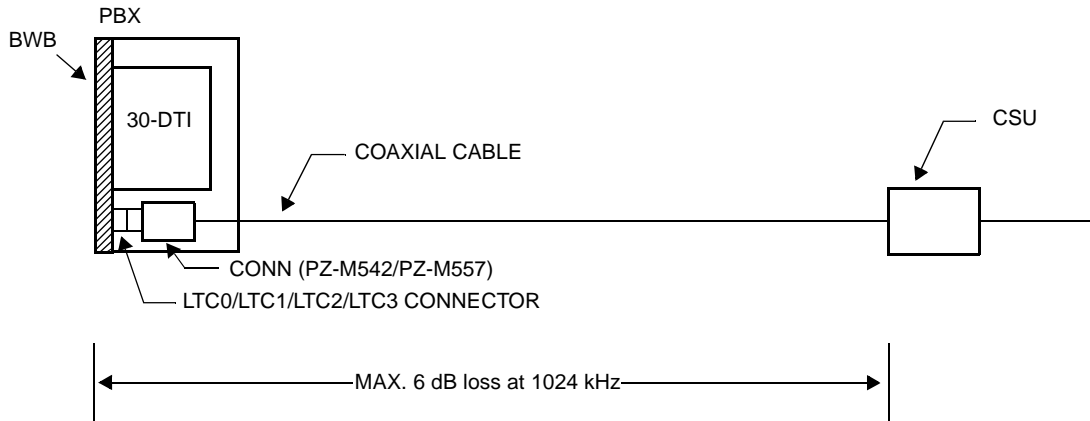
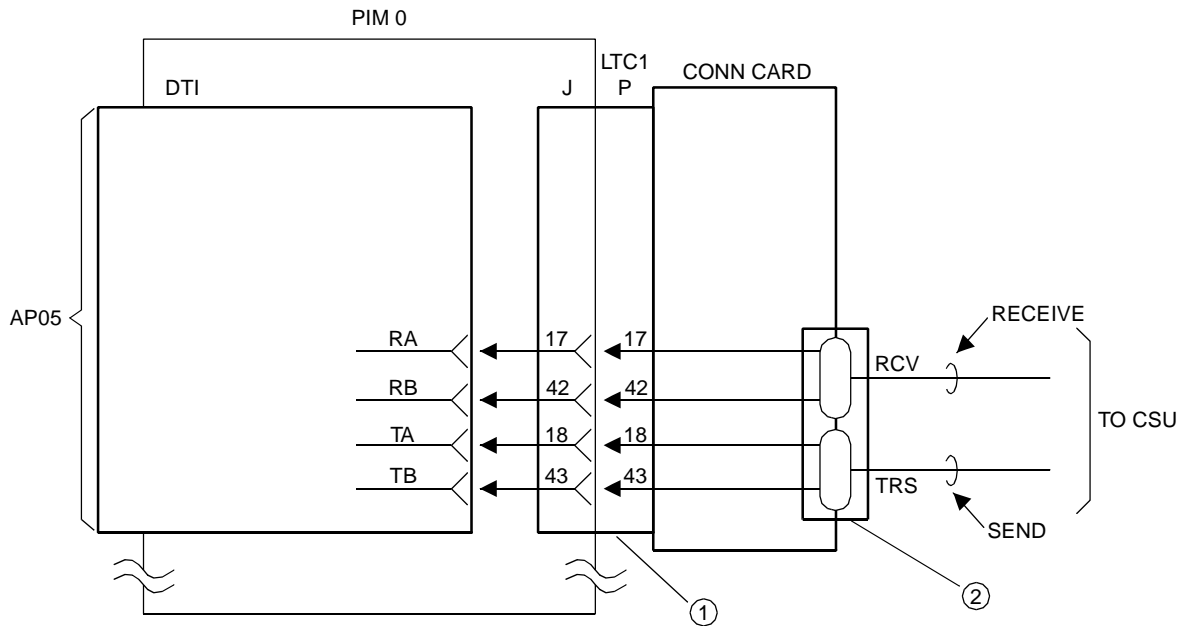


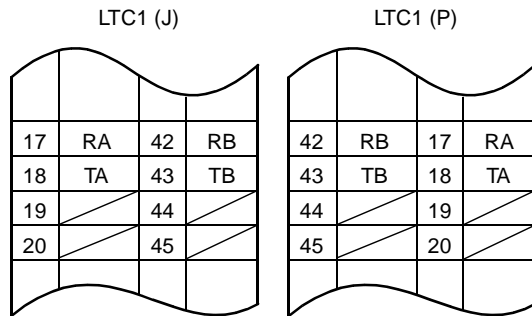
Figure 2-8 shows an example of the cable connection when the 30-DTI card is mounted in the AP05 slot of PIM0.

Figure 2-8 Example of Cable Connection via the CONN Card



① LTC1 CONNECTOR

② COAXIAL CONNECTOR



Optical Cable Connection

When you use an optical cable for DTI, connect the cable each other to the CN1 connector of the M10 (PN-M10) cards.

M10 card and DTI cards are connected via MDF through LTC connector on the BWB.

Figure 2-9 and Figure 2-10 show the outline of connection and example of M10 MDF cross connection.

Figure 2-9 Outline of Optical Cable Connection

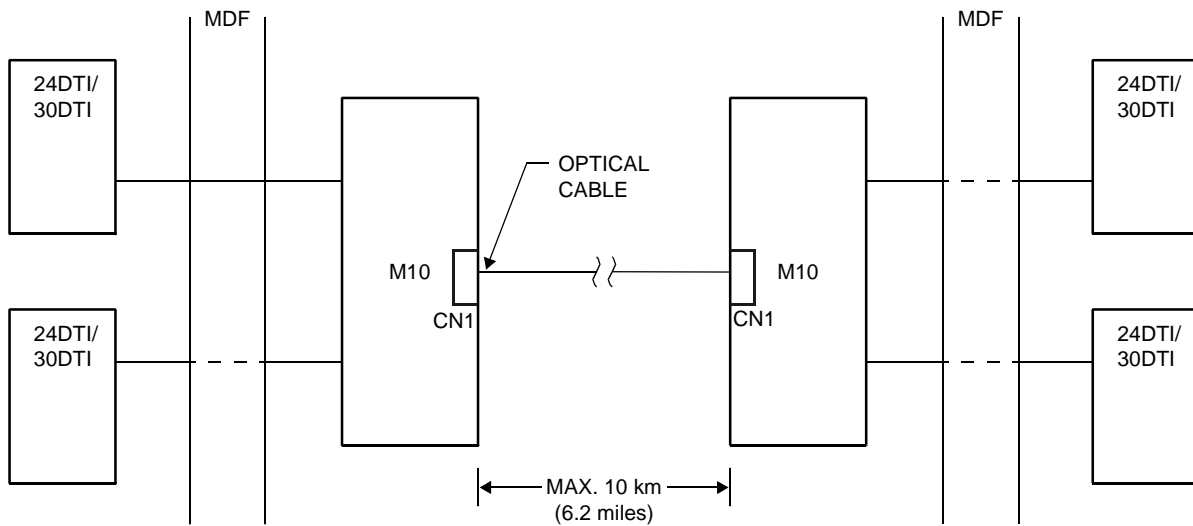


Figure 2-10 Example of MDF Cross Connection for M10 Card (1 of 2)

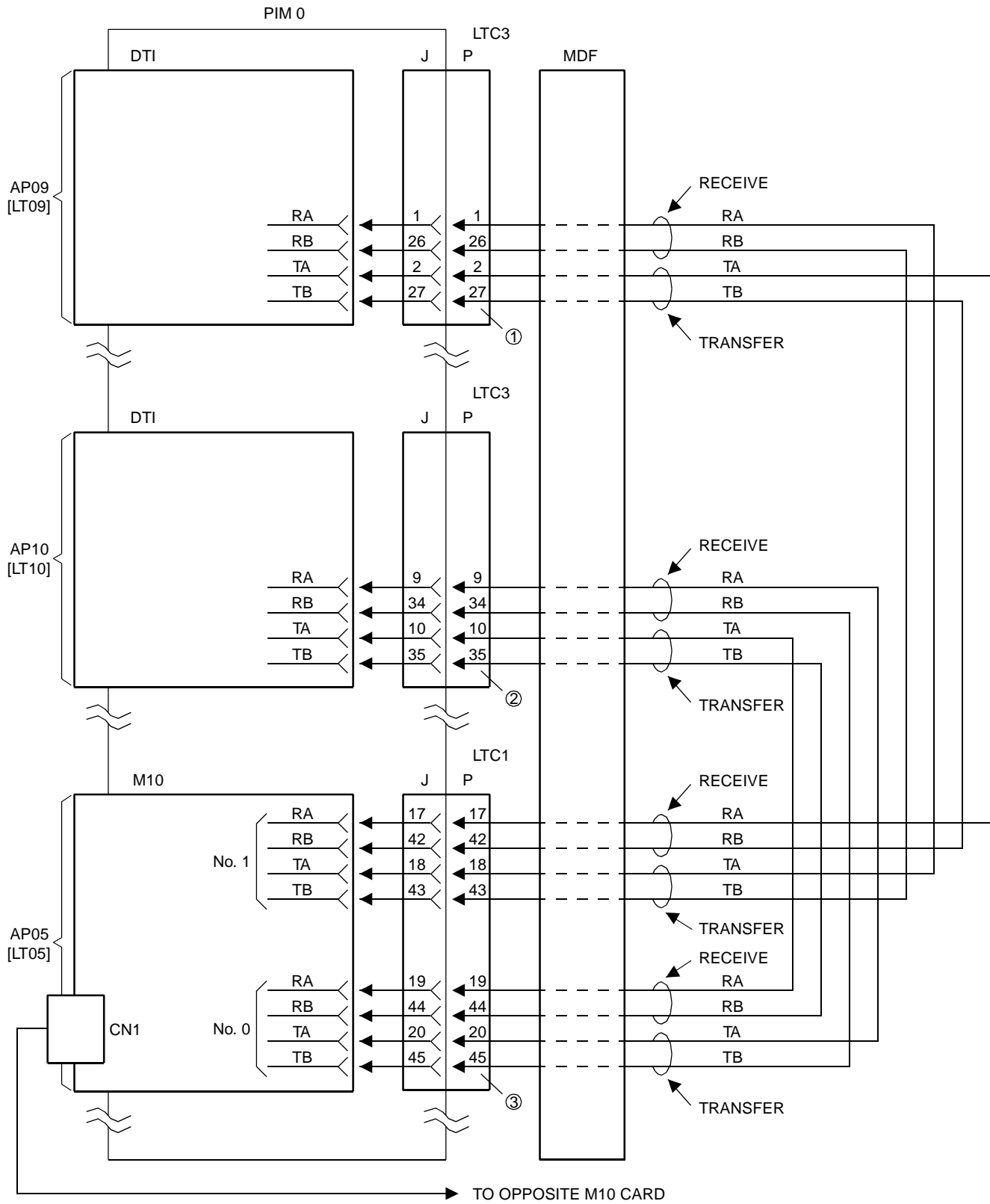
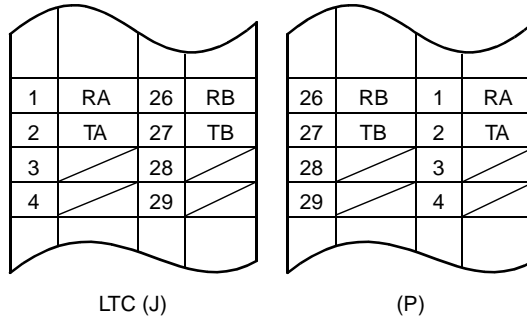
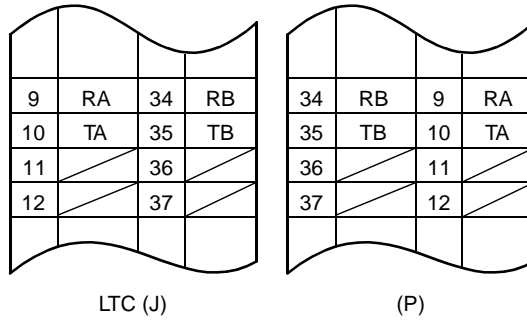


Figure 2-10 Example of MDF Cross Connection for M10 Card (2 of 2)

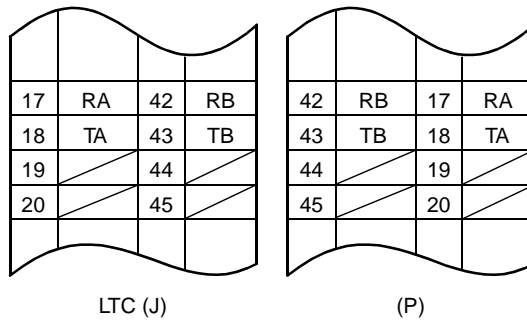
① LTC3 CONNECTOR



② LTC3 CONNECTOR



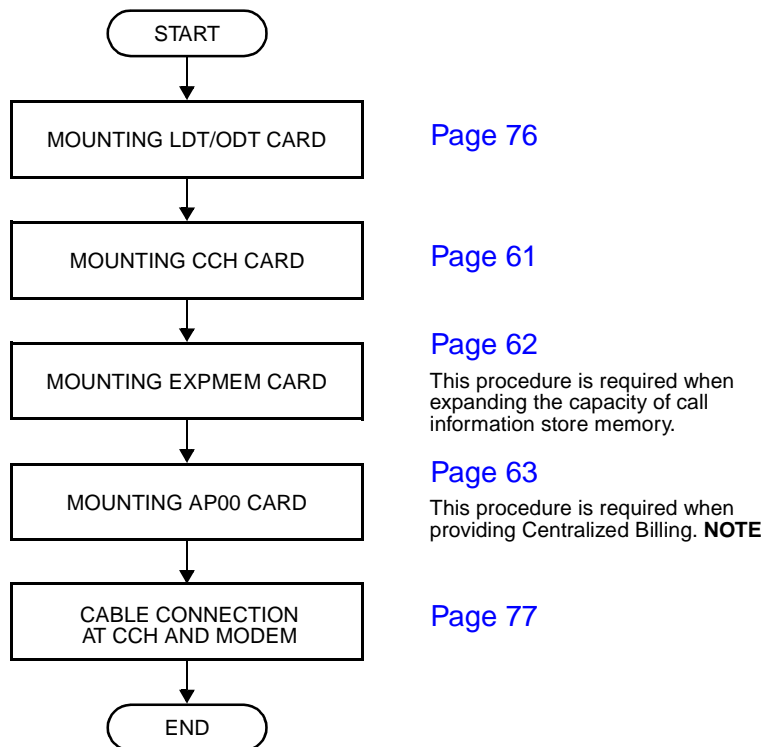
③ LTC1 CONNECTOR



No. 7 CCIS with Analog Interface

Perform necessary installation works of the equipment according to the procedure shown in Figure 2-11.

Figure 2-11 Installation Procedure for No. 7 CCIS with Analog Interface



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

Mounting LDT/ODT Card

Mount the LDT (PN-2LDTA) and ODT (PN-2ODTA/PN-2ODTB) cards in LT slots.

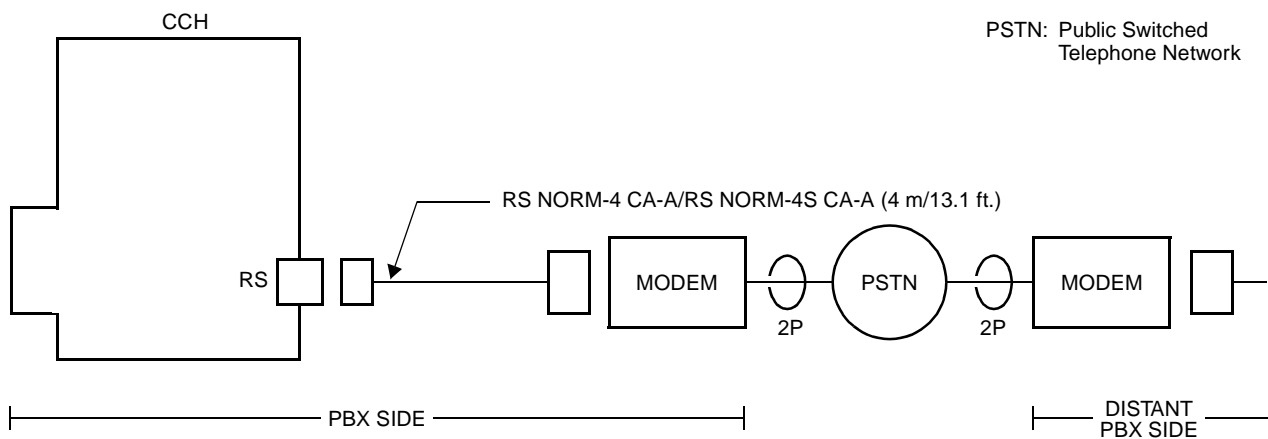


Cable Connection at CCH and MODEM

- When providing the Common Signaling Data Link via MODEM:

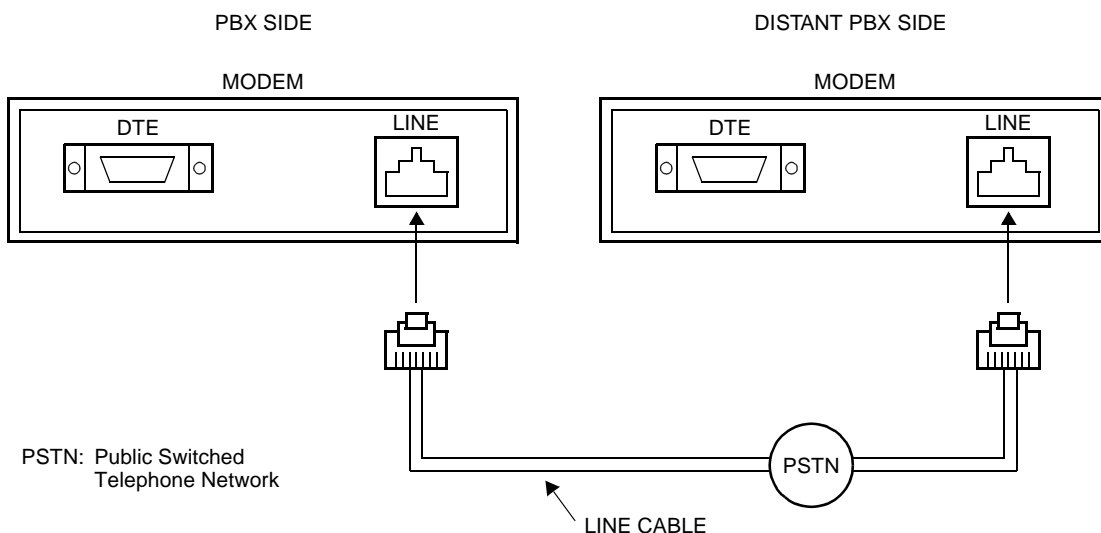
- Connect the RS NORM-4 CA-A/RS NORM-4S CA-A to the CCH card and the MODEM (PBX side) as shown in [Figure 2-12](#).

Figure 2-12 Cabling of RS NORM-4 CA-A/RS NORM-4S CA-A (for Common Signaling Data Link via MODEM)



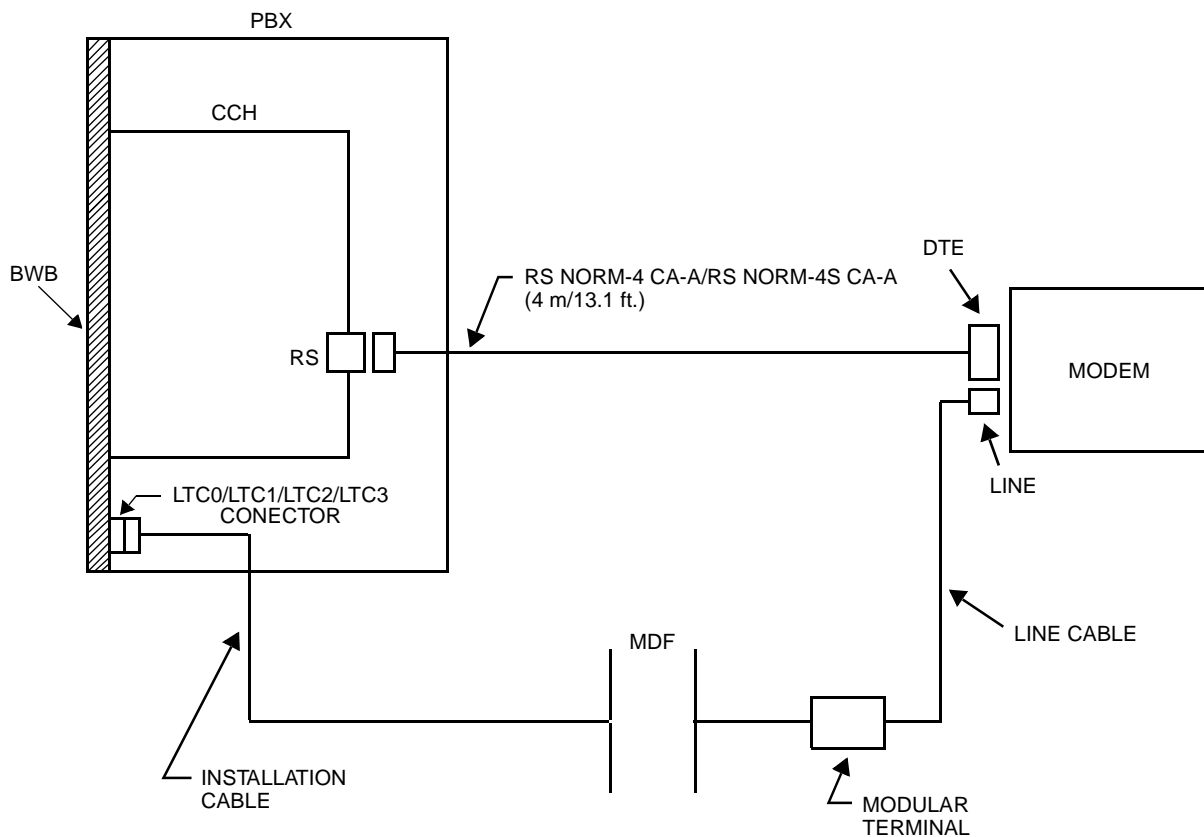
- Connect the LINE cable between the MODEM (PBX side) and MODEM (Distant PBX side) as shown in [Figure 2-13](#).

Figure 2-13 Cabling of LINE Cable (for Common Signaling Data Link 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 in [Figure 2-14](#).

**Figure 2-14 Cabling of RS NORM-4 CA-A/RS NORM-4S CA-A
(for Common Signalling Data Link via LDT/ODT)**



- (2) Connect the LINE cable to the MODEM and the MDF. [Figure 2-15](#) shows LTC connector with corresponding AP slots and CCH pin assignment for each AP slot.

Figure 2-15 Location of the AP Slots and the LTC Connectors for CCH

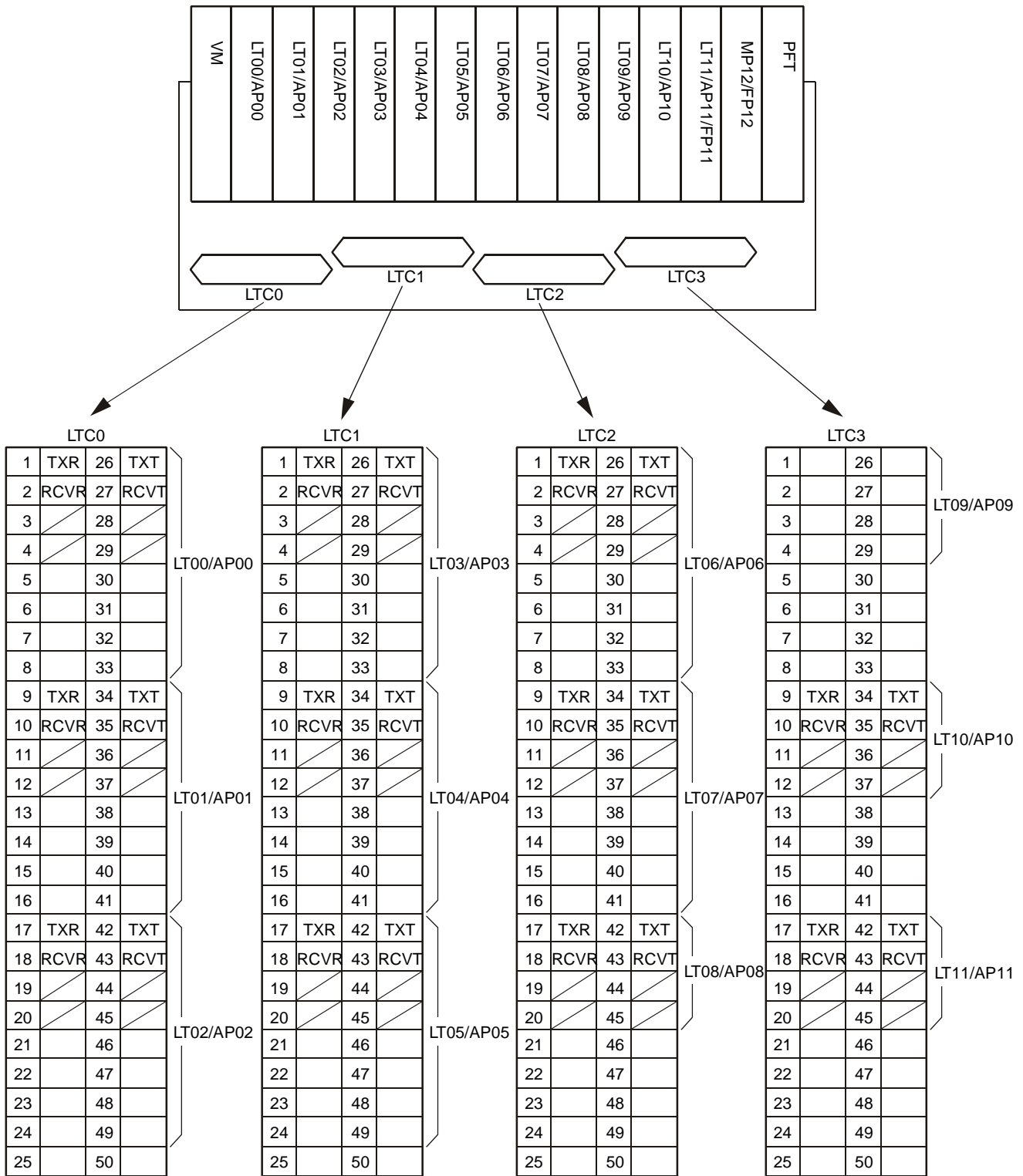
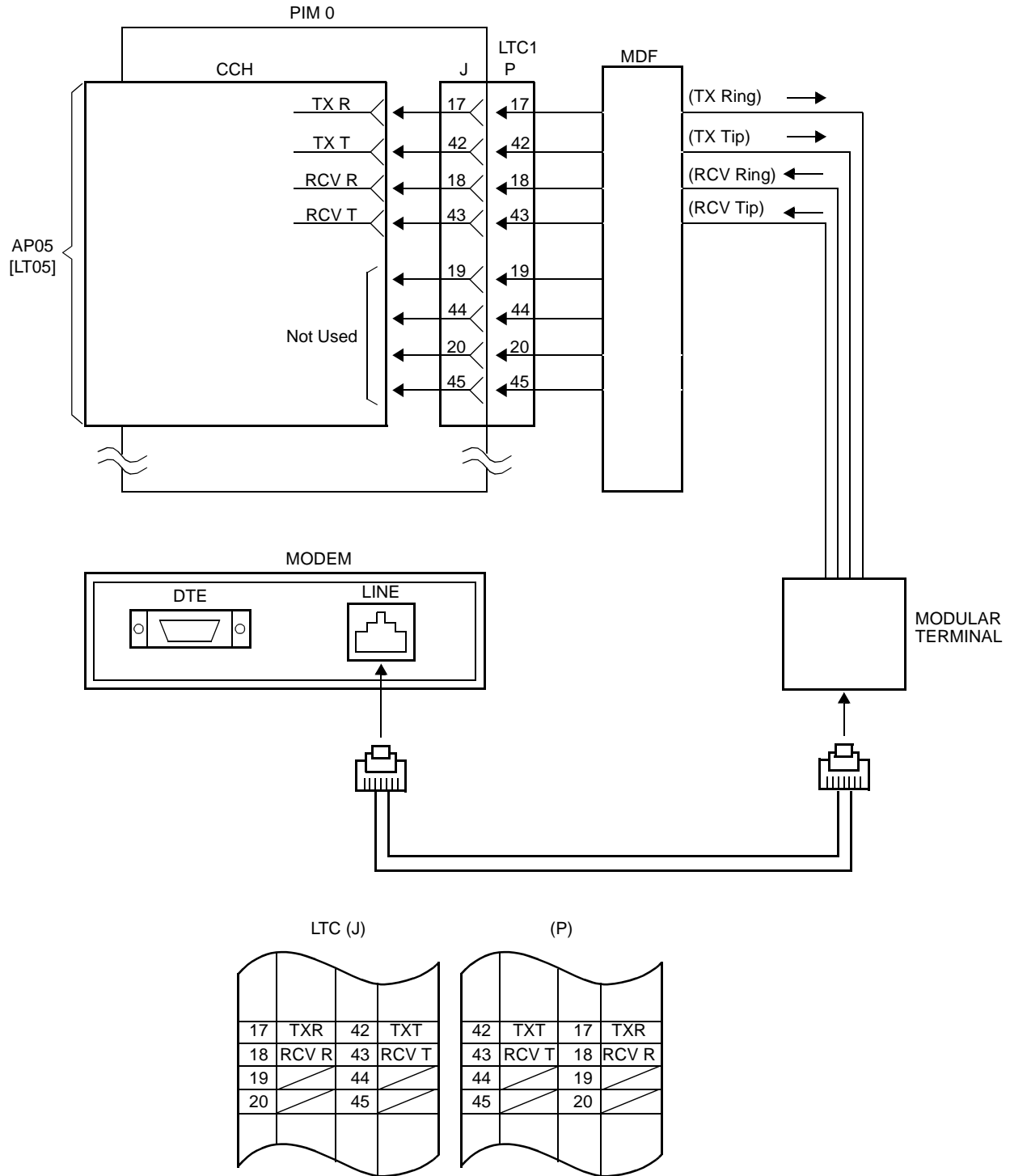


Figure 2-16 shows an example of the cable connection when the CCH card is mounted in the AP05 slot of PIM0.

Figure 2-16 Cabling of LINE Cable (for Common Signalling Data Link via LDT/ODT)



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

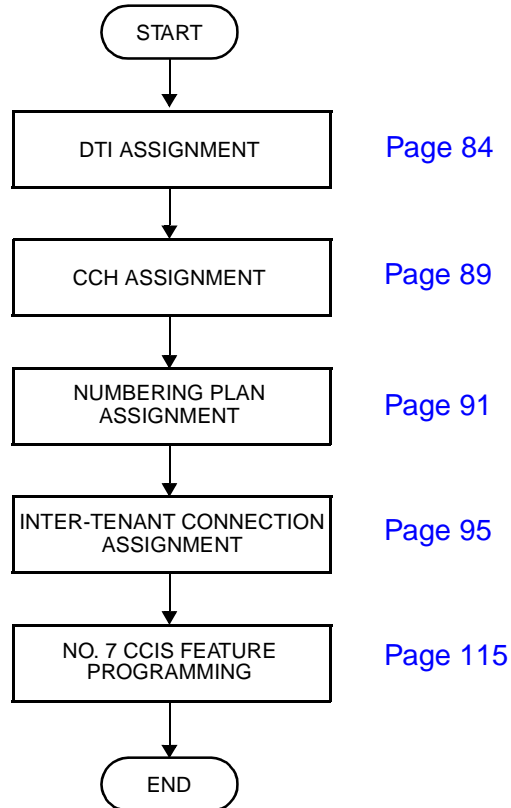
◀ : Initial data; With the system data clear command (CM00, CM01), the data with this marking is automatically set for each command.

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

NO. 7 CCIS WITH DIGITAL INTERFACE

Perform the programming according to the procedures shown in [Figure 3-1](#).

Figure 3-1 Programming Procedure (for No. 7 CCIS with Digital Interface)



DTI Assignment

START	DESCRIPTION	DATA	
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM05</div>	Assign an AP number to each DTI card. The AP number must match the switch settings on the DTI card.	<ul style="list-style-type: none"> • Y=0 (1) 04-15, 20-31: AP No. (2) 09: DTI card 	
	<div style="border: 1px solid black; border-radius: 10px; padding: 2px 10px; display: inline-block;">INITIAL</div>	Specify the AP highway channel for 24-DTI card.	<ul style="list-style-type: none"> • Y=1 (1) 04-15, 20-31: AP No. (2) 0 : Expanded Highway channel (128 time slots) 1 ◀: Basic Highway channel (128 time slots)
	<p>NOTE: This command is only applicable for the 24 DTA-C card.</p>		
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM07</div>	Assign a Trunk number to each channel number on the DTI card.	<ul style="list-style-type: none"> • YY=01 (1) XX ZZ <li style="padding-left: 20px;">XX: 04-15, 20-31: AP No. assigned by CM05 Y=0 <li style="padding-left: 20px;">ZZ: Channel No. of DTI <li style="padding-left: 40px;">00-23: For 24-DTI <li style="padding-left: 40px;">01-15, 17-31: For 30-DTI (2) D000-D255: Trunk No. <li style="padding-left: 20px;">Any trunk number already assigned by CM10 cannot be used. 	
	<div style="border: 1px solid black; border-radius: 10px; padding: 2px 10px; display: inline-block;">INITIAL</div>	<p>NOTE 1: For the 30-DTI, Channel 0 cannot be used.</p>	
	<p>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.</p>		
<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto; display: flex; align-items: center; justify-content: center;">A</div>			

A	DESCRIPTION	DATA											
CMAA	<p>Assign the necessary functions to each DTI (24-DTI) cards.</p> <p style="text-align: center;">DTI INITIAL</p> <p>After entering the data, set the MB switch on the DTI card to UP, and then to DOWN, for DTI initialization.</p> <p>NOTE 1: This command is only applicable for the 24-DTI card.</p> <p>NOTE 2: The following table shows the relationship between CMAA YY=01 and YY=02.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">CMAA YY=01 (FRAME CONFIGURATION)</th> <th style="text-align: center;">CMAA YY=02 (ZERO CODE SUPPRESSION)</th> <th style="text-align: center;">SIGNALING</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">24-Multi Frame [1]</td> <td style="background-color: #cccccc;"></td> <td style="text-align: center;">B8ZS</td> </tr> <tr> <td rowspan="2" style="text-align: center;">12-Multi Frame [0]</td> <td style="text-align: center;">Not available [1]</td> <td style="text-align: center;">Transparent</td> </tr> <tr> <td style="text-align: center;">Available [0]</td> <td style="text-align: center;">B7</td> </tr> </tbody> </table> <p>[] indicates 2nd Data</p> <p>NOTE 3: If 56K CCIS is used. 24 Multi-Frame (ESF) must be assigned.</p>	CMAA YY=01 (FRAME CONFIGURATION)	CMAA YY=02 (ZERO CODE SUPPRESSION)	SIGNALING	24-Multi Frame [1]		B8ZS	12-Multi Frame [0]	Not available [1]	Transparent	Available [0]	B7	<ul style="list-style-type: none"> • YY=00 Data Mode <ol style="list-style-type: none"> (1) 04-15, 20-31: AP No. assigned by CM05 Y=0 (2) 0: Based on AT&T Spec. • YY=01 Frame Configuration <ol style="list-style-type: none"> (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 • YY=02 Zero Code Suppression [B7] <ol style="list-style-type: none"> (1) 04-15, 20-31: AP No. assigned by CM05 Y=0 (2) 0 : Available (Non-Transparent) 1◀: Not available (Transparent) • YY=03 <ol style="list-style-type: none"> (1) 04-15, 20-31: AP No. assigned by CM05 Y=0 (2) 7◀: Common Channel Signaling
CMAA YY=01 (FRAME CONFIGURATION)	CMAA YY=02 (ZERO CODE SUPPRESSION)	SIGNALING											
24-Multi Frame [1]		B8ZS											
12-Multi Frame [0]	Not available [1]	Transparent											
	Available [0]	B7											
CM30	<p>Assign a trunk route number to each DTI.</p> <p>NOTE 1: The trunk routes used for a common signaling channel must be different from the trunk routes used for voice channels.</p> <p>NOTE 2: If channel number 16 is assigned as the CCIS Common Signaling channel, all channels in the DTI must be assigned as No. 7 CCIS trunk.</p> <p>NOTE 3: The DTI route must be separated from any analog trunk route.</p>	<ul style="list-style-type: none"> • YY=00 <ol style="list-style-type: none"> (1) 000-255: Trunk No. assigned by CM07 YY=01 (2) 00-63: Trunk Route No. 											
B													

B	DESCRIPTION	DATA
CM35	Assign the trunk route data for common signaling channel and voice channels. Minimum of two routes.	<ul style="list-style-type: none"> • YY=00 (1) 00-63: Trunk Route No. (2) 04: Tie Line
		<ul style="list-style-type: none"> • YY=01 (1) 00-63: Trunk Route No. (2) 7◀: DP/DTMF
		<ul style="list-style-type: none"> • YY=04 (1) 00-63: Trunk Route No. (2) 2: Answer Signal arrives
		<ul style="list-style-type: none"> • YY=05 (1) 00-63: Trunk Route No. (2) 1◀: Release Signal arrives
	Specify the incoming connection signal.	<ul style="list-style-type: none"> • YY=09 (1) 00-63: Trunk Route No. (2) 03: Wink Start
	Specify the DTI PAD Patterns on the voice channel route.	<ul style="list-style-type: none"> • YY=19 (1) 00-63: Trunk Route No. (2) 0-3 : Programmable PAD (See CM42 on next page.) 4-7◀: Fixed PAD (See the following tables.)
	Specify outgoing start connection.	<ul style="list-style-type: none"> • YY=20 (1) 00-63: Trunk Route No. (2) 00: Wink Start
C		

C

CM35

DESCRIPTION

- For Australia:

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				0/0
Tone-DTI				0/0
COT/LDT-DTI				0/0
ODT-DTI				0/0
DTI-DTI				0/0

T/R: Transmit/Receive
+: Gain
-: Loss

DATA

- For North America/Other 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	-3/-8	-3/-3	-3/-3	-3/-8
Tone-DTI	0/0	0/0	0/0	0/0
COT/LDT-DTI	0/0	0/0	0/0	0/0
ODT-DTI	+3/-3	0/0	0/0	+3/-3
DTI-DTI	0/-6	0/0	0/-6	0/0

T/R: Transmit/Receive
+: Gain
-: Loss

CM42

When using the programmable PAD (CM35 YY=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 YY=19 2ND DATA=0	CM35 YY=19 2ND DATA=1	CM35 YY=19 2ND DATA=2	CM35 YY=19 2ND DATA=3	
50	50	54	58	62	STA/TONE-DTI/BRT
?	51	55	59	63	COT/DID/LDT-DTI/BRT
65	52	56	60	64	ODT-DTI/BRT
	53	57	61	65	DTI/BRT-DTI/BRT

- For Australia:

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

T/R: Transmit/Receive
+: Gain
-: Loss

D

D

DESCRIPTION

DATA

CM42

- For North America/Other Countries:

PATTERNS		PAD DATA OF DTI (T/R) [dB]
2ND DATA		
00	00	0/0
1 15	01	-2/-2
	02	-3/-3
	03	0/-6
	04	-3/-8
	05	+3/-3
	06	-6/-6
	07	-8/-8
	08 1 15		Not Used

T/R: Transmit/Receive
 +: Gain
 -: Loss

CM08

Provide the System with Call Forwarding Override-CCIS.

- (1) 371
- (2) 0 : Not available
- 1◀: Available

Specify alternative routing when the outgoing trunks of Tandem Office are all busy.

- (1) 372
- (2) 0 : Available
- 1◀: Not available

Provide Station-to-Station Transfer over CCIS.

- (1) 253
- (2) 0 : Available
- 1◀: Not Available

END

CCH Assignment

START	DESCRIPTION	DATA
CM05	Assign an AP number to the CCH card. The AP number must match the switch settings on the CCH card. INITIAL	<ul style="list-style-type: none"> • Y=0 (1) 04-15, 20-31: AP No. (2) 11: CCH card
CM06	Assign a CCIS channel number to each CCH card. INITIAL	<ul style="list-style-type: none"> • YY=07 (1) 0-7: CCIS channel No. (2) 04-15, 20-31: AP No. of the CCH card assigned by CM05 Y=0
CM35	Provide the common signaling channel and voice channel DTI routes with No. 7 CCIS facilities. Assign a CCIS channel number to each common signaling channel and voice channel DTI route.	<ul style="list-style-type: none"> • YY=90 (1) 00-63: Trunk Route No. (2) 0: No. 7 CCIS • YY=91 (1) 00-63: Trunk Route No. (2) 0-7: CCIS channel No.
CM30	Assign a Circuit Identification Code (CIC) number to each trunk number used for voice channel. See assignment example in "Example of No. 7 CCIS with Digital Interface" on Page 98. 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.	<ul style="list-style-type: none"> • YY=35 (1) 000-255: Trunk No. (2) 001-254: CIC No.
CMA7	Assign the trunk number to be used as the common signaling channel.	<ul style="list-style-type: none"> • YY=00 (1) 0-7: CCIS channel No. (2) 000-255: Trunk No. assigned by CM07
A		

A	DESCRIPTION	DATA
CMA7	Assign a Originating Point Code (OPC) to each CCIS channel number.	<ul style="list-style-type: none"> • YY=01 (1) 0-7: CCIS channel No. (2) 00001-16367: Originating Point Code
	<p>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 CCIS channels provided in the same system.</p>	
	Assign a Destination Point Code (DPC) to each CCIS channel number.	<ul style="list-style-type: none"> • YY=02 (1) 0-7: CCIS channel No. (2) 00001-16367: DPC
	<p>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 CCIS channel in the same system.</p>	
	Assign the Point Code of the Centralized Fault Reporting office, if required.	<ul style="list-style-type: none"> • YY=05 (1) 0-7: CCIS channel No. (2) 00001-16367: Point Code of Centralized Fault Reporting office
CMA8	Assign the CCIS channel to which a signaling message is transferred according to the Point Code received. Up to 256 point codes can be assigned.	<ul style="list-style-type: none"> (1) 00001-16367: DPC (2) 0-7: CCIS channel No.
END		

Numbering Plan Assignment

- For open numbering system

START	DESCRIPTION	DATA
CM20	Assign the access code for LCR Group 0-3.	<ul style="list-style-type: none"> • Y=0-3 Number 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	<p>Assign an Area Code Development Pattern number to each LCR Group.</p> <p>Assign a Route Pattern number to the digits to be dialed in the Area Code Development Pattern number assigned by YYYY=A000.</p> <p>Assign an area code for Intra-Office Termination, if required.</p> <p>Specify the LCR selection priority for the Route Pattern number assigned by YYYY=4000-4007.</p>	<ul style="list-style-type: none"> • YYYY=A000 (1) 0-3: LCR Group 0-3 (2) 4000-4007: Area Code Development pattern No. 0-7 • YYYY=4000-4007 Area Code, Development Pattern No. 0-7 (1) X-X---X: Area Code 1-8 digits (2) 0000-0255: Route Pattern No. 000-255 • YYYY=4000-4007 Area Code Development Pattern No. 0-7 (1) X-X---X: Area Code 1-8 digits (2) 8000: Intra-Office Termination • YYYY=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		

A	DESCRIPTION	DATA
CM8A	To delete the designated digit of an area code:	<ul style="list-style-type: none"> • YYYY=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
	For digit addition, designate the digits to be added.	<ul style="list-style-type: none"> • YYYY=5000-5255 (1) 100: Designation of Digit Addition Pattern No. (2) 9000-9255: Digit Addition Pattern No. 000-255 CCC : No digit addition
	NOTE: Digits are always added in front of the number to be dialed.	<ul style="list-style-type: none"> • YYYY=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 (Max. 32 digits.)
CM08	Specify the maximum number of dialed digits sent to the CCIS network.	<ul style="list-style-type: none"> (1) 379 (2) 0 : 24 digits 1◀: 16 digits
CMA7	Assign the originating office number to each CCIS channel number if required.	<ul style="list-style-type: none"> • YY=06 (1) 0-7: CCIS channel No. (2) 0000-9999: Office No.
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.	<ul style="list-style-type: none"> • Y=0-7 Area Code Development Pattern No. 0-7 assigned by CM8A YYYY=A000 (1) X-X---X: Area Code dialed 1-8 digits (2) 01-24◀: 1-24 digits 25-79 : 25-79 digits
<u>END</u>		

- For closed numbering system

START	DESCRIPTION	DATA
CM20	Assign the access code for LCR Group 3.	<ul style="list-style-type: none"> • Y=0-3 Number plan Group 0-3 (1) X-XXXX: Access Code (2) A129: LCR Group 3
	<p>When providing Centralized MAT or Number Portability, assign the access code for the number of digits of the network station number.</p> <p>NOTE: For Centralized MAT or Number Portability, this data must be set.</p>	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • YYYY=A000 (1) 0-3: LCR Group 3 (2) 4000-4007: Area Code Development Pattern No. 0-7
	Assign a Route Pattern number to the digits to be dialed in the Area Code Development Pattern number assigned by YYYY=A000.	<ul style="list-style-type: none"> • YYYY=4000-4007 Area Code Development pattern No. 0-7 (1) X-X---X: Area Code 1-8 digits (2) 0000-0255: Route Pattern No. 000-255
	<p>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.</p>	
	Assign an area code (station number) for Intra-Office Termination, if required.	<ul style="list-style-type: none"> • YYYY=4000-4007 Area Code Development Pattern No. 0-7 (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 YYYY=4000-4007.	<ul style="list-style-type: none"> • YYYY=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.

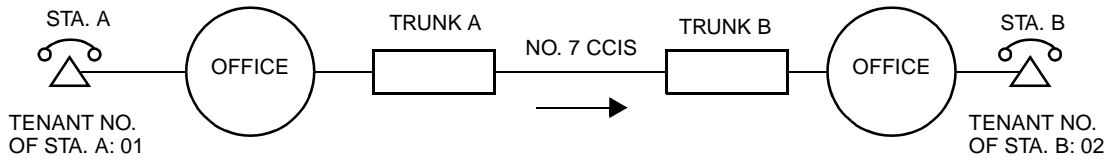


A	DESCRIPTION	DATA
CM8A	<p>To delete the designated digit of an area code:</p> <p>For digit addition, designate the digits to be added.</p> <p>NOTE: Digits are always added in front of the number to be dialed.</p>	<ul style="list-style-type: none"> • YYYY=5000-5255 LCR Pattern No. 000-255 (1) 153: Designation of digit to be deleted (2) 00 : No digit deletion 01-10: Leading 1-8 digits deletion CCC : No digit deletion <ul style="list-style-type: none"> • YYYY=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 <ul style="list-style-type: none"> • YYYY=9000-9255 Digit Addition Pattern No. 000-255 (1) 0 (2) X-X---X: Digits to be added (Max. 32 digits.)
CM08	Specify the maximum number of dialed digits sent to the CCIS network.	<ul style="list-style-type: none"> (1) 379 (2) 0 : 24 digits 1◀: 16 digits
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.	<ul style="list-style-type: none"> • Y=0-7 Area Code Development Pattern No. 0-7 assigned by CM8A YYYY=A000 (1) X-X---X: Area Code dialed 1-8 digits (2) 01-24◀: 1-24 digits 25-79 : 25-79 digits
END		

Inter-Tenant Connection Assignment

START	DESCRIPTION	DATA
CM12	<p>Assign the Tenant number to each station.</p> <p>NOTE: When making a link with the IMX, Tenant number should be assigned as 01-63. 00 is not used.</p>	<ul style="list-style-type: none"> • YY=04 (1) X-XXXXXXXX: Station No. (2) 00-63: Tenant No. 00-63 01◀ : Tenant No. 01
CM30	<p>Assign the Tenant number to each trunk.</p> <p>NOTE: When making a link with the IMX, Tenant number should be assigned as 01-63. 00 is not used.</p>	<ul style="list-style-type: none"> • YY=01 (1) 000-255: Trunk No. (2) 00-63: Tenant No. 00-63 01◀ : Tenant No. 01
CM63	<p>Specify the inter-tenant connection for station-to-station calling or incoming call termination. (See Example 1, 2.)</p>	<ul style="list-style-type: none"> • 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 0 : Restricted (2) 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.

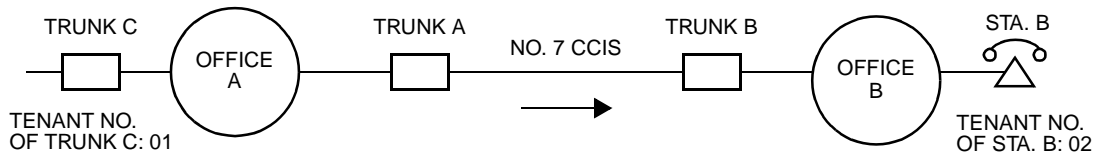


For the inter-tenant connection between Sta. A and Sta. B, the data assignment at Office B is as follows.

Command Code	1st Data	2nd Data
CM63 Y=1	01 02 01: Tenant No. of Calling Station (Sta. A) 02: Tenant No. of Called Station (Sta. B)	0 : Restricted 1◀: Allow

NOTE: The inter-tenant connection between Trunk B and Sta. 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 Sta. B (Office B), the data assignment at Office B is as follows.

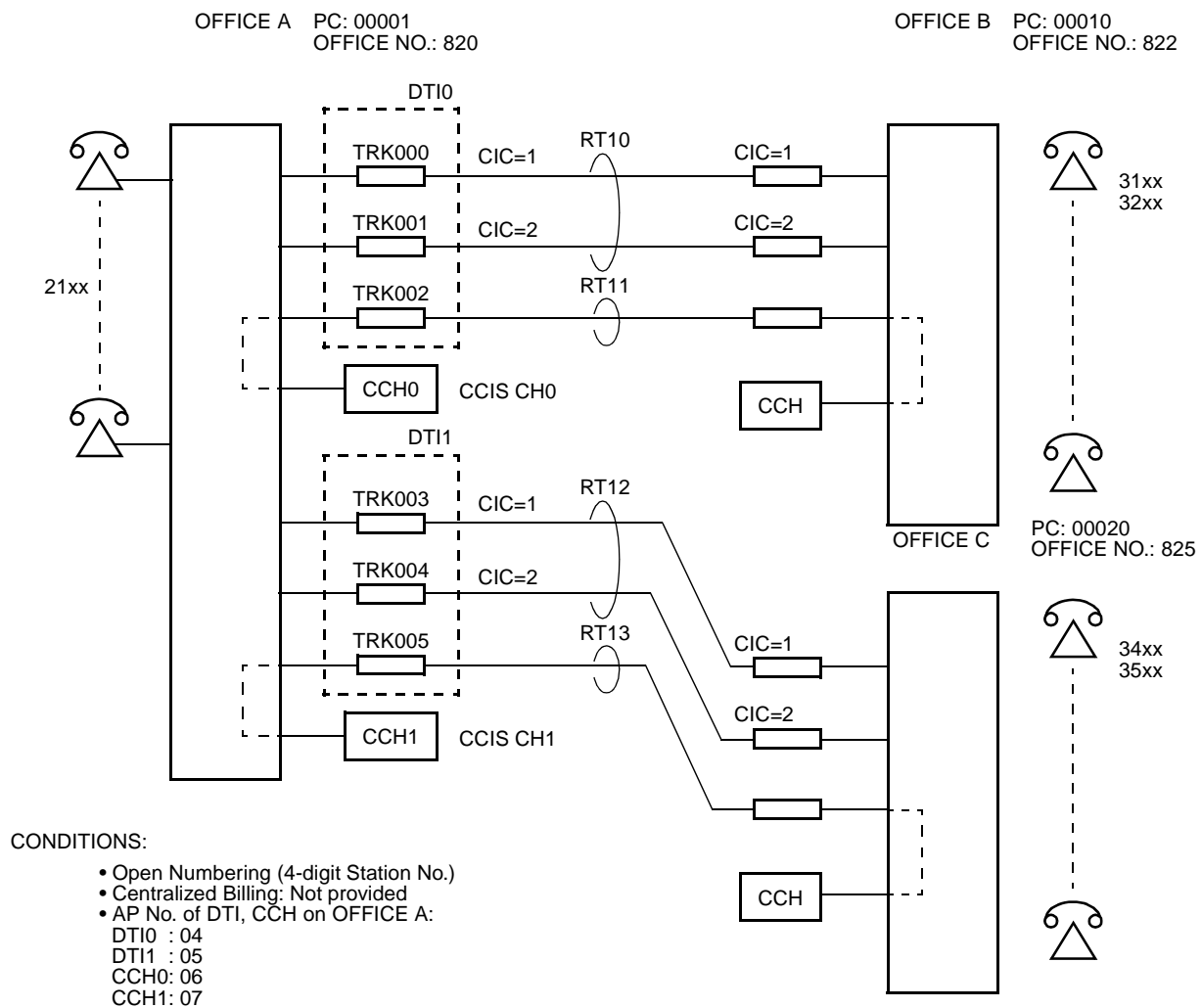
Command Code	1st Data	2nd Data
CM63 Y=2	01 02 01: Tenant No. of Called Station (Sta. B) 02: Tenant No. of Trunk (Trunk C)	0 : Restricted 1◀: Allow

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

Example of No. 7 CCIS with Digital Interface

(1) For open numbering system

EXAMPLE



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

For 24 DTA-C only

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

Command Code	1st Data	2nd Data	
07 YY=01	0400	D000	: TRK000
	0401	D001	: TRK001
	0402	D002	: TRK002 (Common Signaling Channel)
	0500	D003	: TRK003
	0501	D004	: TRK004
	0502	D005	: TRK005 (Common Signaling Channel)

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

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

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

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

(5) Assign trunk route data

Command Code	1st Data	2nd Data	
35 YY=00	10	04] Tie Line Route Assignment
	11	04	
	12	04	
	13	04	
35 YY=01	10	7] Dialing Signal Type
	11	7	
	12	7	
	13	7	
35 YY=04	10	2] Answer Signal
	11	2	
	12	2	
	13	2	
35 YY=05	10	1] Release Signal
	11	1	
	12	1	
	13	1	
35 YY=09	10	03] Incoming Connection Signal
	11	03	
	12	03	
	13	03	
35 YY=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 YY=20	10	00] Sender Start Condition
	11	00	
	12	00	
	13	00	
35 YY=90	10	0] No. 7 CCIS facilities assignment
	11	0	
	12	0	
	13	0	

(6) Assign CCH card

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

(7) Assign CCIS channel number to each CCH

Command Code	1st Data	2nd Data	
06 YY=07	0	06	: CCIS Channel 0
	1	07	: CCIS Channel 1

(8) Provide the system with No. 7 CCIS

Command Code	1st Data	2nd Data
09	53	0

(9) Assign CCIS channel number to each route

Command Code	1st Data	2nd Data	
35 YY=91	10	0	] : CCIS Channel 0
	11	0	
	12	1	] : CCIS Channel 1
	13	1	

(10) Assign a CIC number to each voice channel trunk.

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

(11) Assign CCIS channel data.

Command Code	1st Data	2nd Data	
A7 YY=00	0	002	] Common Signaling Channel Assignment
	1	005	
A7 YY=01	0	00001	] Originating Point Code Assignment
	1	00001	
A7 YY=02	0	00010	] Destination Point Code Assignment
	1	00020	
A7 YY=06	0	820	] Office Number Assignment
	1	820	
A8	00010	0	] Destination Point Code to which a signaling message is transferred.
	00020	1	

(12) Assign route access data.

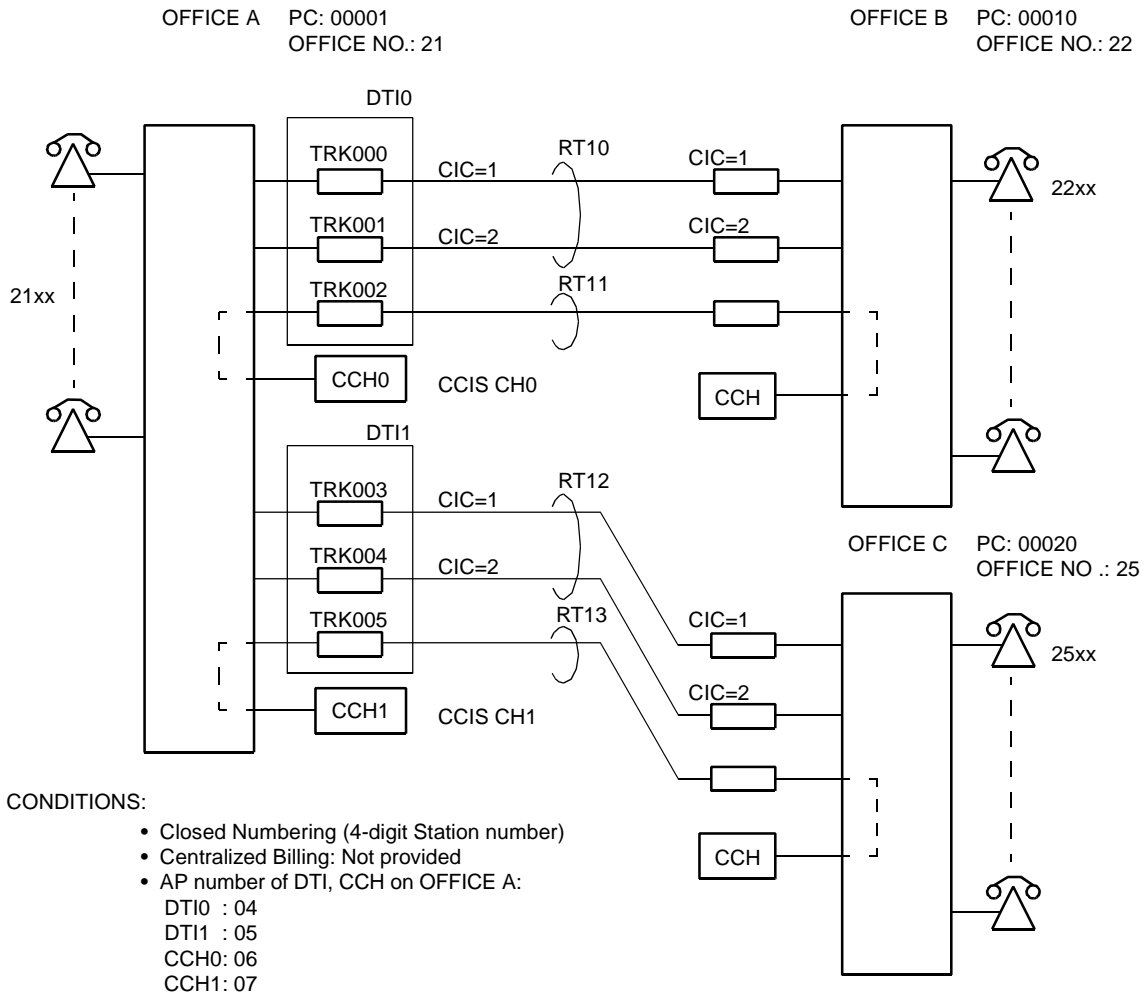
Command Code	1st Data	2nd Data	
20 Y=0	8	A126	: Access Code=8
8A YYYY=A000	0	4005	: Area Code Development Pattern No. 5
8A YYYY=4005	22	0000	: Route Pattern 0000
	25	0001	: Route Pattern 0001
8A YYYY=0000	1	00010	: Trunk Route 10
8A YYYY=0001	1	00012	: Trunk Route 12
8A YYYY=5000	100	9000	: Digit Addition Pattern No. 00
8A YYYY=9000	0	8	: Addition of digit "8".
85 Y=5	22	07	] Maximum number of digits dialed is 7
	25	07	

NOTE: This example shows 8 22 XXXX...XX
 _____ Station numbers in Distant PBX.
 _____ Office number of Distant PBX.
 _____ LCR Access Code

Second Dial tone will be heard only after 8 is dialed.
 8 will be added and sent to Distant PBX.

(2) For closed numbering system

EXAMPLE



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] For 24 DTA-C only

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

Command Code	1st Data	2nd Data	
07 YY=01	0400	D000	: TRK000
	0401	D001	: TRK001
	0402	D002	: TRK002 (Common Signaling Channel)
	0500	D003	: TRK003
	0501	D004	: TRK004
	0502	D005	: TRK005 (Common Signaling Channel)

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

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

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

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

(5) Assign trunk route data.

Command Code	1st Data	2nd Data	
35 YY=00	10	04] Tie Line Route Assignment
	11	04	
	12	04	
	13	04	
35 YY=01	10	7] Dialing Signal Type
	11	7	
	12	7	
	13	7	
35 YY=04	10	2] Answer Signal
	11	2	
	12	2	
	13	2	
35 YY=05	10	1] Release Signal
	11	1	
	12	1	
	13	1	
35 YY=09	10	03] Incoming Connection Signal
	11	03	
	12	03	
	13	03	
35 YY=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 YY=20	10	00] Sender Start Condition
	11	00	
	12	00	
	13	00	
35 YY=90	10	0] No. 7 CCIS facilities assignment
	11	0	
	12	0	
	13	0	

(6) Assign CCH card.

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

(7) Assign CCIS channel number to each CCH.

Command Code	1st Data	2nd Data	
06 YY=07	0	06	: CCIS Channel 0
	1	07	: CCIS Channel 1

(8) Provide the system with No. 7 CCIS.

Command Code	1st Data	2nd Data
35 YY=09	53	0

(9) Assign CCIS channel number to each route.

Command Code	1st Data	2nd Data	
35 YY=91	10	0	] : CCIS Channel 0
	11	0	
	12	1	] : CCIS Channel 1
13	1		

(10) Assign a CIC number to each voice channel trunk.

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

(11) Assign CCIS channel data.

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

(12) Assign 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 YYYY=A000	3	4007	: Area Code Development Pattern No. 5
8A YYYY=4007	22	0000	: Route Pattern 000 (22XX)
	25	0001	: Route Pattern 001 (25XX)
8A YYYY=0000	1	00010	: Route 10 access by 22XX
8A YYYY=0001	1	00012	: Route 12 access by 25XX
20 Y=0	21	804	: 4 digits station (for Originating Station No.)
85 Y=7	22	04	] Maximum number of digits dialed is 4.
	25	04	

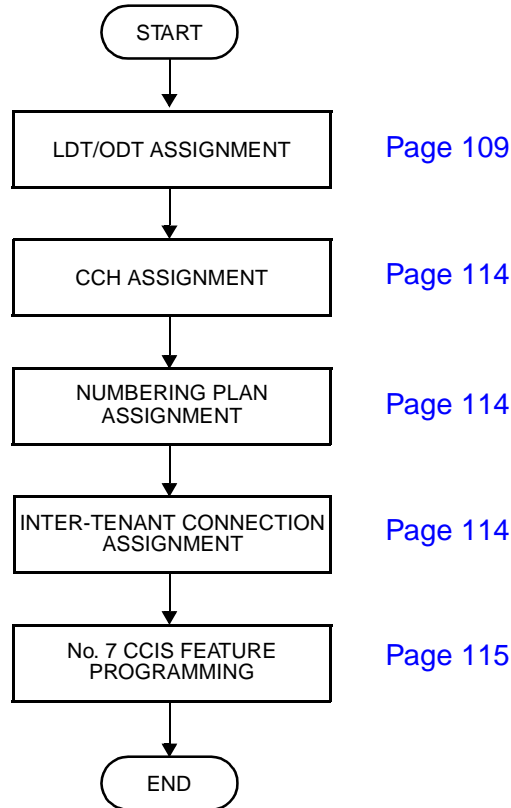
NOTE: This example shows 22 XX
 _____ Station numbers in Office B.
25 XX
 _____ Station numbers in Office C.

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

NO. 7 CCIS WITH ANALOG INTERFACE

Do the programming according to the procedures shown in [Figure 3-2](#).

Figure 3-2 Programming Procedure (for No. 7 CCIS with Analog Interface)



LDT/ODT Assignment

START	DESCRIPTION	DATA
CM10	<p>Assign a trunk number to each LDT/ODT.</p> <p>NOTE: The Trunk number must be assigned to the 1st LEN (Level 0) and 2nd LEN (Level 1) of each LT slot.</p>	<p>(1) 000-763: LEN (2) D000-D255: Trunk No.</p>
CM30	Assign a trunk route number to each trunk.	<ul style="list-style-type: none"> • YY=00 (1) 000-255: Trunk No. assigned by CM10 (2) 00-63: Trunk Route No.
CM35	Assign the trunk route data for voice channels.	<ul style="list-style-type: none"> • YY=00 (1) 00-63: Trunk Route No. (2) 04: Tie Line • YY=01 (1) 00-63: Trunk Route No. (2) 7◀: DP/DT MF • YY=04 (1) 00-63: Trunk Route No. (2) 2: Answer Signal arrives • YY=05 (1) 00-63: Trunk Route No. (2) 1◀: Release Signal arrives • YY=09 (1) 00-63: Trunk Route No. (2) 03: Wink Start • YY=20 (1) 00-63 (2) 00: Wink Start
A		

A

CM35

DESCRIPTION

Specify the PAD Patterns on the voice channel route.

- For Australia:

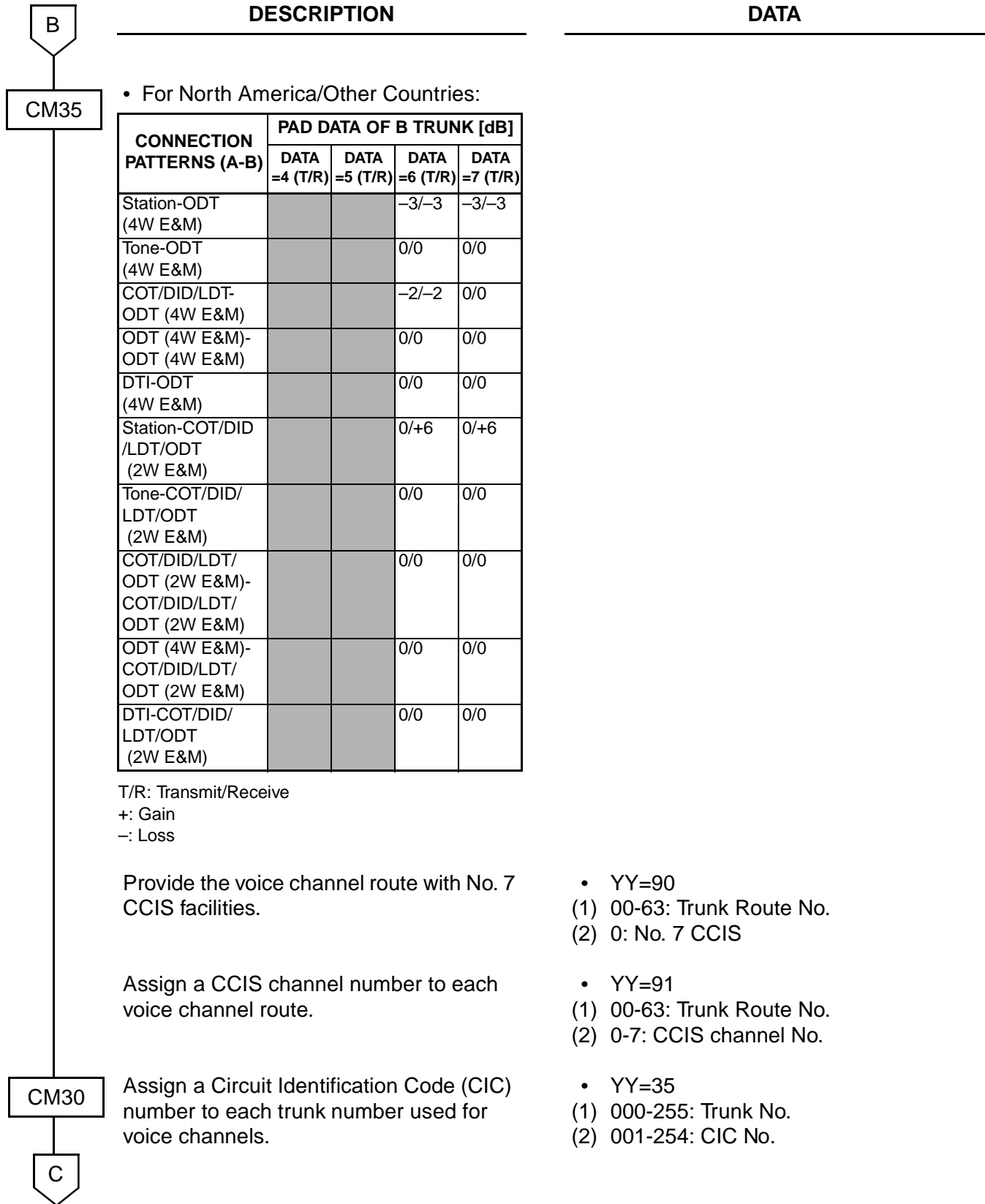
CONNECTION PATTERNS (A-B)	PAD DATA OF B TRUNK [dB]			
	DATA =4 (T/R)	DATA =5 (T/R)	DATA =6 (T/R)	DATA =7 (T/R)
Station-ODT		0/0	0/0	0/0
Tone-ODT		0/0	0/0	0/0
COT/DID/LDT-ODT		0/0	-8/-8	-8/-8
ODT-ODT		0/0	-8/-8	-3/-3
DTI/BRI-ODT		0/0	-8/-8	-3/-3
Station-COT/DID/LDT		0/+6	0/+6	0/+6
Tone-COT/DID/LDT		0/+6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

T/R: Transmit/Receive
 +: Gain
 -: Loss

B

DATA

- YY=19
- (1) 00-63: Trunk Route No.
- (2) 0-3 : Programmable PAD
 (See "CM42" on Page 112.)
- 4-7 ◀: Fixed PAD
 (See left column.)



DESCRIPTION **DATA**

• For North America/Other 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 (4W E&M)			-2/-2	0/0
ODT (4W E&M)-ODT (4W E&M)			0/0	0/0
DTI-ODT (4W E&M)			0/0	0/0
Station-COT/DID/LDT/ODT (2W E&M)			0/+6	0/+6
Tone-COT/DID/LDT/ODT (2W E&M)			0/0	0/0
COT/DID/LDT/ODT (2W E&M)-COT/DID/LDT/ODT (2W E&M)			0/0	0/0
ODT (4W E&M)-COT/DID/LDT/ODT (2W E&M)			0/0	0/0
DTI-COT/DID/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.

Assign a CCIS channel number to each voice channel route.

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

- YY=90
 - (1) 00-63: Trunk Route No.
 - (2) 0: No. 7 CCIS

- YY=91
 - (1) 00-63: Trunk Route No.
 - (2) 0-7: CCIS channel No.

- YY=35
 - (1) 000-255: Trunk No.
 - (2) 001-254: CIC No.

C

CM42

DESCRIPTION

DATA

When using the programmable PAD (CM35 YY=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 YY=19 2ND DATA=0	CM35 YY=19 2ND DATA=1	CM35 YY=19 2ND DATA=2	CM35 YY=19 2ND DATA=3	
50	50	54	58	62	STA-COT/DID/ODT/LDT
∩	51	55	59	63	TONE-COT/DID/ODT/LDT
65	52	56	60	64	COT/DID/LDT-COT/DID/ODT/LDT
	53	57	61	65	ODT/DTI/BRT-COT/DID/ODT/LDT

- For Australia:

PATTERNS 2ND DATA	PAD DATA OF B TRUNK (T/R) [dB]	
	ODT	COT/DID/LDT
00	0/0	0/+6
∩	-3/-3	0/+6
15	-8/-8	-6/+6
	-6/-6	0/0
	0/0	0/+6
	0/-6	0/0
	-6/0	0/0
	0/0	0/0
08	Not Used	
∩		
15		

T/R: Transmit/Receive
 +: Gain
 -: Loss

D

D

DESCRIPTION

DATA

CM42

- For North America/Other Countries:

PATTERNS 2ND DATA		PAD DATA OF B TRUNK (T/R) [dB]		
		ODT (4W E&M)	ODT (2W E&M)	COT/DID/LDT
00	00	0/0	0/0	0/0
∩	01	0/0	0/0	0/0
15	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	Not Used		
	∩			
	15			

T/R: Transmit/Receive

+: Gain

-: Loss

END

CCH Assignment

Perform the same programming procedure for CCH Assignment as shown in "[CCH Assignment](#)" on [Page 89](#)). Note that the assignment of trunk number by CMA7 YY=00 is not required when the CCH is connected with a dedicated line. CMA7 YY=00 is required when the common signaling channel is connected via an LDT/ODT card.

Numbering Plan Assignment

Perform the same programming procedure for Numbering Plan Assignment as shown in "[Numbering Plan Assignment](#)" on [Page 91](#).

Inter-Tenant Connection Assignment

Perform the same programming procedure for Inter-Tenant Connection Assignment as shown in "[Inter-Tenant Connection Assignment](#)" on [Page 95](#).

NO. 7 CCIS FEATURE PROGRAMMING

This section explains the feature programming of No. 7 CCIS services required for a particular data assignment.

The following features require no programming. Additional information on these features may be found in the Features and Specifications.

- Elapsed Time Display-CCIS
- Hands-Free Answer Back-CCIS
- Individual Attendant Access-CCIS
- Multiple Call Forwarding-All Calls-CCIS
- Multiple Call Forwarding-Busy Line-CCIS
- Multiple Call Forwarding-Don't Answer-CCIS
- Station Controlled Conference-CCIS
- Station to Station Calling-Operator Assistance-CCIS

ATTENDANT CAMP-ON WITH TONE INDICATION-CCIS

General Description

This feature provides inter-office Attendant Camp-On service which permits the operator, 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 Indication is sent to the busy station when the operator sets Camp-On. When the station becomes idle, it is automatically rung and connected to the waiting trunk party upon answering.

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 sec.
CM41	Specify the recall timing of Camp-On.	<ul style="list-style-type: none"> • Y=0 (1) 00 (2) 01-14 : 2.4-33.6 sec. (2.4 sec. increments) 15-24 : 38.4-124.8 sec. (9.6 sec. increments) If no data is set, the default setting is 31.2-33.6 sec.
END		

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

START	DESCRIPTION	DATA
START | CM20 | END	Assign the access code for Call Pickup-Direct.	<ul style="list-style-type: none"> • Y=0-3 Numbering Plan Group 0-3 (1) X-XXXX: Access Code (2) A021: Call Pickup-Direct

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
START | CM08 | END	Provide the Attendant Console with the busy station number/name display when reentering a Camped-On trunk.	<ul style="list-style-type: none"> (1) 441 (2) 0 : Available 1◀: Not available

Operating Procedure

To activate an Attendant Camp-On with Tone Indication-CCIS from the 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 Indication tone is sent to the busy station and Camp-On is set.

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

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

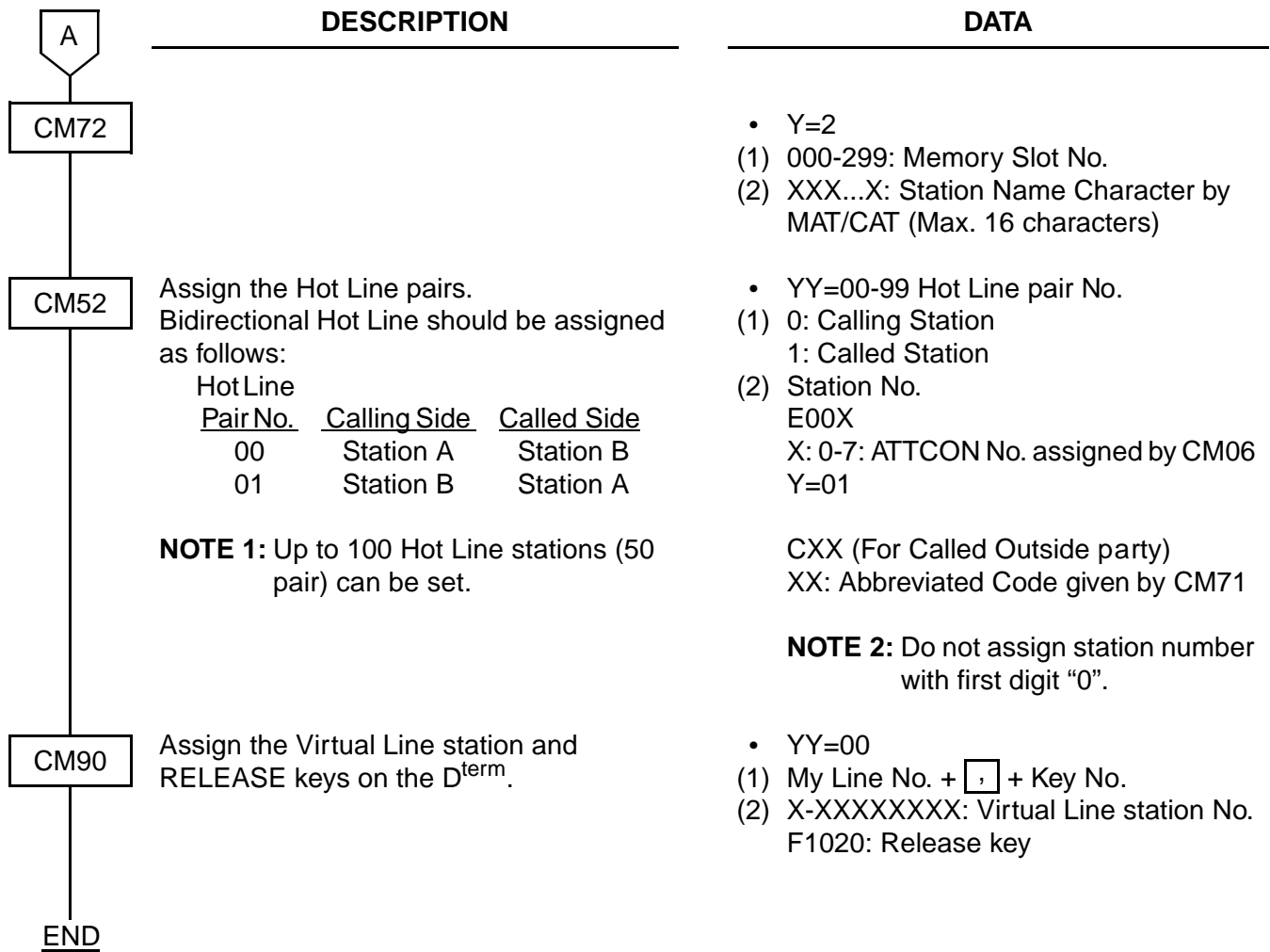
BROKERAGE-HOT LINE-CCIS

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.	<ul style="list-style-type: none"> YY=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:	(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)								
	<table border="1"> <thead> <tr> <th>Memory Slot 100</th> <th>Abbrev. Codes</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>00</td> </tr> <tr> <td>Memory Slot 109</td> <td>1</td> </tr> <tr> <td></td> <td>09</td> </tr> </tbody> </table>	Memory Slot 100	Abbrev. Codes	1	00	Memory Slot 109	1		09	
Memory Slot 100	Abbrev. Codes									
1	00									
Memory Slot 109	1									
	09									
CM72	Assign the destination party's number and name to each Memory Slot number.	<ul style="list-style-type: none"> Y=0 (1) 000-299: Memory Slot No. (2) XXXX [] YY...Y XX : Access Code (Max. 2 digits) [] : Separator Mark YY...Y: Calling Party's No. (Max. 26 digits)								
		<ul style="list-style-type: none"> Y=1 (1) 000-299: Memory Slot No. (2) XXX...X: Station Name Character Code (Max. 32 digits: 16 characters) See CM77 in the Command Manual.								
A										



Operating Procedure

To access 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, 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 VERIFICATION-CCIS

General Description

This service feature permits the operator, via the Attendant Console on the IMX or the IVS, 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. <ul style="list-style-type: none"> • Three burst tone [Australia/Other Countries] • 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 sec.
	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.	<ul style="list-style-type: none"> • YY=02 (1) X-XXXXXXXX: Station No. (2) XX ZZ XX: 00-15◀: Service Restriction Class A
CM15	Allow Busy Verification in the Service Restriction Class A assigned by CM12 YY=02.	<ul style="list-style-type: none"> • YY=09 (1) 00-15 : Service Restriction Class A assigned by CM12 YY=02 1◀ : Allow
END		

Operating Procedure

To activate Busy Verification-CCIS:

- (1) Press an idle LOOP key.
- (2) Dial the desired station number; receive busy tone.
- (3) Press the BV key.
- (4) Two-burst tones are sent to connected parties.
- (5) The operator 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-CCIS service. A station user who has dialed a busy station at another office can set Call Back-CCIS by dialing a feature access code. When this service has been set, the calling station will be rung as soon as the busy station becomes available.

Programming

START	DESCRIPTION	DATA
CM12	Assign Service Restriction Class A to the required stations.	<ul style="list-style-type: none"> YY=02 (1) X-XXXXXXX: Station No. (2) XX ZZ XX: 00-15◀: Service Restriction Class A
CM15	Allow Call Back in the Service Restriction Class A assigned by CM12 YY=02.	<ul style="list-style-type: none"> YY=03 (1) 00-15: Service Restriction Class A assigned by CM12 YY=02 (2) 1◀: Allow
CM20	Assign the access code for Call Back.	<ul style="list-style-type: none"> Y=0-3 Numbering Plan Group 0-3 (1) X-XXXX: Access Code <p>For setting the different access code from OG Trunk Queuing:</p> <ul style="list-style-type: none"> (2) A002: Call Back Set A003: Call Back Cancel <p>For setting the same access code as OG Trunk Queuing:</p> <ul style="list-style-type: none"> (2) A004: Set A005: Cancel
CM90	Assign a Call Back key to the D ^{term} , if desired.	<ul style="list-style-type: none"> YY=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 desired station number; receive busy tone.
- (2) Press hookswitch for feature dial tone.
- (3) Dial Call Back-CCIS feature access code; receive service set tone.
- (4) Replace the handset.
- (5) When desired station becomes idle, calling station will ring.
- (6) When calling station answers, called station will be rung.

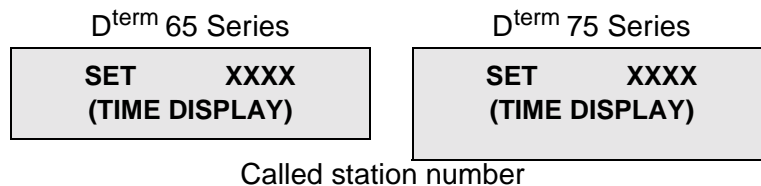
To cancel Call Back-CCIS from a Single-Line Telephone:

- (1) Lift handset; receive dial tone.
- (2) Dial Call Back-CCIS cancellation code; receive service set tone.

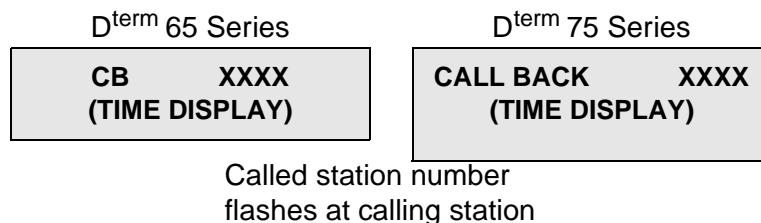
D^{term}:

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

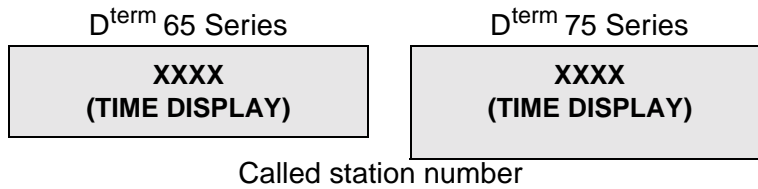
- (1) Dial desired station number; receive busy tone.
- (2) Press the CALL BACK Line/Feature key, receive service set tone. LCD displays:



- (3) Replace the handset.
- (4) When called station becomes idle, calling station will ring. The LCD displays:

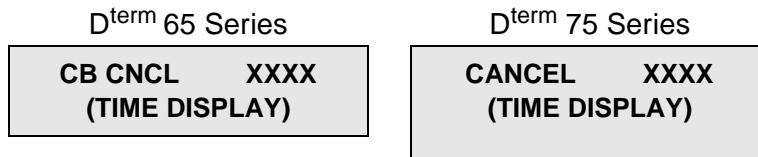


- (5) When calling station answers, the called station will ring.
- (6) The originally called Station's LCD displays:



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

- (1) Lift the handset or press the SPEAKER key, receive dial tone.
- (2) Press the Call Back Line/Feature key; receive service set tone. Call Back-CCIS is canceled
- (3) The LCD displays:



CALL FORWARDING-ALL CALLS-CCIS

General Description

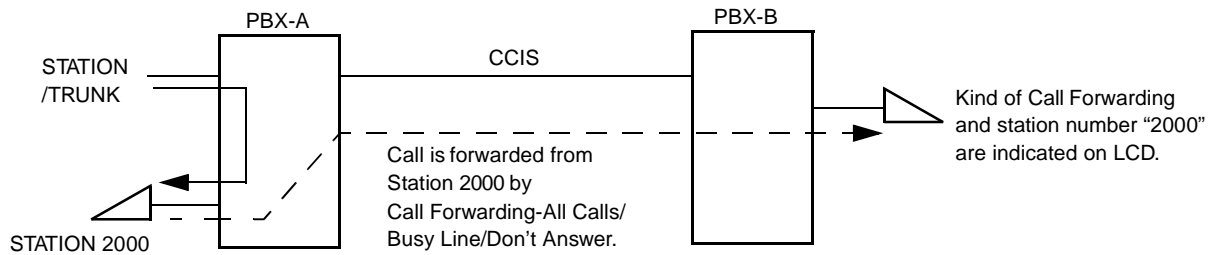
This service feature permits all calls destined for a particular station to be routed to another station, or to an Attendant Console, in another office in the CCIS network regardless of the status (busy or idle) of the called station. Activation and cancellation may be accomplished by either the station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

Programming

START	DESCRIPTION	DATA
CM12	Assign Service Restriction Class A to the required stations.	<ul style="list-style-type: none"> YY=02 (1) X-XXXXXXX: Station No. (2) XX ZZ XX: 00-15◀: Service Restriction Class A
CM15	<p>Allow Call Forwarding-All Calls and Call Forwarding-All Calls-Outside in the Service Restriction Class A assigned by CM12 YY=02.</p> <p>NOTE: When providing Call Forwarding-All Calls-Outside, set "1" (Allow) for YY=00, YY=26 of CM15.</p>	<ul style="list-style-type: none"> YY=00 Call Forwarding-All Calls YY=26 Call Forwarding-All Calls-Outside (1) 00-15: Service Restriction Class A assigned by CM12 YY=02 (2) 1◀: Allow
CM20	Assign an access code for Call Forwarding-All Calls Entry and Cancel respectively.	<ul style="list-style-type: none"> Y=0-3 Numbering Plan Group 0-3 (1) X-XXXX: Access Code (2) A010: Call Forwarding-All Calls Entry A011: Call Forwarding-All Calls Cancel
CM35	To apply this feature to incoming calls, assign trunk route combinations for Tandem connection.	<ul style="list-style-type: none"> YY=05 (1) 00-63: Trunk Route No. (2) 1◀: Release Signal arrive
CM36		<ul style="list-style-type: none"> Y=0 (1) Incoming Trunk Route No. + Outgoing Trunk Route No. for CCIS (Assigned by CM35 YY=05) (2) 0: Allow
A		

A	DESCRIPTION	DATA
CM08	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 or not an extension can set Call Forwarding-All Calls-Outside by entering only a trunk access code.	(1) 386 (2) 0 : Restrict 1◀: Allow
	Assign whether or not the system should check the trunk restriction class of the forwarded station during a Call Forwarding-All Calls-Outside.	(1) 387 (2) 0 : Call forwarding All Calls-Outside follows setting station class 1◀: No check
CM65	Provide Call Forwarding feature with each tenant as per incoming call type.	<ul style="list-style-type: none"> • YY=23 Internal Call or ATT assisted Call • YY=24 C.O. Incoming Call • YY=25 Tie Line Incoming Call (1) 00-63: Tenant No. (2) 1◀: Call Forwarding
CM48	Select the DialTone on setting Call Forwarding-All Calls.	<ul style="list-style-type: none"> • Y=2 (1) 13: Dial Tone on Setting Call Forwarding-All Calls (2) 0 : Special Dial Tone 1◀: Dial Tone
	INITIAL	
CM90	Assign a Call Forwarding-All Calls key to the D ^{term} , if desired.	<ul style="list-style-type: none"> • YY=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, perform 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 A to the required stations.	<ul style="list-style-type: none"> • YY=02 (1) X-XXXXXXXX: Station No. (2) XX ZZ XX: 00-15 ◀ Service Restriction Class A
CM15	Specify the LCD digits number of the D ^{term} as 24 digits.	<ul style="list-style-type: none"> • YY=95 (1) 00-15: Service Restriction Class A assigned by CM12 YY=02 (2) 0: 24 digits
END		

Operating Procedure

Single Line Telephone

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

- (1) Lift the handset; receive dial tone.
- (2) Dial the Call Forwarding-All Calls-CCIS access code; receive feature dial tone.
- (3) Dial the outgoing trunk access code; receive a single burst of service set tone.
- (4) Dial the station number to which calls are to be forwarded.
- (5) Wait approximately 5 seconds; receive service set tone.

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

- (1) Lift the handset; receive dial tone.
- (2) Dial Call Forwarding-All Calls-CCIS cancellation code; receive service set tone.

Attendant Console

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

- (1) Press an idle LOOP key.
- (2) Dial Call Forwarding-All Calls-CCIS access code; receive feature dial tone.
- (3) Dial the origination station number.
- (4) Dial the outgoing trunk access code; receive a single burst feature dial tone.
- (5) Dial the station number to which calls are to be forwarded.
- (6) Press the RELEASE key.

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

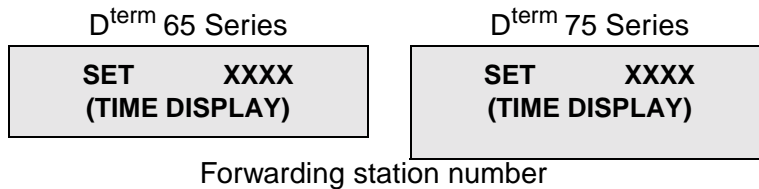
- (1) Press an idle LOOP key.
- (2) Dial the Call Forwarding-All Calls-CCIS cancellation code; receive feature dial tone.
- (3) Dial origination station number; receive service set tone.
- (4) Press the RELEASE key.

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 Call Forwarding-All Calls-CCIS from a My Line:

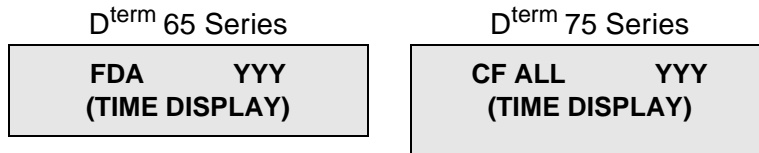
- (1) Lift handset or press SPEAKER key; receive dial tone.
- (2) Press the Call Forwarding-All Calls-CCIS feature access key; receive feature dial tone.
- (3) Dial the outgoing trunk access code; receive a single burst of service set tone.
- (4) Dial the desired station number to which calls are to be forwarded.
- (5) Wait approximately 5 seconds; receive service set tone. The LED lights and the LCD displays:



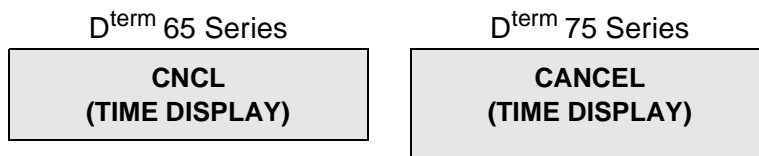
- (6) Replace the handset or press the SPEAKER key.

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

- (1) Lift handset or press SPEAKER key; receive dial tone.
- (2) Press the Call Forwarding-All Calls-CCIS feature access key. The LCD displays:



- (3) Dial “*”; receive Service Set Tone. The LED of the associated feature key will go out. The LCD displays:



- (4) Replace the handset or press the SPEAKER key.

CALL FORWARDING-BUSY LINE-CCIS

General Description

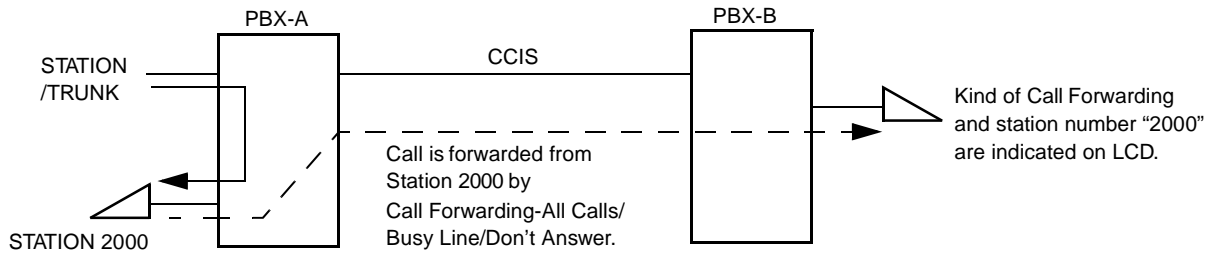
This service feature provides inter-office Call Forwarding-Busy Line-CCIS, which permits a call to a busy station to be immediately forwarded to a predesignated station or to an Attendant Console in another office in the CCIS network.

Programming

START	DESCRIPTION	DATA
CM12	Assign Service Restriction Class A to the required stations.	<ul style="list-style-type: none"> YY=02 (1) X-XXXXXXXX: Station No. (2) XX ZZ XX: 00-15◀: Service Restriction Class A
CM15	<p>Allow Call Forwarding-Busy Line and Call Forwarding-Busy Line-Outside in the Service Restriction Class A assigned by CM12 YY=02.</p> <p>NOTE: When providing Call Forwarding-Busy Line-Outside, set "1" (Allow) for YY=11, YY=28, YY=12, YY=29 of CM15.</p>	<ul style="list-style-type: none"> YY=11 Call Forwarding-Busy Line YY=28 Call Forwarding-Busy Line-Outside YY=12 Call Forwarding-Busy Line-Outside YY=29 Call Forwarding-Busy Line-Outside/Don't Answer-Outside (1) 00-15: Service Restriction Class A assigned by CM12 YY=02 (2) 1◀: Allow
CM20	Assign an access code for Call Forwarding-Busy Line.	<ul style="list-style-type: none"> Y=0-3 Numbering Plan Group 0-3 (1) X-XXXX: Access Code (2) A014: Call Forwarding-Busy Line Entry A015: Call Forwarding-Busy Line Cancel
CM35	To apply this feature to incoming calls, assign trunk route combinations for Tandem connection.	<ul style="list-style-type: none"> YY=05 (1) 00-63: Trunk Route No. (2) 1◀: Release Signal arrive
CM36		<ul style="list-style-type: none"> Y=0 (1) Incoming Trunk Route No. + Outgoing Trunk Route No. for CCIS (Assigned by CM35 YY=05) (2) 0: Allow
A		

A	DESCRIPTION	DATA
CM08	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 : Allow 1◀: Restrict
	Assign whether or not an extension can set Call Forwarding-Busy Line-Outside by entering only a trunk access code.	(1) 386 (2) 0 : Restrict 1◀: Allow
	Assign whether or not the system should check the trunk restriction class of the forwarded station during a Call Forwarding-Busy Line-Outside.	(1) 387 (2) 0 : Follow trunk restriction 1◀: No check
CM65	Provide Call Forwarding feature with each tenant as per incoming call type.	<ul style="list-style-type: none"> • YY=23 Internal Call or ATT assisted call • YY=24 C.O. Incoming Call • YY=25 Tie Line Incoming Call (1) 00-63: Tenant No. (2) 1◀: Call Forwarding
CM90	Assign a Call Forwarding-Busy Line key to the D ^{term} , if desired.	<ul style="list-style-type: none"> • YY=00 (1) My Line No. + <input type="text"/> + Key No. (2) F0014: Call Forwarding-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, perform 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 A to the required stations.	<ul style="list-style-type: none"> • YY=02 (1) X-XXXXXXXX: Station No. (2) XX ZZ XX: 00-15 ◀: Service Restriction Class A
CM15	Specify the LCD digits number of the D ^{term} as 24 digits.	<ul style="list-style-type: none"> • YY=95 (1) 00-15: Service Restriction Class A assigned by CM12 YY=02 (2) 0: 24 digits
END		

Operating Procedure

Single Line Telephone

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

- (1) Lift the handset; receive dial tone.
- (2) Dial the specific Call Forwarding-Busy Line-CCIS access code; receive feature dial tone.
- (3) Dial the outgoing trunk access code; receive a single burst of service set tone.
- (4) Dial the station number to which calls are to be forwarded.
- (5) Wait approximately 5 seconds; receive service set tone.

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

- (1) Lift the handset; receive dial tone.
- (2) Dial the specific Call Forwarding-Busy Line-CCIS cancellation code; receive service set tone.

Attendant Console

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

- (1) Press an idle LOOP key.
- (2) Dial the specific Call Forwarding-Busy Line-CCIS access code; receive dial tone.
- (3) Dial the origination station number.
- (4) Dial the outgoing trunk access code; receive a single burst service set tone.
- (5) Dial the station number to which calls are to be forwarded.
- (6) Press the RELEASE key.

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

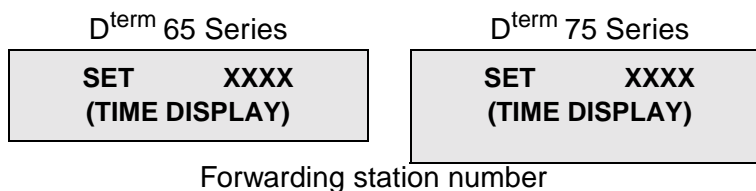
- (1) Press an idle LOOP key.
- (2) Dial the specific Call Forwarding-Busy Line-CCIS cancellation code; receive feature dial tone.
- (3) Dial the origination station number; receive service set tone.

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 Call Forwarding-Busy Line-CCIS from a D^{term}:

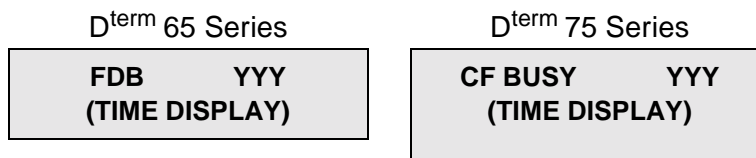
- (1) Lift handset or press SPEAKER key; receive dial tone.
- (2) Press the Call Forwarding-Busy Line-CCIS feature access key; receive feature dial tone.
- (3) Dial the outgoing trunk access code; receive a single burst service set tone.
- (4) Dial the station number to which calls are to be forwarded.
- (5) Wait approximately 5 seconds; receive service set tone. The LED lights and the LCD displays:



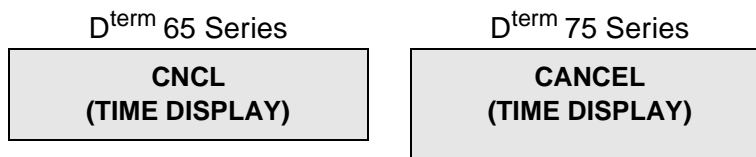
- (6) Replace the handset or press the SPEAKER key.

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

- (1) Lift handset or press SPEAKER key; receive dial tone.
- (2) Press the Call Forwarding-Busy Line key. The LCD displays:



- (3) Dial “*”; receive service set tone. The LED of the associated feature key will go out. The LCD displays:



- (4) Replace the handset or press the SPEAKER key.

CALL FORWARDING-DON'T ANSWER-CCIS

General Description

This service feature provides interoffice Call Forwarding-Don't Answer-CCIS, which permits a call to an unanswered station to be forwarded to a pre-designated station or to an Attendant Console in another office, when the called station does not answer after a predetermined time interval.

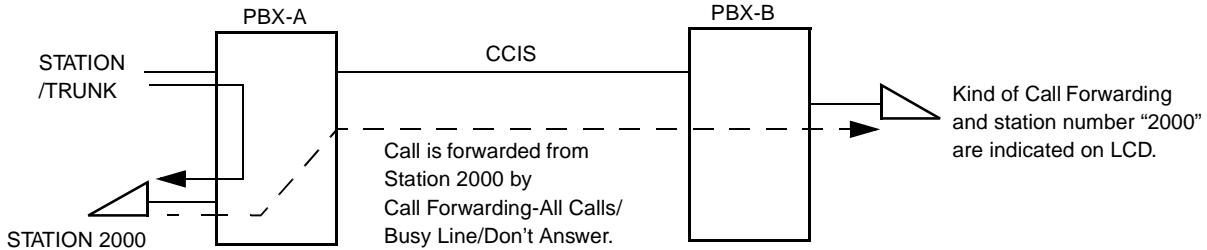
Programming

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">CM12</div>	Assign Service Restriction Class A to the required stations.	<ul style="list-style-type: none"> • YY=02 (1) X-XXXXXXX: Station No. (2) XX ZZ XX: 00-15◀: Service Restriction Class A
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">CM15</div>	Allow Call Forwarding-Don't Answer and Call Forwarding-Don't Answer-Outside in the Service Restriction Class A assigned by CM12 YY=02. NOTE: When providing Call Forwarding-Don't Answer-Outside, set "1" (Allow) for YY=10, YY=27 of CM15.	<ul style="list-style-type: none"> • YY=10 Call Forwarding-Don't Answer • YY=27 Call Forwarding-Don't Answer-Outside • YY=12 Call Forwarding-Busy Line-Outside • YY=29 Call Forwarding-Busy Line-Outside/Don't Answer-Outside (1) 00-15: Service Restriction Class A assigned by CM12 YY=02 (2) 1◀: Allow
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">CM20</div>	Assign an access code for Call Forwarding-All Calls Entry and Cancellation respectively.	<ul style="list-style-type: none"> • Y=0-3 Numbering Plan Group 0-3 (1) X-XXXX: Access Code (2) A016 : Call Forwarding-Don't Answer Entry A017 : Call Forwarding-Don't Answer Cancel For setting the same access code as Call Forwarding-Busy Line: (2) A012: Entry A013: Cancel
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">A</div>		

A	DESCRIPTION	DATA
CM35	To apply this feature to incoming calls, set the trunk route combinations for Tandem connection.	<ul style="list-style-type: none"> • YY=05 (1) 00-63: Trunk Route No. (2) 1◀: Release Signal arrive
CM36	Specify the combination of Trunk Routes allowing aTrunk toTrunk (CCIS) Connection.	<ul style="list-style-type: none"> • Y=0 (1) XX ZZ XX: 00-63 (Incoming Trunk Route) ZZ: 00-63 (Outgoing Trunk Route) (2) 0: Allow
CM08	Specify the Call Forwarding-Don't Answer-Outside setting operation.	<ul style="list-style-type: none"> (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)
	DID call to station with Call Forwarding-Don't Answer set over CCIS to a busy destination station. (Destination station has no call forwarding set.)	<ul style="list-style-type: none"> (1) 449 (2) 0 : Ring continuously at forwarded DID station 1◀: Drop to busy signal after timer set by CM41 Y=0>01
	Assign whether or not an extension can set Call Forwarding-Don't Answer-Outside by entering only a trunk access code.	<ul style="list-style-type: none"> (1) 386 (2) 0 : Restrict 1◀: Allow
	Assign whether or not the system should check the trunk restriction class of the forwarded station during a Call Forwarding-Don't Answer-Outside.	<ul style="list-style-type: none"> (1) 387 (2) 0 : Follow trunk restriction 1◀: No check
CM65	Provide Call Forwarding feature with each tenant as per incoming call type.	<ul style="list-style-type: none"> • YY=23 Inter Call or ATT assisted call • YY=24 C.O. Incoming Call • YY=25 Tie Line Incoming Call (1) 00-63: Tenant No. (2) 1◀: Call Forwarding
B		

B	DESCRIPTION	DATA
CM41	Specify the timing for Call Forwarding-Don't Answer for a trunk incoming call.	<ul style="list-style-type: none"> • Y=0 (1) 01 (2) 01-30: 0-120 sec. (4 sec. 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 assigned call.	<ul style="list-style-type: none"> • Y=0 (1) 15 (2) 01-30: 4-120 sec. (4 sec. increments) If no data is set, the default setting is 32-36 seconds.
CM90	Assign Call Forwarding-Don't Answer Key to the D ^{term} , if desired.	<ul style="list-style-type: none"> • YY=00 (1) My Line No. + <input type="text"/> + Key No. (2) F0016: Call Forwarding-Don't Answer Set/Cancel For setting the same key as Call Forwarding-Busy Line (2) F10012: Set/Cancel
<u>END</u>		

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, perform 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 A to the required stations.	<ul style="list-style-type: none"> • YY=02 (1) X-XXXXXXX: Station No. (2) XX ZZ XX: 00-15◀: Service Restriction Class A
CM15	Specify the LCD digits number of the D ^{term} as 24 digits.	<ul style="list-style-type: none"> • YY=95 (1) 00-15: Service Restriction Class A assigned by CM12 YY=02 (2) 0: 24 digits
END		

Operating Procedure

Single-Line Telephone

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

- (1) Lift the handset; receive dial tone.
- (2) Dial the Call Forwarding-Don't Answer-CCIS access code; receive feature dial tone.
- (3) Dial the outgoing trunk access code; receive a single burst service set tone.
- (4) Dial the station number to which calls are to be forwarded.
- (5) Wait approximately 5 seconds; receive service set tone.

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

- (1) Lift the handset; receive dial tone.
- (2) Dial Call Forwarding-Don't Answer-CCIS cancellation code; receive service set tone.

Attendant Console

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

- (1) Press an idle LOOP key.
- (2) Dial the Call Forwarding-Don't Answer-CCIS access code; receive feature dial tone.
- (3) Dial the originating station number.
- (4) Dial the outgoing trunk access code; receive single burst service set tone.
- (5) Dial the station number to which calls are to be forwarded.
- (6) Press the RELEASE key.

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

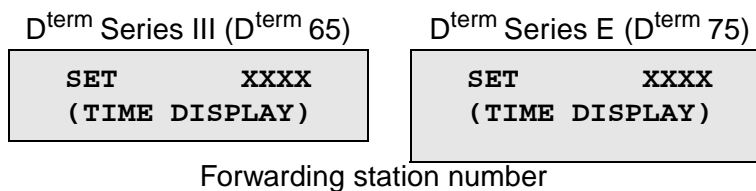
- (1) Press an idle LOOP key.
- (2) Dial Call Forwarding-Don't answer-CCIS cancellation code; receive feature dial tone.
- (3) Dial origination station number; receive service set tone.
- (4) Press the LOOP key.

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 Call Forwarding-Don't Answer-CCIS from a D^{term}:

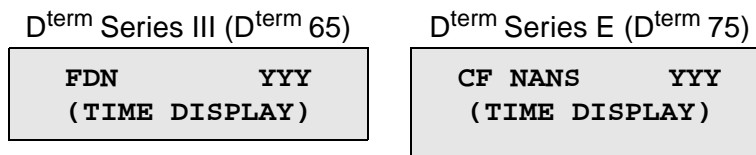
- (1) Lift the handset or press the SPEAKER Key; receive dial tone.
- (2) Press the Call Forwarding-Don't Answer-CCIS feature access key; receive feature dial tone.
- (3) Dial the outgoing trunk access code; receive a single burst service set tone.
- (4) Dial the station number to which calls are to be forwarded.
- (5) Wait approximately 5 seconds; receive service set tone. The LED lights. The LCD displays:



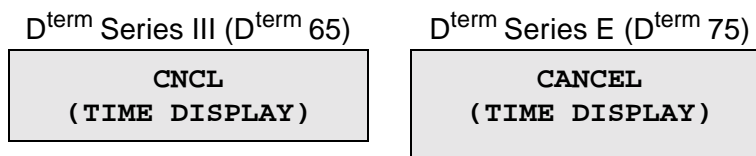
- (6) Replace the handset or press the SPEAKER key.

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

- (1) Lift handset or press SPEAKER key; receive dial tone.
- (2) Press the Call Forwarding-Don't Answer-CCIS feature access key. The LCD displays:



- (3) Dial “*”; receive service set tone. The LED of the associated feature key will go out. The LCD displays:

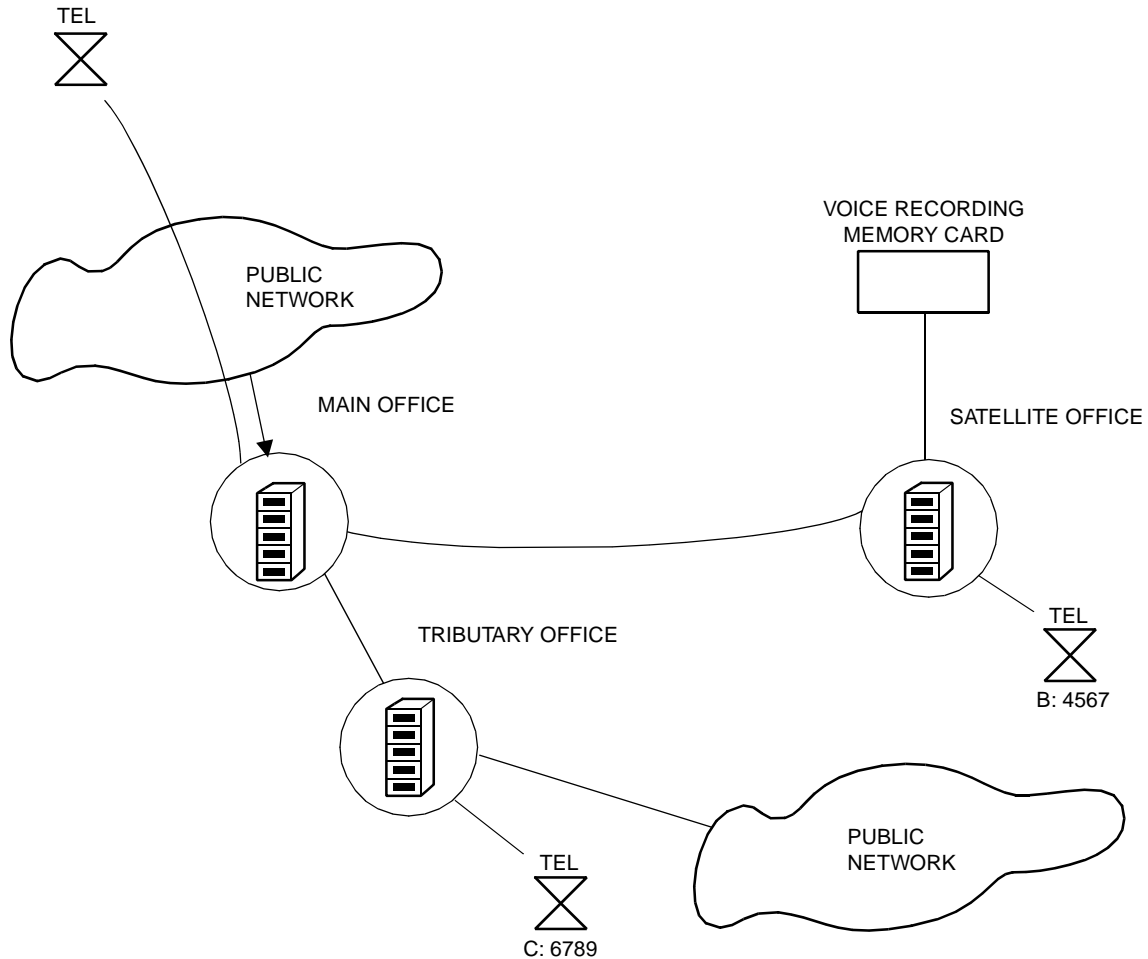


- (4) Replace the handset or press the SPEAKER key.

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
<p>CM10</p>	<p>Assign the Digital Announcement Trunk card number to the required LEN. (For Intercept Announcement only.)</p> <p>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.</p>	<p>(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</p> <p>NOTE: EB000 and EB001 are dedicated to built-in Digital Announcement Trunk of the MP card.</p>
<p>CM12</p>	<p>Assign Service Restriction Class A to the required stations. (For Intercept Announcement only.)</p>	<ul style="list-style-type: none"> • YY=02 <p>(1) X-XXXXXXX: Station No. (2) XX ZZ XX: 00-15◀: Service Restriction Class A</p>
<p>CM15</p>	<p>Allow Digital Announcement Trunk access in the Service Restriction Class A assigned by CM12 YY=02. (For Intercept Announcement only.)</p>	<ul style="list-style-type: none"> • YY=33 <p>(1) 00-15: Service Restriction Class A assigned by CM12 YY=02 (2) 1◀: Allow</p>
<p>CM49</p>	<p>Set the function to each Digital Announcement Trunk accommodated into the system. (For Intercept Announcement only.)</p>	<ul style="list-style-type: none"> • YY=00 <p>(1) 000-001: Built-in DAT on MP card 002-127: Digital Announcement Trunk No. (EB002-EB127) (2) 0A00: Call Forwarding-Intercept Announcement</p>
<p>CM51</p>	<p>Assign a destination for the intercepted call for each tenant.</p>	<ul style="list-style-type: none"> • YY=07 <p>(1) 00-63: Tenant No. (2) EB000-EB127 : Digital Announcement Trunk Card No. X-XXXXXXX : Station No. E000 : Attendant Console</p>
<p>A</p>		

A	DESCRIPTION	DATA
CM20	To record, replay, or delete a message, assign the appropriate Digital Announcement Trunk Card access codes. (For Intercept Announcement only.)	<ul style="list-style-type: none">• 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)
<u>END</u>		

Operating Procedure

No manual operation is required.

CALL FORWARDING-OVERRIDE-CCIS

General Description

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

Programming

START	DESCRIPTION	DATA
<u>CM08</u>	Assign Call Forwarding-Override-CCIS.	(1) 271 (2) 0 : Not available (BT connection) 1◀ : Available
<u>END</u>		

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, inter-office and inter-office calls to another station in the CCIS network, without Attendant assistance.

Programming

START	DESCRIPTION	DATA
CM12	Assign the Service Restriction Class A to the required stations.	<ul style="list-style-type: none"> YY=02 (1) X-XXXXXXXX: Station No. (2) XX ZZ XX: 00-15◀: Service Restriction Class A
CM15	Allow Trunk to Trunk Transfer in the Service Restriction Class A assigned by CM12 YY=02.	<ul style="list-style-type: none"> YY=22 (1) 00-15: Service Restriction Class A assigned by CM12 YY=02 (2) 1◀: Allow
CM12	Assign the Service Restriction Class C to the required stations.	<ul style="list-style-type: none"> YY=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 the Service Restriction Class C assigned by CM12 YY=07.	<ul style="list-style-type: none"> YY=90, 91 (1) 00-15: Service Restriction Class C assigned by CM12 YY=07 (2) 1◀: Allow
CM36	Specify the combination of Trunk Routes allowing a Trunk to Trunk (CCIS) Connection.	<ul style="list-style-type: none"> Y=0 (1) XX ZZ XX: 00-63 (Incoming Trunk Route) ZZ: 00-63 (Outgoing Trunk Route) (2) 0 : Allow 1◀: Restricted
CM08	Specify Call Transfer from a station before a called station answers.	<ul style="list-style-type: none"> (1) 062 (2) 0 : Not available 1◀: Available
	Station to Station transfer over CCIS	<ul style="list-style-type: none"> (1) 253 (2) 0 : Available
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) At this point, the station user can either:
 - (a) Hang up before the third party answers. The first and third parties will be connected when third party answers.
 - (b) 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 service feature permits a station user, while connected to a CCIS network call, to transfer a call to an Attendant Console located in the main office via the CCIS network.

Programming

START	DESCRIPTION	DATA
CM12	Assign the Service Restriction Class A to the required stations.	<ul style="list-style-type: none"> YY=02 (1) X-XXXXXXXX: Station No. (2) XX ZZ XX: 00-15◀: Service Restriction Class A
CM15	Allow Trunk to Trunk Transfer in the Service Restriction Class A assigned by CM12 YY=02.	<ul style="list-style-type: none"> YY=22 (1) 00-15: Service Restriction Class A assigned by CM12 YY=02 (2) 1◀: Allow
CM12	Assign the Service Restriction Class C to the required stations.	<ul style="list-style-type: none"> YY=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 the Service Restriction Class C assigned by CM12 YY=07.	<ul style="list-style-type: none"> YY=90, 91 (1) 00-15: Service Restriction Class C assigned by CM12 YY=07 (2) 1◀: Allow
CM36	Specify the combination of Trunk Routes allowing aTrunk toTrunk (CCIS) Connection. The incoming Trunk Route must provide a release signal for this feature. (See CM35 YY=05 in the Command Manual)	<ul style="list-style-type: none"> Y=0 (1) XX ZZ XX: 00-63 (Incoming Trunk Route) ZZ: 00-63 (Outgoing Trunk Route) (2) 0 : Allow 1◀: Restrict
CM08	Specify Call Transfer from a station before the called attendant answers.	<ul style="list-style-type: none"> (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, switch hook flash; 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 ringback tone.

To answer from the Attendant Console:

- (1) Refer to the "IMX Attendant Console User Guide".

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

- (1) Switch hook flash. the ATND lamp is extinguished at the Attendant Console and the buzzer stops.
- (2) Ringback tone ceases; the station returns to the Central Office trunk call.

CALLING NAME DISPLAY-CCIS

General Description

This feature provides a display indicating the calling/called party's name, at another switching office, on the LCD of 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 sec. later 1◀: 6 sec. later
	Specify the duration to display the name.	(1) 121 (2) 0 : Until call finished 1◀: As per CM08>120
CM20	Assign the access code for station user name entry from an individual station.	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> YY=03 (1) 00-63: Trunk Route No. (2) 00-14: Trunk Name No. 15 : Kind of trunk route assigned by CM35 YY=00 are displayed 16-63: Trunk Name No.
CMA7	Provide each CCH number with Name Display feature.	<ul style="list-style-type: none"> YY=26 Name Display (1) 0-7: CCH No. 0-7 (2) 0: To provide
A		

A	DESCRIPTION	DATA
CM77	<p>Enter the desired user's name to each station number with Character Codes or characters.</p>	<ul style="list-style-type: none"> • Y=0 By Character Code <ol style="list-style-type: none"> (1) X-XXXXXXXX: Station No. (2) 20-7F: Character Code Max. 32 digits (See CM77 in the Command Manual)
	<p>Assign the desired trunk name to each trunk route by Y=2 or Y=3.</p>	<ul style="list-style-type: none"> • Y=1 By character <ol style="list-style-type: none"> (1) X-XXXXXXXX: Station No. (2) A-Z, 0-9: Character Max. 16 characters • Y=2 By character Code <ol style="list-style-type: none"> (1) 00-14, 16-63: Trunk Name No. assigned by CM35 YY=03. (2) Character Code 20-7F: (See CM77 in the Command Manual) • Y=3 By character <ol style="list-style-type: none"> (1) 00-14, 16-63: Trunk Name No. assigned by CM35 YY=03. (2) A-Z, 0-9: Character Code Max. 4 characters
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.

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: A name currently programmed can be changed by overwriting with a new name, or by inserting a blank space as the first character. This will cancel the existing name.

Operating Procedure

No manual operation is required.

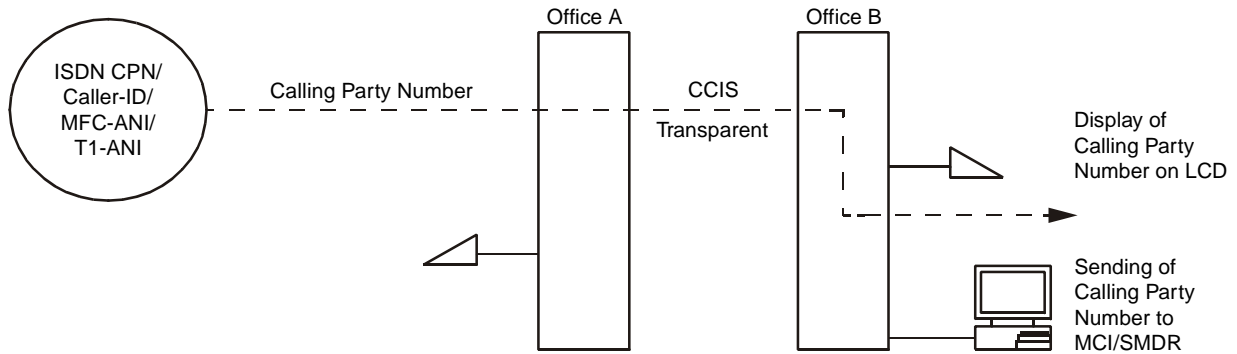
CALLING NUMBER DISPLAY-CCIS

General Description

This feature provides a display indicating the calling/called party's number, at another switching office via the CCIS network, on the LCD of a D^{term} or an Attendant Console/Smart 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 display 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.



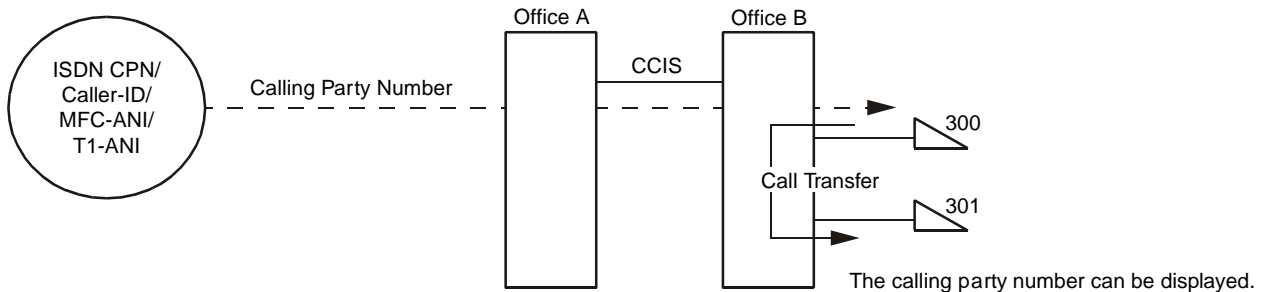
Programming

START	DESCRIPTION	DATA
<p>CM08</p> <p>A</p>	<p>Provide the system with the Name Display service.</p>	<p>(1) 255 (2) 1◀: To provide</p>

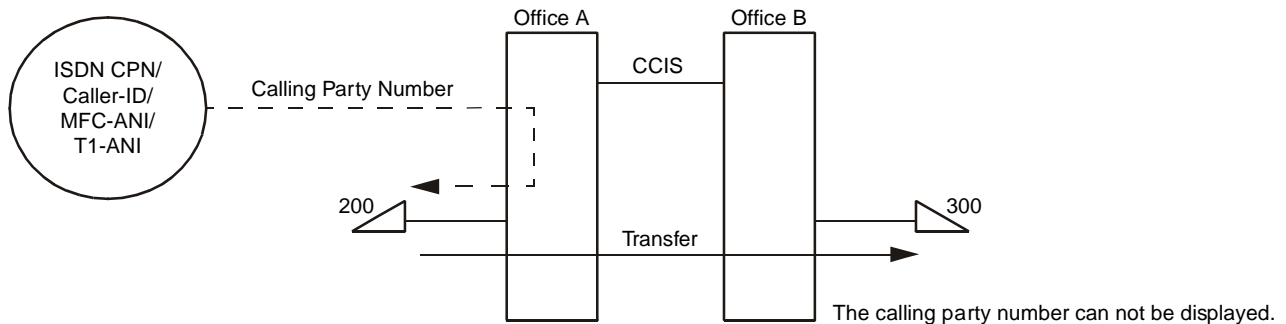
A	DESCRIPTION	DATA
CM08	Specify the number of digits sent to the CCIS network as 24 digits.	(1) 379 (2) 0: 24 digits
CMA7	Provide each CCH channel with Name Display feature.	<ul style="list-style-type: none"> • YY=26 (1) 0-7: CCH Channel No. 0-7 (2) 0: To provide
END	Provide each CCH channel with the information transferring service.	<ul style="list-style-type: none"> • YY=28 (1) 0-7: CCH Channel No. 0-7 (2) 0: To provide

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

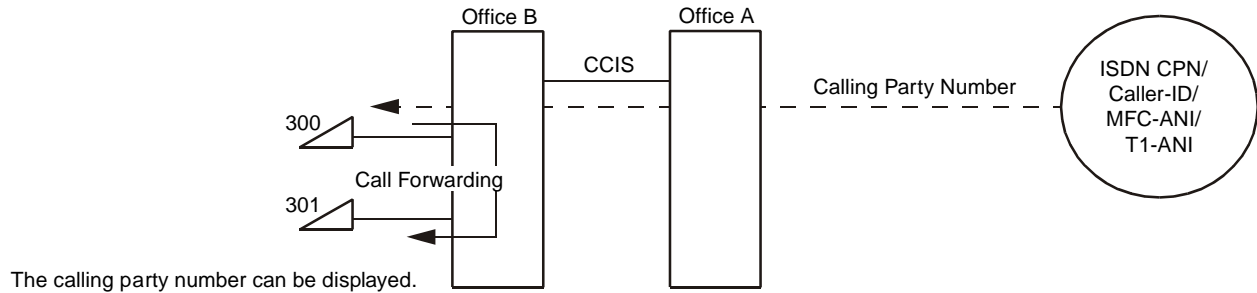
When the Station 300 on the Office B answers the call from the network, and transfers the call to the Station 301 on the Office B, the calling party number will be displayed on the Station 301.



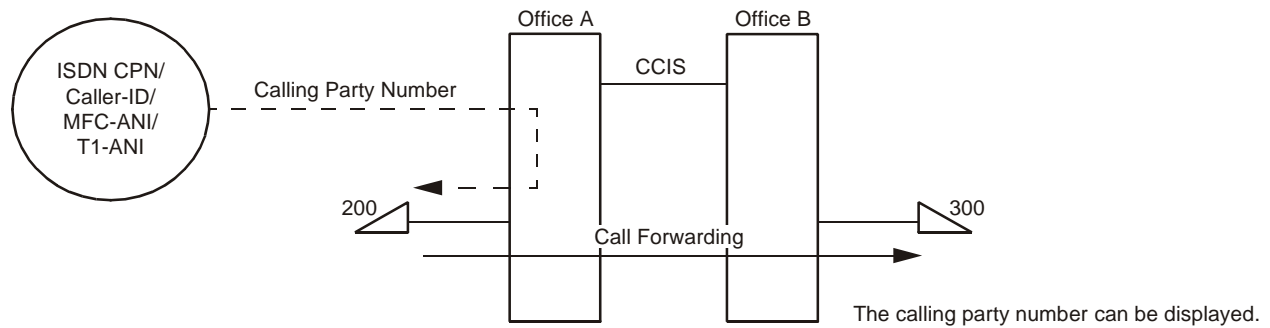
When the Station 200 on the Office A answers the call from the network, and transfers the call to the Station 300 on the Office B, the calling party number will not be displayed on the Station 300.



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.



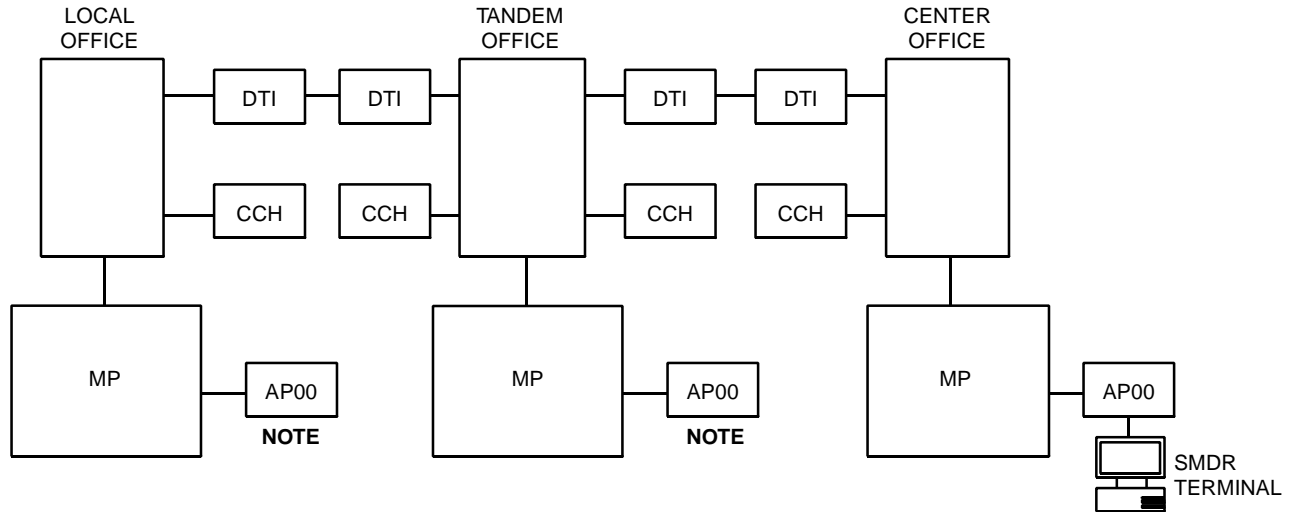
Operating Procedure

No manual operation is required.

CENTRALIZED BILLING-CCIS

General Description

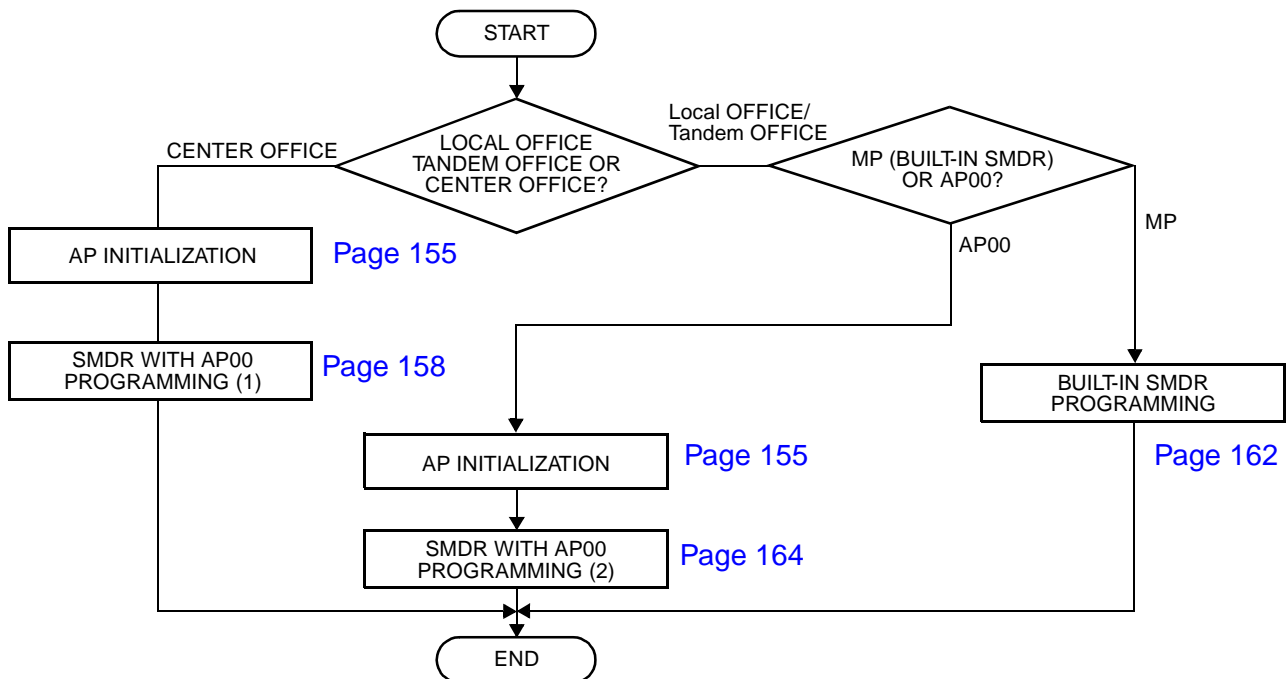
This feature is used to collect billing information from each office within the network and to direct it to the associated center office. Billing information is then forwarded to the SMDR of center office.



NOTE: AP00 is required in Local Office/Tandem Office.

Programming

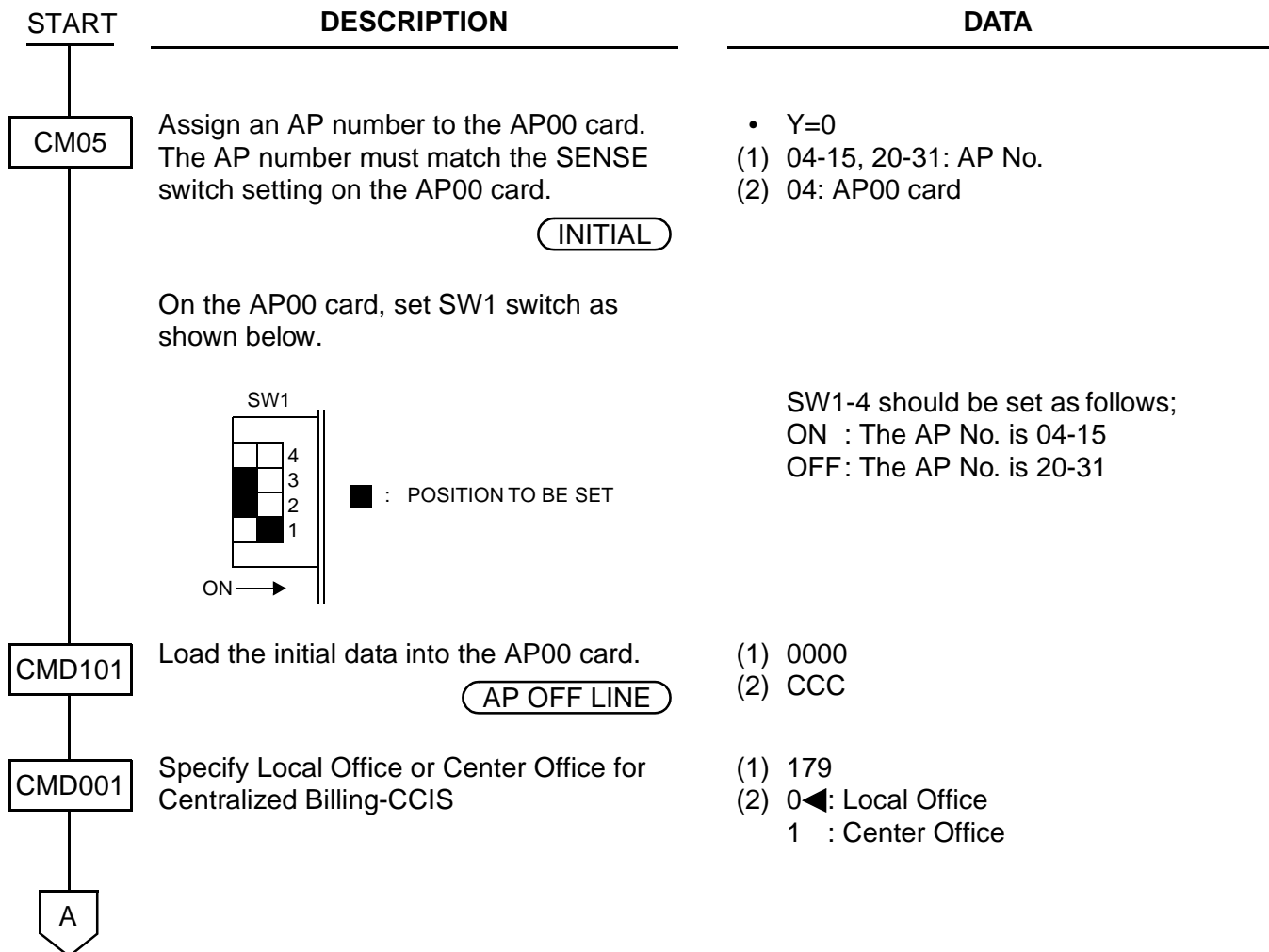
Programming Summary



AP Initialization

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 in this section. The AP should have already been activated if one of the following feature is applied: Station Message Detail Recording (SMDR), Message Center Interface (MCI), D^{term} Time Information Management System (TIMS), Property Management System (PMS), or Hotel printer. You can distinguish whether the AP is active by the RUN lamp indication. The RUN lamp flashes green when the AP is in active mode.

When installing the AP00 at first time, do the following AP initialization.



A	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CMD003</div>	Allow the maximum number of Call Record for SMDR which is set to "5" by CMD001>80/100/120/140.	(1) 24 (2) 0◀ : No limitation 1-27000 : 1-27000 calls
	<p>NOTE: When the data is set to 1-27000, external alarm of memory overflow is available, if CM44, 2nd data=3002 is assigned.</p>	
	Assign the maximum number of Local of office's Call Record for Centralized Billing office.	(1) 26 (2) 0◀ : No record 1-27000 : 1-27000 calls
	<p>NOTE: When the data is set to 1-27000, external alarm of memory overflow is available, if CM44, 2nd data=3000 is assigned.</p>	
	Assign the maximum number of Call Record for SMDR/PMS which is set to "4" by CMD001>80/100/120/140.	(1) 29 (2) 0◀ : No record 1-27000 : 1-27000 calls
	<p>NOTE: When the data is set to 1-27000, external alarm of memory overflow is available, if CM44, 2nd data=3001 is assigned.</p>	
B		

B

CMD102

DESCRIPTION

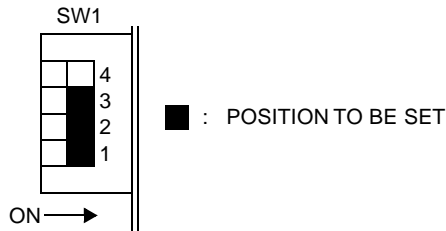
DATA

Initialize the billing memory.

- (1) 0000
- (2) CCC

AP OFFLINE

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 3**, 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 (Not a center office of Centralized Billing-CCIS)	When CMD001>179 is set to other than 0 (Center office of Centralized Billing-CCIS)	When CMD003>28 is set to 0 (No Call Record for CIS is provided)	When CMD003>28 is set to other than 0 (Call Record for CIS is provided)
1600	800	27000	26000

END

SMDR with AP00 Programming (1)

PROGRAMMING FOR CENTER OFFICE

When sending billing information from local offices to SMDR of Center Office, do the following programming.

When sending billing information from both Center Office and Local Office to SMDR of Center Office, do the following programming in addition to the basic programming of SMDR with AP00. For details of the SMDR with AP00, refer to the Feature Programming Manual.

START	DESCRIPTION	DATA
CM02	Assign the system clock data.	(1) 0: Calendar Year (2) 0000-9999 (Ex. 1999) (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		

A	DESCRIPTION	DATA
CM08	Do not provide the system with Built-in SMDR on MP card.	(1) 800 (2) 1◀: Not provided (AP00 is effective)
	Provide the system with Centralized Billing-CCIS for Center Office.	(1) 368 (2) 0: Provided
	INITIAL	
	Do 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.	<ul style="list-style-type: none"> • YY=03 (1) 0-7: CCIS channel No. (2) 1: Distant end is Local Office
CMD000	Invalidate the data for sending of billing information on tandem calls through CCIS.	(1) 76 (2) 1: 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
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.)

- (1) See the following table.
- (2) See the following table.

AP00 INITIAL

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	1200/2400/4800/9600 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	NEAX2400 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

C	DESCRIPTION	DATA
CMD016	Invalidate the data setting of Centralized Billing used for Local Office.	<p>(1) XX31: Sending of billing information of C.O. outgoing calls through CCIS XX : 00-15 (Station Class No. assigned by CMD015) (2) 1 : Sent</p> <p>(1) XX32: Sending of billing information of Tie Line outgoing calls through CCIS XX : 00-15 (Station Class No. assigned by CMD015) (2) 1 : Sent</p> <p>(1) XX58: Sending of billing information of C.O./Tie Line incoming calls through CCIS XX : 00-15 (Station Class No. assigned by CMD015) (2) 1 : Sent</p>
<u>END</u>		

Built-in SMDR Programming

For Local Office or Tandem Office, in addition to the basic programming of Built-in SMDR, do the following programming. For details of the Built-in SMDR, refer to Feature Programming Manual.

NOTE 1: When the system provides an AP00 card (CM05 Y=0 second data=04 is assigned), the Built-in SMDR cannot be provided.

NOTE 2: Outgoing and tandem call records are not available with Built-in SMDR.

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM08</div>	<p>Provide the system with Built-in SMDR of MP card.</p> <p>NOTE: Do not assign CM40 YY=00>14 when using Built-in SMDR in Local Office of Centralized Billing-CCIS.</p>	<p>(1) 800 (2) 0: Built-in SMDR of MP card</p>
	<p>Not provide the system with Centralized Billing-CCIS for Center Office.</p> <p style="text-align: center;">INITIAL</p>	<p>(1) 368 (2) 1◀: Provided</p>
	<p>Provide the system with Centralized Billing-CCIS for Local Office.</p>	<p>(1) 378 (2) 0: Provided</p>
	<p>Specify whether the Office number is sent to Center Office for Centralized Billing-CCIS.</p> <p>NOTE: When the network adopts Open Numbering Plan, set the office number by CMA7 YY=06.</p>	<p>(1) 801 (2) 0 : To send 1◀: Not sent</p>
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">A</div>		

A	DESCRIPTION	DATA				
CMA7	Assign the data as follows.	<ul style="list-style-type: none"> • YY=03 				
	<table border="0"> <tr> <td style="text-align: center;"><u>1st Data</u></td> <td style="text-align: center;"><u>2nd Data</u></td> </tr> <tr> <td>CCIS channel No. (0-7) for Center Office</td> <td style="text-align: center;">0</td> </tr> </table>	<u>1st Data</u>	<u>2nd Data</u>	CCIS channel No. (0-7) for Center Office	0	<ul style="list-style-type: none"> (1) 0-7: CCIS channel No. (2) 0 : Distant end is Center Office 1◀: Distant end is Local Office
<u>1st Data</u>	<u>2nd Data</u>					
CCIS channel No. (0-7) for Center Office	0					
	See "Example 3: Data Assignment of CMA7 YY=03, 04" on Page 176.					
	Assign Centralized Billing destination. See "Example 3: Data Assignment of CMA7 YY=03, 04" on Page 176.	<ul style="list-style-type: none"> • YY=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 YY=06 and CMD004>55" on Page 177.	<ul style="list-style-type: none"> • YY=06 (1) 0-7: CCIS channel No. (2) 0000-9999: Originating Office No. 				
<u>END</u>						

SMDR with AP00 Programming (2)

For Local Office or Tandem Office, in addition to the basic programming of SMDR with AP00, do the following programming. For details of the SMDR with AP00, refer to Feature Programming Manual.

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM08</div>	<p>Not provide the system with Built-in SMDR of MP card.</p> <p>NOTE: Do not assign CM40 YY=00>14 when using Built-in SMDR in Local Office of Centralized Billing-CCIS.</p>	<p>(1) 800 (2) 1◀: Not provided (AP00 is effective)</p>
	<p>Not provide the system with Centralized Billing-CCIS for Center Office.</p> <p style="text-align: right;">INITIAL</p>	<p>(1) 368 (2) 1◀: Not provided</p>
	<p>Provide the system with Centralized Billing-CCIS for Local Office.</p>	<p>(1) 378 (2) 0: Provided</p>
	<p>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" on Page 174.</p>	<p>(1) 377 (2) 0 : Station No. and Office No. 1◀: Trunk Route No.</p>
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">A</div>		

A	DESCRIPTION	DATA				
CMA7	Assign the data as follows.	• YY=03				
	<ul style="list-style-type: none"> For Local Office: <table border="0"> <tr> <td style="text-align: center;"><u>1st Data</u></td> <td style="text-align: center;"><u>2nd Data</u></td> </tr> <tr> <td>CCIS channel No. (0-7) for Center Office</td> <td style="text-align: center;">0</td> </tr> </table> 	<u>1st Data</u>	<u>2nd Data</u>	CCIS channel No. (0-7) for Center Office	0	<ul style="list-style-type: none"> (1) 0-7: CCIS channel No. (2) 0 : Distant end is Center Office 1◀: Distant end is Local Office
<u>1st Data</u>	<u>2nd Data</u>					
CCIS channel No. (0-7) for Center Office	0					
CM65	<ul style="list-style-type: none"> For Tandem Office: <table border="0"> <tr> <td style="text-align: center;"><u>1st Data</u></td> <td style="text-align: center;"><u>2nd Data</u></td> </tr> <tr> <td>CCIS channel No. (0-7) for Center Office</td> <td style="text-align: center;">0</td> </tr> </table> 	<u>1st Data</u>	<u>2nd Data</u>	CCIS channel No. (0-7) for Center Office	0	<ul style="list-style-type: none"> • YY=04 (1) 0-7: CCIS channel No. (2) 00001-16367: Point Code of Center Office.
	<u>1st Data</u>	<u>2nd Data</u>				
CCIS channel No. (0-7) for Center Office	0					
<ul style="list-style-type: none"> CCIS channel No. 1 (0-7) for Local Office 	<ul style="list-style-type: none"> • YY=26 (1) Tenant No. of Stations (2) 0 : My Line No. 1◀: Sub Line No. 					
<p>See "Example 3: Data Assignment of CMA7 YY=03, 04" on Page 176.</p>	<p>Assign Centralized Billing destination.</p>					
<p>See "Example 3: Data Assignment of CMA7 YY=03, 04" on Page 176.</p>	<p>Specify the station number sent to the IMX PBX through CCIS for SMDR.</p>					
<p>NOTE: If the Center Office is the IMX PBX, CM65 YY=26 is required.</p>						
B						

B	DESCRIPTION	DATA
CMD015	Assign a Station Class number to the required station number.	(1) X-XXXX: Station No. (2) 00◀-15: Station Class No.
CMD016	Assign the data for sending the detail call information for C.O. outgoing calls through CCIS.	(1) XX31 XX: 00-15 (Station Class No. assigned by CMD015) (2) 1: To send
	Assign the data for sending of detail call information for Tie Line outgoing calls through CCIS, if required.	(1) XX32 XX: 00-15 (Station Class No. assigned by CMD015) (2) 1: To send
	Assign the data for sending of detail call information for C.O./Tie Line incoming calls through CCIS, if required.	(1) XX58 XX: 00-15 (Station Class No. assigned by CMD015) (2) 1: To send
CMD004	Assign the Local Office number for Open Numbering Plan. See "Example 4: Data Assignment of CMA7 YY=06 and CMD004>55" on Page 177.	(1) 55 (2) X-XXXX: Local Office No. NOTE
	Assign the office number to specify the billing office when originating a call of other local office through the own office.	(1) 56 (2) X-XXXX: Billing Office No. NOTE
	NOTE: If using a leading degit(s) of 0 and 0 is required to print at the SMDR terminal, assign "A" for each leading 0 to be printed. If the leading degit(s) 0 is not required to print at the SMDR terminal, assign "0".	
	See "Example 5: Data Assignment of CMD004>56" on Page 178.	
END		

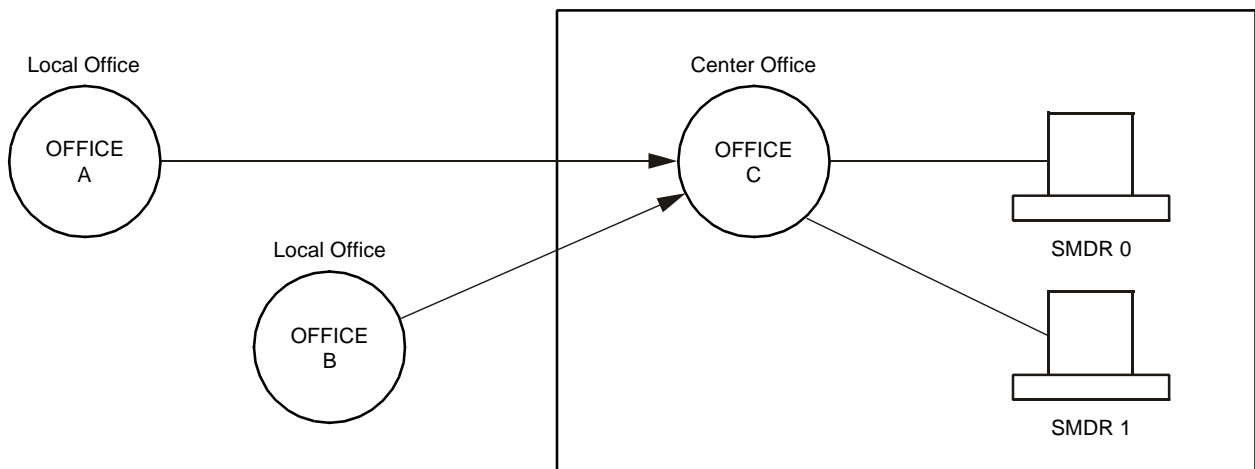
Example 1: Data Assignment of SMDR output for Center Office

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

- (1) To SMDR 0: Sending of billing information from both a Center Office and Local Offices.
- (2) To SMDR 1: Sending of billing information from both a Center Office and Local Offices.
- (3) To SMDR 0: Sending of billing information from Local Offices.
To SMDR 1: Sending of billing information of a Center Office.
- (4) To SMDR 0: Sending of billing information of a Center Office.
To SMDR 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
 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 (400)	No. of call record Local Office (400)
>29 : No. of call record for SMDR 0 (400)	Desired setting (400)
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 YY=03>0 : 1 (Distant Office is Local Office)	0 (Distant Office is Center Office)
=04>0 : NONE	Point Code of Center Office
CMD000>76 : 1 (Tandem Call through CCIS)	1 (Default or desired setting)
CMD001>239 : 1 (SMDR 0)	0 (Not Centralized Billing Office)
>20 : Data Bit (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 : 1 (C.O. through CCIS)	1
>XX32 : 1 (Tie through CCIS)	1
>XX58 : 1 (IC through CCIS if needed)	1
>XX16 : 1 (SMDR 0)	1
>XX17 : 0	0
XX21 : 1 (Tie outgoing)	1 (Tie outgoing)
XX30 : 1 (CO/Tie incoming)	1 (CO/Tie incoming)
CMD000>70 : 1	1
>77 : 1	1
>79 : 1	1
CMD027>0000~0009>9 (Send to SMDR)	CMD027>0000~0009>9 (Send to SMDR)
CMD034>0000~0009>11 (Local call)	CMD034>0000~0009>11 (Local call)

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 YY=03>0	: 1 (Distant Office is Local Office)	0 (Distant Office is Center Office)
=04>0	: NONE	Point Code of Center Office
CMD000>76	: 1 (Tandem Call through CCIS)	1 (Default or desired setting)
CMD001>239	: 2 (SMDR 1)	0 (Not Centralized Billing Office)
>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	: 1 (C.O. through CCIS)	1
>XX32	: 1 (Tie through CCIS)	1
>XX58	: 1 (IC through CCIS if needed)	1
>XX16	: 0	Desired setting
>XX17	: 1 (SMDR 1)	Desired setting
>XX22	: 1 (Tie outgoing)	1 (Tie outgoing)
>XX55	: 1 (CO/Tie incoming)	1 (CO/Tie incoming)
CMD000>70	: Desired setting	Desired setting
>77	: Desired setting	Desired setting
>79	: Desired setting	Desired setting
CMD027>0000~0009>9 (Send to SMDR)		CMD027>0000~0009>9 (Send to SMDR)
CMD034>0000~0009>11 (Local call)		CMD034>0000~0009>11 (Local call)

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 (400)	Desired setting
>26	: 0 (Not record)	No. of call record Local Office (400)
>29	: 0 (Not record) (400)	Desired setting (400)
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 YY=03>0	: 1 (Distant Office is Local Office)	0 (Distant Office is Center Office)
=04>0	: NONE	Point Code of Center Office
CMD000>76	: 1 (Tandem Call through CCIS)	1 (Default or desired setting)
CMD001>239	: 1 (SMDR 0)	0 (Not Centralized Billing Office)
>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

CENTER OFFICE

LOCAL OFFICE A/B

CMD001>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.)
CMD016>XX31	: 1 (C.O. through CCIS)	1
>XX32	: 1 (Tie through CCIS)	1
>XX58	: 1 (IC through CCIS if needed)	1
>XX16	: 1 (SMDR 0)	1 (Desired setting)
>XX17	: 1 (SMDR 1)	1 (Desired setting)
CMD000>70	: 1 (Desired setting)	1 (Desired setting)
>77	: 1 (Desired setting)	1 (Desired setting)
>79	: 1 (Desired setting)	1 (Desired setting)

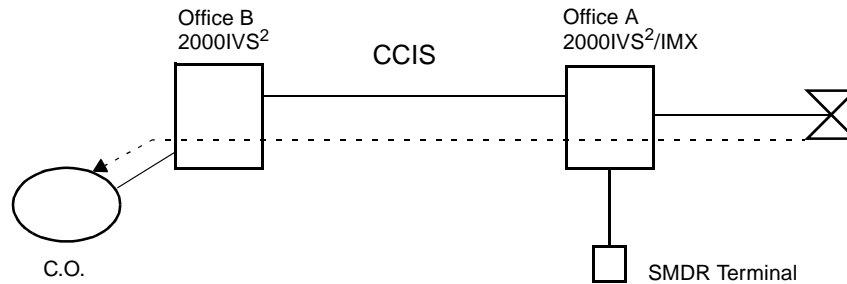
Centralized Billing Programming Steps for Pattern 4
 To SMDR 0: Setting of billing information from Local Offices.
 To SMDR 1: Setting of billing information from Center Office.
 Use two SMDR terminals, one for Port 0 and one for Port 1.

	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 YY=03>0	: 1 (Distant Office is Local Office)	0 (Distant Office is Center Office)
=04>0	: NONE	Point Code of Center Office
CMD000>76	: 1 (Tandem Call through CCIS)	Default or desired setting
CMD001>239	: 2 (SMDR 1)	0 (Not Centralized Billing Office)
>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

	CENTER OFFICE	LOCAL OFFICE A/B
CMD001>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.)
CMD016>XX31	: 1 (C.O. through CCIS)	1
>XX32	: 1 (Tie through CCIS)	1
>XX58	: 1 (IC through CCIS if needed)	1
>XX16	: 1 (SMDR 0)	Desired setting
>XX17	: 1 (SMDR 1)	Desired setting
CMD000>70	: 1 (Desired setting)	1 (Desired setting)
>77	: 1 (Desired setting)	1 (Desired setting)
>79	: 1 (Desired setting)	1 (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 YY=14>C.O. Route No.: 1 (To provide)
- CMD000>76: 1 (To send)
- CMD000>79: 0 (Only outgoing call information)

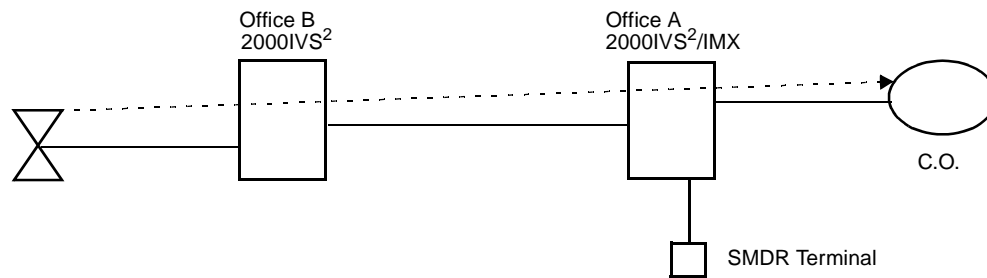
Data Assignment of Office A

- CM35 YY=14>CCIS Route No.: 0 (Not provided)
- CMA7 YY=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 YY=14>C.O. Route No.: 0 (Not provided)
CMD000>76: 1 (To send)
CMD000>79: 0 (Only outgoing call information)

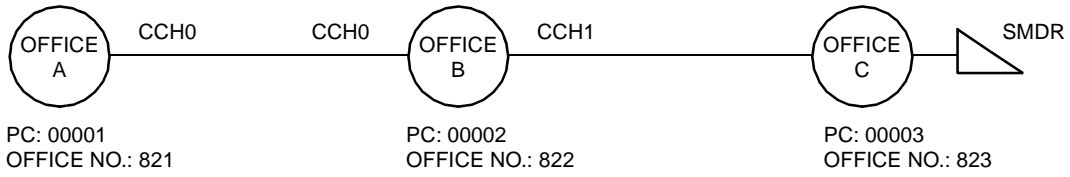
Data Assignment of Office A

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 YY=03, 04



PC : Point Code
CCH: Common Channel Handler

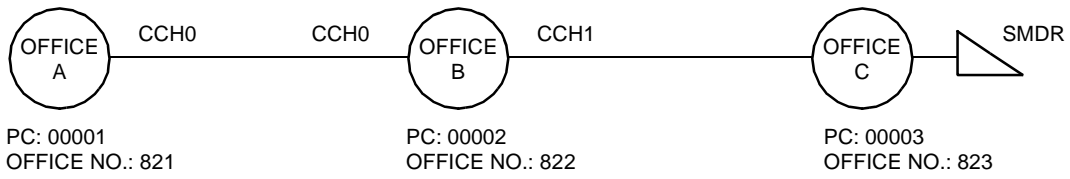
- Data Assignment of Office A

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

- Data Assignment of Office B

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

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



PC : Point Code
CCH: Common Channel Handler

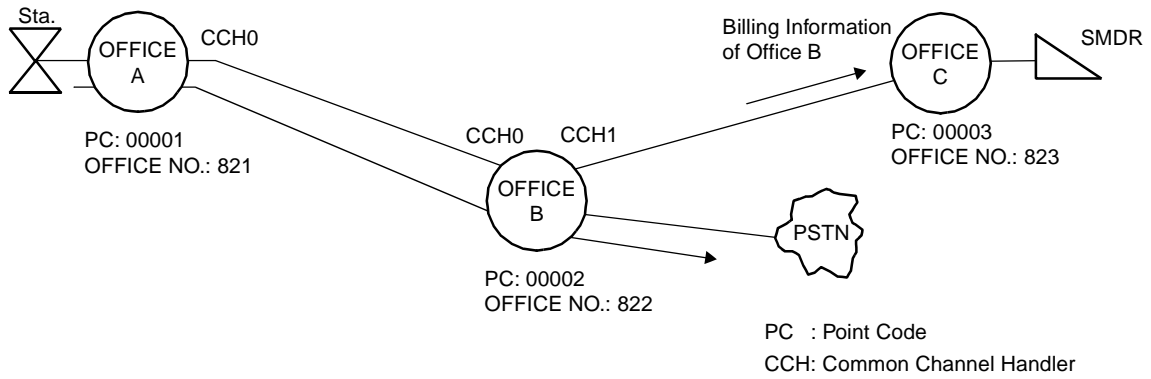
- Data Assignment of Office A

Command Code	1st Data	2nd Data	Remarks
CMA7 YY=06	0	821	When using Built-in SMDR
CMD004	55	821	When using AP00

- Data Assignment of Office B

Command Code	1st Data	2nd Data	Remarks
CMA7 YY=06	0	822	] When using Built-in SMDR
CMA7 YY=06	1	822	
CMD004	55	822	When using AP00

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:

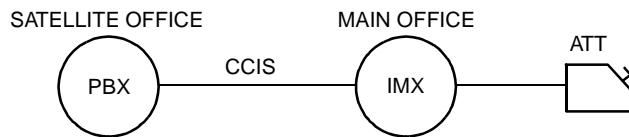
- Data Assignment of Office A

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

CENTRALIZED DAY/NIGHT MODE CHANGE-CCIS

General Description

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



- For Satellite Office

If no Attendant Console is required in the Satellite Office, the following programming is required.

START	DESCRIPTION	DATA
CM60 END	Assign as ineffective Trunk Restriction Class change by NT (Night) switch on ATTCON/DESKCON. INITIAL	<ul style="list-style-type: none"> • YY=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	<ul style="list-style-type: none"> • YY=04 (1) 0-7: ATTCON No. (2) 1◀: Ineffective
	Assign as ineffective Day/Night Mode Change by NT switch on ATTCON/DESKCON. INITIAL	<ul style="list-style-type: none"> • YY=06 (1) 0-7: ATTCON No. (2) 1◀: Ineffective

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
START		
CM10	Assign the DK card to the required LEN. 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) 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 2: Circuit No. 3 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 E800-E831 Y : 0-3: Circuit No. 313 : Built-in External Equipment Interface on MP card (2) 3601
END		

Hardware Requirements

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:

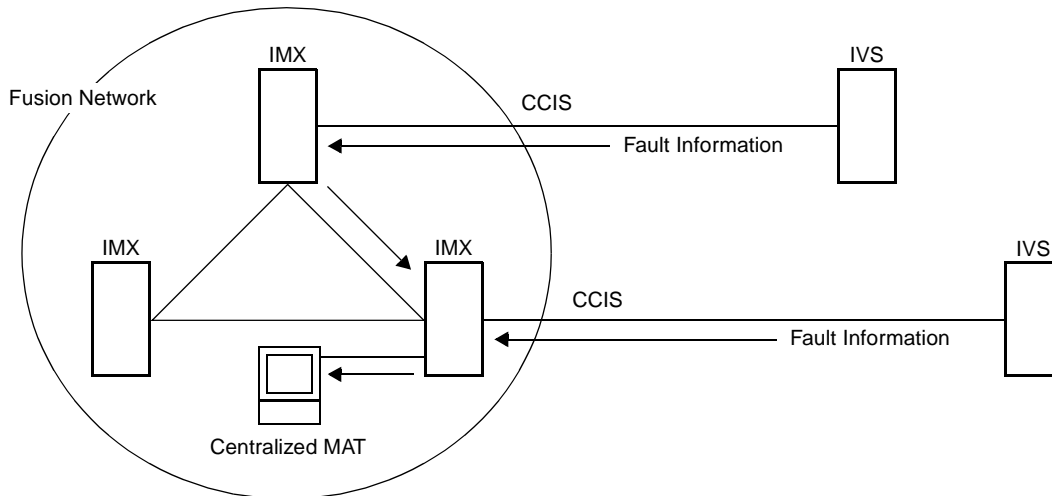
No manual operation required.

CENTRALIZED MAT-CCIS (FUTURE ENHANCEMENT)

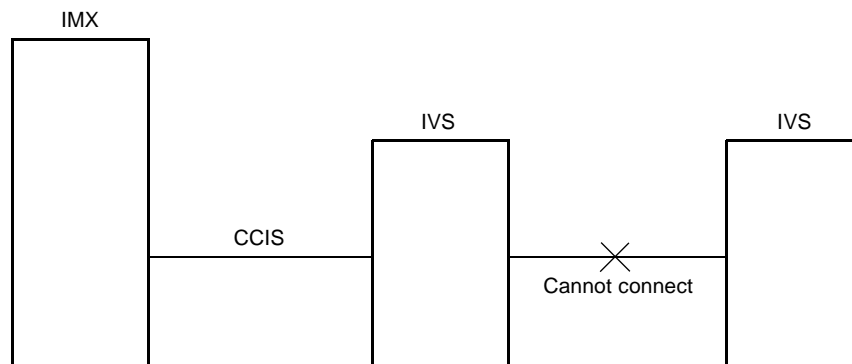
General Description

All nodes in the multiple IMXs and IVSs through CCIS link can be maintained from the sole MAT installed in an IMX.

When the fault occurs at an IVS, the fault information (node name, alarm kind) is displayed on at the Centralized MAT.



- The IVS must be a subordinate office.
 - The opposite office must be an IMX.
- A connection among IMX and two or more IVSs cannot provide the Centralized MAT feature.



- For the station number in integrated numbering plan through CCIS network, access code for network station number set by CM20>811-818 is required.

Programming

START	DESCRIPTION	DATA
CMEA	<p>Assign fault kind information and its external alarm kind.</p> <p>Fault Kind number:</p> <p>01 : System Initialization</p> <p>04 : MP-FP/AP communication failure</p> <p>08 : FP/AP card down</p> <p>09 : Power failure</p> <p>12 : CS/ZT fault occurred</p> <p>16 : Battery exchange periodic alarm</p> <p>20 : DTI Line failure</p> <p>21 : DCH/BRT/PRT D-channel link connection failure</p> <p>22 : CCH Link connection failure</p> <p>24 : Number of faulty trunks was more than predetermined number.</p> <p>25 : The number of lockout stations was more than predetermined number.</p> <p>26 : DLC card down</p> <p>27 : Synchronism of DPC missed</p> <p>28 : SMDR output buffer memory overflow</p> <p>2B : CS/ZT fault occurred.</p> <p>18 : FP/AP card returned to normal condition.</p> <p>19 : Power failure returned to normal condition.</p> <p>30 : DTI Line returned to normal condition.</p> <p>31 : DCH/BRT/PRT D-channel link connection returned to the normal condition.</p> <p>32 : CCH Link connection returned to normal condition.</p> <p>34 : Number of faulty trunks was less than predetermined number.</p> <p>35 : Number of lockout stations restored to less than predetermined number.</p> <p>36 : DLC card returned to normal condition.</p> <p>38 : SMDR output buffer memory returned to normal condition.</p> <p>3B : CS/ZT returned to normal condition.</p>	<ul style="list-style-type: none"> • Y=2 (1) Fault Kind No.: See left column (2) External Alarm Kind <ul style="list-style-type: none"> 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
A		

A	DESCRIPTION	DATA
CMEA	Specify the external alarm kind which is automatically sent.	<ul style="list-style-type: none"> • Y=3 (1) 00-02: External Alarm Kind set by CMEA Y=2 (2) 0 : Sent 1◀: Not sent
	Specify the contents which is sent to the Integrated Maintenance office as external alarm kind.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • Y=5 (1) 01: With Character Codes (2) 20-7F: Character Code (Max. 32 digits, 16 characters) (See CM77 in the Command Manual.) (1) 02: With Characters (2) XX...XX:Office name (Max. 16 characters)
<u>END</u>		

NOTE: When a fault occurs, the external alarm kind registered in the IVS in the CCIS network is displayed on Centralized MAT on the IMX office as follows:

```
DFTD 99/08/30      14:57  xxxxxxxxxxxxxxxx
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 3:00 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 7:00 00 00 00 00 00 00
8: 00 00 00 00 00 00 00 00
```

DFTD 99/08/30 14:57 XXXXXXXXXX : Date of external alarm message output
 SYSTEM MESSAGE 15-0 IVS MESSAGE : Means that the fault information is transferred from the IVS.

1: 3F EE 01 00 00 00 00 00
 3F EE : Point Code of a IVS which external alarm message outputs

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

00 : Summary information (00 fixed)

For details, refer to the manuals for the IMX.

CONSULTATION HOLD-ALL CALLS-CCIS

General Description

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

Programming

START	DESCRIPTION	DATA
CM12	Assign the Service Restriction Class C to the required stations.	<ul style="list-style-type: none"> • YY=07 (1) X-XXXXXXXX: Station No. (2) XX: 00-15◀: Service Restriction Class C
CM15	Allow the Switch Hook Flash capability in the Service Restriction Class C assigned by CM12 YY=07.	<ul style="list-style-type: none"> • YY=90, 91 Switch Hook Flash on External Call (1) 00-15: Service Restriction Class C assigned by CM12 YY=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.	<ul style="list-style-type: none"> (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; receive ringback tone.
- (4) The second station answers; Consultation Hold-All Calls-CCIS is established.

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

- (1) Under any of the following conditions, the calling station can return to the original call by pressing the switch hook:
 - (a) The second station called is busy.
 - (b) The calling station cannot gain access to the second station because of a restriction, etc.
 - (c) The second station does not answer.
- (2) If the second party hangs up, the calling station will automatically be returned to the original call.
- (3) If the originating station switch hook flashes, a three-way call will be established.

D^{term}

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

- (1) Press the TRANSFER key; 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; receive ringback tone.
- (4) The second station answers; Consultation Hold-All Calls-CCIS is established.

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

- (1) Under any of the following conditions, 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 because of a restriction, etc.
 - (c) The second station does not answer.
- (2) If the second station hangs up, the calling station will automatically be 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 calling station and the second call is held.
- (4) By pressing the CONF key, a Conference will be initiated.

DATA LINE SECURITY-CCIS

General Description

This feature allows line circuits which are used for data transmission to be protected from following interruptions:

- Attendant Camp-On with Tone Indication (Attendant Camp-On)
- Attendant Camp-On with Tone Indication-CCIS
- Attendant Override
- Automatic Camp-On (Attendant Camp-On)
- Boss-Secretary-Message Waiting Lamp Control-D^{term} (Boss/Secretary Calling)
- Boss-Secretary Override-D^{term} (Boss/Secretary Calling)
- Boss-Secretary Transfer-D^{term} (Boss/Secretary Calling)
- Busy Verification (Attendant Override)
- Busy Verification-CCIS
- Executive Right Of Way (Executive Override)
- Executive Right Of Way-D^{term} (Executive Override)

Programming

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">CM13</div>	Assign the function of Analogue Data station (Single Line Station with FAX or MODEM.) to required stations.	<ul style="list-style-type: none"> • YY=07 (1) X-XXXXXXX: 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
	Assign a Trunk Restriction Class to the required stations.	<ul style="list-style-type: none"> • YY=01 Trunk Restriction Class (1) X-XXXXXXXX: Station No. (2) X Z: Route Restriction Class <li style="padding-left: 20px;">X: 1-8: Trunk Restriction Class in Day Mode <li style="padding-left: 20px;">Z: 1-8: Trunk Restriction Class in Night Mode <li style="padding-left: 40px;">1: Unrestricted (RCA) <li style="padding-left: 40px;">2: Non-Restricted 1 (RCB) <li style="padding-left: 40px;">3: Non-Restricted 2 (RCC) <li style="padding-left: 40px;">4: Semi-Restricted 1 (RCD) <li style="padding-left: 40px;">5: Semi-Restricted 2 (RCE) <li style="padding-left: 40px;">6: Restricted 1 (RCF) <li style="padding-left: 40px;">7: Restricted 2 (RCG) <li style="padding-left: 40px;">8: Fully-Restricted (RCH)

A	DESCRIPTION	DATA
CM35	<p>Specify to outgoing/incoming call capability on each Route Restriction Class (RCA-RCH) assigned by CM12 YY=01 to each route.</p> <p>NOTE: For the route assigned as C.O. line by CM35 YY=56 (RCF), 57 (RCG), 58 (RCH) are automatically assigned to "Restricted".</p>	<ul style="list-style-type: none"> • YY=51 (RCA) • YY=52 (RCB) • YY=53 (RCC) • YY=54 (RCD) • YY=55 (RCE) • YY=56 (RCF) • YY=57 (RCG) • YY=58 (RCH) <p>Restriction of Outgoing Connection</p> <ul style="list-style-type: none"> • YY=61 (RCA) • YY=62 (RCB) • YY=63 (RCC) • YY=64 (RCD) • YY=65 (RCE) • YY=66 (RCF) • YY=67 (RCG) • YY=68 (RCH) <p>Restriction of Incoming Connection</p> <p>(1) 00-63: Trunk Route No. (2) 0 : Restricted 1◀: Allow</p>
CM36	<p>To deny access to particular trunk groups from dial-repeating Tie trunks, specify the combination of trunk route restricting the Trunk-to-Trunk Connection.</p>	<ul style="list-style-type: none"> • Y=0 <p>(1) XX ZZ XX: 00-63 (Incoming Trunk [Tie Trunk] Route) ZZ: 00-63 (Outgoing Trunk [Miscellaneous Trunk] Route)</p> <p>(2) 0: Allow</p>
<u>END</u>		

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

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM42</div>	<p>Assign the IMX Trunk Restriction Class to each PBX Trunk Restriction Class for the restriction class conversion from the PBX to the IMX, if required.</p>	<ul style="list-style-type: none"> (1) 20: TRK Restriction Class 1 (RCA) 21: TRK Restriction Class 2 (RCB) 22: TRK Restriction Class 3 (RCC) 23: TRK Restriction Class 4 (RCD) 24: TRK Restriction Class 5 (RCE) 25: TRK Restriction Class 6 (RCF) 26: TRK Restriction Class 7 (RCG) 27: TRK Restriction Class 8 (RCH) (2) 00-15: IMX TRK Restriction Class (0-15)
	<p>Assign the PBX Trunk Restriction Class to each IMX Trunk Restriction Class for the restriction class conversion from the IMX to the PBX, if required.</p>	<ul style="list-style-type: none"> (1) 30: TRK Restriction Class 0 31: TRK Restriction Class 1 32: TRK Restriction Class 2 33: TRK Restriction Class 3 34: TRK Restriction Class 4 35: TRK Restriction Class 5 36: TRK Restriction Class 6 37: TRK Restriction Class 7 38: TRK Restriction Class 8 39: TRK Restriction Class 9 40: TRK Restriction Class 10 41: TRK Restriction Class 11 42: TRK Restriction Class 12 43: TRK Restriction Class 13 44: TRK Restriction Class 14 45: TRK Restriction Class 15 (2) 01-08: PBX TRK Restriction Class (1-8)
<u>END</u>		

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

(1) PBX to IMX:

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

(2) IMX to PBX:

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

Operating Procedure

None (However, this feature is dependent on System Programming.)

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
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM62</div>	<p>Specify the tenants to be handled by each ATTCON Group.</p> <p>NOTE: When marking a link with the IMX Tenant number should be assigned as 01-63, not 00.</p>	<ul style="list-style-type: none"> • Y=0-3: ATTCON Group 0-3 assigned by CM60 Y=00 (1) 00-63: Tenant No. (2) 0 : To be handled 1◀: Not to be handled
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM20</div>	<p>Assign the digit 0 as an access code, to LCR Group 3 (A129).</p>	<ul style="list-style-type: none"> • Y=0: Number Plan Group 0-3 (1) 0: Access Code (2) A129
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM8A</div>	<p>Assign an area code table to be used to select a route pattern table.</p> <p>Assign the digit 0 into the selected area code table.</p> <p>Assign the route pattern table with the desired properties and selection of appropriate routes.</p>	<ul style="list-style-type: none"> • YYYY=A000 (1) 0-3: LCR Group 0-3 (2) 4000-4007: Area Code Development Pattern No. 0-7 • YYYY=4000-4007 (1) 0 (2) 0000-0255: Route Pattern No. 000-255 • YYYY=0000-0255: Route Pattern No. 000-255 (1) 1-4: LCR Selection Priority <ul style="list-style-type: none"> 1: 1st 2: 2nd 3: 3rd 4: 4th (2) XXX ZZ <ul style="list-style-type: none"> XXX: 000-255 (LCR Pattern No.) ZZ : 00-63 (Trunk Route No.)
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">END</div>		

Operating Procedure

To call an Attendant Console:

- (1) The station user dials the operator call code, then 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 predesignated 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.	<ul style="list-style-type: none"> • YY=02 Day Mode • YY=03 Night Mode • YY=40 Mode A • YY=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.	<ul style="list-style-type: none"> • YY=04 Day Mode • YY=05 Night Mode • YY=42 Mode A • YY=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).	<ul style="list-style-type: none"> • YY=02 IC/BW (1) 00-63: Trunk Route No. (2) 1 : Incoming Trunk 3◀: Bothway Trunk
		<ul style="list-style-type: none"> • YY=05 Release Signal from Distant Office (1) 00-63: Trunk Route No. (2) 1◀: Arrive
		<ul style="list-style-type: none"> • YY=09 Incoming Connection Signaling (1) 00-63: Trunk Route No. (2) 15◀: Ring Down 01 : Ground Start
A		

A	DESCRIPTION	DATA
CM36	Specify the combination of trunk routes allowing the Tandem connection.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> (1) 66: Exclusively for DIT-Outside (2) XXX YYY XXX: 000-299 (First Memory/Slot No. in Block) YYY: 001-300 (No. of Slots to be allocated in Block)
CM72	Set the stored number to the Memory Slot number allocated by CM71.	<ul style="list-style-type: none"> • Y=0 (1) 000-299: Memory Slot No. (2) XXXX [] YY...Y XX : Access Code (Max. 2 digits) [] : Separator Mark YY...Y: Calling Party's No. (Max. 26 digits)
<u>END</u>		

- 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.)	<ul style="list-style-type: none"> (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.	<ul style="list-style-type: none"> • YY=02 Day Mode • YY=03 Night Mode • YY=40 Mode A • YY=41 Mode B
	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.	<ul style="list-style-type: none"> (1) 000-255: Trunk No. (2) 04: Direct-In Termination <ul style="list-style-type: none"> • YY=04 Day Mode • YY=05 Night Mode • YY=42 Mode A • YY=43 Mode B
CM35	Assign trunk route data to the trunk route number (for IC route).	<ul style="list-style-type: none"> (1) 000-255: Trunk No. (2) CXX XX: 00-31 (Abbreviated Code for System Speed Dialing Assigned by CM71>66) <ul style="list-style-type: none"> • YY=02 IC/BW (1) 00-63: Trunk Route No. (2) 1 : Incoming Trunk 3◀: Bothway Trunk <ul style="list-style-type: none"> • YY=05 Release Signal from Distant Office (1) 00-63: Trunk Route No. (2) 0◀: No Arrive <ul style="list-style-type: none"> • YY=09 Incoming Connection Signaling (1) 00-63: Trunk Route No. (2) 15◀: Ring Down 01 : Ground Start
A		

A	DESCRIPTION	DATA
CM35	Assign Trunk Route data to the trunk route number (for OG route).	<ul style="list-style-type: none"> • YY=04 Answer Signal from Distant Office (1) 00-63: Trunk Route No. (2) 2: Arrive
CM36	Specify the combination of trunk routes allowing the Tandem connection.	<ul style="list-style-type: none"> • YY=05 Release Signal from Distant Office (1) 00-63: Trunk Route No. (2) 1◀: Arrive
CM71	Assign the System Speed Dialing memory area used exclusively for DIT-Outside.	<ul style="list-style-type: none"> • YY=00 (1) XX ZZ XX: 00-63 (Incoming Trunk Route) ZZ: 00-63 (Outgoing Trunk Route for CCIS) (2) 0: Allow <ul style="list-style-type: none"> (1) 66: Exclusively for DIT-Outside (2) XXX YYY XXX: 000-299 (First Memory/Slot No. in Block) YYY: 001-300 (No. of Slots to be allocated in Block)
CM72	Set the stored number to the Memory Slot number allocated by CM71.	<ul style="list-style-type: none"> • Y=0 (1) 000-299: Memory Slot No. (2) XXXX [] YY...Y XX : Access Code (Max. 2 digits) [] : Separator Mark YY...Y: Calling Party's No. (Max. 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.	<ul style="list-style-type: none"> • Y=0 (1) 55 (2) 01-13: 8-60 sec, in 4 sec increments. If no data is set, the default setting is 20-24 seconds.
END		

Operating Procedure

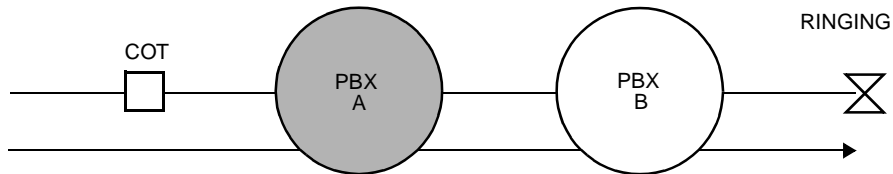
The outside calling party dials the telephone number as usual. The call is answered at a predesignated station within the CCIS network, bypassing the Attendant Console.

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 A (equipped with incoming COT).
Internal ringing will always be 1 sec. ON, 2 sec. OFF.

START	DESCRIPTION	DATA
CM35	Select the ringing pattern on external call.	<ul style="list-style-type: none"> • YY=33 (1) 00-63: Trunk Route No. for IC (2) 0 : 0.4 s ON-0.2 s OFF-0.4 s ON-2 s OFF 1 : 0.4 s ON-0.2 s OFF-0.4 s ON-2 s OFF 2 : 1 s ON-2 s OFF 3◀: When CM08>392: 0 2 s ON-4 s OFF When CM08>392: 1 0.4 s ON-0.2 s OFF-0.4 s ON-0.2 s OFF
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.

Programming

START	DESCRIPTION	DATA
CM12	Assign the Service Restriction Class A the required stations.	<ul style="list-style-type: none"> YY=02 (1) X-XXXXXXXX: Station No. (2) XX ZZ XX: 00-15◀: Service Restriction Class A
CM15	Allow Do Not Disturb in the Service Restriction Class A assigned by CM12 YY=02.	<ul style="list-style-type: none"> YY=19 (1) 00-15: Service Restriction Class A assigned by CM12 YY=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.	<ul style="list-style-type: none"> YY=00 (1) X-XXXXXXXX: Station No. (2) 0: Provided
CM20	Assign the access code for Do Not Disturb Set/Cancel.	<ul style="list-style-type: none"> Y=0-3 Numbering Plan Group 0-3 (1) X-XXXX: Access Code (2) A022: Set A023: Cancel
CM51	Assign the destination of call transfer when the called station is set to Do Not Disturb. NOTE: Station No. or Attendant No. must be assigned within this PBX.	<ul style="list-style-type: none"> YY=10 (1) 00-63: Tenant No. (2) X-XXXXXXXX: Station No. E000: Attendant Console
A		

A	DESCRIPTION	DATA
CM90	<p>If the Attendant Console is assigned as the destination by CM51, assign a Call Forwarding-Intercept (ICPT) key to the console.</p> <p>Assign a DND function key to a D^{term}, if desired.</p> <p>Assign DND and DNDOVR function keys to the ATTCON/DESKCON.</p>	<ul style="list-style-type: none"> • YY=00 (1) My Line No. + [] + Key No. (2) F6065: Call Forwarding-Intercept Key <ul style="list-style-type: none"> • YY=00 (1) My Line No. + [] + Key No. (2) F0022: Do Not Disturb set/reset <ul style="list-style-type: none"> • YY=00 (1) ATTCON No. (E000-E007) + [] + Key No. (2) F6102: DND F6103: DND Override F6104: RESET
CM08	<p>Specify the Call Forwarding-Busy Line/ Station Hunting for a station set to Do Not Disturb.</p> <p>For a system with Multiple-Tenant features, specify the destination of a call transferred in CM51 YY=10 for the tenant of the calling or called station.</p>	<ul style="list-style-type: none"> (1) 240 (2) 0 : Available 1◀: Not available <ul style="list-style-type: none"> (1) 241 (2) 0 : Tenant of called station 1◀: Tenant of calling station
CM48	<p>Select the DialTone on setting Do Not Disturb.</p>	<ul style="list-style-type: none"> • Y=2 (1) 14: Dial Tone on setting Do Not Disturb (2) 0 : Special Tone 1◀: Dial Tone
<u>END</u>		

Operating Procedure

Single-Line Telephone/D^{term}

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

- (1) Lift the handset; receive dial tone.
- (2) Dial Do Not Disturb-CCIS feature access code; 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; receive dial tone.
- (2) Dial Do Not Disturb-CCIS cancellation code; receive service set tone.
- (3) Replace the handset.

D^{term}

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

- (1) Press the SPEAKER key; receive dial tone.
- (2) Press the Do Not Disturb feature access key and the associated LED lights. If 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; receive dial tone.
- (2) Press the Do Not Disturb feature access key and the associated LED goes out. If equipped with an LCD, the display will indicate CNCL.
- (3) Press the SPEAKER key.

DUAL HOLD-CCIS

General Description

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

Programming

START	DESCRIPTION	DATA
CM12	Assign the Service Restriction Class B to the required stations.	<ul style="list-style-type: none"> • YY=02 (1) X-XXXXXXXX: Station No. (2) XX ZZ ZZ: 00-15◀: Service Restriction Class B
CM15	Allow Dual Hold in the Service Restriction Class B assigned by CM12 YY=02.	<ul style="list-style-type: none"> • YY=64 (1) 00-15: Service Restriction Class B assigned by CM12 YY=02. (2) 1◀: Allow
END		

Operating Procedure

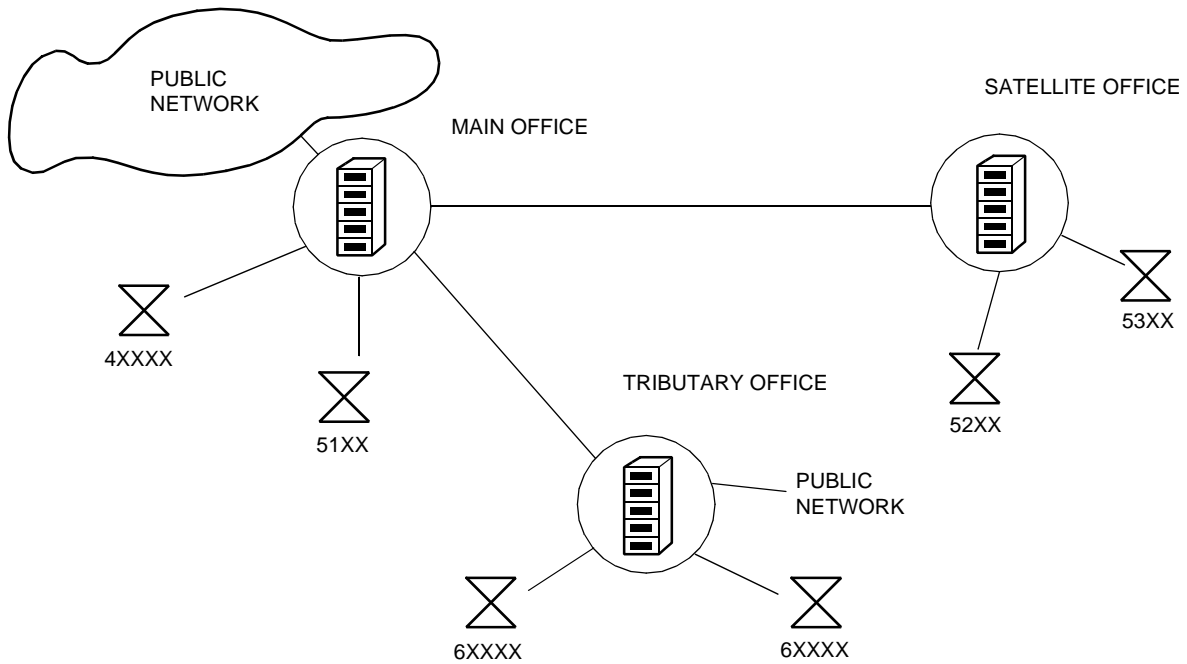
To operate Dual Hold-CCIS from a D^{term}:

- (1) Station A pressed the HOLD key; Station B is placed on hold.
- (2) Station B pressed the HOLD key; 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 upon 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 digit station numbers must not be assigned if: <ul style="list-style-type: none"> • Stations are observed by SMDR/PMS/OAI • Front Desk Terminal/D^{term} TIMS 	<ul style="list-style-type: none"> • 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.	(1) 000-763: LEN (2) X-XXXXXXXX: Station No.
END		

Operating Procedure

No manual operation is required.

HOT LINE-CCIS

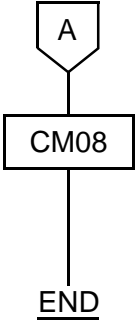
General Description

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.	<ul style="list-style-type: none"> YY=03 (1) X-XXXXXXX: 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:	(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)																						
	<table border="1"> <thead> <tr> <th>Memory Slot 100</th> <th>Abbrev. Codes</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>00</td> </tr> <tr> <td>2</td> <td>01</td> </tr> <tr> <td>3</td> <td>02</td> </tr> <tr> <td>4</td> <td>03</td> </tr> <tr> <td>5</td> <td>04</td> </tr> <tr> <td>6</td> <td>05</td> </tr> <tr> <td>7</td> <td>06</td> </tr> <tr> <td>8</td> <td>07</td> </tr> <tr> <td>9</td> <td>08</td> </tr> <tr> <td>Memory Slot 109</td> <td>09</td> </tr> </tbody> </table>	Memory Slot 100	Abbrev. Codes	1	00	2	01	3	02	4	03	5	04	6	05	7	06	8	07	9	08	Memory Slot 109	09	
Memory Slot 100	Abbrev. Codes																							
1	00																							
2	01																							
3	02																							
4	03																							
5	04																							
6	05																							
7	06																							
8	07																							
9	08																							
Memory Slot 109	09																							
CM72	Assign the destination party's number to each Memory Slot number.	<ul style="list-style-type: none"> Y=0 (1) 000-299: Memory Slot No. (2) XXXX [] YY...Y XX : Access Code (Max. 2 digits) [] : Separator Mark YY...Y: Calling Party's No. (Max. 26 digits)																						
CM52	Define the Hot Line pairs.	<ul style="list-style-type: none"> YY=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																								

	<u>DESCRIPTION</u>	<u>DATA</u>
	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) Station "A" lifts the handset.
- (2) Station "B" is rung.
- (3) 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.	<ul style="list-style-type: none"> YY=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: <table border="1" style="margin: 10px auto;"> <thead> <tr> <th>Memory Slot</th> <th>Abbrev. Codes</th> </tr> </thead> <tbody> <tr> <td>Memory Slot 100</td> <td>00</td> </tr> <tr> <td>1</td> <td>1</td> </tr> <tr> <td>Memory Slot 109</td> <td>09</td> </tr> </tbody> </table>	Memory Slot	Abbrev. Codes	Memory Slot 100	00	1	1	Memory Slot 109	09	<ul style="list-style-type: none"> (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)
Memory Slot	Abbrev. Codes									
Memory Slot 100	00									
1	1									
Memory Slot 109	09									
CM72	Assign the destination party's number to each Memory Slot number.	<ul style="list-style-type: none"> Y=0 (1) 000-299: Memory Slot No. (2) XXXX [] YY...Y XX : Access Code (Max. 2 digits) [] : Separator Mark YY...Y: Calling Party's No. (Max. 26 digits) 								
CM52	Define the Hot Line (House-phone) pairs.	<ul style="list-style-type: none"> YY=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:

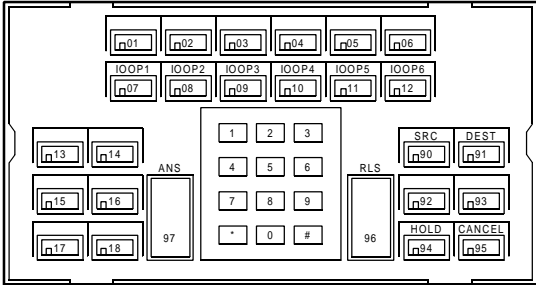
- (1) House Phone-CCIS user lifts the handset.
- (2) The Attendant in another office is automatically called. ATND lamps on Attendant Console flash and console buzzer sounds.

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.

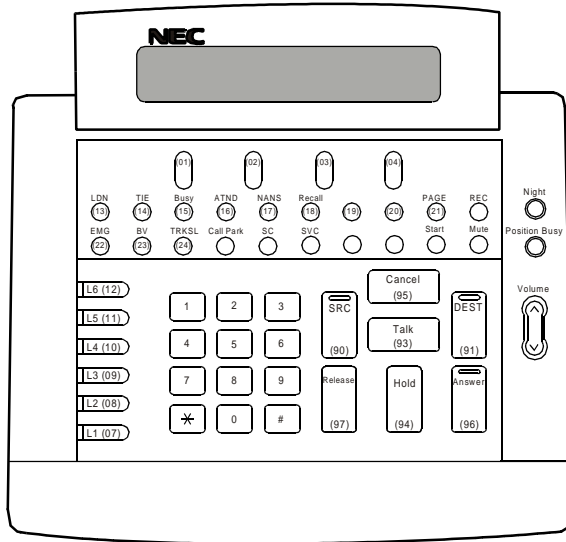
Programming

START	DESCRIPTION	DATA												
CM35	Specify the ICI key to which an incoming call from each trunk route terminates.	<ul style="list-style-type: none"> YY=15 (1) 00-63: Trunk Route No. (2) 75: No. 7 CCIS Call 												
CM90	<p>Assign the ATT Call Selection keys required on the ATTCON. The following ATT Call Selection keys are initially set.</p>  <table border="1"> <thead> <tr> <th>Key No.</th> <th>Data</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>16</td> <td>F6061</td> <td>Recall (RCL)</td> </tr> <tr> <td>17</td> <td>F6060</td> <td>Operator Call (ATND)</td> </tr> <tr> <td>18</td> <td>F6000</td> <td>C.O. Incoming 0 (LND0)</td> </tr> </tbody> </table> <p>Assign the required Attendant Call Selection keys and ATTCON Function keys to each DESKCON, according to the Key label.</p>	Key No.	Data	Description	16	F6061	Recall (RCL)	17	F6060	Operator Call (ATND)	18	F6000	C.O. Incoming 0 (LND0)	<ul style="list-style-type: none"> YY=00 (1) ATTCON No. (E000-E007) + [] + Key No. (2) F60XX <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> YY=00 (1) ATTCON No. (E000-E007) + [] + Key No. (2) F6000-F6067: Type of Calls to be assigned F6100-F6245: Functions to be assigned
Key No.	Data	Description												
16	F6061	Recall (RCL)												
17	F6060	Operator Call (ATND)												
18	F6000	C.O. Incoming 0 (LND0)												
A														

A

DESCRIPTION

DATA



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-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 predesignated 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.	<ul style="list-style-type: none"> • YY=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.	<ul style="list-style-type: none"> • YY=00 (1) E00X + <input type="checkbox"/> + 13-18 (Key No.) X: Attendant Console No. (2) F6000-F6007: LDN0-7
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.	<ul style="list-style-type: none"> • YY=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
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM08</div>	Provide the system with the LDN Diversion feature.	(1) 205 (2) 0: To provide
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM58</div>	Assign the data for LDN Diversion to each indiald number assigned by CM50 YY=01. Note that a call is diverted to LDN 0-7 keys as specified by CM58 YY=02-07, even if CM50 YY=01, 1-8 has already been set.	<ul style="list-style-type: none"> • YY=00 Tenant No. of the LDN <ul style="list-style-type: none"> (1) 00 : Effective data in CM35 YY=15 01-08 : LDN key No. 00-07 assigned by CM90. (2) 00-63 : Tenant No. • YY=01 TAS Group No. <ul style="list-style-type: none"> (1) Same as CM58 Y=00 (2) 00-63: TAS Group No. • YY=02 Day Mode destination of the <ul style="list-style-type: none"> (1) LDN (2) Same as CM58 Y=00 <ul style="list-style-type: none"> 00-07 : LDN key 0-7 08 : To TAS 09 : To station/outside party assigned by CM58 YY=08. • YY=03 Night Mode destination <ul style="list-style-type: none"> (1) Same as CM58 Y=00 (2) 00-07 : LDN key 0-7 <ul style="list-style-type: none"> 08 : To TAS 09 : To station/outside party assigned by CM58 YY=09. • YY=04 Day Mode Diversion for busy destination station <ul style="list-style-type: none"> (1) Same as CM58 Y=00 (2) 00: To ATTCON (BUSY key) 08: To TAS 09: Camped on
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">A</div>		

A	DESCRIPTION	DATA
CM58	<p>If the 2nd data (09) is designated by CM58 YY=02, 03, assign the station/outside party number to be diverted.</p>	<ul style="list-style-type: none"> • YY=05 Night Mode Diversion for busy destination station <ol style="list-style-type: none"> (1) Same as CM58 YY=00 (2) Same as CM58 YY=04 • YY=06 Day Mode Diversion for non-answering destination station <ol style="list-style-type: none"> (1) Same as CM58 YY=00 (2) 00: To ATTCON (NANS key) 08: To TAS • YY=07 Night Mode Diversion for non-answering destination station <ol style="list-style-type: none"> (1) Same as CM58 YY=00 (2) Same as CM58 YY=06 • YY=08 Day Mode destination station/ outside party <ol style="list-style-type: none"> (1) Same as CM58 Y=00 (2) X-XXXXXXXX: Station No. CXX: Abbreviated Code for Outside Party XX : 00-31 (Abbreviated Code) • YY=09 Night Mode destination station/ outside party <ol style="list-style-type: none"> (1) Same as CM58 Y=00 (2) X-XXXXXXXX: Station No. CXX: Abbreviated Code for Outside Party XX : 00-31 (Abbreviated Code)
B		

B	DESCRIPTION	DATA
CM36	If the 2nd data (CXX) is designated by CM58 YY=08, 09, specify the combination of trunk routes allowing the Tandem connection.	<ul style="list-style-type: none"> • 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 YY=08, 09 assign the Speed Calling-System (System Speed Dialing) memory area exclusively for LDN-Outside.	<ul style="list-style-type: none"> (1) 66: Exclusively for LDN-Outside (2) XXX ZZZ XXX: 000-299 (First Memory/Slot No. in Block) ZZZ: 001-300 (No. of Slots to be allocated in Block)
CM72	Set the stored number to the Memory Slot number allocated by CM71.	<ul style="list-style-type: none"> • Y=0 (1) 000-299: Memory Slot No. (2) XXXX [] YY...Y XX : Access Code (Max. 2 digits) [] : Separator Mark YY...Y: Calling Party's No. (Max. 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: The DK card number must be assigned to the 1st LEN (Level 0), 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: Circuit No. 3 of E831 is used for built-in External Equipment Interface of MP card by setting CM44.
CM44	Assign the function of CCIS Link Alarm Indication to the DK.	(1) XX Y XX : 00-31 (Card No. assigned by CM10>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.)
END		

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.

MESSAGE WAITING LAMP SETTING-ATTENDANT-CCIS

General Description

This feature allows an attendant, in the IMX system, to set or cancel a Message Waiting lamp indication, through the CCIS network on a station in a PBX system.

Programming

START	DESCRIPTION	DATA
CM13	Provide each station with Message Waiting service.	<ul style="list-style-type: none">• YY=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 from the IMX ATTCON:

- (1) Press an idle LOOP key; receive dial tone.
- (2) Dial the Message Waiting feature access code (max. three digits); receive feature dial tone.
- (3) Dial the station number; 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; receive dial tone.
- (2) Dial the Message Waiting cancel code (max. 3 digits); receive feature dial tone.
- (3) Dial the station number; 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 IMX system to set or cancel a Message Waiting lamp indication, through the CCIS network, to a station in the PBX system with this feature.

Programming

START	DESCRIPTION	DATA
START | CM13 | END	Provide each station with Message Waiting service.	<ul style="list-style-type: none"> • Y=03 (1) X-XXXXXXXX: Station No. (2) 0: To provide

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; receive dial tone.
- (2) Dial the Message Waiting feature access code (up to 3 digits); receive feature dial tone.
- (3) Dial the desired station number; receive service set tone.
- (4) Message Waiting indication is set at the station.

To cancel a Message Waiting indication:

- (1) Lift the handset; receive dial tone.
- (2) Dial the Message Waiting cancellation code (up to 3 digits); receive feature dial tone.
- (3) Dial the desired station number; 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 lines and exchange networks, 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 particular trunk groups, such as tie lines, exchange networks, 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" on Page 188](#).

Operating Procedure

No manual operation is required.

NIGHT CONNECTION-FIXED-CCIS

General Description

When the Night Mode has been entered, this service feature routes calls normally directed to the Attendant Console to a preselected station in another office, through the CCIS network.

Programming

Refer to ["Direct-In Termination-CCIS" on Page 194](#).

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 goes off-hook 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" on Page 194](#).

Operating Procedure

To set the Night Connection-Flexible-CCIS:

- (1) The operator or Night Fixed-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 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 goes off-hook to answer the incoming call.

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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 the Service Restriction Class A to the required stations.	<ul style="list-style-type: none"> • YY=02 (1) X-XXXXXXXX: Station No. (2) XX ZZ XX: 00-15◀: Service Restriction Class A
CM15	Allow Outgoing Trunk Queuing in the Service Restriction Class A assigned by CM12 YY=02.	<ul style="list-style-type: none"> • YY=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.	<ul style="list-style-type: none"> • 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} .	<ul style="list-style-type: none"> • YY=00 (1) My Line No. + [] + Key No. (2) F0004
CM35	Specify the Trunk Queuing-Outgoing capability to each trunk route.	<ul style="list-style-type: none"> • YY=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; receive dial tone.
- (2) Dial the desired number; receive busy tone.
- (3) Press the hookswitch momentarily; receive feature dial tone.
- (4) Dial the Outgoing Trunk Queuing-CCIS feature access code; receive service set tone.
- (5) Replace handset

To cancel Outgoing Trunk Queuing-CCIS:

- (1) Dial the Outgoing Trunk Queuing-CCIS cancellation code; 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	<p>Assign the Paging Trunk (COT card and DK card) to the required LEN.</p> <p>NOTE: The DK card number must be assigned to the first LEN (Level 0) and third LEN (Level 2) of each LT slot.</p>	<p>(1) 000-763: LEN (2) D000-D255 : 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</p> <p>NOTE: Circuit No. 3 of E831 is used for built-in External Equipment Interface on the MP card by setting CM44.</p>
CM44	<p>Assign the paging function to the DK card or external equipment interface on the MP card.</p>	<p>(1) XX Y XX : 00-31 (DK Card No. assigned by CM10 [E800-E831]) Y : 0-3 (Circuit No. of DK card) 313 : Built-in External Equipment Interface</p> <p>(2) 02 XX: Speak Paging start XX: 00-09 (Speaker Paging Zone 0-9)</p>
CM08	<p>Specify the conditions for paging access.</p>	<p>(1) 094: Paging Access Tone (2) 0 : To send 1◀: Not sent out</p>
CM20	<p>Assign the access code for paging access.</p>	<ul style="list-style-type: none"> Y=0-3 Numbering Plan Group 0-3 <p>(1) X-XXXX: Access Code (2) 100-163: For Paging Access (Route 00-63)</p>
A		

A	DESCRIPTION	DATA
CM30	Assign paging trunk route to the trunk number assigned by CM10.	<ul style="list-style-type: none"> YY=00 Trunk Route Allocation (1) 000-255: Trunk No. (2) 00-63: Trunk Route No.
	Assign Paging Answer Zone and Kind of Paging to the trunk number assigned by CM10.	<ul style="list-style-type: none"> YY=28 Zone/Kind of Paging (1) 000-255: 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.	<ul style="list-style-type: none"> YY=00 (1) 00-63: Trunk Route No. (2) 05: Paging Trunk
		<ul style="list-style-type: none"> YY=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.	<ul style="list-style-type: none"> Y=0 (1) XX ZZ XX: 00-63 (Incoming Trunk Route for CCIS) ZZ: 00-63 (Outgoing Paging Trunk Route) (2) 0: Allow
<u>END</u>		

Hardware Requirements

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; receive dial tone.
- (2) Dial the paging feature access code.
- (3) 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" on Page 188](#).

Operating Procedure

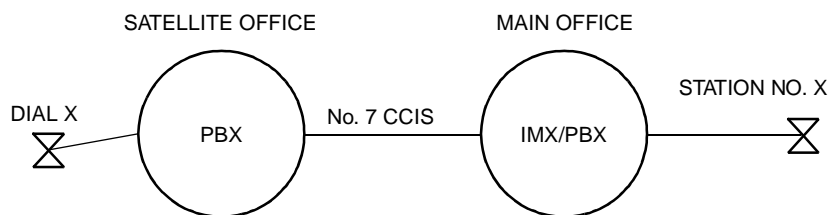
No manual operation is required.

SINGLE-DIGIT STATION CALLING-CCIS

General Description

This feature allows the assignment of single digit station numbers.

Programming



- For Satellite Office

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM20</div>	Assign the single-digit station number to LCR Group 3 (A129).	<ul style="list-style-type: none"> • Y=0-3 Number Plan Group 0-3 (1) X: Access Code (2) A129: LCR Group 3
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM8A</div>	Assign an area code table to be used to select a route pattern table.	<ul style="list-style-type: none"> • YYYY=A000 (1) 3 (2) 4000-4007: Area Code Development Pattern No. 0-7
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">END</div>	<p>Assign the same digit which was assigned as the access code (in CM20) into the selected area code table.</p> <p>Assign the route pattern table with the desired properties and selection of appropriate routes.</p>	<ul style="list-style-type: none"> • YYYY=4000-4007 (1) X: Access Code (2) 0000-0255: Route Pattern No. 000-255
		<ul style="list-style-type: none"> • YYYY=0000-0255 (1) 1-4: LCR Selection Priority 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 operate:

- (1) Lift the handset; 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 operator assistance.

Programming

In addition to the programming of flexible station numbering, perform the following programming:

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM10</div>	<p>Assign a station number to each LEN.</p> <p>NOTE: To the following stations, 5 or more digit station numbers must not be assigned if:</p> <ul style="list-style-type: none"> • Stations are observed by SMDR/PMS/OAI • Front Desk Terminal/D^{term} TIMS (CIS) 	<ul style="list-style-type: none"> (1) 000-763: LEN (2) X-XXXXXXXX: Station No.
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM12</div>	<p>Assign the station type to each station.</p> <p>NOTE: For providing the DTMF station, DTMF Receivers (PN-8RST) are required.</p>	<ul style="list-style-type: none"> • YY=00 Telephone types (1) X-XXXXXXXX: Station No. (2) 1 : DP-10PPS 2 : DTMF 3◀: DTMF/DP • YY=03 Kind of Telephone (1) X-XXXXXXXX: Station No. (2) 15◀: Ordinary station
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">END</div>		

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 PBX to be programmed to restrict outgoing calls through CCIS according to specific areas and/or Central 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
	Provide the system with Toll Diversion or Toll Denial.	(1) 044: Speed Calling-System (System Speed Dialing) (2) 0 : Not provided 1◀: To provide (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.	<ul style="list-style-type: none"> • YY=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

CM35

DESCRIPTION

DATA

Provide the Toll Restriction feature to the required trunk routes.

- YY=11
- (1) 00-63: Trunk Route No.
- (2) 0: To provide

Specify the route access capability for each restriction class.

- YY=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.

- YY=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 YY=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).

- YY=01-13
- Toll Restriction Pattern No. 01-13
- (1) 1-8: Trunk Restriction Class
- (2) 0: Restricted
- 3: Allowed

TRUNK RESTRICTION CLASS		YY															
		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	0	3	0	
2	RCB	3	0	3	3	0	0	0	0	3	3	0	0	0	3	0	
3	RCC	3	0	3	0	0	0	0	0	3	0	0	0	0	3	0	
4	RCD	3	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	3	0	
6	RCF	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	3	0	
8	RCH	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.	<ul style="list-style-type: none"> • Y=0-4 Area Code Development Pattern No. 0-4 assigned by CM8A Y=A000 (1) X-X...X: Area Code dialed (Max. 8 digits) (2) 01-24◀: 1-24 digits 25-79 : 25-79 digits
CM8A	<p>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 YY=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":</p> <ul style="list-style-type: none"> • Area Code=00 • Toll Restriction Pattern=05 (See Toll Restriction Pattern Table on CM81.) <p>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.</p>	<ul style="list-style-type: none"> • YYYY=4000-4004 Area Code Development Pattern No. 0-4 (1) X-X...X: Area Code (Max. 8 digits) (2) B000-B015: Toll Restriction Pattern No. 00-15
C	<p>The diagram illustrates the data flow for Toll Restriction. It starts with an 'Area Code' input that branches into several paths. One path goes directly to 'Toll Restriction Pattern 00-15'. Another path goes through a 'Time Pattern' (2000-2007) and a 'Tenant Pattern' (1000-1015). A third path goes through a 'Data Pattern' (3000-3003) and a 'Route Pattern' (0000-0255). A fourth path goes through a 'TR Pattern' (5000-5255). All these paths eventually lead to the 'Toll Restriction Pattern 00-15'.</p>	

C	DESCRIPTION	DATA
CM8A	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 YY=76.	<ul style="list-style-type: none"> • YYYY=4000-4004 Area Code Development Pattern No. 0-4 (1) X-X...X: Area Code (Max. 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.	<ul style="list-style-type: none"> • YYYY=1000-1015 Tenant Pattern No. (1) 00-15 (2) 00-63: Tenant No. 00-63 0000-0255: Route Pattern No. 000-255
	STEP 3 Assign a TR Pattern number to the Route Pattern number assigned by Step 2.	<ul style="list-style-type: none"> • YYYY=0000-0255 (1) Route Pattern No. 000-255 (2) 1 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.	<ul style="list-style-type: none"> • (1) YYYY=5000-5255 TR Pattern No. 000-255 (2) 255 000 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 YY=76.	<ul style="list-style-type: none"> • YYYY=4000-4004 Area Code Development No. 0-7 (1) X-X...X: Area Code (Max. 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.	<ul style="list-style-type: none"> • YYYY=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
	Set the data for all dates, one by one to apply Toll Restriction.	
	D	

D	DESCRIPTION	DATA
CM8A	<p>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.</p> <p>Example: To set the 7:00 AM to 9:00 PM for the Toll Restriction, enter the following starting times one by one.</p> <p>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)</p>	<ul style="list-style-type: none"> • YYYY=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).
	<p>STEP 4 Assign a TR Pattern number to the Route Pattern number assigned by Step 3.</p>	<ul style="list-style-type: none"> • YYYY=0000-0255 Route Pattern No. 000-255 (1) 1 (2) XXX: 000-255: TR Pattern No.
	<p>STEP 5 Assign a Toll Restriction Pattern number assigned by CM81 to the TR Pattern number assigned by Step 4.</p>	<ul style="list-style-type: none"> • YYYY=5000-5255 TR Pattern No. 000- (1) 255 (2) 000 00-15◀: Toll Restriction Pattern No. 00-15
<u>END</u>		

Operating Procedure

No manual operation is required.

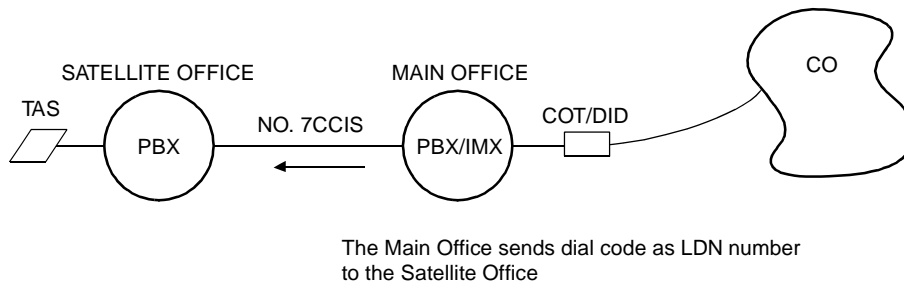
TRUNK ANSWER FROM ANY STATION-CCIS

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 in the local PBX may answer the call and extend it to any other station in the CCIS network using Call Transfer-All Calls-CCIS.

Programming



- For the Satellite Office
Use the LDN Diversion feature.

START	DESCRIPTION	DATA
CM12	Assign a Trunk Restriction Class to each station.	<ul style="list-style-type: none"> • YY=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 the Service Restriction Class B to the required stations.	<ul style="list-style-type: none"> • YY=02 (1) X-XXXXXXXX: Station No. (2) XX ZZ ZZ: 00-15◀: Service Restriction Class B
CM15	Allow Trunk Answer From Any Station in the Service Restriction Class B assigned by CM12 YY=02.	<ul style="list-style-type: none"> • YY=53 (1) 00-15: Service Restriction Class B assigned by CM12 YY=02 (2) 1◀: Allow
CM08	Provide the system with the Diversion Display and the LDN Diversion features.	<ul style="list-style-type: none"> (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 and CM11.	<ul style="list-style-type: none"> • YY=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 indialiaed number assigned by CM50 YY=02.	<ul style="list-style-type: none"> YY=00 Tenant No. of the LDN <ol style="list-style-type: none"> 01-08: TIE 0-7 assigned by CM50 YY=02 00-63: Tenant No. YY=01 TAS Group No. <ol style="list-style-type: none"> Same as CM58 Y=00 00-63: TAS Group No. YY=02 Day Mode Destination <ol style="list-style-type: none"> Same as CM58 Y=00 08: To TAS YY=03 Night Mode Destination <ol style="list-style-type: none"> Same as CM58 Y=00 08: To TAS 																														
CM53	Specify the function of each type of TAS within a system.	<ul style="list-style-type: none"> Y=0-4 TAS Answer A-E <ol style="list-style-type: none"> 1: Tie Line/Dial-in 0 : Cannot be answered 1◀: Can be answered 7: A call terminated to a different tenant <ol style="list-style-type: none"> 0 : Can be answered 1◀: Cannot be answered 																														
	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2" rowspan="2"></th> <th colspan="2" style="text-align: center;">(1)</th> </tr> <tr> <th style="text-align: center;">1</th> <th style="text-align: center;">7</th> </tr> </thead> <tbody> <tr> <th style="text-align: center;">Y</th> <th></th> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">0</td> <td>TAS Answer A</td> <td style="text-align: center;">0/1◀</td> <td style="text-align: center;">0/1◀</td> </tr> <tr> <td style="text-align: center;">1</td> <td>TAS Answer B</td> <td style="text-align: center;">0/1◀</td> <td style="text-align: center;">0/1◀</td> </tr> <tr> <td style="text-align: center;">2</td> <td>TAS Answer C</td> <td style="text-align: center;">0/1◀</td> <td style="text-align: center;">0/1◀</td> </tr> <tr> <td style="text-align: center;">3</td> <td>TAS Answer D</td> <td style="text-align: center;">0/1◀</td> <td style="text-align: center;">0/1◀</td> </tr> <tr> <td style="text-align: center;">4</td> <td>TAS Answer E</td> <td style="text-align: center;">0/1◀</td> <td style="text-align: center;">0/1◀</td> </tr> </tbody> </table>			(1)		1	7	Y				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◀	
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2	TAS Answer C	0/1◀	0/1◀																													
3	TAS Answer D	0/1◀	0/1◀																													
4	TAS Answer E	0/1◀	0/1◀																													
CM20	Assign the access code for each type of TAS (TAS Answer A-E) assigned by CM53.	<ul style="list-style-type: none"> Y=0-3 Numbering Plan Group 0-3 <ol style="list-style-type: none"> X-XXXX: Access Code A047: TAS Answer A A048: TAS Answer B A049: TAS Answer C A050: TAS Answer D A051: TAS Answer E 																														
B																																

B	DESCRIPTION	DATA
CM63	Specify the tenants allowing TAS Answer between them.	<ul style="list-style-type: none">• 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
<u>END</u>		

To provide an External TAS Indicator via the DK card:

START	DESCRIPTION	DATA
CM10	Assign the card number of the to required LEN. NOTE: The DK card number must be assigned to the 1st LEN (Level 0), the 3rd LEN (Level 2) of each LT slot.	(1) 000-763: LEN (2) E800-E831: DK Card No. For PIM0/1: EB800-EB807 For PIM2/3: EB808-EB815 For PIM4/5: EB816-EB823 For PIM6/7: EB824-EB831
CM44	Assign the TAS Group number assigned by CM30 YY=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 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 YY=17)
CM59	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 sec. ON/OFF)
END		

To provide the telephone set for TAS Indication:

<u>START</u>	<u>DESCRIPTION</u>	<u>DATA</u>
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 YY=17. E600-E663 → TAS Group 00-63	(1) 000-763: LEN (2) E600-E663: TAS Buzzer No.
<u>END</u>		

- 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.	<ul style="list-style-type: none"> (1) 204: Diversion Display (2) 0: To provide
CM50	Assign the indialed number to each TIE key on the ATTCOM. The indialed number should be different from any numbers assigned by CM10 and CM11.	<ul style="list-style-type: none"> (1) 205: LDN Diversion (2) 0: To provide • YY=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 YY=01.	<ul style="list-style-type: none"> • YY=00 Tenant No. (1) 01-08: LDN 0-7 assigned by CM50 YY=01 (2) 00-63: TAS Group • YY=02 Day Mode Destination (1) 01-08: LDN 0-7 assigned by CM50 YY=01 (2) 09: LDN Diversion-Outside (Assigned by CM58 YY=08)
A		

A	DESCRIPTION	DATA
CM58	Assign the Abbreviated Code for System Speed Dialing to terminate the Satellite Office via CCIS by DID in Day Mode and Night Mode, respectively.	<ul style="list-style-type: none"> • YY=03 Night Mode Destination (1) Same as CM58 YY=02 (2) 09: LDN Diversion-Outside (Assigned by CM58 YY=09)
CM71	Assign the System Speed Dialing memory area exclusively for LDN Diversion-Outside.	<ul style="list-style-type: none"> • YY=08 Day Mode • YY=09 Night Mode (1) Same as CM58 YY=02 (2) CXX XX: Abbreviated Code for System Speed Dialing Assigned by CM71>66
CM72	Set the stored number into the Memory Slot number allocated by CM71.	<ul style="list-style-type: none"> (1) 66: Exclusively for LDN Diversion-Outside (2) XXX YYY XXX: 000-299 (First Memory/Slot No. in Block) YYY: 001-300 (No. of Slots to be allocated in Block)
CM36	Specify the combination of Trunk Routes allowing a Tandem connection.	<ul style="list-style-type: none"> (1) 000-299: Memory Slot No. (2) XX [] YY...Y XX : Access Code (Max. 2 digits) [] : Separator Mark YY...Y: Calling Party's No. (Max. 26 digits)
END		<ul style="list-style-type: none"> • Y=0 (1) XX ZZ XX: 00-63 (Incoming Trunk Route) ZZ: 00-63 (Outgoing Trunk Route for CCIS) (2) 0: Allow

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) (Max. 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:

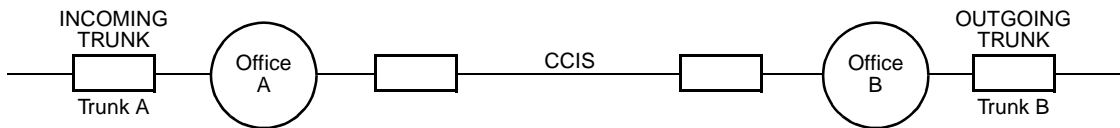
- (1) The TAS signal (bell, buzzer, etc.) sounds indicating an incoming call.
- (2) Lift the handset; receive dial tone.
- (3) Dial the TAS access code.
- (4) Connect to the incoming call.

TRUNK TO TRUNK RESTRICTION-CCIS

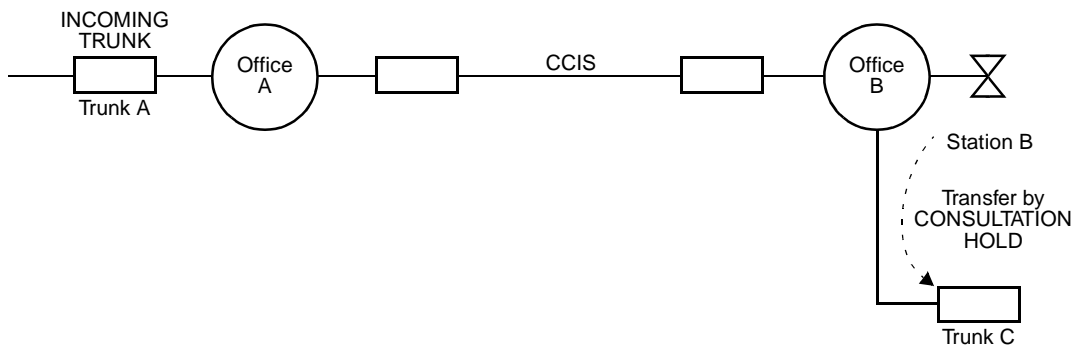
General Description

This feature allows trunk to trunk tandem restriction by caller's information (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
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">CM35</div>	Assign the Trunk Restriction Class to the required trunk route.	<ul style="list-style-type: none"> • YY=97 (1) 00-63: Route No. (2) X Z <ul style="list-style-type: none"> X: 1-8: Day Class Z: 1-8: Night Class <ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> • YY=76 (1) 00-63: Trunk Route No. (2) 0-7: Area Code Development Pattern No. 0-7
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin: 0 auto;">A</div>		

A

CM81

DESCRIPTION

DATA

Assign the Toll Restriction Patterns with eight kinds of Trunk Restriction Classes assigned by CM35 YY=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).

- YY=01-13
Toll Restriction Pattern No. 01-13
- (1) 1-8: Trunk Restriction Class
- (2) 0: Restricted
3: Allowed

TRUNK RESTRICTION CLASS	YY															
	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 YYYY=A000
- (1) X-X...X: Area Code dialed
(Max. 8 digits)
- (2) 01-24 : 1-24 digits
25-79 : 25-79 digits

B

B	DESCRIPTION	DATA
CM8A	<p>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 YY=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":</p> <ul style="list-style-type: none"> • Area Code=00 • Toll Restriction Pattern=05 <p>(See Toll Restriction Pattern Table on CM81.)</p> <p>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.</p>	<ul style="list-style-type: none"> • YYYY=4000-4007 Area Code Development No. 0-7 (1) X-X...X: Area Code (Max. 8 digits) (2) B000-B015: Toll Restriction Pattern 00-15
C		

C	DESCRIPTION	DATA
CM8A	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 YY=76.	<ul style="list-style-type: none"> • YYYY=4000-4007 Area Code Development Pattern No. (1) X-X...X: Area Code (Max. 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.	<ul style="list-style-type: none"> • YYYY=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.	<ul style="list-style-type: none"> • YYYY=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.	<ul style="list-style-type: none"> • YYYY=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 YY=76.	<ul style="list-style-type: none"> • YYYY=4000-4007 (1) X-X...X: Area Code (Max. 8 digits) (2) 3000-3003: Date Pattern No. 0-3
	STEP 2 Assign a date to applied to Toll Restriction and Time Pattern number 0-7 to the Date Pattern number assigned by Step 1.	<ul style="list-style-type: none"> • YYYY=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
	Set the data for all dates, one by one, to be applied Toll Restriction.	
	D	

D	DESCRIPTION	DATA
CM8A	<p>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.</p> <p>Example: To Set the 7:00 AM to 9:00 PM for the Toll Restriction, enter the following starting times one by one.</p> <p>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)</p>	<ul style="list-style-type: none"> • YYYY=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) <p>If Tenant Pattern is required, set 1000-1015 (Tenant Pattern No. 00-15).</p>
	<p>STEP 4 Assign the TR Pattern number to the Route Pattern number assigned by Step 3.</p>	<ul style="list-style-type: none"> • Y=0000-0255 Route Pattern No.000-255 (1) 1 (2) XXX 00 (TR Pattern No.) XXX: 000-255: TR Pattern No.
	<p>STEP 5 Assign the Toll Restriction pattern number (assigned by CM81) to TR Pattern number assigned by Step 4.</p>	<ul style="list-style-type: none"> • 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 IMX Trunk Restriction Class (0-15), execute the following programming.

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 2px; width: fit-content; margin-bottom: 10px;">CM42</div>	<p>Assign the IMX Trunk Restriction Class to each PBX Trunk Restriction Class for the restriction class conversion from the PBX to IMX, if required.</p>	<ul style="list-style-type: none"> (1) 20: TRK Restriction Class 1 (RCA) 21: TRK Restriction Class 2 (RCB) 22: TRK Restriction Class 3 (RCC) 23: TRK Restriction Class 4 (RCD) 24: TRK Restriction Class 5 (RCE) 25: TRK Restriction Class 6 (RCF) 26: TRK Restriction Class 7 (RCG) 27: TRK Restriction Class 8 (RCH) (2) 00-15: IMX TRK Restriction Class (0-15)
	<p>Assign the PBX Trunk Restriction Class to each IMX Trunk Restriction Class for the restriction class conversion from IMX to PBX, if required.</p>	<ul style="list-style-type: none"> (1) 30: TRK Restriction Class 0 31: TRK Restriction Class 1 32: TRK Restriction Class 2 33: TRK Restriction Class 3 34: TRK Restriction Class 4 35: TRK Restriction Class 5 36: TRK Restriction Class 6 37: TRK Restriction Class 7 38: TRK Restriction Class 8 39: TRK Restriction Class 9 40: TRK Restriction Class 10 41: TRK Restriction Class 11 42: TRK Restriction Class 12 43: TRK Restriction Class 13 44: TRK Restriction Class 14 45: TRK Restriction Class 15 (2) 01-08: PBX TRK Restriction Class (1-8)
<u>END</u>		

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

(1) PBX to IMX

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

(2) IMX to PBX

<u>1ST DATA</u>	<u>2ND DATA</u>
30: TRK Restriction Class 0	01: TRK Restriction Class 1 (RCA)
31: TRK Restriction Class 1	01: TRK Restriction Class 1 (RCA)
32: TRK Restriction Class 2	02: TRK Restriction Class 2 (RCB)
33: TRK Restriction Class 3	03: TRK Restriction Class 3 (RCC)
34: TRK Restriction Class 4	04: TRK Restriction Class 4 (RCD)
35: TRK Restriction Class 5	05: TRK Restriction Class 5 (RCE)
36: TRK Restriction Class 6	06: TRK Restriction Class 6 (RCF)
37: TRK Restriction Class 7	07: TRK Restriction Class 7 (RCG)
38-45: TRK Restriction Class 8-15	08: 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-, or two-digits of the station number. In the second plan, the station user dials a one-, two-, or three-digit office number and any digit station number from two to eight.

Programming

Refer to “Numbering Plan Assignment”.

Operating Procedure

To call a station at another office using Numbering Plan 1:

- (1) Lift the handset; receive dial tone.
- (2) Dial the 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 at another office using Numbering Plan 2:

- (1) Lift the handset; receive DialTone.
- (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" is on, the called party can converse hands-free.

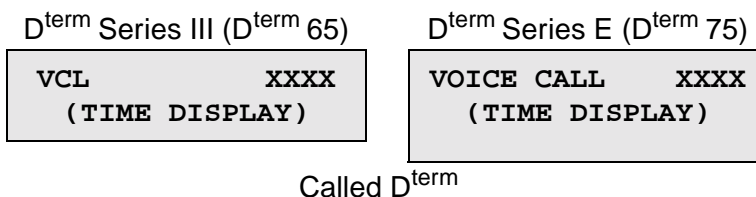
Programming

START	DESCRIPTION	DATA
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">CM90</div>	Assign a Voice Call key to the D ^{term} .	<ul style="list-style-type: none"> • YY=00 (1) My Line No. + + Key No. (2) F1002: Voice Call
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">END</div>		

Operating Procedure

From a D^{term} to another D^{term}:

- (1) The originating D^{term} user dials the desired station number in a different office and receives ring back tone.
- (2) Calling party presses the VCL feature/line key.
A signal tone is transmitted over the CCIS network to the called party's speaker.
The calling party's LCD displays:



- (3) The called party presses "MIC" key and dials "1" (if the MIC LED is not on) 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.

This page is for your notes.

CHAPTER 4

CIRCUIT CARD INFORMATION

This chapter explains the mounting location, the meaning of lamp indications, and the method of switch settings of each circuit card for the No. 7 CCIS system.

HOW TO READ THIS CHAPTER

This chapter explains each circuit card used in this system about the following items. 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.

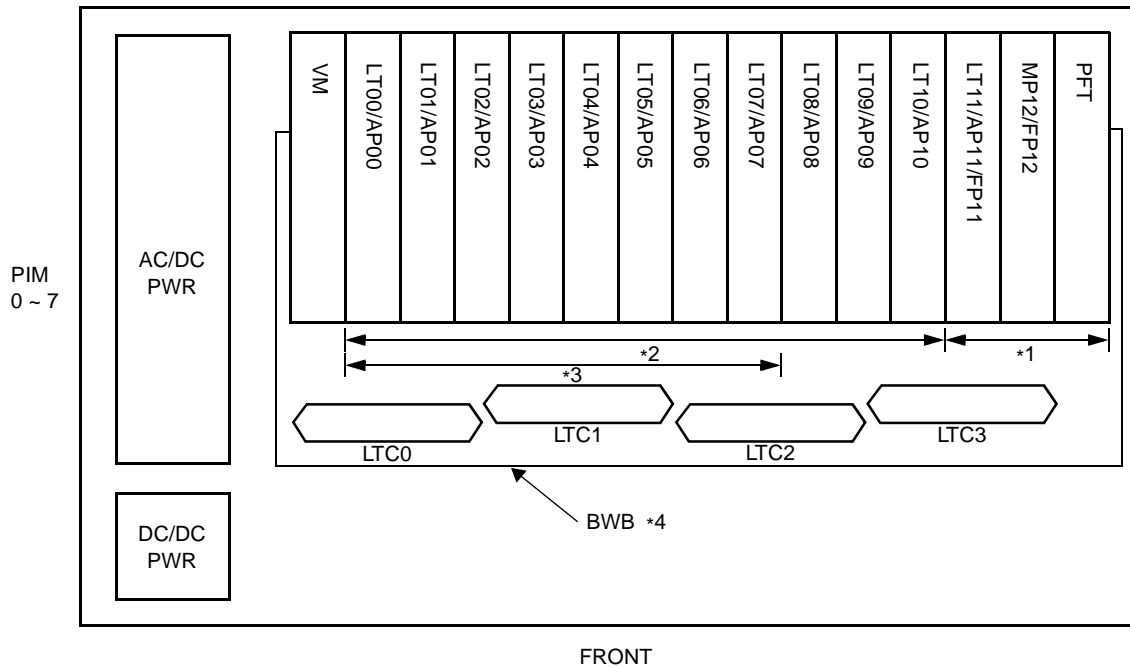
MOUNTING LOCATION OF CIRCUIT CARD

This section explains the location for mounting circuit cards for the CCIS system.

Circuit Card Mounting Slots

Figure 4-1 shows circuit card mounting slots allocated in the PIM.

Figure 4-1 Mounting Location



- *1 PN-CP14 (MP) card on PIM0. PN-CP15 (FP) card on the FP11 slot on PIM0, and FP12 slot on PIM 2, 4, 6. PZ-M537 (EXPMEM) card on the PN-CP14 (MP) card on PIM0.
- *2 PN-SC00 (CCH) card on the AP00-AP10 slots on PIM0, on the AP00-AP11 slots on PIM 1-7. PN-M10 (M10), PN-2LDTA (LDT), PN-ODTA (ODT) and PN-2ODTB (ODT) card on the LT00-LT10 slots on PIM0, on the LT00-LT11 slots on PIM 1-7.
- *3 PN-AP00-B (AP00), PN-24DTA (DTI), PN-30DTC-A (DTI) card on the AP00-AP07 slots on PIM 0-7.
- *4 PZ-M542/PZ-M557 (CONN) card into the LTC0-LTC3 connector.

LIST OF REQUIRED CARDS

Table 4-1 shows the required cards to be explained in this section.

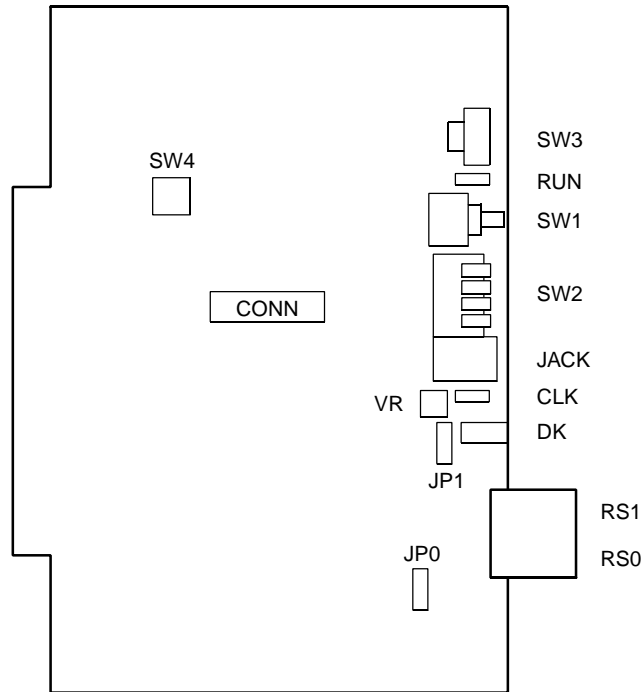
Table 4-1 List of Required Cards

NAME (FUNCTIONAL NAME)	LAMP X: PROVIDED -: NOT PROVIDED	SWITCH X: PROVIDED -: NOT PROVIDED	EXTRACTION/ INSERTION WITH POWER ON X:ALLOWED Δ:ALLOWED AFTER MB* -:NOT ALLOWED	REFERENCE PAGE
PN-CP14 (MP)	X	X	–	Page 263
PN-CP15 (FP)	X	X	Δ	Page 268
PN-AP00-B (AP00)	X	X	Δ	Page 270
PN-24DTA-C (DTI)	X	X	Δ	Page 276
PN-30DTC-A (DTI)	X	X	Δ	Page 282
PN-SC00 (CCH)	X	X	Δ	Page 288
PZ-M537 (EXPMEM)	–	X	–	Page 291
PZ-M542 (CONN)	–	X	X	Page 294
PZ-M557 (CONN)	–	X	X	Page 296
PN-2LDTA (LDT)	X	–	X	Page 298
PN-M10 (M10)	X	X	–	Page 299
PN-2ODTA (ODT)	X	–	X	Page 301
PN-2ODTB (ODT)	X	–	X	Page 302

*MB = Make Busy

PN-CP14 (MP)

Locations of Lamps, Switches, and Connectors



CONN: To CONNR connector on PZ-M537 (EXPMEM)

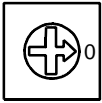
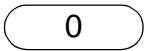
Lamp Indications

LAMP NAME	COLOR	FUNCTION
RUN	Green	Flashes at 120 IPM while this card is operating normally.
CLK	Green	Remains lit while receiving clock signals to the PLO.

Switch Settings

CAUTION

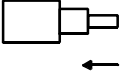
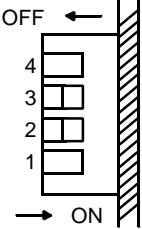
When the operating power is being supplied to this circuit card, do not plug/unplug this circuit card into/from its mounting slot.

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW3 (Rotary SW)  NOTE 1	0-F		On Line (Call processing is in progress)	
		2	Off Line (Call processing is stopped) • I/O port: As per CM40 YY=08	
		3	Off Line (Call processing is stopped) • I/O port: 9600bps (Fixed)	
		5 NOTE 2	Off Line (Call processing is stopped) • I/O port: 9600bps	
		6 NOTE 2	Off Line (Call processing is stopped) • I/O port: 19200bps	
		7 NOTE 2	Off Line (Call processing is stopped) • I/O port: 38400bps	
		8 NOTE 2	Off Line (Call processing is stopped) • I/O port: 57600bps	
		B	For clearing the office data	
		C	For setting the resident system program	
		1, 4, 9 A, D-F	Not used	

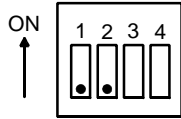

(Continued)

NOTE 1: Set the groove on the switch to the desired position.

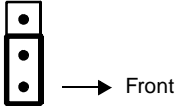

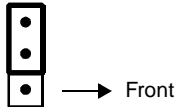
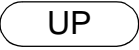
NOTE 2: Only when executing “MP Program Download” in MATWorX Studio, set the SW3 to 5-8.



SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK													
SW1 (Push SW) 			For initializing CPU														
SW2 (Piano Key SW) 	1	ON	A-law (Australia)														
		OFF	μ-law (North America)														
	2, 3	Selection of PLO0 input (Phase Locked Oscillator)															
		• For clock receiver office:															
<table border="1"> <thead> <tr> <th>SW2-2</th> <th>SW2-3</th> <th>FUNCTION</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>OFF</td> <td>1.5MHz clock [For PN-24DTA-C/PN-24PRTA]</td> </tr> <tr> <td>ON</td> <td>OFF</td> <td>192kHz clock [For PN-BRTA]</td> </tr> <tr> <td>OFF</td> <td>ON</td> <td>2MHz clock [For PN-30DTC-A/PN-2BRTC]</td> </tr> <tr> <td>ON</td> <td>ON</td> <td>Not used</td> </tr> </tbody> </table>		SW2-2	SW2-3	FUNCTION	OFF	OFF	1.5MHz clock [For PN-24DTA-C/PN-24PRTA]	ON	OFF	192kHz clock [For PN-BRTA]	OFF	ON	2MHz clock [For PN-30DTC-A/PN-2BRTC]	ON	ON	Not used	
SW2-2	SW2-3	FUNCTION															
OFF	OFF	1.5MHz clock [For PN-24DTA-C/PN-24PRTA]															
ON	OFF	192kHz clock [For PN-BRTA]															
OFF	ON	2MHz clock [For PN-30DTC-A/PN-2BRTC]															
ON	ON	Not used															
4	ON	When using RS1 port for built-in MODEM															
	OFF	When using RS1 port for RS-232C															

(Continued)

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK																		
SW4 (Dip SW) 	1	<input type="checkbox"/> OFF	Not used																			
	2	<input type="checkbox"/> OFF	Not used																			
	3, 4	Selection of PLO1 input (Phase Locked Oscillator) <ul style="list-style-type: none"> For clock receiver office: <table border="1"> <thead> <tr> <th>SW4-3</th> <th>SW4-4</th> <th>FUNCTION</th> </tr> </thead> <tbody> <tr> <td>OFF</td> <td>OFF</td> <td>1.5MHz clock [For PN-24DTA-C/PN-24PRTA]</td> </tr> <tr> <td>ON</td> <td>OFF</td> <td>192kHz clock [For PN-BRTA]</td> </tr> <tr> <td>OFF</td> <td>ON</td> <td>2MHz clock [For PN-30DTC-A/PN-2BRTC]</td> </tr> <tr> <td>ON</td> <td>ON</td> <td>Not used</td> </tr> </tbody> </table> For clock source office: <table> <tr> <td><u>SW4-3</u></td> <td><u>SW4-4</u></td> </tr> <tr> <td>OFF</td> <td>OFF</td> </tr> </table> 		SW4-3	SW4-4	FUNCTION	OFF	OFF	1.5MHz clock [For PN-24DTA-C/PN-24PRTA]	ON	OFF	192kHz clock [For PN-BRTA]	OFF	ON	2MHz clock [For PN-30DTC-A/PN-2BRTC]	ON	ON	Not used	<u>SW4-3</u>	<u>SW4-4</u>	OFF	OFF
SW4-3	SW4-4	FUNCTION																				
OFF	OFF	1.5MHz clock [For PN-24DTA-C/PN-24PRTA]																				
ON	OFF	192kHz clock [For PN-BRTA]																				
OFF	ON	2MHz clock [For PN-30DTC-A/PN-2BRTC]																				
ON	ON	Not used																				
<u>SW4-3</u>	<u>SW4-4</u>																					
OFF	OFF																					
VR (Rotary SW)			Variable Resistor for External Hold Tone Source (0 - 20 Kohms : Clockwise)																			
DK (Connector) 	02	Ground detection																				
	01	Ground sending																				

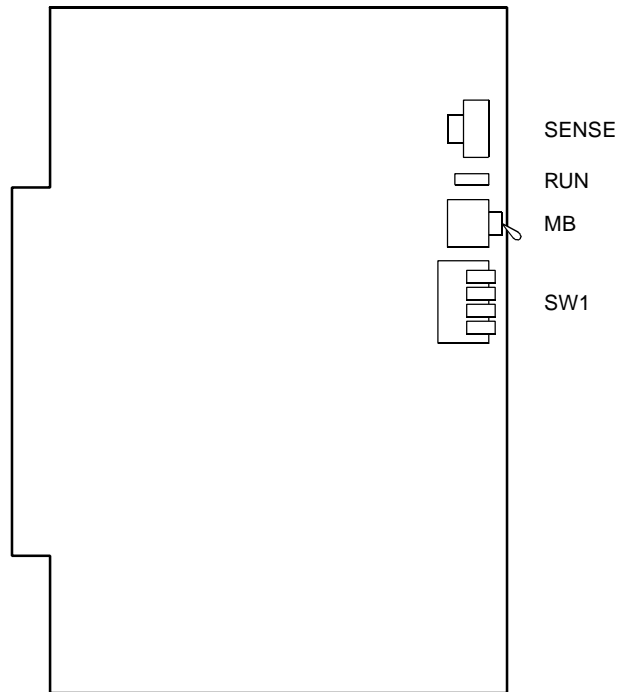
(Continued)

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
JP0 (Jumper pin) 		UP	Not used (Memory backup OFF)	
			For normal operation (Memory backup ON)	
JP1 (Jumper pin) 			For using internal tone source	
		DOWN	For using external tone source	

The figure in the SWITCH NAME column and the position in  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.

PN-CP15 (FP)

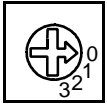
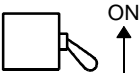

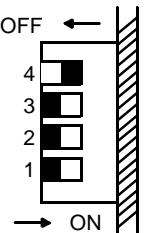


Locations of Lamps, Switches, and Connectors





Lamp Indications

LAMP NAME	COLOR	FUNCTION
RUN	Green	Flashes at 120 IPM while the circuit card is operating normally.

Switch Settings

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SENSE (Rotary SW)  NOTE 1	0-3	For setting FP No.		
		0	For mounting this card in PIM0	
		1	For mounting this card in PIM2	
		2	For mounting this card in PIM4	
	3	For mounting this card in PIM6		
	4-F		Not used	
MB (Toggle SW)  NOTE 2		UP	For make-busy	
			For normal operation	
SW1 (Piano Key SW) 	1 - 3		Not used	
	4		For normal operation	
		OFF	Not used	

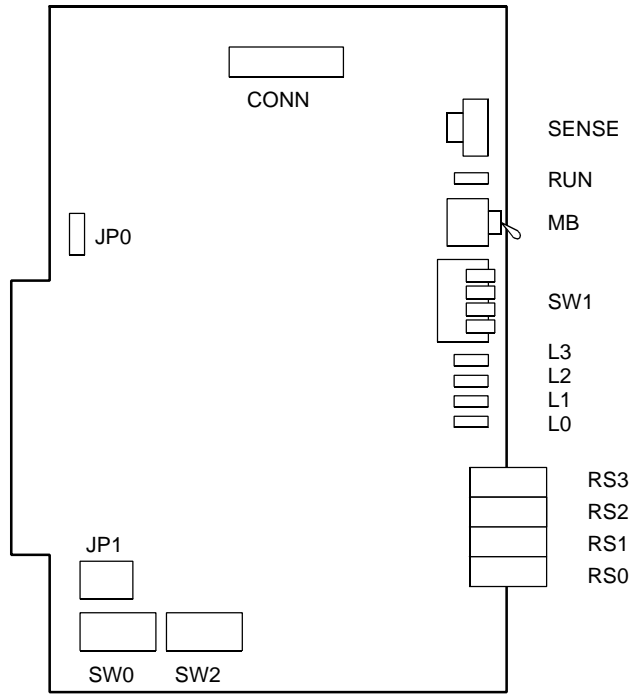
The figure in the SWITCH NAME column and the position in  in the SETTING POSITION column indicate the standard setting of the switch. When the switch is not set as shown by the figure and , the setting of the switch varies with the system concerned.

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.

PN-AP00-B (AP00)

Locations of Lamps, Switches, and Connectors


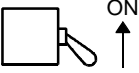


CONN: To CONNR connector on PZ-M537 (EXPMEM)

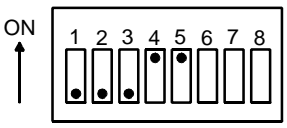
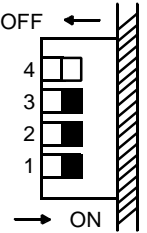
Lamp Indications

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 (Port 0)-3 (Port 2)	
		L3	Indication of transmitting status of Port 0	Indication of CTS signal status on Port 0-2
		L2	Indication of transmitting status of Port 1	Indication of DCD signal status on Port 0-2
		L1	Indication of transmitting status of Port 2	Indication of TXD signal status on Port 0-2
L0	Indication of transmitting status of Port 3	Indication of RXD signal status on Port 0-2		

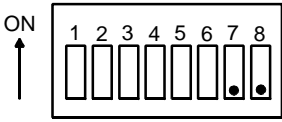
Switch Settings

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK																																							
SENSE (Rotary SW) 	0-3	Not used																																									
	4-F	Set the switch to match the AP Number (04-31) to be set by CM05.																																									
	<table border="1"> <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>	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
AP No.	SW1-4: ON		04	05	06	07	08	09	10	11	12	13	14	15																													
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SW No.		4	5	6	7	8	9	A	B	C	D	E	F																														
MB (Toggle SW) 		UP	For make-busy																																								
		DOWN	For normal operation																																								

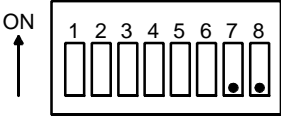

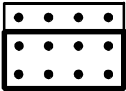
(Continued)

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)

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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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)

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW2 (Dip SW) 	6 NOTE 4	ON	<ul style="list-style-type: none"> • 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 (Memory backup ON)	
		DOWN	Not used (Memory backup OFF)	
JP1 (Jumper SW) 		UP	Not used	
		DOWN	For normal operation	

(Continued)

The figure in the SWITCH NAME column and the position in  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.

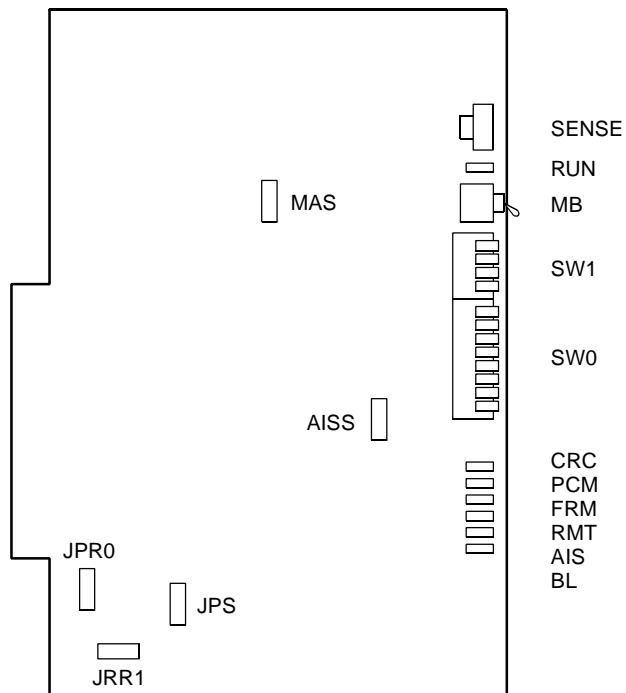
NOTE 3: When the DCE connected to the port does not provide a function to send the DSR signals, set the switch to ON. In this case, the AP00 card can not recognize the actual state of the DCE, so that the call records or system messages will not be stored in the memory buffer on the AP00 card even if 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.

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-24DTA-C (DTI)


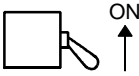
Locations of Lamps, Switches and Connectors



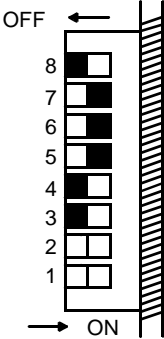
Lamp Indications

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 loop-back 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

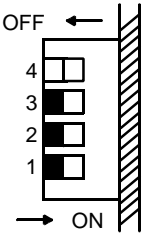





Switch Settings

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.																																											
	<table border="1"> <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>				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
AP No.	SW1-4: ON	04	05	06		07	08	09	10	11	12	13	14	15																															
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SW No.		4	5	6	7	8	9	A	B	C	D	E	F																																
MB (Toggle SW)  NOTE 2		UP	For make-busy																																										
		DOWN	For normal operation																																										

(Continued)

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK																												
SW0 (Piano Key SW) 	1 NOTE 3 NOTE 4	ON	Source clock signal from network is sent to the PLO 0 input on MP card.																													
		OFF	Source clock signal from network is not sent to the PLO 0 input on MP card.																													
	2 NOTE 3 NOTE 4	ON	Source clock signal from network is sent to the PLO 1 input on MP card.																													
		OFF	Source clock signal from network is not sent to the PLO 1 input on MP card.																													
	3	ON	Remote loop-back																													
		<input type="radio"/> OFF	For normal operation																													
	4	ON	Local loop-back (AIS send)																													
		<input type="radio"/> OFF	For normal operation																													
	5	<input type="radio"/> ON	Set equalizer according to the cable length between the PBX and the MDF.																													
		OFF																														
	6	<input type="radio"/> ON	<table border="1"> <thead> <tr> <th>SW0-5</th> <th>SW0-6</th> <th>SW0-7</th> <th>CABLE LENGTH</th> </tr> </thead> <tbody> <tr> <td>ON</td> <td>ON</td> <td>ON</td> <td>0-4 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> </tbody> </table>	SW0-5	SW0-6	SW0-7	CABLE LENGTH	ON	ON	ON	0-4 m (0-131.2 ft.)	ON	ON	OFF	40-80 m (131.2-262.5 ft.)	ON	OFF	ON	80-120 m (262.5-394 ft.)	ON	OFF	OFF	120-160 m (394-525 ft.)	OFF	ON	ON	160-200 m (525-656 ft.)	OFF	OFF	OFF	Signal is not sent	
		SW0-5		SW0-6	SW0-7	CABLE LENGTH																										
		ON		ON	ON	0-4 m (0-131.2 ft.)																										
		ON		ON	OFF	40-80 m (131.2-262.5 ft.)																										
ON	OFF	ON	80-120 m (262.5-394 ft.)																													
ON	OFF	OFF	120-160 m (394-525 ft.)																													
OFF	ON	ON	160-200 m (525-656 ft.)																													
OFF	OFF	OFF	Signal is not sent																													
OFF																																
7	<input type="radio"/> ON																															
	OFF																															
8	<input type="radio"/> OFF	Not used																														

(Continued)

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW1 (Piano Key SW) 	1	<input type="radio"/> OFF	Not used	
	2	<input type="radio"/> OFF	Not used	
	3	<input type="radio"/> OFF	Not used	
	4	ON	AP No. 04-15	
OFF		AP No. 20-31		
NOTE 4				
JPR0 (Jumper pin) 		UP	Neutral grounding on the receiving line is provided.	
		<input type="radio"/> DOWN	Neutral grounding on the receiving line is not provided.	
JPR1 (Jumper pin) 		<input type="radio"/> Right	Line impedance: 100 ohms	
		Left	Line impedance: 110 ohms	
JPS (Jumper pin) 		UP	Neutral grounding on the transmitting line is provided.	
		<input type="radio"/> DOWN	Neutral grounding on the transmitting line is not provided.	
MAS (Jumper pin) 		UP	Clock Source	
		<input type="radio"/> DOWN	Clock Receiver	
AISS (Jumper pin) 		<input type="radio"/> 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.	

(Continued)

The figure in the SWITCH NAME column and the position in 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: Set SW0-1 and SW0-2 as follows:

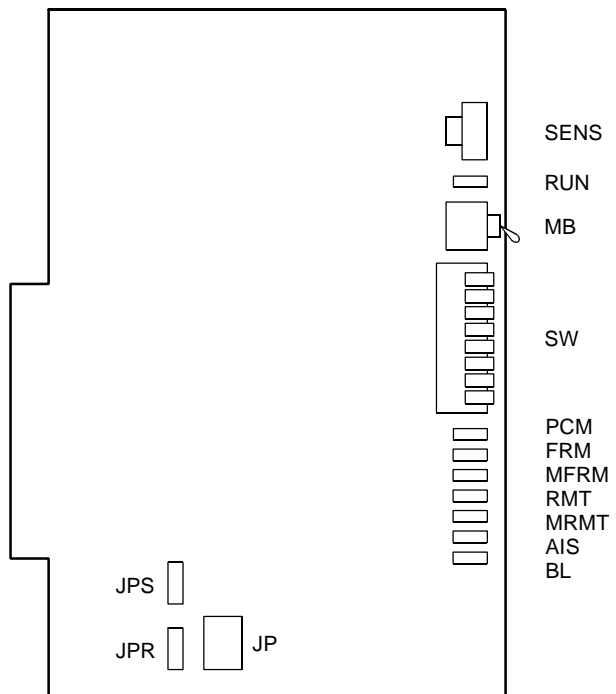
CONDITIONS	DTI0		DTI1		DTI2		DTI3		DTI4		REMARKS
	SW 0-1	SW 0-2	SW 0-1	SW 0-2	SW 0-1	SW 0-2	SW 0-1	SW 0-2	SW 0-1	SW 0-2	
When one DTI is provided.	ON	OFF	–	–	–	–	–	–	–	–	MP card will receive the clock signal from DTI0 at its PLO0 input.
When more than one DTI is provided.	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	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.

PN-30DTC-A (DTI)

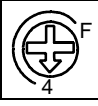
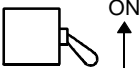

Locations of Lamps, Switches and Connectors



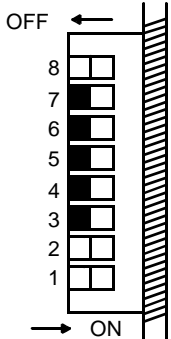
Lamp Indications

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 loop-back test distant.
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





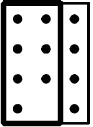

Switch Settings

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK																																									
SENS (Rotary SW) 		Set the switch to match the AP Number (04-31) to be set by CM05.	<table border="1"> <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>	AP No.	SW-8: ON	04	05	06	07	08	09	10	11	12	13	14	15	SW-8: 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	
AP No.	SW-8: ON	04	05		06	07	08	09	10	11	12	13	14	15																															
	SW-8: 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																																
NOTE 1	0-3	Not used																																											
MB (Toggle SW) 		UP 	For make-busy For normal operation																																										



(Continued)

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 PLO 0 input on MP card.	
		OFF	Source clock signal from network is not sent to the PLO 0 input on MP card	
	2 NOTE 3 NOTE 4	ON	Source clock signal from network is sent to the PLO 1 input on MP card.	
		OFF	Source clock signal from network is not sent to the PLO 1 input on MP card.	
	3	ON	Remote loop-back	
		<input type="radio"/> OFF	For normal operation	
	4	ON	Local loop-back (AIS send)	
		<input type="radio"/> OFF	For normal operation	
	5	ON	Transmission line cable: Coaxial cable (75 ohms)	
		<input type="radio"/> OFF	Transmission line cable: Twisted-pair cable (120 ohms)	
	6	<input type="radio"/> OFF	Always set to OFF	
	7	<input type="radio"/> OFF		
	8	ON	AP No. 04-15	
		OFF	AP No. 20-31	

(Continued)

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
JPS (Jumper pin) 			Balanced transmission (For twisted-pair cable)	
		DOWN	TA is grounded on the transmission line (For coaxial cable)	
JPR (Jumper pin) 			Balanced transmission (For twisted-pair cable)	
		DOWN	RA is grounded on the transmission line (For coaxial cable)	
JP (Jumper pin) 		RIGHT	Line impedance: 75 ohms (For coaxial cable)	
			Line impedance: 120 ohms (For twisted-pair cable)	

(Continued)

The figure in the SWITCH NAME column and the position in  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: Set the SW-1 and SW-2 as follows:

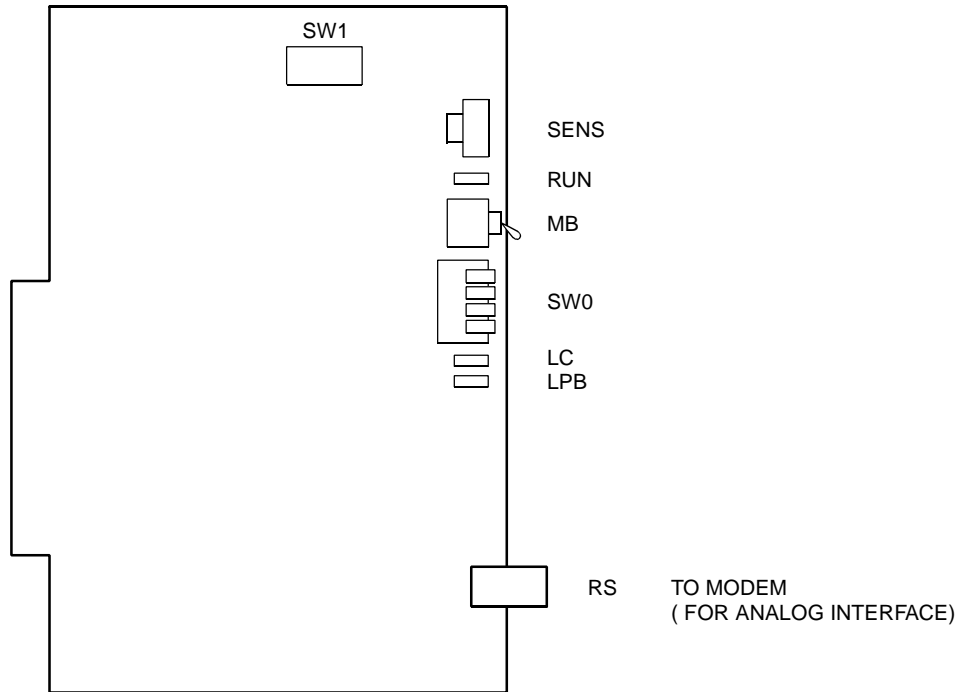
CONDITIONS	DTI0		DTI1		DTI2		DTI3		REMARKS
	SW-1	SW-2	SW-1	SW-2	SW-1	SW-2	SW-1	SW-2	
When one DTI is provided.	ON	OFF	–	–	–	–	–	–	MP card will receive the clock signal from DTI0 at its PLO0 input.
When more than one DTI is provided.	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	MP card will receive the clock signal 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)


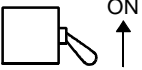
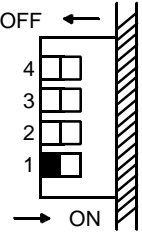
Locations of Lamps, Switches and Connectors



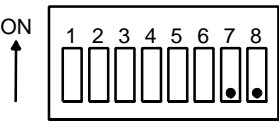
Lamp Indications

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 signalling channel data links connected.
LPB	Green	Remains lit when a loop-back test is in progress.

Switch Settings

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK																																									
SENS (Rotary SW) 	4-F	Set the switch to match the AP Number (04-31) to be set by CM05.	<table border="1"> <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>	AP No.	SW0-4: ON	04	05	06	07	08	09	10	11	12	13	14	15	SW0-4: 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	
			AP No.		SW0-4: ON	04	05	06	07	08	09	10	11	12	13	14	15																												
				SW0-4: 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																																
NOTE 1	0-3	Not used																																											
MB (Toggle SW) 		UP	For make-busy																																										
		DOWN	For normal operation																																										
SW0 (Piano Key SW) 	1	ON	Loop-back test																																										
		OFF	For normal operation																																										
	2	ON	Analog interface																																										
		OFF	Digital interface																																										
	3	ON	RS-232C RTS signal (to MODEM) ON NOTE 3																																										
		OFF	RS-232C RTS signal (to MODEM) OFF																																										
	4	ON	AP No. 04-15																																										
		OFF	AP No. 20-31																																										

(Continued)

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK																														
SW1(Dip SW) 	1	ON	<ul style="list-style-type: none"> Common channel signalling data transmission speed (For Digital Interface) <table border="1"> <thead> <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> </thead> <tbody> <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> </tbody> </table>	TRANSMISSION SPEED	SW 1-1	SW 1-2	SW 1-3	SW 1-4	SW 1-5	48 kbps NOTE 4	ON	ON	OFF	OFF	ON	48 kbps NOTE 4	ON	ON	ON	OFF	ON	56 kbps	ON	ON	OFF	ON	ON	64 kbps	ON	ON	ON	ON	ON	
		TRANSMISSION SPEED		SW 1-1	SW 1-2	SW 1-3	SW 1-4	SW 1-5																										
	48 kbps NOTE 4	ON		ON	OFF	OFF	ON																											
	48 kbps NOTE 4	ON		ON	ON	OFF	ON																											
	56 kbps	ON		ON	OFF	ON	ON																											
	64 kbps	ON		ON	ON	ON	ON																											
	OFF																																	
	2	ON																																
		OFF																																
	3	ON																																
		OFF		<ul style="list-style-type: none"> Common channel signalling data transmission speed (For Analog Interface) 																														
	4	ON																																
		OFF																																
	5	ON		Set switches (SW1-1 - SW1-5) to OFF.																														
		OFF																																
	6	ON		A-law																														
OFF		μ-law																																
7	<input type="radio"/>	Always set to OFF																																
8	<input type="radio"/>	Always set to OFF																																

The figure in the SWITCH NAME column and the position in 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.

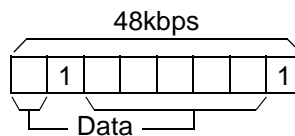
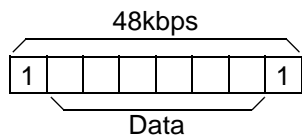
NOTE 1: Set the groove on the switch to the desired position.

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 rate-adaptation methods are available in 48 Kbps data transmission. The rate adaptation method must be set to match the rate adaptation of master office.

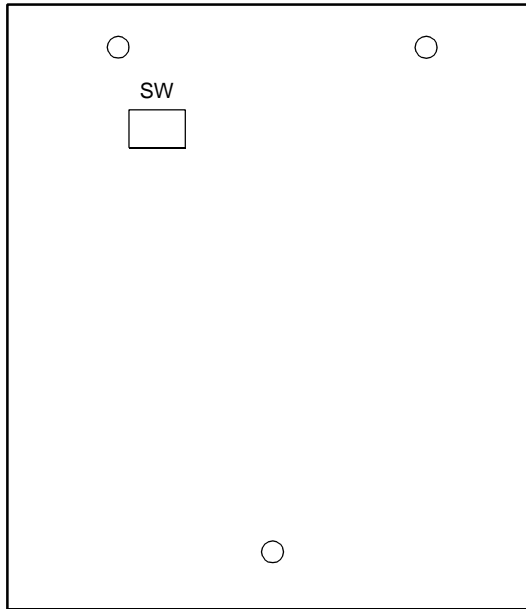
- SW1-3: OFF
- SW1-3: ON



PZ-M537 (EXPMEM)

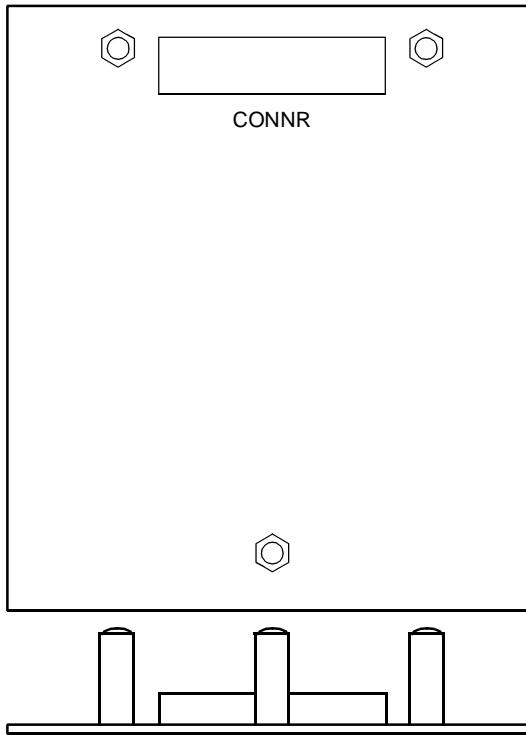
Locations of Lamps, Switches and Connectors

FACE



REAR

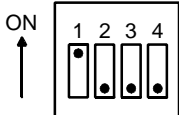




CONNR: To CONN connector on PN-CP14 (MP) or PN-AP00-B (AP00)





Lamps Indications

This card has no lamps.

Switch Settings

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
SW (Dip SW) 	1		For normal operation (Memory backup ON)	
		OFF	Not used (Memory backup OFF)	
	2		Not used	
	3		Not used	
	4		Not used	

The figure in the SWITCH NAME column and the position in  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

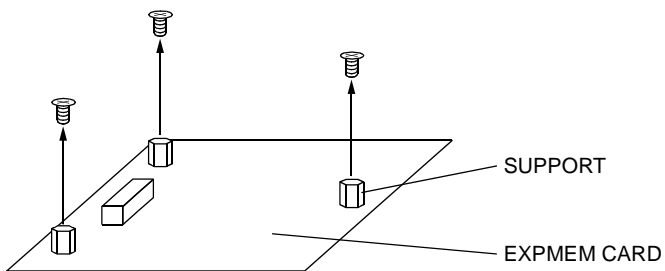
When mounting the EXPMEM card on the AP00/MP card, do the following procedure.

STEP 1: Remove three screws from the rear side of EXPMEM support.

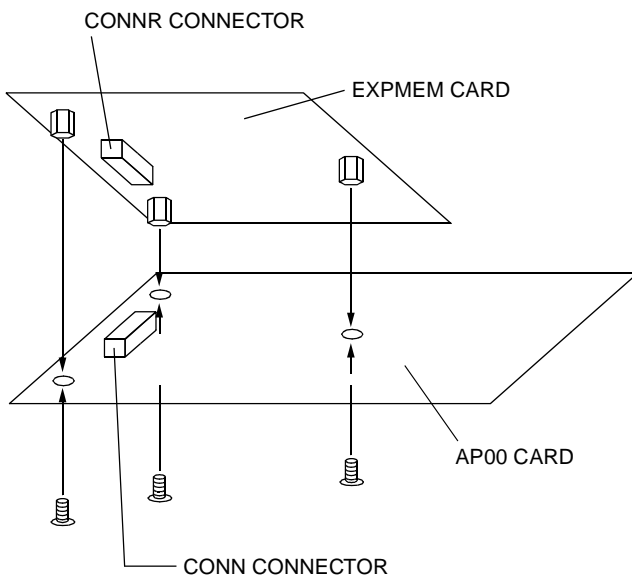
NOTE: Supports and screws are attached to the EXPMEM card.

STEP 2: Connect the CONNR connector on the EXPMEM card and the CONN connector on the AP00/MP card.

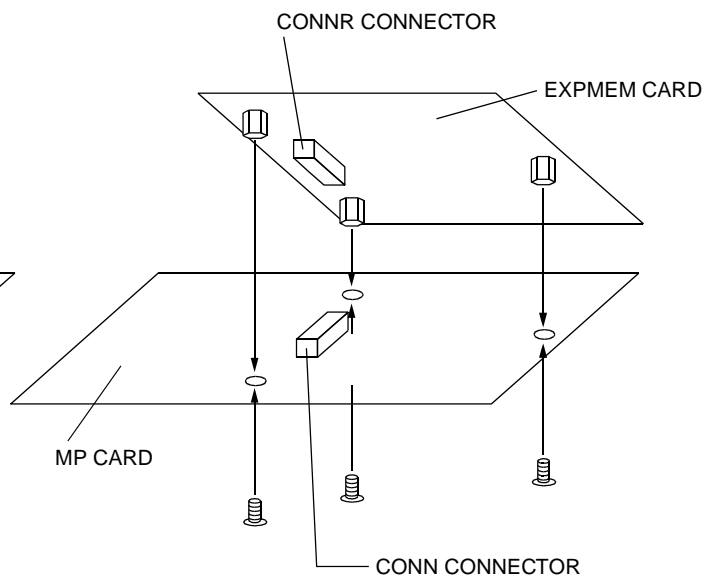
STEP 3: Secure the EXPMEM card to the AP00/MP card with the three screws which were removed in STEP 1.



WHEN MOUNTING EXPMEM CARD
ON THE AP00 CARD

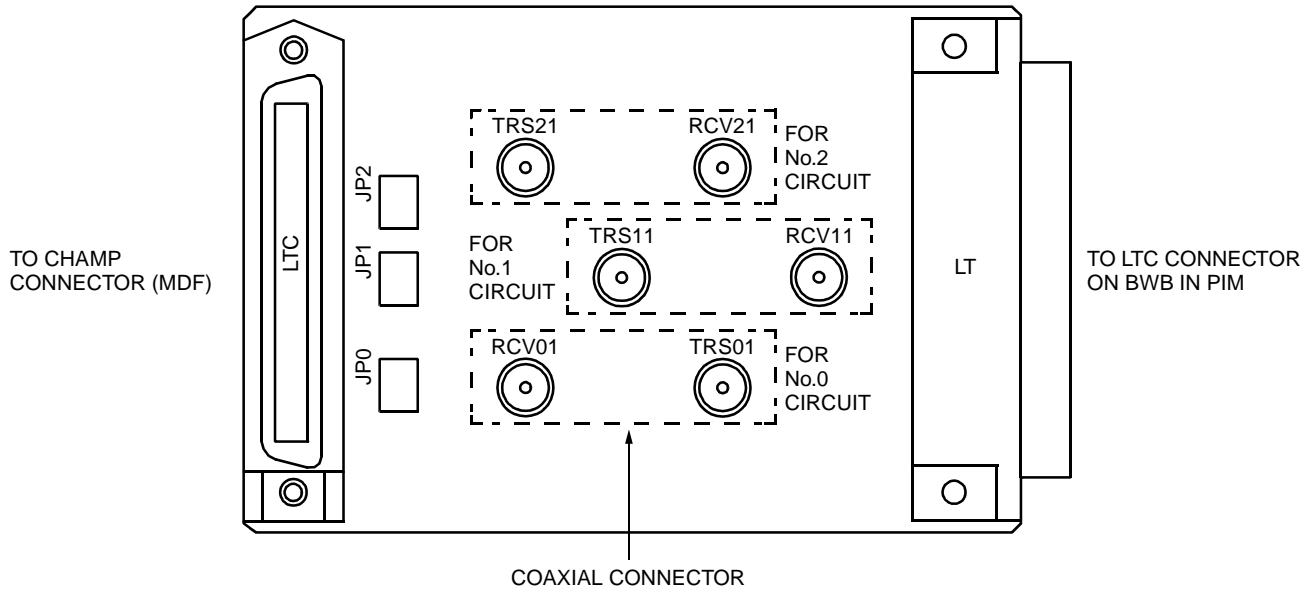


WHEN MOUNTING EXPMEM CARD
ON THE MP CARD



PZ-M542 (CONN)

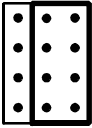

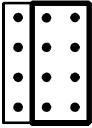

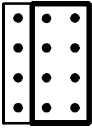

Locations of Lamps, Switches and Connectors





Lamp Indications

This card has no lamps.

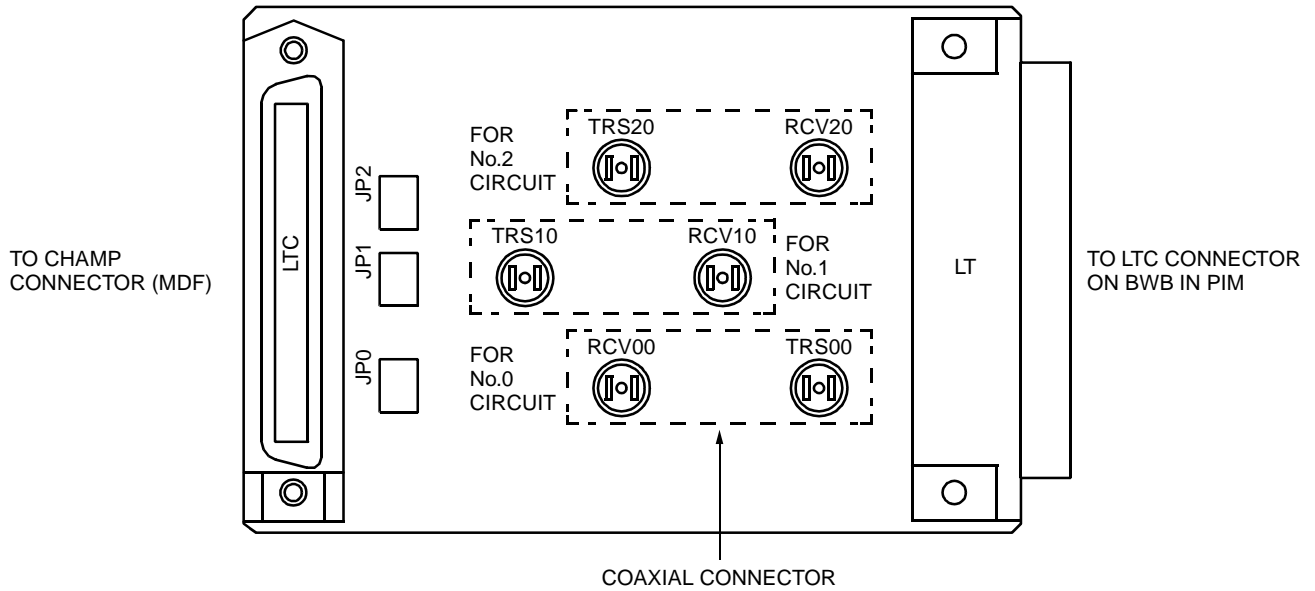
Switch Settings

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 in  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.

PZ-M557 (CONN)

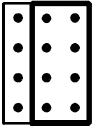

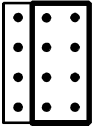

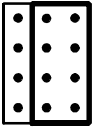

Locations of Lamps, Switches and Connectors





Lamp Indications

This card has no lamps.

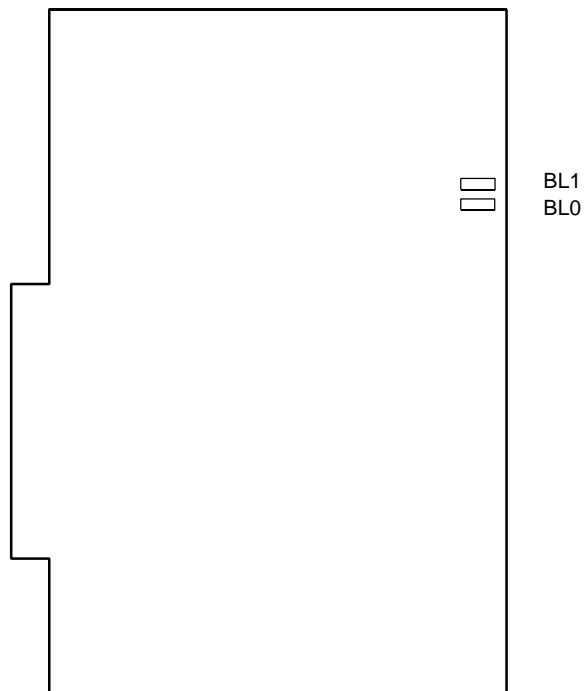
Switch Settings

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 in  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.

PN-2LDTA (LDT)

Locations of Lamps, Switches and Connectors



Lamp Indications

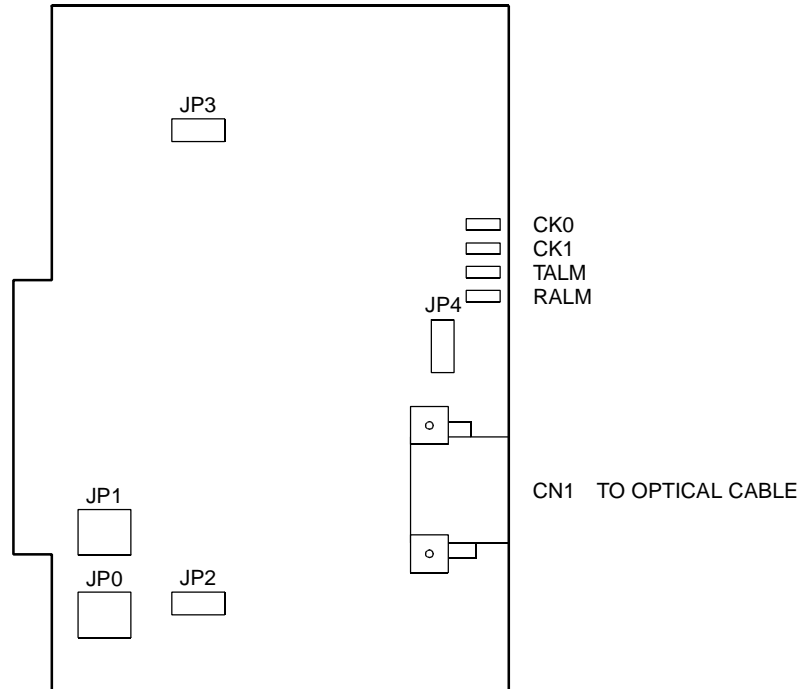
LAMP NAME	COLOR	FUNCTION
BL0, 1	Red	<ul style="list-style-type: none">• Remains lit when the corresponding circuit is in use.• Flashes at 60 IPM when the corresponding circuit is in make-busy state or the system data for this card is not assigned.

Switch Settings

This card has no switches.

PN-M10 (M10)

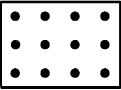



Location of Lamps, Switches and Connectors



Lamp Indications

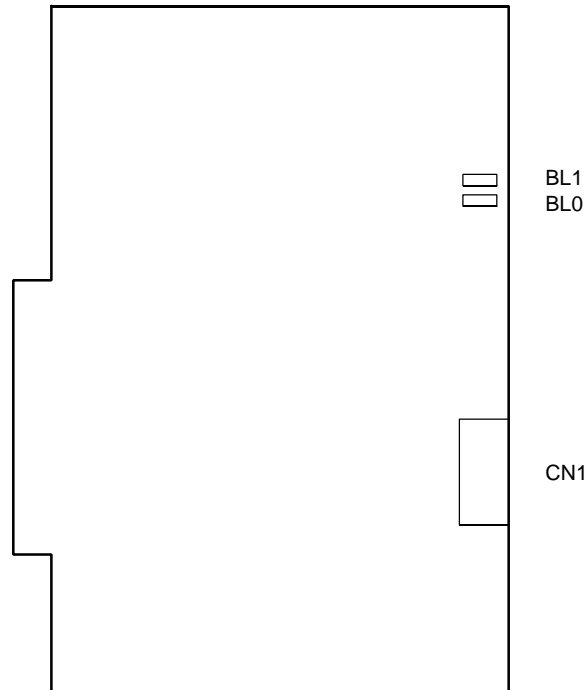
LAMP NAME	COLOR	FUNCTION
CK0	Green	Remains lit when a Digital Trunk Interface is connected to No. 0 circuit on this card.
CK1	Green	Remains lit when a Digital Trunk Interface is connected to No. 1 circuit on this card.
TALM	Red	Remains lit when optical output is stopped.
RALM	Red	Remains lit when optical input is lost or stopped.

Switch Settings

SWITCH NAME	SWITCH NUMBER	SETTING POSITION	FUNCTION	CHECK
JP0, 1 (Jumper pin) 		UP	When connected to E1 (2M) Digital Trunk Interface.	
		DOWN	When connected to T1 (1.5M) 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 provided (For T1 interface) *B8ZS: Bipolar Eight Zero Substitution	
JP3 (Jumper pin) 		Right	When connected to E1 (2M) Digital Trunk Interface.	
		Left	When connected to T1 (1.5M) Digital Trunk Interface.	
JP4 (Jumper pin) 		UP	When connected to E1 (2M) Digital Trunk Interface.	
		DOWN	When connected to T1 (1.5M) Digital Trunk Interface.	

PN-2ODTA (ODT)

Locations of Lamps, Switches and Connectors



Lamp Indications

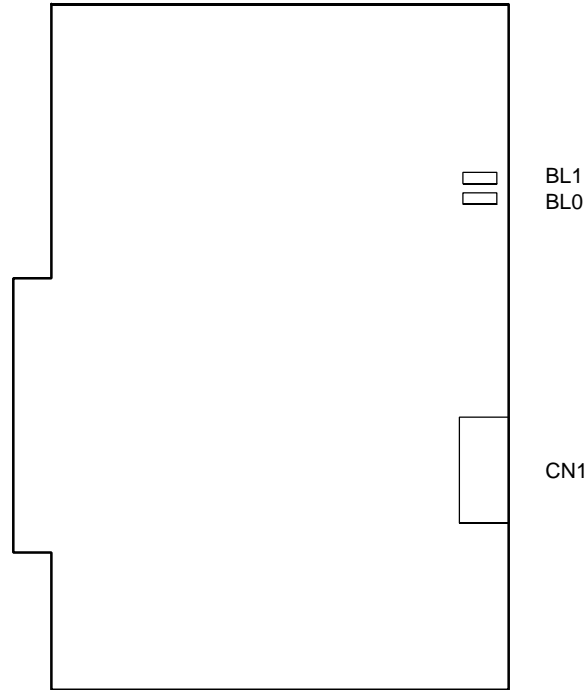
LAMP NAME	COLOR	FUNCTION
BL0, 1	Red	<ul style="list-style-type: none"> Remains lit when the corresponding circuit is in use. Flashes at 60 IPM when the corresponding circuit is in make-busy state or the system data for this card is not assigned.

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	<ul style="list-style-type: none">• 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.

CHAPTER 5

OPERATION TEST

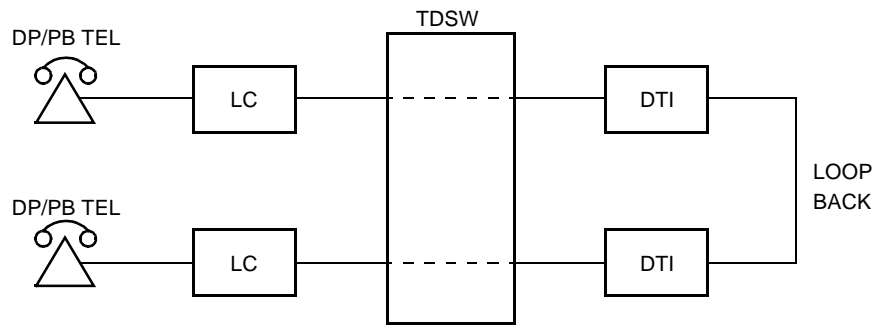
This chapter explains inter-office test procedure relating to the basic DTI functions.

LOOP-BACK TEST

A loop-back test is performed on the DTI card. At least two DTI cards are necessary. Operational tests are performed by the clock within the MP.

STEP 1: Assign the system data for a performance test as shown in [Figure 5-1](#).

Figure 5-1 Loop-Back Test

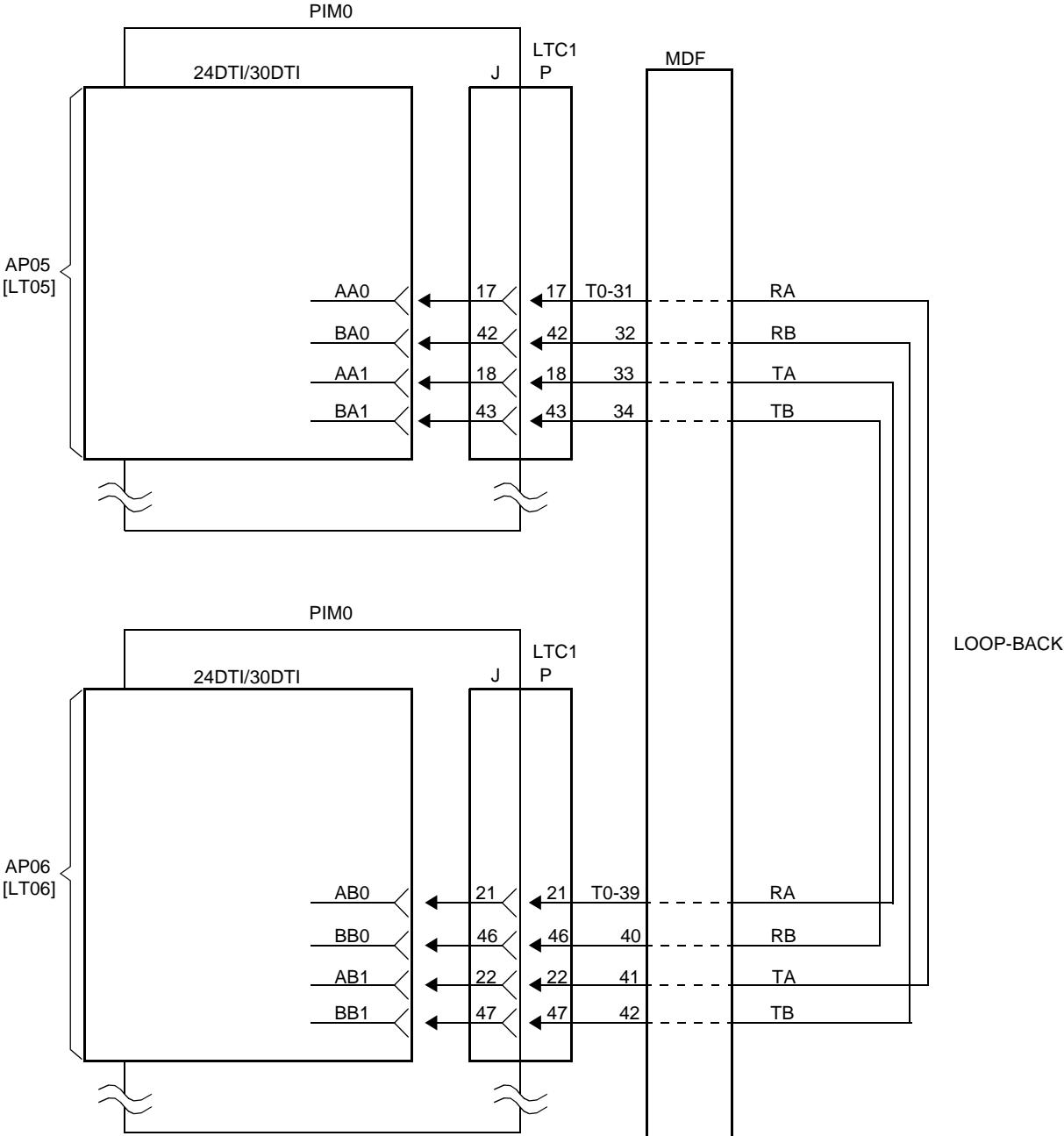


STEP 2: Connect the cable for loop-back test.

(1) When using a twisted-pair cable:

Figure 5-2 shows an example of the cable connection when the 24DTI/30DTI cards are mounted in the AP05 and AP06 slot of PIM0.

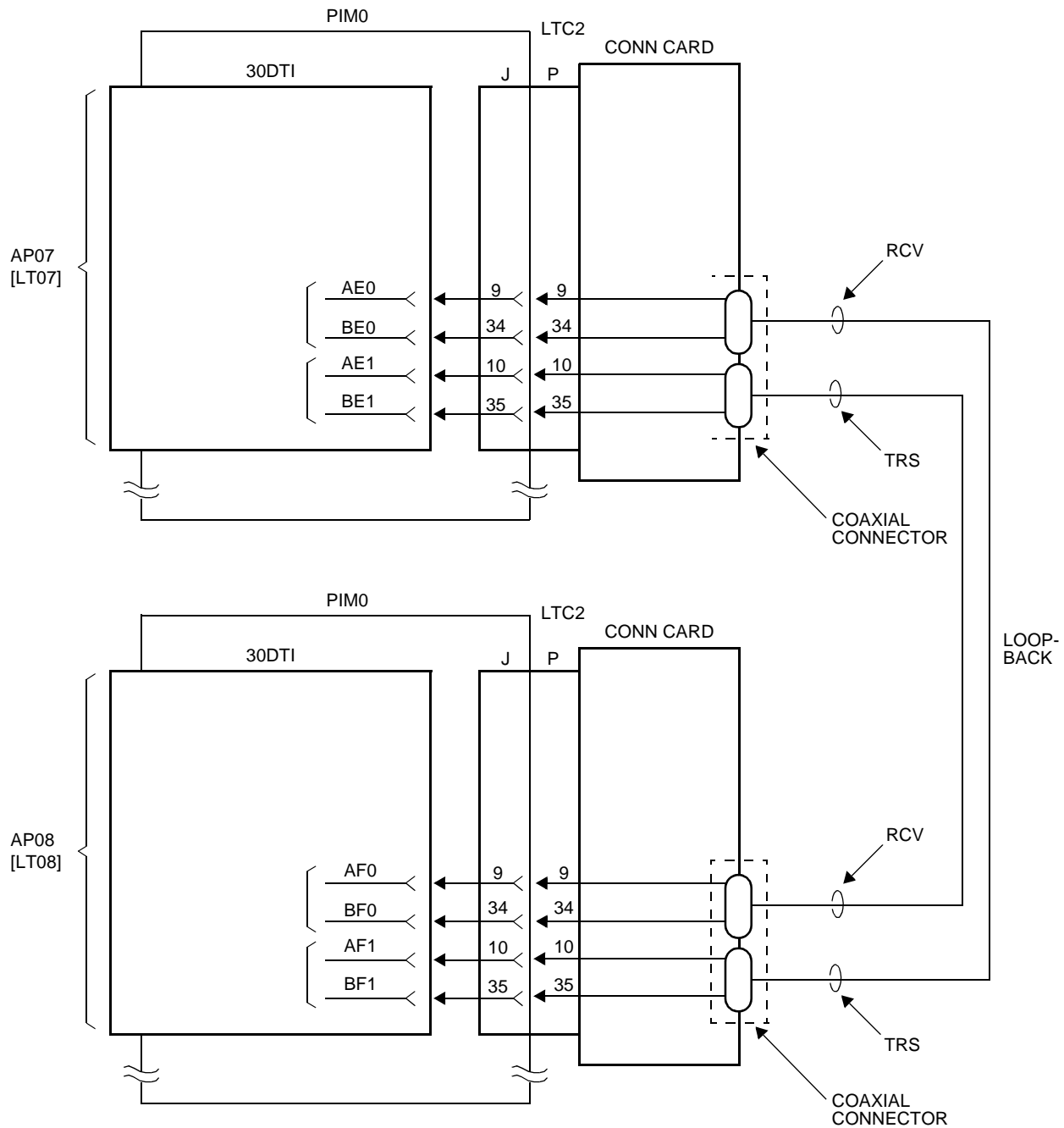
Figure 5-2 Loop-Back Test Cable Connection (for Twisted-Pair Cable)



(2) When using a coaxial cable:

Figure 5-3 shows an example of the cable connection when the 30DTI cards are mounted in the AP07 and AP08 slot of PIM0.

Figure 5-3 Loop-Back Test Cable Connection (for Coaxial Cable)



STEP 3: Turn on the operating power. Confirm the state of the lamps on the two 24DTI cards or 30DTI cards. See [Table 5-1](#) and [Table 5-2](#).

Table 5-1 Alarm Indications on the 24DTI Card (Loop-Back Test)

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, CM07 YY=01. ② Check to see if the SENS switch is set as per the AP number (04-15, 20-31) assigned by CM05. 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 DTI cable is correctly connected. ② Plug and unplug the DTI card. Repeat this two or three times.
FRM	Off	On	Frame Alignment signals from the distant office can not 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 loop-back test	① Check the switch settings of the remote DTI card.

Table 5-2 Alarm Indications on the 30DTI Card (Loop-Back Test)

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, CM07 YY=01. ② Check to see if the SENS switch is set as per the AP number (04-15, 20-31) assigned by CM05. 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 DTI cable is correctly connected. ② Plug and unplug the DTI card. Repeat this two or three times.
FRM	Off	On	Frame Alignment signals from the distant office can not 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 can not 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.
MRMT	Off	On	Frame Alignment signals from the distant office can not be received	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 loop-back test	① Check the switch settings of the remote DTI card.

STEP 4: 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 means of CME5.

Dial the trunk route access code and a station number. In the case of a loop-back test, the same BL lamp lights up on the calling-side DTI card and the called-side DTI card. 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.

STEP 5: Reassign the system data, as needed.

STEP 6: Turn off the operating power and disconnect the loop-back test cable. Then, connect the transmission line cable.

INTEROFFICE TRANSMISSION LINE TEST

To confirm inter-office synchronization and speech quality using “In-Service” transmission lines, do the following steps.

STEP 1: Connect the transmission line to the MDF or CONN card.

STEP 2: Make busy the channels except the channel tested by CME5.

STEP 3: Confirm indication lamps on the DTI card, as per the following table.

- ["Alarm Indications on the 24DTI Card \(Loop-Back Test\)" on Page 307](#)
- ["Alarm Indications on the 30DTI Card \(Loop-Back Test\)" on Page 308](#)

STEP 4: Originate an outgoing call via trunk.

STEP 5: After an outgoing connection via trunks has been established, confirm 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.

STEP 6: Repeat the test for all channels. When completed, make idle all channels by CME5.

Table 5-3 Alarm Indications on 24DTI (Interoffice Transmission Line Test)

LED	LED INDICATION		FAULT	
	NORMAL	FAULT	CAUSE	ACTION
RUN	Flash (120 IPM)	On or Off	Abnormal operation of DTI card	<ol style="list-style-type: none"> ① Confirm the programming data: CM05, CM07 YY=01. ② Check to see if the SENS switch is set as per the AP number (04-15, 20-31) assigned by CM05. 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> ① Check to see if the DTI cable is correctly connected. ② Plug and unplug the DTI card. Repeat this two or three times.
FRM	Off	On	Frame Alignment signals from the distant office can not be received	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> ① Check the transmission line and external equipment. ② Replace the DTI card.
AIS	Off	On	Remote PBX is in the loop-back test	<ol style="list-style-type: none"> ① Check the switch settings of the remote DTI card.

Table 5-4 Alarm Indications on 30DTI (Interoffice Transmission Line Test)

LED	LED INDICATION		FAULT	
	NORMAL	FAULT	CAUSE	ACTION
RUN	Flash (120 IPM)	On or Off	Abnormal operation of DTI card	<ol style="list-style-type: none"> ① Confirm the programming data: CM05, CM07 YY=01. ② Check to see if the SENS switch is set as per the AP number (04-15, 20-31) assigned by CM05. 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	<ol style="list-style-type: none"> ① Check to see if the DTI cable is correctly connected. ② Plug and unplug the DTI card. Repeat this two or three times.
FRM	Off	On	Frame Alignment signals from the distant office can not be received	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> ① Check the transmission line and external equipment. ② Replace the DTI card.
MRMT	Off	On	Frame Alignment signals from the distant office can not be received	<ol style="list-style-type: none"> 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 loop-back test	<ol style="list-style-type: none"> ① Check the switch settings of the remote DTI card.

PLO OPERATION TEST

To confirm the PLO operation do the following tests.

- Clock Signal Generation Test
 - Clock Signal Synchronization Test
 - Interoffice Synchronization Test
 - Source Office Mode Test
- } To be tested when the PBX is a clock receiver office.
- _____ 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 previous source clock, when the source clock signal from network have stopped. Do the following steps using “In Service” transmission lines.

STEP 1: On all the DTI cards mounted in PIM0, set the switches as follows to stop the external clock signal input.

- 30DTI card: SW-1 and SW-2 to OFF
 - 24DTI card: SW0-1 and SW0-2 to OFF
- The CLK lamp on the MP card goes out.

STEP 2: Originate an outgoing call via trunks.

STEP 3: 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.

STEP 4: On all the DTI 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 has input again after it has stopped once. Do the following steps using “In Service” transmission lines.

(1) When providing one clock supply route

STEP 1: On the DTI0 card extracting clock signals, set the SW-1 and SW-2 to OFF to stop the external clock signal input.

– The CLK lamp on the MP card goes out.

STEP 2: Originate an outgoing call via trunk.

STEP 3: 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.

STEP 4: On the DTI0 card, restore the switches as the state before testing to input the external clock signals.

- 30DTI0 card: SW-1 to ON, SW-2 to OFF
- 24DTI0 card: SW0-1 to ON, SW0-2 to OFF

– The CLK lamp on the MP card lights.

STEP 5: Originate an outgoing call via trunks.

STEP 6: 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

STEP 1: On the DTI cards extracting clock signals, set the switches as follows to change the clock supply route from 0 to 1.

- 30DTI0 card: SW-1 to OFF, SW-2 to OFF
- 30DTI1 card: SW-1 to OFF, SW-2 to ON
- 24DTI0 card: SW0-1 to OFF, SW0-2 to OFF
- 24DTI1 card: SW0-1 to OFF, SW0-2 to ON

STEP 2: Originate an outgoing call via trunks.

STEP 3: 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.

STEP 4: On the DTI cards, set the switches as follows to stop the external clock signal input.

- 30DTI0/1 card: SW-1 and SW-2 to OFF
- 24DTI0/1 card: SW0-1 and SW0-2 to OFF

– The CLK lamp on the MP card goes out.

STEP 5: Repeat the procedure shown in STEP 2 and STEP 3.

STEP 6: On the DTI0/1 cards, set the switches as shown in STEP 1 to input clock signals from the clock supply route 1.

STEP 7: Repeat the procedure shown in STEP 2 and STEP 3.

STEP 8: On the DTI cards, set the switches as follows to change the clock supply route from 1 to 0.

- 30DTI0 card: SW-1 to ON, SW-2 to OFF
- 30DTI1 card: SW-1 to OFF, SW-2 to ON
- 24DTI0 card: SW0-1 to ON SW0-2 to OFF
- 24DTI1 card: SW0-1 to OFF, SW0-2 to ON

– The CLK lamp on the MP card lights.

STEP 9: 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.

STEP 1: Originate an outgoing call via trunks.

STEP 2: Check the speech quality (if noise, distortion or click occurs during a few minutes) with the opposite office mutually.

STEP 3: 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.

STEP 4: 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.

STEP 1: Confirm that the following switches on all the DTI cards mounted in PIM0 are set to “OFF”.

- 30DTI card: SW-1 and SW-2 to OFF
- 24DTI card: SW0-1 and SW0-2 to OFF

STEP 2: 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

STEP 3: Confirm indication lamps on the MP card.

NOTE: When the CLK lamp lights on the MP card, the clock signal is not generated from the MP card. Check the switch settings on the DTI and MP card.

For details of the lamp indications, refer to [CHAPTER 4 on Page 259](#).

STEP 4: Originate an outgoing call via trunks.

STEP 5: 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 and MP card, and do the above test again.

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