

# Panasonic

T-1 Digital Trunk card  
for KX-T336 System

Model No. **KX-T96187**

## Reference Guide

This Reference Guide does not show the complete model number that indicates the area or country where your card should be used. The model number of your card is printed on the package.

KX-T96187 _ _ _	1 set
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Please read before using.

# Thank you for purchasing this Panasonic Card.

## Introduction

The KX-T96187 (T-1 Digital Trunk card) has 24 PCM voice channels. This card supports the following five different trunk interfaces to provide desired connection at minimum expense.

type of interface : LCO/GCO/DID/OPX/TIE

This card is compatible with the following :

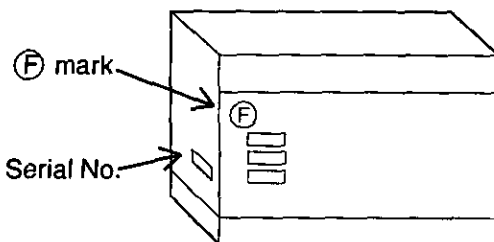
### Software

#### KX-T336 System

Software version	CPU card ROM version (IC11 through IC14)
V.12.XX and higher version	Y251J through Y254J and higher version

### Basic Shelf

For (F) and subsequent (in alphabetical order) versions of the KX-T336100, the (F) mark is located above the plates on the backside of the KX-T336100 as shown at right.



For Suffix versions of the KX-T336100, the Suffix is located above the plates on the right side of the KX-T336100 as shown below .

Example : 5BCHA xxxxxx (Serial No.)  
                  I---- Suffix

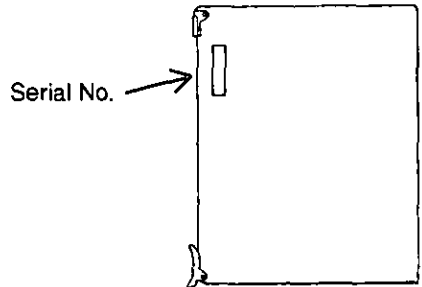
- Suffix "Y" and subsequent version ---- KX-T336100 (for U.S.A.)
- Suffix "B" and subsequent version ---- KX-TP310CN (for China)
- Suffix "C" and subsequent version ---- KX-T336100C (for Canada),  
KX-T336100NZ (for New Zealand)
- Suffix "E" and subsequent version ---- KX-T336100XM (for Mexico),  
KX-T336100BML (for Malaysia),  
KX-T336100SN (for Singapore)
- Suffix "F" and subsequent version ---- KX-T336100HK (for Hong Kong)
- Suffix "H" and subsequent version ---- KX-T336100X (for Asia, Middle Near  
East and other areas)
- Suffix "N" and subsequent version ---- KX-T336100B (for Asia, Middle Near  
East and other areas)

# Introduction

## TSW Card

For Suffix versions of the KX-T336102, the Suffix is located above the PCB of the KX-T336102 as shown at right.

Example : 5BCHA xxxxxx (Serial No.)  
          └---- Suffix



Suffix "C" and subsequent version ---- KX-T336102 (for U.S.A.)

Suffix "B" and subsequent version ---- KX-T336102X (for Asia, Middle Near East and other areas)

## CSU (Channel Service Unit)

The installer must provide a CSU to connect the T-1 line to the KX-T96187.

The CSU must support the following functions:

- : Protection for the Central Office line
- : Loop Back
- : Performance Monitoring

## T-1 line

The installer must arrange for the following parameters with the Central Office or T-1 provider:

**Type of Interface** : LCO/GCO/DID/OPX/TIE, **Frame format** : D4 (SF)/ESF

**Line coding** : AMI/B8ZS, **Signalling** : DP/DTMF

## **Note :**

- You can assign up to six T-1 Digital Trunk cards (144 ports), if the following conditions are completed :

## System Configuration

Basic shelf	HLC+PLC+SLC+OPX+DID+LCOT+GCOT+T-1	12 cards (96 ports)
Expansion shelf	HLC+PLC+SLC+OPX+DID+LCOT+GCOT+T-1	15 cards (120 ports)
Fully Expanded system	HLC+PLC+SLC+OPX+DID+LCOT+GCOT+T-1	42 cards (336 ports)

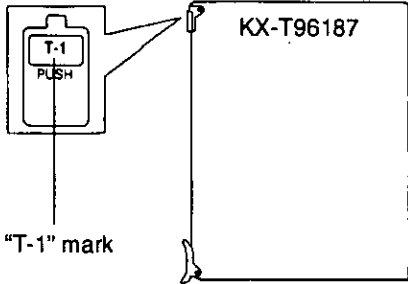
Note: Total 18 CO cards (144 ports) allowed per system  
DID + LCOT + GCOT + T-1

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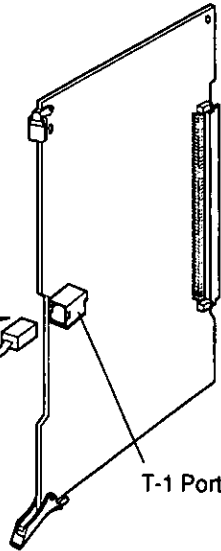
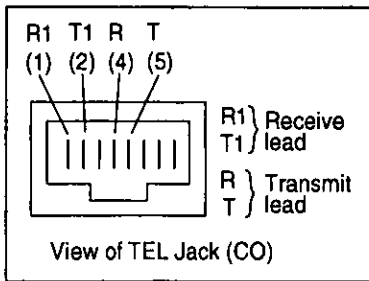
# Installation



- Insert the card into Free Slot 1, 5 or 9 of any shelf.
- A maximum of six KX-T96187 can be installed in the system.

## Connecting the Central Office Line

Insert the RJ-48C plug of the telephone line cord (4-conductor wiring) into the RJ-48C jack (T-1 port on the KX-T96187).



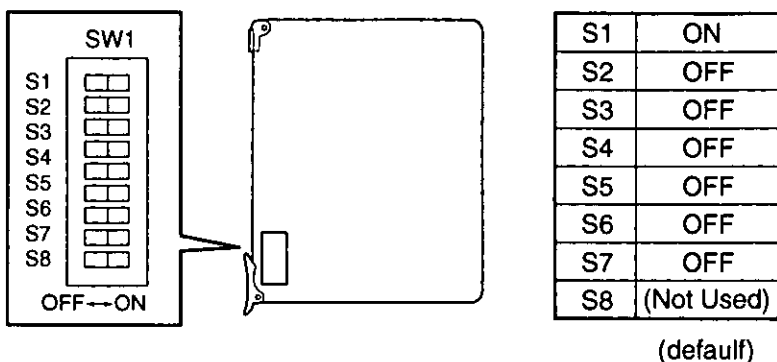
To Channel Service Unit (CSU) or Other KX-T96187

Use 4-conductor wiring cord.

T-1 Digital Trunk card (KX-T96187)

# Installation

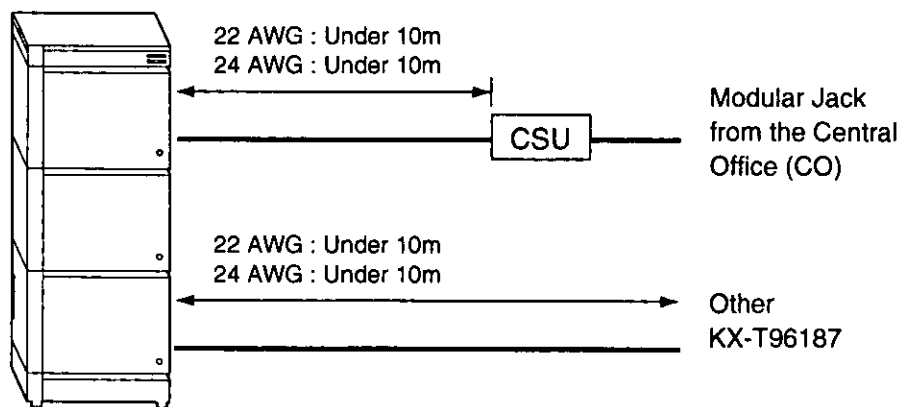
## Transmit Equalizer Setting



**Note:**

The User cannot change this setting.

## Maximum Cabling Distance of the T-1 Line



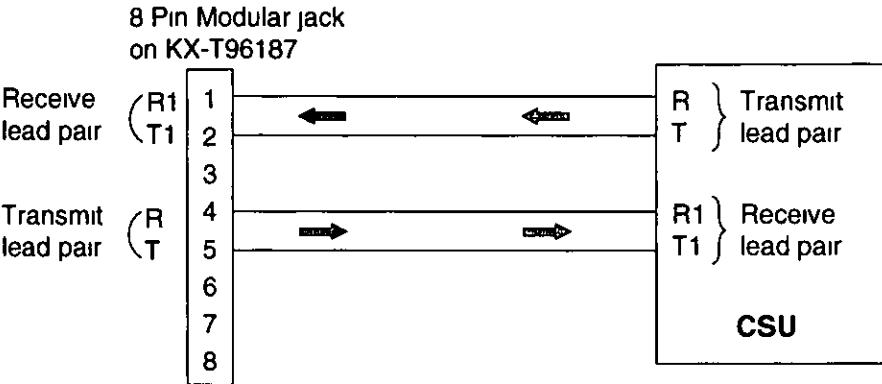
**Note :**

The T-1 line cable must be 22 AWG shielded twisted pair cable or 24 AWG UTP (unshielded twisted pair) cable supported Category 5.

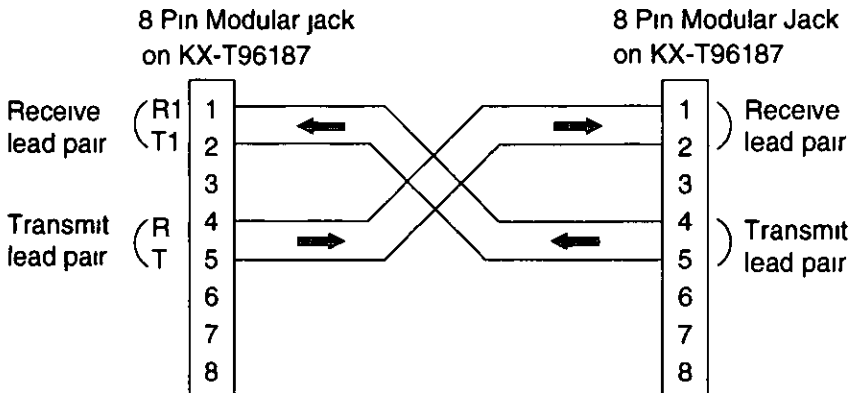
# Installation

## Cable Pin Numbers to be connected

KX-T96187 ↔ Channel Service Unit (CSU)



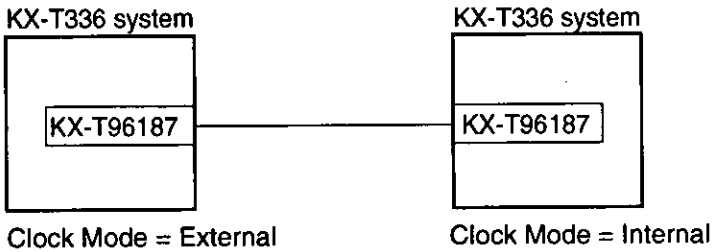
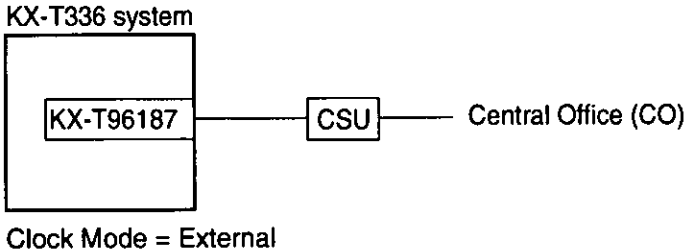
KX-T96187 ↔ KX-T96187



# Installation

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## System Clock Mode



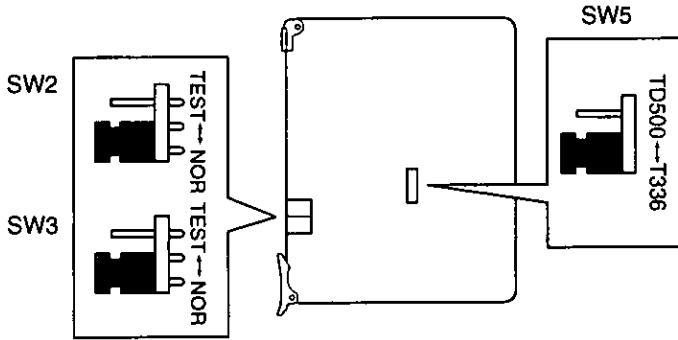
**Note:**

System Clock mode is programmed by CLK command.(see page 30)



# Installation

## Short Jumper Setting



**SW2, SW3**

NOR	Normal (default)
TEST	TEST (see Note)

**SW5**

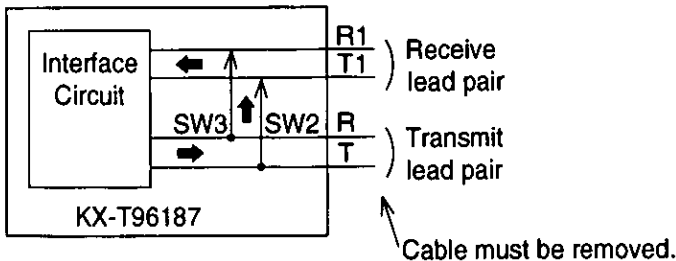
T336	Mode for KX-T336 (default)
TD500	(Reserved)

**Note:**

**Loop Back Test**

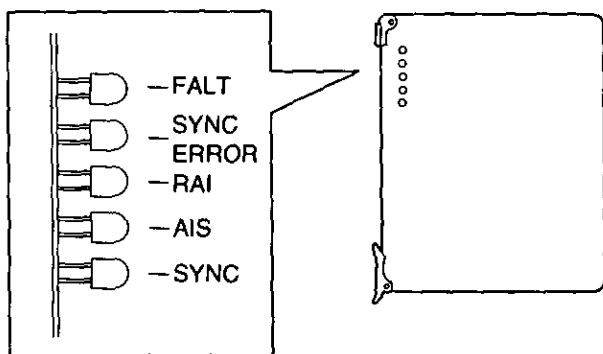
The user can check KX-T96187 by the following procedure.

1. Remove T-1 cable from KX-T96187.
2. Set SW2 and SW3 to TEST position.
3. Check SYNC LED (green).
  - If SYNC LED does not light or flash, KX-T96187 does not work.
4. Set SW2 and SW3 to NOR position.



# Installation

## LED Indication



Item	Status	Contents
FALT	ON	Card Fault
	OFF	Normal
SYNC ERROR	ON	Clock Synchronization Error or Loss of Signal
	OFF	Normal
RAI	ON	Receive Remote Alarm Indication signal (Yellow Alarm)
	OFF	Normal
AIS	ON	Send Alarm Indication Signal (Yellow Alarm)
	OFF	Normal
SYNC	FLASH	Clock Master at External Clock Mode
	ON	Detection of Signal
	OFF	No Detection of Signal

# System Programming

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## Procedure

The following system programming is required to make use of T-1 trunks.

1. Slot Assignment (See page 12) — VT or Dumb Terminal mode
2. Channel Assignment (See page 14) — VT or Dumb Terminal mode
3. Trunk Group (1/2) (See page 16) — VT or Dumb Terminal mode
4. Trunk Group (2/2) (See page 18) — VT or Dumb Terminal mode
5. CO Line (See page 21) — VT or Dumb Terminal mode
6. TIE Line Routing Table\* (See page 23) — VT or Dumb Terminal mode
7. CLP command (See page 27) — Dumb Terminal mode only
8. CLK command (See page 30) — Dumb Terminal mode only
9. TAC command\* (See page 32) — Dumb Terminal mode only
10. TRR command\* (See page 33) — Dumb Terminal mode only
11. LHS command\* (See page 35) — Dumb Terminal mode only

\* Programming of these items is required, if you utilize the tie lines by selecting "Tie" channels at "Channel Assignment screen" on page 14.

## Feature Description

A tie line is a privately leased communication line between two or more PBXs, which provides cost effective communications between company members at different locations.

Tie lines can be used to call through KX-T336 to reach another switching system (PBX or CO). By utilizing the tie lines, the KX-T336 can support not only communications with the public network but with other locations of the company in the private network of which your KX-T336 can be a part.

To make a call to a person in a distant company location, an extension user must first obtain the appropriate tie line to that person's PBX, and then dial the extension number only or a location number plus extension number.

# System Programming

---

## Slot Assignment

From the VT mode Main Menu

↓  
1. Programming (↵)

↓  
01. Configuration (↵)

↓  
2. Slot Assignment (↵)

↓

Slot Assignment screen (example)

Configuration - Slot Assignment						OFL   PRG   SCR   SEL		
+-----+-----+-----+								
Basic	FS01	T-1	Expansion	FS01	SLC	Expansion	FS01	
Shelf	FS02	-	Shelf 1	FS02	OPX	Shelf 2	FS02	
	FS03	-		FS03	LCOT		FS03	
	FS04	PLC		FS04	GCOT		FS04	
	FS05	T-1		FS05	DID		FS05	
	FS06	-		FS06	MSLT		FS06	
	FS07	-		FS07	ATLC		FS07	
	FS08	SLC		FS08	DPH		FS08	
	FS09	T-1		FS09	AGC		FS09	
	FS10	-		FS10	DISA		FS10	
	FS11	-		FS11	RMT		FS11	
	FS12	HLC		FS12			FS12	
	BS01	CPU		FS13			FS13	
	BS02	OHCAI		FS14			FS14	
	BS03	TSW		FS15			FS15	
FS : Free Slot, BS : Basic Slot								
+-----+-----+-----+								
1	COMMON	2	3	4	5	6	HRD CPY	7
8								

# System Programming

## Slot Assignment (Continued from page 12)

Assign the type of service cards inserted in the free slots in the basic and expansion shelves.

Assigning Items	Default	Value Selection
Basic Shelf FS (01 to 12)	Automatic Set	Blank : Not assigned T-1 : T-1 Digital Trunk card PLC : Proprietary Integrated Telephone System Line Circuit card HLC : Hybrid Line Circuit card SLC : Single Line Telephone Circuit card MSLC : SLC card with Message Waiting LCOT : Loop Start Central Office Trunk card RCOT : Loop Start Central Office Trunk card with Polarity Reverse Detection GCOT : Ground Start Central Office Trunk card DID : Direct Inward Dialing card AGC : Automatic Gain Control card DISA : Direct Inward System Access card OPX : Off Premise Extension card ATLC : Attendant Console Line Circuit card DPH : Door Phone Circuit card RMT : Remote Circuit card
Expansion Shelf 1 FS (01 to 15)	Automatic Set	Same as Basic Shelf FS
Expansion Shelf 2 FS (01 to 15)	Automatic Set	Same as Basic Shelf FS

- The T-1 Digital Trunk card should be assigned to FS01, 05 and 09 in any shelf.
- One T-1 Digital Trunk card occupies three slots. If you assign a T-1 Digital Trunk card to FS01, FS02 and FS03 are not available for other cards. A '-' (hyphen) is displayed in these two slots and the cursor skips them.

# System Programming

## Channel Assignment

Assign the type of T-1 interface to each channel using the space key.

From the VT mode Main Menu

- ```

↓
1.Programming (-J)
↓
01.Configuration (-J)
↓
4.Channel Assignment (-J)
↓
    
```

Channel Assignment screen (example)

| Configuration - Channel Assignment |          |               |           |  |          |                |          |               |  | OFL | PRG | SCR | SEL |  |  |
|------------------------------------|----------|---------------|-----------|--|----------|----------------|----------|---------------|--|-----|-----|-----|-----|--|--|
| Channel Assignment (1 / 2) *1      |          |               |           |  |          |                |          |               |  |     |     |     |     |  |  |
| Slot 101                           | Option   | 1:None 2:None |           |  |          | Slot 105       | Option   | 1:DTMF 2:None |  |     |     |     |     |  |  |
| Frame Sequence                     |          | D4            |           |  |          | Frame Sequence |          | ESF           |  |     |     |     |     |  |  |
| Line Cording                       |          | AMI           |           |  |          | Line Cording   |          | B8ZS          |  |     |     |     |     |  |  |
| 101  LCO                           | 109  LCO | 117  LCO      | 125  - *2 |  | 101  LCO | 109  DID       | 117  LCO | 125  -        |  |     |     |     |     |  |  |
| 102  GCO                           | 110  GCO | 118  GCO      | 126  -    |  | 102  LCO | 110  TIE       | 118  OPX | 126  -        |  |     |     |     |     |  |  |
| 103  DID                           | 111  DID | 119  DID      | 127  -    |  | 103  LCO | 111  TIE       | 119  LCO | 127  -        |  |     |     |     |     |  |  |
| 104  DID                           | 112  DID | 120  DID      | 128  -    |  | 104  GCO | 112  TIE       | 120  GCO | 128  -        |  |     |     |     |     |  |  |
| 105  TIE                           | 113  TIE | 121  TIE      | 129  -    |  | 105  GCO | 113  TIE       | 121  OPX | 129  -        |  |     |     |     |     |  |  |
| 106  TIE                           | 114  TIE | 122  TIE      | 130  -    |  | 106  DID | 114  OPX       | 122  OPX | 130  -        |  |     |     |     |     |  |  |
| 107  OPX                           | 115  OPX | 123  OPX      | 131  -    |  | 107  DID | 115  OPX       | 123  LCO | 131  -        |  |     |     |     |     |  |  |
| 108  OPX                           | 116  OPX | 124  OPX      | 132  -    |  | 108  DID | 116  OPX       | 124  GCO | 132  -        |  |     |     |     |     |  |  |
| 01-32 : Channel No.                |          |               |           |  |          |                |          |               |  |     |     |     |     |  |  |

\*1 If you install one or two T-1 Digital Trunk cards, this line is not displayed.

You only have to program this page.

When you install three or more T-1 Digital Trunk cards, 2 or more page(s) of "Channel Assignment" will be displayed. Go to the next page and complete the assignment.

\*2 A "-" (hyphen) is displayed in channels 25 through 32. These channels are not available. The cursor skips them.

# System Programming

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## Channel Assignment (Continued from page 14)

Enter or select the appropriate values according to the table below.

| Assigning Items    | Default              | Value Selection             |
|--------------------|----------------------|-----------------------------|
| Frame Sequence     | ESF                  | D4 / ESF                    |
| Line Cording       | B8ZS                 | AMI / B8ZS                  |
| Channel (01 to 24) | Blank : Not assigned | LCO / GCO / DID / TIE / OPX |

## Other Programming

- "DN Assignment" of the Configuration - DN Assignment screen  
If the T-1 channel is set to "OPX", it is necessary to program the "DN Assignment" and "Station".

# System Programming

## Trunk Group (1/2)

From the VT mode Main Menu

↓

1. Programming (↵)

↓

03. Group (↵)

↓

1. Trunk Group (↵)

↓

Trunk Group (1/2) screen (example)

| Group - Trunk Group             | OFL      | PRG        | SCR    | SEL |
|---------------------------------|----------|------------|--------|-----|
| Trunk Group No. = 15 (1/2)      |          |            |        |     |
| Type -----                      | TIE      |            |        |     |
| Name -----                      |          |            |        |     |
| Tenant -----                    | 1        |            |        |     |
| Incoming/Outgoing -----         | Both-Way |            |        |     |
| Incoming Mode (Day) -----       | -        |            |        |     |
| Incoming Mode (Night) -----     | -        |            |        |     |
| Intercept Routing (Day) -----   | -        | (Type:No.) |        |     |
| Intercept Routing (Night) ----- | -        | (Type:No.) |        |     |
| Toll Restriction Level -----    | 16       |            |        |     |
| Toll Restriction Table -----    | 1        |            |        |     |
| Dialing Plan -----              | None     |            |        |     |
| CO-CO Duration Limit -----      | 10       | minute(s)  | (1-64) |     |
| Disconnect Time -----           | 1.5      | second(s)  |        |     |
| Pause Time -----                | 3.5      | second(s)  |        |     |
| Hook Switch Flash Time ----     | None     |            |        |     |
| +-----+                         |          |            |        |     |
| 1 COMMON                        | 2 INDEX  | 3          | 4 READ | 5   |
| 6 HRD CPY                       | 7        | 8          |        |     |



# System Programming

## Trunk Group (1/2) (Continued from page 16)

Enter or select the appropriate values according to the table below.

| Assigning Items           | Default                                                 | Value Selection                                                |
|---------------------------|---------------------------------------------------------|----------------------------------------------------------------|
| Type                      | DDD                                                     | DDD/FEX/WATS/PVL/PBX/DID/TIE                                   |
| Name                      | CO                                                      | Up to three digits consisting of characters, numbers and marks |
| Tenant                    | blank                                                   | 1 or 2                                                         |
| Incoming/Outgoing         | Both-Way                                                | Incoming Only/Outgoing Only/Both-Way                           |
| Incoming Mode (Day)       | ATT : for "with ATLC"<br>DIL 1 : 1 : for "without ATLC" | ATT/DIL 1:1/DIL 1:N/DISA/TAFAS 1/<br>TAFAS 2                   |
| Incoming Mode (Night)     | FLEXIBLE                                                | Day Mode/FIXED/FLEXIBLE/DISA                                   |
| Intercept Routing (Day)   | None                                                    | (Type) : None/ATT/EXT                                          |
|                           |                                                         | (No.) : Directory number : when "EXT" is selected              |
| Intercept Routing (Night) | None                                                    | (Type) : None/EXT                                              |
|                           |                                                         | (No.) : Directory number : when "EXT" is selected              |
| Toll Restriction Level    | 16                                                      | 01 to 16                                                       |
| Toll Restriction Table    | 1                                                       | 1 to 8                                                         |
| Dialing Plan              | None                                                    | Type-A/Type-B/Type-C/Type-D/None                               |
| CO-CO Duration Limit      | 10                                                      | 1 to 64 : minute(s)                                            |
| Disconnect Time           | 1.5                                                     | 1.5/4.0/12.0 : seconds                                         |
| Pause Time                | 3.5                                                     | 1.5/2.5/3.5/4.5 : seconds                                      |
| Hook Switch Flash Time    | None                                                    | None/80/300/600/900/1200 : milliseconds                        |

# System Programming

## Trunk Group (2/2)

Press **NEXT** at the Trunk Group (1/2) screen.

Trunk Group (2/2) screen (example)

| Group - Trunk Group                             | OFL            | PRG      | SCR           | SEL      |
|-------------------------------------------------|----------------|----------|---------------|----------|
| Trunk Group No. = 15 (2/2)                      |                |          |               |          |
| Destination (DIL 1 : N Only)<br>Type and Number | -              | -        | ,             |          |
|                                                 | -              | -        | ,             |          |
|                                                 | -              | -        | ,             |          |
| DID Digit Modification Table -----              | -              |          |               |          |
| PBX Access Code (No Restriction)                | -              | ,        | ,             | ,        |
|                                                 | -              | ,        | ,             | ,        |
| PBX Access Code (Restriction)                   | -              | ,        | ,             | ,        |
|                                                 | -              | ,        | ,             | ,        |
| Max. Dial No. after EFA Signal -----            | 0              | (0-32)   |               |          |
| CO-TIE Restriction -----                        | -              |          |               |          |
| TIE-CO Restriction -----                        | Yes            |          |               |          |
| TIE Forced Account Code Mode -----              | No             |          |               |          |
| TIE Incoming Delete Digit -----                 | 0              | (0-4)    |               |          |
| TIE Incoming Insert Dial -----                  | 950            |          |               |          |
| +-----+                                         |                |          |               |          |
| <b>1</b> COMMON                                 | <b>2</b> INDEX | <b>3</b> | <b>4</b> READ | <b>5</b> |
| <b>6</b> HRD CPY                                | <b>7</b>       | <b>8</b> |               |          |

- "CO-TIE Restriction" :  
Assigns whether the connection from the CO to TIE is restricted or not.
- "TIE-CO Restriction" :  
Assigns whether the connection from the TIE to CO is restricted or not.
- "TIE Forced Account Code Mode" :  
Assigns whether entering the Account Code in outgoing CO calls via TIE is necessary or not.
- "TIE Incoming Delete Digit":  
Assigns the number of digits to be deleted from the digits received from other PBXs via tie lines.
- "TIE Incoming Insert Dial":  
Assigns one through four digits number to be added to the digits received from other PBXs via tie lines.

# System Programming

## Trunk Group (2/2) (Continued from page 18)

Enter or select the appropriate value according to the table below.

| Assigning Items                            | Default | Value Selection                                                                                                                                      |
|--------------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Destination (DIL 1:N Only) Type and Number | blank   | Type/ICM/PCKUP/EXT/blank                                                                                                                             |
|                                            |         | (Number) : blank : when "blank" is selected, 01 to 32 : pickup group number, three or four digits : extension number, 1 to 8 : intercom group number |
| DID Digit modification Table               | blank   | 1 to 4                                                                                                                                               |
| PBX Access Code (No Restriction)           | blank   | Up to three digits composed of numbers (up to eight codes can be assigned)                                                                           |
| PBX Access Code (Restriction)              | blank   | Up to three digits composed of numbers (up to eight codes can be assigned)                                                                           |
| Max. Dial No. after EFA Signal             | 0       | 0 : dialing is not acceptable<br>1 to 32 : maximum dialing digit(s)                                                                                  |
| CO-TIE Restriction*1                       | Yes     | Yes/No                                                                                                                                               |
| TIE-CO Restriction*2                       | Yes     | Yes/No                                                                                                                                               |
| TIE Forced Account Code Mode*2             | No      | Yes/No                                                                                                                                               |
| TIE Incoming Delete Digit*2                | 0       | 0 to 4                                                                                                                                               |
| TIE Incoming Insert Dial*2                 | blank   | Up to four digits                                                                                                                                    |

\*1. Assignable when "Type" of the Trunk Group is set to any type other than "TIE."

\*2. Assignable when "Type" of the Trunk Group is set to "TIE."

**Note:**

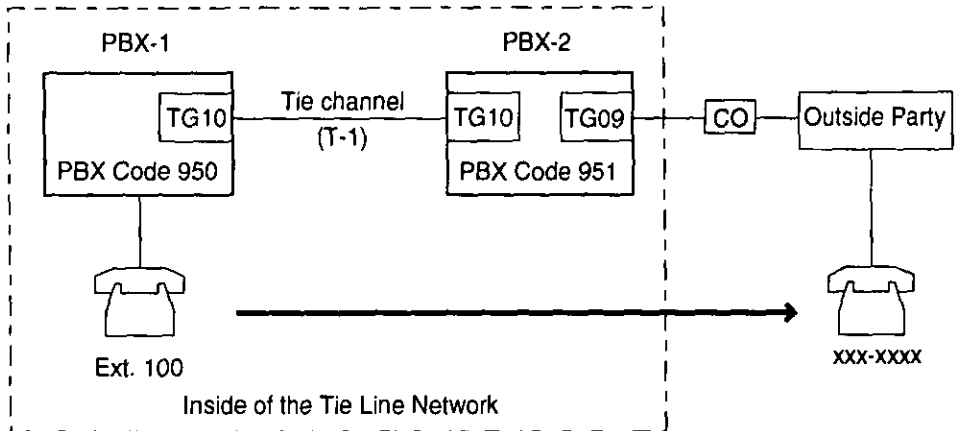
Programming items "TIE Incoming Delete Digit" and "TIE Incoming Insert Dial" are required, if there is a need to modify the digits received from other PBXs.

# System Programming

## Trunk Group (2/2) (continued from page 19)

### Feature Reference

#### TIE to CO call



#### Call Flow

1. Ext.100 dials 84-951-9 (TIE Trunk Access Code + PBX Code + CO Access Code).
2. Ext.100 is required to enter a tie account code\*.
3. Ext.100 hears dial tone from an idle CO line of PBX-2.
4. Ext.100 dials xxx-xxxx (phone number of the outside party).

\* Step 2 is required when "TIE Forced Account Code Mode" is set to "Yes" at PBX-2. Tie Account Code can be registered using TAC command. (See page 32).

# System Programming

## CO Line

The physical port number for each T-1 Digital Trunk channel is as follows

| Slot No | Channel                | Port No                         |
|---------|------------------------|---------------------------------|
| Slot 1  | 1~8ch, 9~16ch, 17~24ch | X011~X018, X021~X028, X031~X038 |
| Slot 5  | 1~8ch, 9~16ch, 17~24ch | X051~X058, X061~X068, X071~X078 |
| Slot 9  | 1~8ch, 9~16ch, 17~24ch | X091~X098, X101~X108, X111~X118 |

X Shelf No (1, 2 or 3)

From the VT mode Main Menu

```

↓
1 Programming (↵)
↓
04 Trunk (↵)
↓
1 CO Line (↵)
↓
    
```

CO Line screen (example)

| Trunk - CO Line                     | OFL     | PRG            | SCR    | DIR |
|-------------------------------------|---------|----------------|--------|-----|
| Trunk Equipment No = 1081           |         |                |        |     |
| Trunk Group -----                   | 15      |                |        |     |
| Trunk Name -----                    | T1081   |                |        |     |
| Direct Termination -----            | -       | -              |        |     |
| Night Answer Point (Type No ) ----- | -       | -              |        |     |
| Dial Mode -----                     | DTMF    |                |        |     |
| DTMF Duration Time -----            | 80      | msecond(s)     |        |     |
| Pulse Speed -----                   | -       |                |        |     |
| % Break -----                       | - %     |                |        |     |
| CPC Detection -----                 | 50*8    | msecond(s)     |        |     |
| Start Arrangement -----             | -       |                |        |     |
| Wink Signal Time-Out -----          | -       | *64 msecond(s) |        |     |
| +-----+                             |         |                |        |     |
| 1 COMMON                            | 2 INDEX | 3              | 4 READ | 5   |
| 6 HRD CPY                           | 7       | 8              |        |     |

# System Programming

## CO Line (Continued from page 21)

Enter or select the appropriate values according to the table below.

| Assigning Items                    | Default                                                              | Value Selection                                                                                                                   |
|------------------------------------|----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Trunk Group                        | 01: for CO<br>16 : for DID                                           | 01 to 16 : trunk group number                                                                                                     |
| Trunk Name                         | TXXXX<br>Physical<br>number                                          | Up to ten digits composed of letters, numbers<br>and symbols<br>blank : no trunk name programmed                                  |
| Direct Termination                 | blank :<br>"with ATLC"<br>Directory<br>Number :<br>"without<br>ATLC" | DN and directory number (3 or 4 digits) : call<br>destination (Extension, Remote FDN, UCD<br>FDN)<br>None : no direct termination |
| Night Answer<br>Point (Type : No.) | Directory<br>No. for each<br>extension                               | (Type) : None/UNA/EXT/RMT/NAG<br>(No.) : 1 or 2 : for "UNA",<br>3 or 4 digits : extension number for "EXT"                        |
| Dial Mode                          | 80 msec                                                              | 80 msec/160 msec                                                                                                                  |
| DTMF Duration<br>Time              | DTMF                                                                 | DTMF/Pulse                                                                                                                        |
| Pulse Speed                        | blank                                                                | Low Speed/High Speed                                                                                                              |
| % Break                            | blank                                                                | 60% / 67%                                                                                                                         |
| CPC Detection                      | 50<br>(400msec)                                                      | 00 : unavailable for CPC detection, 01 : 6.5<br>mseconds detection , 02 to 75 : 8 N mseconds<br>detection                         |
| Start Arrangement                  | Send Delay<br>Wink                                                   | Immediate Start/Send Delay Wink                                                                                                   |
| Wink Signal Time-<br>Out           | 016<br>(1.024msec)                                                   | 001 : 64 msec<br>002 : 128 (64 x 2) msec<br>:<br>:<br>127 : 8. 128 (64 x 127) msec                                                |

# System Programming

## TIE Line Routing Table

This table is referenced by the system to identify the trunk route, when an extension user made a tie call by dialing the feature number for "TIE Trunk Access" or "Other PBX Extension number".

A routing pattern appropriate for each call is decided by the first three digits (except tie trunk access code) of the dialed number.

Up to 36 routing patterns can be programmed in this table.

The sequence is used by both tenants but the trunk group will be skipped if it does not belong to the same tenant as the caller.

From the VT mode Main Menu

↓

1. Programming (↵)

↓

09. Special Attended (↵)

↓

4. TIE Line Routing Table (↵)

↓

TIE Line Routing Table (1/3) screen (example)

| Special Attended - TIE Line Routing Table |      |              |             |    |    |    |    |    |  | OFL                       | PRG | SCR | DIR |
|-------------------------------------------|------|--------------|-------------|----|----|----|----|----|--|---------------------------|-----|-----|-----|
| TIE Line Routing Table (1/3)              |      |              |             |    |    |    |    |    |  |                           |     |     |     |
|                                           |      |              |             |    |    |    |    |    |  | Trunk Group Hunt Sequence |     |     |     |
| No.                                       | Code | Delete Digit | Insert Dial | 01 | 02 | 03 | 04 | 05 |  |                           |     |     |     |
| 01                                        | 2XX  | 2            | 32          | 02 | 03 |    |    |    |  |                           |     |     |     |
| 02                                        | 31X  | 0            |             | 01 | 03 |    |    |    |  |                           |     |     |     |
| 03                                        | 950  | 3            | 3           | 01 |    |    |    |    |  |                           |     |     |     |
| 04                                        | 954  | 3            | 3           | 02 | 01 |    |    |    |  |                           |     |     |     |
| 05                                        |      |              |             |    |    |    |    |    |  |                           |     |     |     |
| 06                                        |      |              |             |    |    |    |    |    |  |                           |     |     |     |
| 07                                        |      |              |             |    |    |    |    |    |  |                           |     |     |     |
| 08                                        |      |              |             |    |    |    |    |    |  |                           |     |     |     |
| 09                                        |      |              |             |    |    |    |    |    |  |                           |     |     |     |
| 10                                        |      |              |             |    |    |    |    |    |  |                           |     |     |     |
| 11                                        |      |              |             |    |    |    |    |    |  |                           |     |     |     |
| 12                                        |      |              |             |    |    |    |    |    |  |                           |     |     |     |

1 COMMON 2 3 4 5 6 HRD CPY 7 8

# System Programming

## TIE Line Routing Table (Continued from page 23)

Enter or select the appropriate values according to the table below.

| Assigning Items           | Default | Value Selection                                |
|---------------------------|---------|------------------------------------------------|
| Code                      | blank   | Up to three digits : 0 - 9, X (wild card)      |
| Delete Digit              | 0       | 0 to 4 : number of deleting digit(s)           |
| Insert Dial               | blank   | Up to four digits : dialing number to be added |
| Trunk Group Hunt Sequence | blank   | 01 to 16 : trunk group number                  |

To view the TIE Line Routing Table (2/3) screen, press **NEXT**.

### Other Programming for the TIE line

- "PBX Code" in the System - Operation screen  
Assigns a PBX Code when PBX Code method is employed for making tie calls. Up to three digits (0 to 9) can be used. (default: blank)  
Not required, if Extension Number method is employed for making tie calls.
- "TIE Interdigit Time-Out" in the System - System Timer screen  
Sets the maximum time allowed between digits on a TIE call after it was received by the system. Up to 15 seconds (3 to 15 secs.) is available. (default: 5 seconds)
- "TIE Trunk Access" in the System - Numbering Plan (07/11) screen  
Assigns the feature number for access to a TIE trunk. (default — Fixed 1:84, Fixed 2:7)
- "Other PBX Extension 01-16" in the System - Numbering Plan (10/11) screen  
Assigns the leading one or two digits of "Other PBX Extension" numbers. (default—Fixed 1, Fixed 2: blank)  
Not required, if PBX code method is employed for making tie calls.

### TIE Line Feature Description

Extension users can make a call over the Tie Line Network to other extension users in a distant location by one of the following two ways;

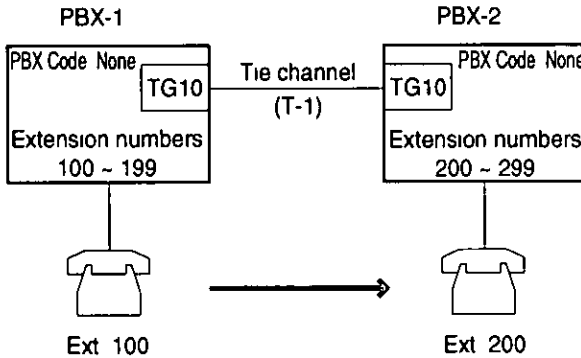
- (1) Extension Number method (Dialing Extension Number only)
- (2) PBX Code method (Dialing Location Number (PBX Code) + Extension Number)



# System Programming

## (1) Dialing Extension Number only

Extension Number



### Call Flow

- 1 Ext 100 dials 200
- 2 Ext 100 is connected to Ext 200 of PBX-2

### Programming

To make up the Tie Line Network above, the following system programming is required at PBX-1 and PBX-2 respectively

#### (PBX-1)

- System - Operation (1/3) - PBX Code (Blank)
- System - Numbering Plan (10/11) - Other PBX Extension 01 2
- Special Attended - TIE Line Routing Table

| No | Code | Delete Digit | Insert Dial | Trunk Group Hunt Sequence |    |  |
|----|------|--------------|-------------|---------------------------|----|--|
|    |      |              |             | 01                        | 02 |  |
| 01 | 2XX  | 0            |             | 10                        |    |  |

#### (PBX-2)

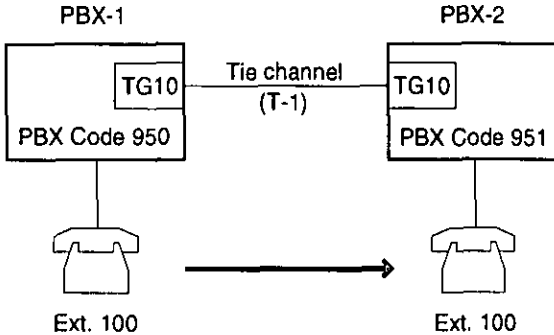
- System - Operation (1/3) - PBX Code (Blank)
- System - Numbering Plan (10/11) - Other PBX Extension 01 1
- Special Attended - TIE Line Routing Table

| No | Code | Delete Digit | Insert Dial | Trunk Group Hunt Sequence |    |  |
|----|------|--------------|-------------|---------------------------|----|--|
|    |      |              |             | 01                        | 02 |  |
| 01 | 1XX  | 0            |             | 10                        |    |  |

# System Programming

## (2) Dialing Location Number (PBX Code) + Extension Number

**Tie Trunk Access Code** + **PBX Code** + **Extension Number**



### Call Flow

1. Ext.100 of PBX-1 dials 84-951-100.
2. Ext.100 of PBX-1 is connected to Ext.100 of PBX-2.

### Programming

To make up the Tie Line Network above, the following system programming is required at PBX-1 and PBX-2 respectively

#### (PBX-1)

- System - Operation (1/3) - PBX Code: 950
- System - Numbering Plan (07/11) - TIE Trunk Access : 84 (default)
- Special Attended - TIE Line Routing Table

| No. | Code | Delete Digit | Insert Dial | Trunk Group Hunt Sequence |    |  |
|-----|------|--------------|-------------|---------------------------|----|--|
|     |      |              |             | 01                        | 02 |  |
| 01  | 951  | 0            |             | 10                        |    |  |

#### (PBX-2)

- System - Operation (1/3) - PBX Code: 951
- System - Numbering Plan (07/11) - TIE Trunk Access : 84 (default)
- Special Attended - TIE Line Routing Table

| No. | Code | Delete Digit | Insert Dial | Trunk Group Hunt Sequence |    |  |
|-----|------|--------------|-------------|---------------------------|----|--|
|     |      |              |             | 01                        | 02 |  |
| 01  | 950  | 0            |             | 10                        |    |  |

# System Programming

---

## CLP command (Dumb Terminal mode only)

### Description

The CLP command is used to assign the sequence in which the TSW clock is provided when multiple T-1 Digital Trunk cards are installed.

(Password level : 2)

### Input Format

(  )

### Index Number

None

### Input Value for Item Numbers

| Item Number | Assigning Items | Input Value                                                      |
|-------------|-----------------|------------------------------------------------------------------|
| 1 to 6      | Priority 1 to 6 | T-1 Digital Trunk card physical slot number (three digit number) |

### Note :

You have to assign this item even if only one T-1 Digital Trunk card is installed.

# System Programming

---

## Programming

### To enter the Dumb Terminal Programming mode

1. Press the **CTRL** key and **V** key simultaneously when the Main Menu screen is displayed in the VT programming mode.
2. At the Dumb Terminal programming initial prompt (; > ), enter 'PRG'.

→ ; > PRG (␣)

The screen displays the programming prompt (PRG>) as follows:

→ ; PRG>

### To change the default setting

1. At the programming prompt (PRG>), enter 'CLP AT 1'.

→ ; PRG> CLP AT 1 (␣)

The screen displays the default value of the sequence and the input prompt (INPUT >>) as follows:

→ ; 1 : Priority 1 ..... 101  
; INPUT >>

2. Enter the new value (e.g. 201).

→ ; INPUT >> 201 (␣)

The screen displays the next item and the input prompt (INPUT >>) as follows:

→ ; 2 : Priority 2 ..... 105  
; INPUT >>

3. Repeat Step 2 until you assign all of the T-1 Digital Trunk cards installed (six cards max.).

# System Programming

---

4. To store a new assignment, enter '\$EOD' on the next line of the last parameter you entered. (If you filled all six items, the display returns to the first item.)

```
; PRG> CLP AT 1
;   1 : Priority 1 ..... 101
;   INPUT >> 201
;   2 : Priority 2 ..... 105
;   INPUT >> 205
;       :
;       :
;   6 : Priority : 6 ..... 209
;   INPUT >> 309
;   1 : Priority : 1 ..... 101
→ INPUT >> $ EOD (␣)
```

The new assignment is stored in the system, and the programming prompt (PRG >) appears again.

## To finish the programming

At the programming prompt (PRG >), enter 'EXIT'.

```
→ ; PRG> EXIT (␣)
```

The screen displays the initial prompt (>) of the Dumb Terminal programming mode as follows:

```
; PRG> EXIT
→ ; >
```

## To return to the VT programming mode

At initial prompt (>), press:

**CTRL** and **V** keys simultaneously.

The screen displays the Main Menu of the VT programming mode.

# System Programming

## CLK command (Dumb Terminal mode only)

### Description

The CLK command determines which the TSW clock mode is used, either an internal clock or external clock. (See page 8)

- Internal Clock mode ..... TSW clock within the system is used.
- External Clock mode ..... TSW clock provided by T-1 trunks is used.

When the external clock has problems and is not working properly, the internal clock starts to work automatically.

(Password level : 2)

### Input Format

Mode (SH/AT/BT) (  )

### Index Number

None

### Input Value for Item 1

| Assigning Item | Input Value                              |
|----------------|------------------------------------------|
| TSW clock mode | 1 : Internal clock<br>2 : External clock |

### Note :

The "TSW clock mode" can be changed only when all of the T-1 Digital Trunk cards status are "OUS" or "FAULT".

# System Programming

---

## Programming

To enter the Dumb Terminal Programming mode

See page 28.

To change the default setting

1. At the programming prompt (PRG>), enter 'CLK AT 1':

→ ; PRG> CLK AT 1 (↵)

The screen displays the current value and the input prompt (INPUT >>) as follows:

→ ; 1: Clock Mode ..... 1  
; INPUT >>

2. Enter the new value.

→ ; INPUT >> 2 (↵)

3. To store the new assignment, enter '\$EOD' on the next line.

→ ; 1: Clock Mode ..... 2  
; INPUT >> \$EOD

The new assignment is stored in the system, and the programming prompt (PRG) appears again.

To finish the programming

See page 29.

# System Programming

---

## TAC command (Dumb Terminal mode only)

### Description

Used to prevent the extension users from making unauthorized CO calls via tie line by checking the validity of the account code entered.

Extension users must enter a Tie Account code before making a CO call via tie line, if "TIE Forced Account Code Mode is set to "Yes." (See page 18)

(Password level : 2)

### Input Format

Mode (SH/AT/BT) (  )

### Index Number

None

### Input Value for Item Number

| Item Number | Assigning Items  | Input Value             |
|-------------|------------------|-------------------------|
| 01 to 32    | TIE Account Code | Up to four digits (0-9) |



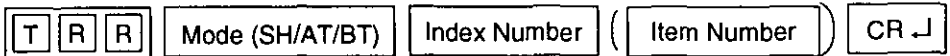
# System Programming

## TRR command (Dumb Terminal mode only)

### Description

The TRR command determines whether the outgoing trunk group is restricted or not for the incoming trunk group connection from one TIE trunk to another TIE trunk. (Necessary only when the trunk group type is set to "TIE" )  
 (Password level: 2)

### Input Format



### Index Number

| Index Number | Explanation                             |
|--------------|-----------------------------------------|
| 01 to 16     | Trunk Group Number (call receiver side) |

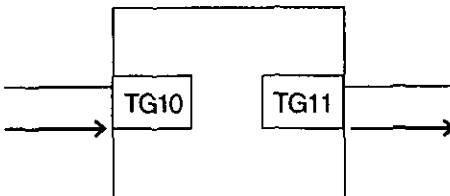
### Item Number

Trunk Group Number : 01 to 16

### Input Value for Item Number

| Item Number   | Assigning Items                          | Input Value                                  |
|---------------|------------------------------------------|----------------------------------------------|
| 01<br> <br>16 | Trunk Group Number<br>(call sender side) | Y : Restricted<br>N : Allowed<br>(Default=N) |

### Example: Tie Trunk Relay Restriction setting



If you want to restrict "tie call relay from TG10 to TG11" in above case, program as follows:

TG10 : N

TG11 : Y (Restricted)

# System Programming

## TRR command (Continued from page 33)

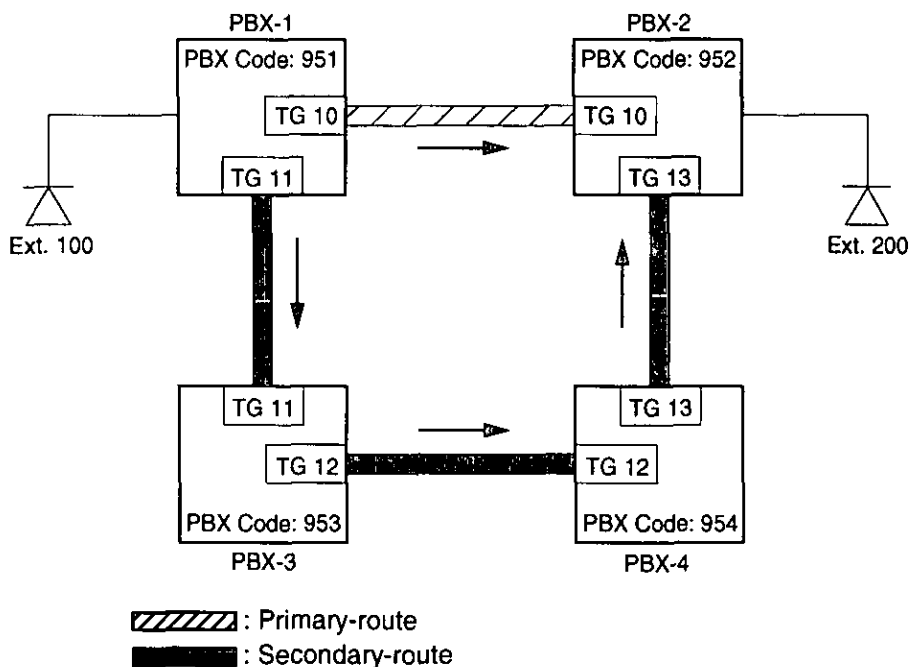
### Feature Description

#### Alternate Routing

When more than two PBXs at different locations are interconnected with a network of Tie Lines, your KX-T336 works as an intermediate switching office to other PBXs in the network by relaying tie calls from one PBX to another.

On receipt of a tie call, KX-T336 analyzes it to determine the destination to which the call must be sent or the route by which the calls will be sent, and then transmit it.

A Network of Tie Lines



#### Note:

If you want to restrict "call relay from PBX-1 to PBX-2 via PBX-3", set TG11 to "Yes" using TRR command at PBX-3.

# System Programming

---

## LHS (Line Hunting Sequence) command

### Description

Used to change the hunting sequence of idle lines on a tie trunk group basis. By default, idle tie lines are seized from the smallest to the largest physical number in order at all locations when a tie call is initiated by a user. This may cause a frequently busy situation between a certain two locations. In this case, we recommend to change the hunting sequence at one location from "1" (smallest → largest) to "2" (largest → smallest).  
(Password Level : 2)

### Input Format

|   |   |   |                 |                      |      |
|---|---|---|-----------------|----------------------|------|
| L | H | S | Mode (SH/AT/BT) | Index Number (01-16) | CR ↵ |
|---|---|---|-----------------|----------------------|------|

### Index Number

| Index Number | Explanation        |
|--------------|--------------------|
| 01 to 16     | Trunk Group Number |

### Input Value for Index Number

| Assigning Item        | Input Value                                                                                                                                                            |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Line Hunting Sequence | X(1 or 2)<br>1: From the smallest to the largest physical number of tie lines<br>2: From the largest to the smallest physical number of tie lines<br><br>(Default = 1) |

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