

Chapter 4

Trunk Features

Chapter 4 Trunk Features

Direct Trunk Selection(DTS)

FEATURE DESCRIPTION

This function enables an extension to directly select a trunk line when making an outgoing trunk call. It can be used to check/disconnect a specific trunk port. DTS number should be a unique value in each node. The DTS number consists of the node number and DTS number of the pertinent port.

I.E. Node number (1 digit) DTS number of port information (4 digits)

	—				
--	---	--	--	--	--

Therefore, press 10020 when you access DTS 20 of node 1.

PROGRAMMING IN MAP

Setup of DTS number

1. Selecting Menu
[Port Information (Total)]
2. Search trunk port you want.
Enter DTS number that you want in "DTS No.[0-1919]"
If there is an overlapping DTS number in a node, an error message is displayed.

Browsing DTS (Direct Trunk Selection) Numbers

Using DTS numbers, the caller can select a specific trunk port. In this function, the user will browse the port type and port number of DTS.

1. Selecting Menu
Database Management ⇒ Trunk DB Management ⇒ DTS Number List
2. Select Port Rx tab or DTS Rx tab, and input the node number, port number or DTS number.
Press the [Port Rx] button.

Setting the COS

1. Selecting Menu in the MAP
Database Management ⇒ System DB Management I ⇒ Class Of Service(COS)
2. Set the following item and press the [Tx] button.
[19] Direct Trunk Selection

OPERATING PROCEDURES

Making a trunk call to DTS number

1. Press DTS function key or DTS key.
2. Press node number and DTS number of trunk port which you want to make a call to.
Press 00030 if it is DTS 30 of node 0. (refer to FEATURE DESCRIPTION)
3. Press other digits except trunk access code.
4. It give ring to the called party and the caller hears Ring-Back Tone.
5. The call is made when called party responds.
6. Hang up.

Area Code

FEATURE DESCRIPTION

This is the first function to be carried out with ISDN trunk incoming call. (Trunk incoming calls except ISDN carry out DID Digit Translation first and foremost.)

The system compares the area code of an incoming number with the area code of your own DB.

(Area code is determined by agreement with the exchange.) If they are identical with each other, the pertinent trunk call is recognized as an incoming call to the DCS Gateway. If there is an area code in the DB, the area code must come from the exchange. Otherwise the incoming call is processed as an error.

ISDN trunk incoming call carries out DID digit translation after processing area code number.

NOTE The LCR function can replace Area code function. (Please refer to 'LCR' section.)

PROGRAMMING IN MAP

Setup of Self area code Number

1. Selecting Menu
[Port Information (Total)]
2. Search the incoming trunk port, Move to 'Calling Tel' field.
Enter Calling Tel number
(In an outgoing trunk call, "Calling Tel" field is used as local code added in front of the calling party number.)

DID Digit Translation

FEATURE DESCRIPTION

This is a function that carries out digit translation by each Trunk Port. Digit Translation is carried out after DID Digit Translation .

PROGRAMMING IN MAP

Setting Dial Group number

1. Selecting Menu
[Port Information (Total)]
2. Search the incoming trunk port. Move to 'Dial Group No.' field.
Input the 'Dial Group No.' of DID Digit Translation DB.

Managing DID Digit Translation DATABASE

1. Selecting Menu

Database Management ⇒ System DB Management I ⇒ DID Translation DB

2. Input the Dial Group No. and press the [Rx] button

3. **Input**

Sets digit incoming from the exchange.

You can enter up to 4 digits in Input field and enter digit in the same way as Digit Translation DB.

Output

A field in which sets output of digit resulted from above input.

Up to 8 digits can be entered in the output field.

OPERATING PROCEDURES

Changing receiving numbers via DID Digit Translation

This shows number 30 from the calling party is changed into 31 and the remaining digit is kept, registered value in DB is as follows:

No.	Input	Output	No.	Input	Output	No.	Input	Output	No.	Input	Output
0	0	0	16	7	7	32			48		
1	1	1	17	8	8	33			49		
2	2	2	18	9	9	34			50		
3	30	31	19	*	*	35			51		
4	31	31	20	#	#	36			52		
5	32	32	21			37			53		
6	33	33	22			38			54		
7	34	34	23			39			55		
8	35	35	24			40			56		
9	36	36	25			41			57		
10	37	37	26			42			58		
11	38	38	27			43			59		
12	39	39	28			44			60		
13	4	4	29			45			61		
14	5	5	30			46			62		
15	6	6	31			47			63		

Suppose that the above mentioned DID Digit Translation is executed and there is no conversion performed in Digit Translation.

Also supposing that there is extension 3000 and extension 3100, incoming digit 3000 and 3100 from the exchange are all forwarded to 3100 since 30 is converted into 31.

RESTRICTIONS

1. You must enter all numbers as shown above not just the numbers you need to be converted.

DDI Translation

FEATURE DESCRIPTION

This is the function that converts incoming trunk DDI digits into pre programmed digits. This feature will allow the DCS Gateway to direct calls to destinations according to converted number.

You can also configure this feature within the DCS Gateway to modify the digits differently depending on the time of day.

PROGRAMMING IN MAP

Managing The DDI Translation DATABASE

Setting different output digits in Time Bands.

1. Selecting Menu

Database Management ⇒ System DB Management II ⇒ DDI Translation DB Register

2. Browsing- Select Digit Rx tab and input the Digit.

Each field in the DDI Translation DB Register is as follows:

- **Input digit**

Sets incoming number from the exchange.

You have two options in this field to setup numbers for translated. For example, you could enter "3000" or 3 *. If you entered 3000 the translation would only take effect when 3000 was received if 3 * was entered all numbers beginning with 3 would be converted.

- **Time Zone Index [0 – 15]**

Selects the Time Zone for digit translations to apply.

- **Output digit**

In this field you specify the output digits required after conversion of above input digits.

You can specify 4 types of numbers according to the time band of Time Zone.

- **Name**

Enter the name to be sent to the called party along with input digit.

- **ACD Priority**

This sets the Priority(0~4) that will be applied to the translated number **IF** the translated number is an ACD pilot Number

- **Call Waiting when Grp.Busy**

This determines what call handling is to take place on BUSY if the translated number is a group pilot number. The options allow you to disconnect, forward to the ATC or execute call waiting.

3. Appending - Select [Append Tx] tab and input the digit information to be appended. Press the [Append Tx] button.

4. Deleting - Select [Delete Tx] tab and input the digit to be deleted. Press the [Delete Tx] button.

5. Modifying - Select [Modify Tx] tab and input the digit information to be modified. Press the [Modify Tx] button.

Browsing DDI translation DB Rx

Browses the DDI number list.

1. Selecting Menu

Database Management ⇒ System DB Management II ⇒ DDI Translation DB List

2. Input the Start Digit and press the [Rx] button.

You can access input digits that are registered in the DDI Translation DB.

Browsing is available only in units of 50 items.

For example, if you enter “3000”, numbers between 3000 to 3049 are shown. If you enter “3010”, you will still only be shown numbers between 3000 to 3049.

Setting DDI Number Dial

Sets or browses the 'DDI Number Dial' option when calls are to be handled by a trunk.

1. Selecting Menu

Database Management ⇒ Trunk DB Management ⇒ Trunk Handling Option

2. Move to the '[118] DDI Number Dial' item. Set the called user when DDI no dialing telephone number is insufficient.

3. Press the [Tx] button to send the values to the system.

OPERATING PROCEDURES

This shows a case of an incoming call via DDI Translation

Value registered in DDI Translation DB.

No.	Item	Option
0	Input Digit (* : Wild Digit)	3000
1	Time Zone Index [0 - 15]	0
2	Output Digit	Time Band 1
		Time Band 2
		Time Band 3
		Time Band 4
3	Name	Business Call
4	ACD Priority [0 - 4]	0
5	Call Waiting When Group Busy	None
6	Total Registered Count	4

Digit Rx Append Tx Delete Tx Modify Tx

Please Input Information in Above Cell

Update

If the database is configured as above, incoming calls to 3000 virtually becomes incoming calls to 3500 and “3000/Business Call” is displayed on the LCD of 3500.

RESTRICTIONS

1. When you are accessing numbers in the DDI Translation DB, it only displays 50 items at one time.
2. DDI information is displayed only to the first called party and is not displayed when the call is forwarded or transferred.
3. The maximum amount of numbers that can be registered in DDI Translation DB is 5000.

Outgoing call barring by COS and System wide

FEATURE DESCRIPTION

This feature enables you to restrict an outgoing trunk call according to user's class. Trunk calling can be restricted according to call type (local, toll, international call and so on) or the outgoing digit.

PROGRAMMING IN MAP

Call restriction by COS

1. Selecting Menu

Database Management ⇒ System DB Management I ⇒ Class Of Service (COS)

2. Search for the user that requires call restriction.

[17] Trunk Outgoing Call Feature

All types of trunk outgoing calls are restricted when this field is set as 'no use'. When set as 'use', the call restriction is then determined by setting 'use/no use' for each of the following call types.

- | | |
|--------------------------------------|--------------------------------------|
| 1 : International Call Feature | : international call |
| 2 : Toll Call Feature | : toll call |
| 3 : Local Call Feature | : local call |
| 5 : Mobile Phone Feature | : mobile phone call |
| 6 : Pager Call Feature | : paging |
| 8 : Information Call Feature | : information call |
| 9 : VAN Call Feature | : charged service call (700 service) |
| 11 : International Free Call Feature | : free international call |
| 12 : Internal Free Call Feature | : free local call |
| 13 : International clover Feature | : international collect call |
| 14 : Home Country Call Feature | : language service call |

Set trunk call type allowed to pertinent COS user as Y(use) and restricted trunk call type as N(no use). Type of each call is determined in LCR CODE DB and LCR ROUTE DB. (Please refer to "Chapter 5 LCR")

Restricting outgoing call number for each COS

This determines whether to allow the outgoing call according to dialed number regardless of restriction/allowance in class of service.

1. Selecting Menu

Database Management ⇒ System DB Management I ⇒ Tel. to Go Out in COS

2. Search user COS.

- **Tel.** : Telephone number to apply restriction/allowance
- **Allowance**: Whether to restrict or allow.

Restriction of an outgoing dialled number in the whole System

Determines whether to allow or restrict according to the dialled number regardless of restriction/allowance in Class Of Service and Tel. to Go Out in COS. **Restriction/allowance in this DB is the first in the order of priority since it affects the whole system.**

1. Selecting Menu

Database Management ⇒ System DB Management I ⇒ Tel. to Go Out in System

2. Select [Append Tx] tab.

- **Tel.** : Telephone number to apply restriction/allowance
- **Allowance**: Whether to restrict or allow.

OPERATING PROCEDURES

Partial allowance of trunk calls that have been restricted in Class Of Service

Assume trunk access code is 0.

Suppose that the Toll Call Feature is set as No (in Class Of Service) in order to restrict long distance calls. If you want to allow any long distance calls to 'Perth', enter 008 (including trunk access code) in the Tel to Go Out in System DB and set to Yes. From now on, phone calls beginning with 008 will be allowed.

Partial Restriction of trunk calls allowed in Class Of Service

Assume that trunk access code is 0

Suppose that Local Call Feature is set as Yes (in Class of Service) to allow local call. In Tel. to Go Out in COS DB or Tel. Go Out in System DB, enter 057 (including trunk access code) and set No to restrict 57 numbers. Outgoing number beginning with 057 are restricted from now on.

RESTRICTIONS

It is based on the assumption that the above mentioned allowance/disallowance function has met all previous system restriction conditions.

(Please refer to 'Call Banning between COS' section.)

Tandem connection

FEATURE DESCRIPTION

Tandem

This is the transfer of incoming call from outside to another outside line phone number. An example would be the case that all incoming call is transferred to a mobile phone when the user is outside the office. In this case all incoming calls will be forwarded to the mobile phone. This is called a Tandem call.



Trunk Tandem

This service allows the PSTN subscriber to use the leased lines of the organization to call a particular station or PSTN subscriber. PSTN and leased line service requires DISA function or Tandem function.

Tandem Connection

This function transfers incoming/outgoing trunk calls to other trunk call.

Accordingly tandem call can be made when you transfer the incoming/outgoing trunk calls (tandem transfer) or incoming trunk call is forwarded to the outside.

PROGRAMMING IN MAP

Setting Tandem call options through the trunk COS

Basically, tandem should be allowed between COS of connected two trunks for tandem function.

1. Selecting Menu

Database Management ⇒ Trunk DB Management ⇒ Trunk Group Info.

• COS [0-63] :

COS of trunk.

Refer to COS of [Port Information (Total)] menu if there is no value here.

2. Selecting Menu

Database Management ⇒ Trunk DB Management ⇒ Tandem Call Through Trunk COS

3. Input the trunk COS and press the [Rx] button.

Select and check the permission item to allow tandem calls to outside stations through the trunk COS.

4. Press the [Tx] button to send the values to the system.

Setting the COS

1. Selecting Menu in the MAP

Database Management ⇒ System DATABASE Management I ⇒ Class Of Service(COS)

2. Set the following fields and press the [Tx] button.

[77] **Recall when Tandem Transfer Not Allowed**

This option set a recall back when tandem transfer is not allowed.

[78] **C.O. Tandem Transfer**

Whether to allow tandem transfer or not.

Setting limit of Tandem duration time

This is a function to forcibly disconnect trunk calls that continues for over a certain period of time.

1 to 24 hours. Usually this function is used in order to use a trunk that can not receive disconnect signal or to save the telephone charges.

Sets 'Tandem Duration Limit Time' option when calls are to be handled in a trunk.

1. Selecting Menu

Database Management ⇒ System DB Management I ⇒ System Option

Database Management ⇒ Trunk DB Management ⇒ Trunk Handling Option

2. Set the following items and press the [Tx] button.

[481] **Automatic Trunk Diagnosis**

Check connection with the opposite party by accessing trunk port regularly.

If any problems are detected in connection, this option forces trunk release.

[77] **Limit of Trunk Call Duration**

Whether to forcibly cutoff trunk calls that continues over a certain period of time

If this feature is set, trunk calls that continue for more than the time entered in option 78 of below are forcibly disconnect. To carry out this function, option 481 should be set.

[78] **Tandem Duration Limit Time item**

Enter trunk call time allowed in system. It operates when option 77 is set.

3. Press the [Tx] button to send the settings to the system.

OPERATING PROCEDURES

When Tandem Transfer Is Restricted

1. Set whether a tandem between two trunk COS to be transferred in Tandem Call Through Trunk COS DB so as to allow basic tandem.
(Station COS)
Set [77] Recall when Tandem Transfer Not Allowed
Reset [78] C.O. Tandem Transfer (if set to NO, Tandem is blocked)
In Class Of Service(COS) DB.
2. From the station make an outgoing trunk call.
3. It gives a ring to the outside party and the station hears Ring-Back Tone.
4. The outside party responds and a call is made between two parties
5. The station then presses TRSF key(Hook-flash) and makes an outgoing call to call the third user.
6. The station hears Transfer Tone.
7. A call is made between the station and the third user when he responds.
8. The station then clears the call (Transfer the calling party to the third user)
9. The system recalls the station and the third user's call is disconnect.
Outside party hears Ring-Back Tone.
10. A connection is then made between outside party and station when the station responds to recall.

When Tandem Transfer Is Allowed

1. Set whether a tandem between two trunk COS transferred in Tandem Call Through Trunk COS DB so as to allow basic tandem.
Set up Class Of Service(COS) DB of '[78] C.O. Tandem Transfer'.
2. From the station make an outgoing trunk call.
3. It gives a ring to the outside party and the station hears Ring-Back Tone.
4. The Called party responds and a call is made between two parties
5. The station then presses TRSF key(Hook-flash) and makes an outgoing call to call the third user.
6. The station hears Transfer Tone
7. A call is made between the station and the third user when he responds.
8. The station then clears the call (Transfer the calling party to the third user)
9. A call is made between caller and another user.
10. Caller cuts off the call.

Tandem restriction

1. Set [481]Automatic Trunk Diagnosis
Set [77] Limit of Tandem Duration
Set [78] Tandem Duration Limit Time as 1 of the [Trunk Handling Option] DB
2. Execute from 1 to 9 of above mentioned “When Tandem Transfer Is Allowed”
3. Confirm if the call is disconnected after one hour.
4. Confirm if extension and trunk port are all idle.

Trunk Call ID

FEATURE DESCRIPTION

This feature is used to allow the called party to know the caller's details when receiving Trunk calls by recording the callers ID and phone number in the applicable phone. The function is executed only on the terminals with LCD.

PROGRAMMING IN MAP

Registering Trunk call ID

To allow the called party to know the caller's details when receiving Trunk calls by recording the callers ID and phone number in the applicable phone.

1. Selecting Menu

Database Management ⇒ System DB Management II ⇒ Trunk Call ID Register

2. Browsing – Select Number Rx tab and press the telephone number. Press the [Rx] button

- **Opposite Number**

Register the outside phone number, that will be received by the system.

- **Opposite Name**

Register ID (letters) in order to identify these Opposite Numbers.

e.g.) 1111-2222 Line 1

3333-4444 Line 2

3. Appending - Select [Append Tx] tab and input the Opposite number and name to be appended. Press the [Tx] button.

4. Deleting - Select [Delete Tx] tab and input the Opposite number to be deleted. Press the [Tx] button.

Managing Trunk Call ID List

1. Selecting Menu

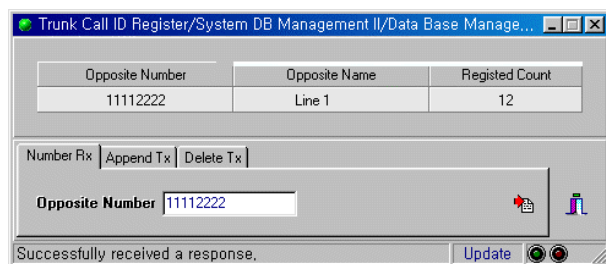
Database Management ⇒ System DB Management II ⇒ Trunk Call ID List

2. Input the List digit and Page number and press the [Rx] button.

Then you can view Trunk Call ID List information.

OPERATING PROCEDURES

Confirm caller number (OPP number) of Trunk incoming call and display pertinent caller's name in previously registered trunk outgoing number name table.



Assume that information on outside user 11112222 is saved as “Line 1”. If an incoming trunk call is made by the outside user 11112222, outside user's information is displayed as “Line 1” on the called party LCD.

RESTRICTIONS

Caller's number should be delivered to DCS Gateway System.

DISA(Direct Inward System Access)

FEATURE DESCRIPTION

This function enables access to the system from outside and full use of the DCS Gateway functions as you would if using the DCS Gateway directly.

When a call is made via an incoming trunk, this function receives the particular password and station number to call the station or drive the system that is connected to a modem.

In addition, it can call a trunk if it receives the password and trunk call code. It can also use the DISA function to connect the PSTN line to the leased line network.

- 1) DISA Trunk function : If an incoming call is received by a LOOP Trunk which has DISA set, you can call extension and trunk by checking password during DISA Time.
- 2) DISA Station function : Sets single line extensions as DISA extensions. You can call extension and trunk by checking password regardless of DISA Time. This function allows system extension users to use DISA function.

PROGRAMMING IN MAP

Setting DISA trunk Information

1. Selecting Menu

Database Management ⇒ Trunk DB Management ⇒ Trunk Group Information

2. Input the trunk group number and press the Group [Rx] button.
3. Set these items as follows.
 - **DISA**
Whether to use DISA function with incoming LOOP Trunk call.
 - **DISA Start Time, DISA End Time**
Sets the time range of the DISA option. Input the start time and end time in 4 time ranges. If current time lies in any of 4 time ranges, it is regarded as DISA Service time. Enter identical start time and end time for 24-hour DISA operation.
 - **DISA Password**
Select this field if you want to enable DISA service only after entering password. Enter password in [Database Management/ System DB Management I/ FAC Management]

Setting DISA station Information

1. Selecting Menu
[Port Information (Total)]
2. Search single line extension to be set as DISA extension by port or telephone number.
3. Set these items as follows:
 - **DISA**
Whether to use DISA function in LOOP Trunk incoming call.
 - **DISA Password**
Select this field if you want to enable DISA service only after entering password. Enter password in [Database Management=> System DB Management I=>FAC Management] menu.
4. Press the [Tx] button to send the values to the system.

Forced Authorization Code Management DB Setup

1. Selecting Menu

Database Management ⇒ System DB Management I ⇒ FAC Management

2. Select Append [Tx] Tab and enter FAC, R2 Calling COS, COS, User ID, User Tel.

- **FAC**

DISA password - You can enter up to 12 digits for Password and if it is 12 digits or less, press '#' at the end.

If '*' is pressed while entering password, you should enter password once again.

- **R2 Calling COS (QSIG OPTION ONLY)**

If incoming call is confirmed with DISA password, this COS is used as R2 caller COS.

- **COS**

If incoming call is confirmed with DISA password, this COS is used as user COS.

- **User ID**

If incoming call is confirmed with DISA password, this ID is used as user ID.

- **User Tel**

If incoming call is confirmed with DISA password, this number is used as user telephone number.

Accordingly, if an incoming DISA call makes a outgoing trunk call, Calling Tel number, COS and User name etc., to be delivered to the exchange are based on FAC Management information. Billing is imposed on "User Tel" .

Setup of DISA announcement

You can set this by node and by tenant.

1. Selecting Menu.

Database Management ⇒ System DB Management I ⇒ Tone Option

2. [24] **DISA Dial Tone**

The announcement that is heard when DISA field only set as YES or when DISA start functioning after password confirmation. Record a message saying "(since DISA starts functioning) press pertinent number" in AVA and enter pertinent AVA port number.

[25] **DISA Password Tone**

The announcement that is heard when password should be checked since DISA password field set as Yes. Record a message saying "enter DISA password" in AVA and enter pertinent AVA port number.

[26] **DISA Re-Password Tone**

The announcement that is heard when password re-entry is required because an invalid number has been entered. Record a message saying "Invalid DISA password. Please Enter password again" in AVA and enter pertinent AVA port number.

Setting DISA function system timer

1. Selecting Menu

Database Management ⇒ System DB Management I ⇒ System Timer

2. Move to the following items and set each value.

- **DISA Password First Digit input Time**

This is the time allowed for a user to enter the first digit of the required DISA password..

- **DISA Password Digit between input Time**

This is the time allowed between digits entered.

Setup of Retry Count of DISA Password

1. Selecting Menu

Database Management ⇒ System DB Management I ⇒ System Option

2. [19] Retry Count of DISA Password

Select the retry count value in a range of 1 – 5 to the station only available when you input the password before calling to the station.

3. Press the [Tx] button to send the values to the system.

Setup of DISA billing

DISA information is set in billing when incoming station calls or outgoing trunk calls are by DISA function.

When DISA is operated with DISA password, calling number is user Tel. of FAC Management.

When DISA is operated without DISA password, calling number is identical with existing billing information.

The billing is printed out in the same way with FAC billing because DISA password uses FAC code.

Below describes option of printing out DISA password (FAC code) to billing information.

1. Selecting Menu

Statistics & Billing ⇒ Billing Management ⇒ Billing Service Option

2. [230] FAC Output When Bill Print Out

Sets print-out form of FAC code to billing printer.

- No : It does not print out FAC code to billing information.
- Hidden Out : It prints out '@@@@@@@@@@' instead of FAC code.
- Out : It prints out FAC code.

[232] FAC Output When Bill Machine Out

Sets print-out form of FAC code to billing machine and each selection is equal with above description.

[234] FAC Output When Bill PMS Out

Sets print-out form of FAC code to PMS and each selection is equal with above description.

OPERATING PROCEDURES

Station Calling with DISA Trunk function

An incoming LOOP Trunk call, calls extension “300” with DISA Trunk function as follows. Information shown in below picture is input in Trunk Group Info. and FAC Management.

The screenshot shows two overlapping windows from a network management system.

The top window, titled "Trunk Group Info./Trunk DB Management/Data Base Management", displays configuration for "Group [2]". It includes a "Trunk Group Information" section with the following fields:

Trunk Type	CO Trunk	DISA	Yes
CDS [0 - 63]	0	DISA Password	Yes
Area/VN		Out Of Service [0 - 100%]	50
Flash Time [100 msec]	1	Out Of Service Printer	No
DISA Time			
	0	1	2
DISA Start Time [HH:MM]	00 : 00	:	:
DISA End Time [HH:MM]	00 : 00	:	:

The bottom window, titled "FAC Management/System DB Management /Data Base Management", displays a table of FAC (Facility Access Code) management data:

No.	FAC	R2 Calling CDS	CDS	User ID	User Tel.
0	12345	No Prior Station	0	Fred	200
1		No Prior Station			
2		No Prior Station			
3		No Prior Station			
4		No Prior Station			
5		No Prior Station			
6		No Prior Station			
7		No Prior Station			
8		No Prior Station			
9		No Prior Station			
10		No Prior Station			
11		No Prior Station			
12		No Prior Station			
13		No Prior Station			

1. Make an incoming call through Loop Trunk. (Refer to LOOP Trunk)
2. Press “1234” and “#” after announcement “enter password”
3. Press “12345” and “#” after announcement “it is a wrong password. Enter password once again.”
4. Press “300” after announcement “Enter pertinent number”
5. A call is made after Ring-Back tone and Station “300” responds.

In this case, the counterpart's number of station “300” is 200.

Station Calling with DISA station function

Information shown in the following is entered in Station Port Information and FAC Management.

The screenshot shows a software window titled "FAC Management/System DB Management /Data Base Management". It contains a table with the following data:

No.	FAC	R2 Calling COS	COS	User ID	User Tel.
0	12345	No Prior Station	0	Fred	200
1		No Prior Station			

Below the table, there is a section titled "Port Information (Total)" with a sub-header "Node [0]". This section contains a table with the following data:

Port Type	Port [BF]	Port Type
Port Type	Single Line	Hotel Group No.
Physical Port Type		Pick Group No.
Pilot	No	Station Group Type
Multi-Line Index		Station Group No.
ACD Group No.		Ring Group No.
Special Service	None	Fax Room Tel.
ACD Priority [0 - 4]		Hot Mode
Adopt Gain Control	<input type="checkbox"/>	Hot Dial No.
ANI	None	R2 Calling COS
Bill Pay Method	After-Pay	R2 Bill/NonBill Signal
Billing Tel.		VIP
Billing Type	Normal	PVMS Group
		Release Method
Caller Ring	Ring 0	Shuttle COS [0 - 9]
Dial Pulse	Dial Pulse or DTMF	Special Type
DISA	<input checked="" type="checkbox"/>	Service Phone Password
DISA Password	<input checked="" type="checkbox"/>	Test Desk
Language	Language 0	Report VMS Mon.

DISA extension number is 400.

1. Call an extension (400) that is set as DISA extension by receiving through DTRK3 (E1) or PRI .
(Refer to 'DTRK3 (E1), PRI' section)
2. After announcement saying " Enter password" press "1234"and "#".
3. After announcement saying " it is a wrong password. Enter password once again", press "12345"and "#".
4. After announcement saying " press pertinent button", press 300.
5. A call is made after Ring-Back tone and station "300" responds.

In this case the counterpart's number of station"300" is 200.

RESTRICTIONS

1. DISA Password (FAC Code) can be registered in MAP only.
2. Only Station Pilot number (Real Pilot) and specific Station numbers are available for DISA extension and it is set in MAP.
DISA extension can be registered only with Single Line ,and SLC Cards don't have to be installed as these are pseudo numbers only. In addition, callers should press the pertinent station number or outgoing trunk number after confirming DISA password.
3. You can use up to 512 FAC codes.
4. Announcement needs AVA card.
5. FAC must be at least 4 digits in length.

CID Loop

FEATURE DESCRIPTION

The GLOOP2 (Loop Start Trunk2) board provides the PSTN trunk module that has 16 ports. You can connect a private exchange or regional telephone exchange through each port of the GLOOP2 board. And the main distribution frame is connected in the 50 pin champ connector that is attached in the back-frame.

The features and functions of the GLOOP2 board are as follows.

- It provides the Signal Detection function.
- It includes the impedance matching circuit.
- It reads the status such as the HOS and Ring Detection, Caller I.D Detection, Polarity Reversal Signal, MPD (Metering Pulse Detection—requires additional module to be plugged in)
- It encodes the entered analog signal into a digital signal using the PCM method and it decodes the digital signal into an analog signal to send to the PSTN.

CID (Caller ID)

If the type of trunk can present caller ID, this function receives the caller ID and displays it or implements various functions.

CID Review

This function shows incoming CID. The maximum number for a station is determined in 'Station Options'. The subscriber can save the CID information for incoming call via CID trunks that have been answered, and press the Review key to check it.

CID Abandon

This function allows the subscriber to check the CID information for calls that have not been answered (when No Answer Time is expired or the other side hangs up the telephone set).

CID NND

When a subscriber presses the CID Soft key during conversation, a NND menu is displayed. This menu displays the telephone number, ID, and time. The set should have CID information of "other end" trunk at this time.

The subscriber can check CID information by using NND function when he/she is using abandon call, review or invest function as well as during a call in progress.

PROGRAMMING IN MAP

Setup of CID LOOP

1. Selecting Menu .
[Port Information(Total)]
2. Search for port where LOOP2 card is installed.
3. Set "CID Trunk" field.

Setting the COS

1. Selecting Menu
Database Management ⇒ System DB Management I ⇒ Class Of Service(COS)
2. Set the following items and press the [Tx] button.
[139] CID Display Request ~ [142] CID review when CID Call Transfer

Setting Maximum CID Count per Port

1. Selecting Menu
Database Management ⇒ Station DB Management ⇒ Station Option
2. Set the values of these following items .
 - [176] •Maximum CID Review Count per Port**
The maximum number of CID review count per each port
 - [177] •Maximum CID Abandon Count per Port**
The maximum number of CID abandon count per each port
3. Press the [Tx] button to send the settings to the system.

Setting CID display function system timer

1. Selecting Menu
Database Management ⇒ System DB Management I ⇒ System Timer
2. Move to the following items and set each value.
 - [30] •CID Receive Time**
Duration during which CID LOOP awaits caller information after receiving incoming message.
 - [31] •CID Display Time**
If CID information is displayed while in conversation, it is returned to conversation display mode after the display time duration.
3. Press the [Tx] button to send the settings to the system.

OPERATING PROCEDURES

CID REVIEW

1. Press **REVIEW** menu key .
2. The set displays the caller information for the calls up until now.

CID ABANDON CALL LIST

1. Press **ABANDON** menu key or using the Soft keys press Scroll-Other-ABAND.
2. It displays incoming call information for calls that have not been answered.

CID NND

1. Press Scroll-CLIP-CID (Caller ID) Soft key during a call in progress.
2. Press **NND** menu key.
3. The set displays Tel no, Caller Name, and Time for the corresponding call.

NOTE: The user can also check the caller information by pressing NND menu during using Abandon call list, Review functions.

MPD(Metering Pulse Detection)

FEATURE DESCRIPTION

These are a pulse that is delivered every (time unit) when making an outgoing trunk call.
 The interval of MP (Metering Pulse) varies according to call type (local, toll, international and etc.,) For example, MP comes every 3 minutes in local call and it comes every 10 seconds in international call. If calling terminal is Digiphone with LCD it displays total number of received MP.
 Telephone charges are calculated by multiplying the number of received MP by unit charge.

PROGRAMMING IN MAP

MPD Setup

Set the values for MP detection in LPM Parameter Management DB in order to execute MPD.
 Set information for processing MP in Port Information DB.

1. Selecting Menu.

Database Management ⇒ System DB Management I ⇒ LPM para Management

[38] :Metering Pulse Detection Cycle

Try MP detection by the interval of this field value.

[39] :Metering Pulse Max. Width

It is the maximum width by which detected pulse can be judged as MP.

[40] :Metering Pulse Min. Width

It is the minimum width by which detected pulse can be judged as MP.

[41] :Min. Width between Metering Pulse

Minimum width between MP and MP.

2. Selecting Menu.

[Port Information(Total)]

• **Metering Pulse Kind**

Ans[PRS+MP], Cnt-1 : In case that MP is detected along with Polarity and that MP is detected in time of disconnection.

MP count : Total number of received MP - 1

Ans[PRS+MP], Cnt : In case that MP is detected along with Polarity and that there is no MP in time of disconnection.

MP count : Total number of received MP

Ans[PRS],Cnt : In case that MP is detected after detection of Polarity and that MP is detected in time of disconnection.

MP count : Total number of received MP

Ans[PRS], Cnt +1 : In case that MP is detected after detection of Polarity and that MP is not detected in time of disconnection.

MP count : Total number of received MP + 1

Ans[MP], Cnt-1 : In case that MP is detected without Polarity and that MP is detected in time of cutoff

MP count : Total number of received MP - 1

Ans[MP], Cnt : In case that MP is detected without Polarity and that there is no MP in time of cutoff

MP count : Total number of received MP

NoAns, Cnt	: In case that MP is detected with the end of caller's dialing regardless of response from called party and that MP is detected in time of cutoff
MP count	: Total number of received MP
NoAns, Cnt +1	: In case that MP is detected with the end of caller's dialing regardless of response from called party and that there is no MP in time of cutoff
MP count	: Total number of received MP + 1

- **Metering Pulse Detect**

Whether to detect MP. This field should be set for MPD execution.

Setup of unit charge

1. Selecting Menu .
Statistics & Billing ⇒ Billing Management ⇒ Billing Service Option
2. Enter unit charge to be charged for each MP in "[238]: Metering Pulse Cost Unit"

RESTRICTION

This function is available only on the GLOOP2 board.

Polarity Reversal

FEATURE DESCRIPTION

Polarity Reversal - Signal includes Answer Polarity, Release Polarity and Re-answer Polarity.

Answer Polarity is a signal delivered to caller if called user responds to incoming call and used as beginning point of billing or - call-connection.

Release Polarity is a signal that a user receives when the counterpart disconnects call while in conversation. According to option, calling party wait for Re-answer Polarity without disconnection when called party hung up. If called party picks up the handset again to send Re-answer Polarity, the call is reconnected. Called party always disconnects call when receiving Release Polarity .

In calling Party Release Control , calling party wait for Re-answer without disconnection when hangs up and the call is disconnected when calling party hangs up.

Called Party Release Control is the opposite.

PROGRAMMING IN MAP

Basic setup for Polarity Reversal

Set as follows to receive all types of Polarity signal:

1. Selecting Menu.
Database Management ⇒ Port Information
2. Search for port where LOOP card is installed.
Set "Answer Supervisor"
Do not set "Seizure Ack. Detect"

Setup of Answer Polarity

Set as follows to send Answer Polarity on the called party and to receive it on the calling party:

1. Selecting Menu .
[Port Information(Total)]
2. Search for port where outgoing LOOP card is installed.
Set "POLA"
3. Set "Disconnect Supervision" as Opposite Party(Both) for both incoming/outgoing loop.

Setup of incoming/outgoing Release Polarity

1. Selecting Menu .
[Port Information(Total)]
2. Search for port where LOOP card is installed.
If it is outgoing LOOP, set "Disconnect Supervision" as Opposite Party(Trunk Outgoing)
If it is incoming LOOP, set "Disconnect Supervision" as Opposite Party(Trunk Incoming)
If it is incoming as well as outgoing set "Disconnect Supervision" as Opposite Party(Both)

Setup of Re-answer Polarity

It is possible that the calling party waits for Re-answer Polarity without disconnection even after receiving Release Polarity from the called party. If called party picks up the handset again to send Re-answer Polarity, the call is reconnected.

Set up as follows. It should be basically capable of receiving Answer Polarity.

1. Selecting Menu.
[Port Information(Total)]
2. Search port where outgoing LOOP card is installed.
Set "POLA"
Set "Release pola supervision"
3. Set "Disconnect Supervision" as Opposite Party(Both) for incoming and outgoing LOOP.
4. Selecting Menu .
Database Management ⇒ System DB Management I ⇒ System Timer

Enter duration of awaiting Re-answer polarity in "Pola waiting time after Incoming Disconnect".

If no Re-answer polarity comes within the time(if called party does not respond again), the call is disconnected.

OPERATING PROCEDURES

Answer Polarity

1. Call by making outgoing LOOP Trunk call.
2. Called party responds and a call is made.
If calling user's terminal is Digiphone with LCD, call duration begins to increase.
3. Caller disconnects the call by hanging up the handset.

Release Polarity

1. Call by making incoming LOOP Trunk call
2. Called party responds and a call is made.
3. If caller disconnects the call, called party hears busy or error tone and it goes into idle state. If called subscriber's terminal is Digiphone it displays "HANG UP"

ISDN Features (PRI and BRI Trunk)

FEATURE DESCRIPTION

ISDN (Integrated Services Digital Network) is a digital network for public communication.

It is an integrated information network over which you can use voice communication, visual communication and data communication at the same time. ISDN can perform high speed data communication at the rate of 64Kbps per channel.

ISDN PRI line is 30B+D, and its configuration is same as the E1's. There are one D channel and 30 B channels. The B channel transfers data while the D channel transfers signaling messages for control and management. PRI has 32 B channels, No.0 channel and no.16 channel are used as synch. channels. So Only 30 B channels can be used actually.

The general ISDN BRI line is made of a packet which consists of three digital channels which are represented as 2B+D, comprising two B channels and one D channel. The B channel transfers data at the line speed of 64Kbps while the D channel transfers signaling messages for control and management.

Therefore, high speed data communication and voice conversations can occur simultaneously through the B channels.

The DCS Gateway System provides PRI boards which can be connected with the ISDN network and BRI boards which can be connected with the ISDN network or with ISDN terminals.

The BRI board is used for connection between the ISDN network and the DCS Gateway System or between an ISDN terminal and the DCS Gateway System. The BRI board is divided into two types depending on its application as listed below.

- BRI-T mode : The BRI port is used to connect the ISDN network with the DCS Gateway System.
- BRI-S mode : The BRI port is used to connect the ISDN terminal with the DCS Gateway System.

Eight ports in the BRI board may be used by setting it as either BRI-T or BRI-S for each port.

PROGRAMMING IN MAP

Setting up PRI, BRI(T/S)

Setting up MAP for using PRI

- (1) Select the [Port Information(Total)] menu in the MAP.

Choose the Port Type as ISDN PRI.

You should set up the COS and Tenant, and input the other required fields.

Port Type	ISDN PRI	Trunk Group No.	
Physical Port Type			
Tenant [0 - 63]	0	Dial Group No. [0 - 63]	0
DTS No. [0 - 1919]	0	PNA Tel.	
ID Tel.		Incoming Only	<input checked="" type="checkbox"/>
COS [0 - 63]	0	MDH Index [0 - 63]	
ACD Priority [0 - 2]		No Pole Disconnect	<input checked="" type="checkbox"/>
Adopt Gain Control	<input type="checkbox"/>		
Bill Pay Method	Alter-Pay	PVMS Group	Not Use
Calling Tel.		Caller Ring	Ring 2
Name			

- (2) Select the [System DB Management I] -> [INI & N/W Sync. Management] -> [INI/PRI Para.] in the MAP.

Set up the inquired fields.

Choose the N/W ID as USER or Network according to opposite exchange or PBX.

No.	Item	Slot 0 - 1	Slot 2 - 3	Slot 4 - 5	Slot 6 - 7	Slot 8 - 9
0	N/W ID	User	User	User	User	User
1	USART	Off	Off	Off	Off	Off
2	TEI Value [0 - 63]	0	0	0	0	0
3	A-Law -> U-Law	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Interface ID	E1	E1	E1	E1	E1
5	Remote Loop-Back	Off	Off	Off	Off	Off
6	Protocol	CCITT	CCITT	CCITT	CCITT	CCITT
7	DG Loop-Back	Off	Off	Off	Off	Off
8	CRC4 Generation	On	On	On	On	On
9	CRC4 Check	On	On	On	On	On
10	D-Ch. 1 [1 - 31]	16	16	16	16	16
11	D-Ch. 1 Usage	0	0	0	0	0
12	D-Ch. 2 [0 - 31]	0	0	0	0	0
13	D-Ch. 2 Usage	0	0	0	0	0
14	D-Ch. 3 [0 - 31]	0	0	0	0	0
15	D-Ch. 3 Usage	0	0	0	0	0

- (3) Configure Trunk Group and LCR DB.

➔ Refer to the 'Chapter 5 LCR' section.

Setting up MAP for using BRI-T

- (1) Select the [Port Information(Total)] menu in the MAP.
Choose the Port Type as BRI(T). Set up the ISDN Protocol according to the conditions.

The screenshot shows the 'Port Information (Total)' window with 'Port Type' set to 'ISDN BRI (T)'. The configuration table is as follows:

Port Type	ISDN BRI (T)	Trunk Group No.	
Physical Port Type			
Tenant [0 - 63]	0	ISDN Protocol	Euro-ISDN
DTS No. [0 - 1919]	32	PNA Tel.	
ID Tel.		MDH Index [0 - 63]	
COS [0 - 63]	0	Monitor Level	Monitor Off
ACD Priority [0 - 2]		Metering Pulse Kind	Ans.(PRS). Cnt.
B-Channel Loopback	Off	Metering Pulse Detect	<input type="checkbox"/>
Bill Pay Method	Alter-Pay		
Calling Tel.		TEI Value [0 - 63]	0
Data Link Mode	Point-To-Point	Caller Ring	Ring 2
Incoming Only	<input type="checkbox"/>		
Name			

At the bottom, the 'Node/Port Rx' tab is selected, showing 'Node' 0 and 'Port' 20. A status bar at the bottom indicates 'Successfully received a response.' and an 'Update' button.

- (2) Configure Trunk Group and LCR DB.
⇒ Refer to the 'Chapter 5 LCR' section.

Setting up MAP for using BRI-S

- (1) Select the [Port Information(Total)] menu in the MAP.
Choose the Port Type as BRI(S). Set up the ISDN Protocol according to the conditions.
You should set up the COS, Tenant, and Telephone number.
The Data Link Mode should be set up as Broadcasting.

The screenshot shows the 'Port Information (Total)' window with 'Port Type' set to 'ISDN BRI (S)'. The configuration table is as follows:

Port Type	ISDN BRI (S)	Pick Group No.	
Physical Port Type		Pilot	No
COM Group No.		Ring Group No.	
Control Group No.		Ring Pilot	No
ISDN Group		Station Group No.	
Tenant [0 - 63]	0	Data Link Mode	Broadcasting
Tel.	1000	Language	Language 0
COS [0 - 63]	0	Hot Mode	None
ACD Priority [0 - 4]		Hot Dial No.	
Alt. IE Index [0 - 7]		ISDN Protocol	Euro-ISDN
B-Channel Loopback	Off	R2 Bill/NomBill Signal	Bill Signal
Bill Pay Method	Alter-Pay	MDH Index [0 - 63]	
Billing Tel.		Monitor Level	Monitor Off
Billing Type	Normal	No Ans. Time Out [0 - 999 sec]	50
Caller Ring	Ring 0	PreSelect ID [0 - 15]	0
Dial Group No. [0 - 63]		PVMS Group	Not Use
Caller Name		Service Phone Password	<input type="checkbox"/>

At the bottom, the 'Node/Port Rx' tab is selected, showing 'Node' 0 and 'Port' 30. A status bar at the bottom indicates 'Update' and a green status icon.

Direct Dialing In

FEATURE DESCRIPTION

This function allows you to enable incoming calls from outside lines to be connected with internal extensions directly without the need to be connected by an operator.

It is not necessary to set up other fields only if 'DID Digit Translation' DB and 'Numbering Plan' DB are to normal status,

No.	Input	Output	No.	Input	Output	No.	Input	Output	No.	Input	Output
0	01	1	16			32			48		
1	02	2	17			33			49		
2	03	3	18			34			50		
3	04	4	19			35			51		
4	05	5	20			36			52		
5	06	6	21			37			53		
6	07	7	22			38			54		
7			23			39			55		
8			24			40			56		
9			25			41			57		
10			26			42			58		
11			27			43			59		
12			28			44			60		
13			29			45			61		
14			30			46			62		
15			31			47			63		

Dial Group [0]

Update

[Numbering Plan DB]

Index	Code	Feature	Input Len.	Anal. Len.	LCR Len.	LCR Virtual Tone
0	1	ATC	3	1	0	<input type="checkbox"/>
1	2	Station	3	1	0	<input type="checkbox"/>
2	3	Station	3	1	0	<input type="checkbox"/>
3	4	Station	3	1	0	<input type="checkbox"/>
4	5	Station	3	1	0	<input type="checkbox"/>
5	6	Station	3	1	0	<input type="checkbox"/>
6	7	Station	3	1	0	<input type="checkbox"/>
7	8	LCR	2	1	2	<input checked="" type="checkbox"/>
8	9	Trunk	2	1	0	<input type="checkbox"/>
9	*	Feature	3	1	0	<input type="checkbox"/>
10	#	Feature	3	1	0	<input type="checkbox"/>
11						<input checked="" type="checkbox"/>
12						<input checked="" type="checkbox"/>
13						<input checked="" type="checkbox"/>
14						<input checked="" type="checkbox"/>
15						<input checked="" type="checkbox"/>

Total [11]

Index Rx | Append Tx | Delete Tx | Modify Tx

Index [0 - 511]

Update

Successfully received a response.

OPERATING PROCEDURE

1. Call the user as DID Trunk.
2. The call is received by called user who is set in the DID Digit Translation DB and Numbering Plan DB.

RESTRICTIONS

The [DID Digit Translation] DB and [Numbering Plan DB] should be configured before.

Multiple Subscriber Number

FEATURE DESCRIPTION

In Point-to-Point connections or Point-to-Multipoint connections, a common telephone number can be designated for the various ISDN telephones connected to the BRI board of the DCS Gateway System. If you dial the common number, all of ISDN telephones with that number will ring.

However, when it is necessary to call a specific telephone in the group you may allocate an additional number for that telephone.

A maximum of eight MSN numbers for a common telephone number may be registered and these numbers should be compatible with the system's Number Plan.

PROGRAMMING IN MAP

Setting MSN number

1. Select Menu in the MAP

Database Management ⇒ Station DB Management ⇒ ISDN Tel. Information

2. Browsing

Press the Rx button after entering the Node number and the Index. This index is the "ISDN TEL Index" existing in the ISDN user port and this value is automatically registered by the system when entering the telephone number of the ISDN user.

3. Appending MSN

Press the [Tx] button after entering the MSN to be added by pressing the Append Tx tab.

4. Deleting MSN

Press the [Tx] button after entering the MSN to be deleted by pressing the Delete Tx tab.

Registering MSN on ISDN Phone

1. Press the MENU key.
2. Select the line parameter.
3. Select TAC.
4. Select the order of MSN to be registered by pressing Back or Others.
5. Press Change.
6. Press the MSN digit to be registered.
7. Press Store.

The above is the MSN registration procedure for ALCATEL ISDN Phone. The MSN registration procedure and number of MSN supported can be changed with the termination of the ISDN Phone.

OPERATING PROCEDURES

The following is the cases of state when calling a user who registered MSN.

1. Calling by representative number: ring goes off on all terminals connected by multi.
2. Calling by MSN: ring goes off on a terminal registered with the same MSN as that of the calling MSN.

Ring goes off on all terminals with the same MSN if more than one terminal has same MSN.

RESTRICTIONS

ISDN supplementary service are available only if most terminals support the function, and the service method and handling Flow are different according to the ISDN terminals

CLIP(Calling Line Identification Presentation)

FEATURE DESCRIPTION

This function is used to show the calling party's number on the called party's LCD. It is set up as "presentation allowed" on the Presentation Indicator of the Calling Party Number IE.

PROGRAMMING IN MAP

Setting COS(Class Of Service)

1. Selecting Menu in the MAP

Database Management ⇒ System DB Management I ⇒ Class Of Service(COS)

2. Set the following items and press the [Tx] button.
[90] CLIP on Incoming

OPERATING PROCEDURES

Examining Indication Condition of CLIP by COS

The calling party number is indicated as in the following depending on the COS set up in MAP.

1. Called party CLIP (No): Calling party number not shown.
2. Called party CLIP (Yes), Calling party CLIR (No): Calling party number shown.
3. Called party CLIP (Yes), Calling party CLIR (Yes): Calling party number not shown.

RESTRICTIONS

- Called party CLIP (Yes), Calling party CLIR (Yes): Calling party number is not shown.
- The COS '[91] CLIR Override on Incoming' of the called party is set as enabled : Calling party number is shown.

CLIR(Calling Line Identification Restriction)

FEATURE DESCRIPTION

This function is used to hide the calling party's number on the called party's LCD. It is set up as "presentation restricted" on the Presentation Indicator of the Calling Party Number IE.

PROGRAMMING IN MAP

Setting COS (Class Of Service)

1. Selecting Menu in the MAP

Database Management ⇒ System DB Management I ⇒ Class Of Service(COS)

2. Set the following items and press the [Tx] button.
[89] CLIR on Outgoing

OPERATING PROCEDURES

Examining Indication Condition of CLIR by MAP

The calling party number is indicated as in the following depending on the COS **[89]** set up in MAP.

1. Called party CLIP (Yes), Calling party CLIR (No) : Calling party number shown.
2. Called party CLIP (Yes), Calling party CLIR (Yes) : Calling party number not shown.

RESTRICTIONS

The calling party number is indicated as in the following depending on the COS set up in MAP.

- Called party CLIRO (Yes), Calling party CLIR (Yes) : Calling party number shown.

COLP(Connected Line Identification Presentation)

FEATURE DESCRIPTION

This function used to show the number of the called party that answered to the call on the calling party's LCD. It is set up as "presentation allowed" on the Presentation Indicator of the Connected Party Number IE.

PROGRAMMING IN MAP

Setting COS (Class Of Service)

1. Selecting Menu in the MAP

Database Management ⇒ System DB Management I ⇒ Class Of Service(COS)

2. Set the following items and press the [Tx] button.
[93] Caller COLP

OPERATING PROCEDURES

Examining Indication Condition of COLP by COS

The called party number is indicated as in the following depending on the COS set up in MAP.

1. Calling party COLP (No) : Called party number is not shown. Indicated as "Restricted NBR."
2. Calling party COLP (Yes), Called party COLR (No): Called party number is shown.

RESTRICTIONS

Calling party COLP (Yes), Called party COLR (Yes): Called party number is not shown.

The COS Index "[94] Caller COLR Override" of calling user is set as enabled : Called party number is shown.

The above is the LCD indication for Philips ISDN Phone.

COLR(Connected Line Identification Restriction)

FEATURE DESCRIPTION

This function is used to hide the number of the called party that answered to the call on the calling party's LCD. It is set up as "presentation restricted" on the Presentation Indicator of the Connected Party Number IE.

PROGRAMMING IN MAP

Setting COS (Class Of Service)

1. Selecting Menu in the MAP

Database Management ⇒ System DB Management I ⇒ Class Of Service(COS)

2. Set the following items and press the [Tx] button.
[92] Called COLR

OPERATING PROCEDURES

Examining Indication Condition of COLR by COS

The called party number is indicated as in the following depending on the COS set up in MAP.

- Calling party COLP (Yes), Called party COLR (No) : Called party number is shown.
- Calling party COLP (Yes), Called party COLR (Yes) : Called party number is not shown.
- Calling party COLRO (Yes), Called party COLR (Yes) : Called party number is shown.

RESTRICTIONS

Calling party COLRO (Yes), Called party COLR (Yes): Called party number is shown.
The above is the LCD indication for Philips ISDN Phone.

Call Transfer (ISDN PHONE)

FEATURE DESCRIPTION

This function transfers a received call to another subscriber.

When a call is transferred to another subscriber (abnormal call transfer procedure).

If the telephone to whom the caller is to be transferred to, is busy or not answering, the transferring telephone will be automatically recalled.

If the call is disconnected during transfer, the transferring telephone will be recalled automatically.

If the subscriber whom the call wants to be transferred to doesn't answer or hangs up the phone by choosing "back", the RETRIEVE message will be indicated and the caller may be reconnected with the previously called party. (Only ALCATEL ISDN Phone supports the menu.)

OPERATING PROCEDURES

1. Select "enquiry" in menu while you are in one-to-one conversation on the phone. The person to whom you were talking is held and you hear dial tone. LCD indicates "enquiry, please dial".
2. Press the number of user to whom you want to transfer the call. Incoming ring sounds when he is in normal state.
3. The user to whom you transferred the call answers. You are connected with him.
4. Press "transfer" button in menu. The user that has been held and the user to whom you transferred the call are connected. You are disconnect.
5. If you press "back" button in menu when it rings to the user to whom you transferred the call, then he is disconnect and you are connected with the user that was held again.
6. If the user to whom you transferred the call is busy, LCD indicates "busy". When you press "back" button in menu in this situation, you are connected the user that was held.
7. When the user to whom you transferred the call is not in normal state, it is recalled.

Above description is about the OPERATING PROCEDURES of ALCATEL ISDN Phone.

RESTRICTIONS

1. Hook Flash is available only with the terminal that has menu for call transfer because ISDN Phone doesn't support the function.
2. Call transfer procedures could be different according the terminal.

CFU(Call Forwarding Unconditional ISDN)

FEATURE DESCRIPTION

This function is used to transfer a call received to a registered user without any condition. Function registration uses the function code of the system or menu in case of ISDN Phone with registration menu.

PROGRAMMING IN MAP

Setting COS (Class Of Service)

1. Selecting Menu in the MAP

Database Management ⇒ System DB Management I ⇒ Class Of Service(COS)

2. Set the following items and press the [Tx] button.
[66] Forwarding All Call : set enabled

Registering Call Forward function

Registering function using function code

1. Lift the handset or press the Speaker key.
2. Press the function code defined as the function to be registered.
3. Press the telephone number of the user to be registered.
4. Hear the confirmation sound (Hang up after pressing the user telephone number in case of registering Offsite Forward).

Registering function using menu on terminal (ALCATEL ISDN Phone)

1. Press the menu key.
2. Select Diversion.
3. Select the function to be registered by pressing Back or Others.
4. Press the telephone number of the user to be transferred.
5. Press Store key.

OPERATING PROCEDURES

1. Call the ISDN user with CFU function registered.
2. The call is forwarded to a registered user unconditionally.

RESTRICTIONS

When the forwarded user is a trunk user and the received call is trunk call :

[Data Base Management] ⇒ [Trunk DB Management] ⇒ [Tandem Call in Trunk COS] DB should be set up before.

CFB(Call Forwarding Busy ISDN Phone)

FEATURE DESCRIPTION

Function used to transfer a call to a registered user if the called party is Busy. The function only works when all of the B channels of the called party are Busy. Function registration uses the function code of the system or menu in case of ISDN Phone with registration menu..

PROGRAMMING IN MAP

Setting COS (Class Of Service)

1. Selecting Menu in the MAP

Database Management ⇒ System DB Management I ⇒ Class Of Service(COS)

2. Set the following items and press the [Tx] button.
[67] Forwarding Busy Call

Registering Call Forward function

Registering function using function code

1. Lift the handset or press the Speaker key.
2. Press the function code defined as the function to be registered.
3. Press the telephone number of the user to be registered.
4. Hear the confirmation sound (Hang up after pressing the user telephone number in case of registering Offsite Forward).

Registering function using menu on terminal (ALCATEL ISDN Phone)

1. Press the menu key.
2. Select Diversion.
3. Select the function to be registered by pressing Back or Others.
4. Press the telephone number of the user to be transferred.
5. Press Store key.

OPERATING PROCEDURES

1. Call the ISDN user with CFB function registered.
2. The call will be forwarded to registered user when the called party is busy.

RESTRICTIONS

1. In case that the user to whom a call is forwarded is a terminal user and the received call is a terminal incoming call, it should be set as below:

“Data Base Management ⇒ Trunk DB Management ⇒ Tandem Call in Trunk COS”

2. CFB function runs only if 2B channels of BRI port are all busy.

CFNR(Call Forwarding No Reply ISDN Phone)

FEATURE DESCRIPTION

This function is used to transfer a call to a registered user if the called party does not answer for a certain amount of time. Function registration uses the function code of the system or menu in case of ISDN Phone with registration menu. The time set up in the system is used for answering time.

PROGRAMMING IN MAP

Setting COS (Class Of Service)

1. Selecting Menu in the MAP

Database Management ⇒ System DB Management I ⇒ Class Of Service(COS)

2. Set the following items and press the [Tx] button.
[69] Forwarding No Answer Call

Setting Timer

1. No Answer Time in case of terminal incoming call

- 1) Selecting Menu in the MAP

Database Management ⇒ System DB Management I ⇒ System Timer

- 2) Set the following items and press the [Tx] button.
[68] Trunk Incoming No Answer Forwarding Time : Initial(25 sec)

2. No Answer Time in case of station incoming call

- 1) Selecting Menu in the MAP

Database Management ⇒ System DB Management I ⇒ System Timer

- 2) Set the following items and press the [Tx] button.
[9] Forward No Answer Time : Initial(10 sec)

Registering Call Forward function

Registering function using function code

1. Lift the handset or press the Speaker key.
2. Press the function code defined as the function to be registered.
3. Press the telephone number of the user to be registered.
4. Hear the confirmation sound (Hang up after pressing the user telephone number in case of registering Offsite Forward).

Registering function using menu on terminal (ALCATEL ISDN Phone)

1. Press the menu key.
2. Select Diversion.
3. Select the function to be registered by pressing Back or Others.
4. Press the telephone number of the user to be transferred.
5. Press Store key.

OPERATING PROCEDURES

1. Call the ISDN user with CFNR function registered.
2. The call will be forwarded to registered user if it rings to the called party in an idle state and he doesn't answer for a certain period of time.

RESTRICTIONS

1. It should be set as below if the user as forwarding target is a terminal user and the incoming call is a terminal incoming call:

Data Base Management ⇒ Trunk DB Management ⇒ Tandem Call in Trunk COS"

2. System timer or the timer, registered in the [port information(Total)] menu, is applied according to the setting in "Data Base Management ⇒ Station DB Management ⇒ Station Service Option" of Index "[222] Apply Trunk No Answer Time, [223] Apply Station No Answer Time".

CD(Call Deflection ISDN Phone)

FEATURE DESCRIPTION

This function is used to transfer a call to another user if the called party does not answer when the phone is ringing. The difference with Call Transfer is that the transfer is done while the incoming call is not answered. The ISDN Phone must have a menu that requests Deflect while the phone is ringing and the function is only available to ALCATEL ISDN Phone.

PROGRAMMING IN MAP

Setting COS (Class Of Service)

1. Selecting Menu in the MAP

Database Management ⇒ System DB Management I ⇒ Class Of Service(COS)

2. Set the following items and press the [Tx] button.
[174] ISDN Call Deflection

OPERATING PROCEDURES

1. Call an ISDN user.
2. Press menu when it rings.
3. Select “deflect to: ”.
4. Press the number of user that is target of deflection
5. Press “on” key.
6. You are disconnect and the call is forwarded to the user that is target of deflection and received.

RESTRICTIONS

1. Target of deflection is limited to station users only.

Line Hunting(STN Group Service)

FEATURE DESCRIPTION

This function is used for forwarding a call to the trunk or to the common number of an ISDN internal group, whose lines are not busy.

This function is available after making a contract with the service provider.

Depending on the member of an internal group, who will receive the call, there are two cases as shown below.

PROGRAMMING IN MAP

Setting COS (Class Of Service)

1. Selecting Menu

Database Management ⇒ Station DB Management ⇒ Station Group Information

2. Input the Station Group number and press the [Rx] button.

Select the type of the station service (Service Type item) for the applicable group.

- ✓ Hunt : Distribute the received Pilot phone call to the members of the group in a certain pre-set order. (Consecutive distribution system)
- ✓ Distribution : Distribute the received Pilot call to the member who is next to the member who received most recent call in order to distribute calls to each members evenly. (Even distribution system)
- ✓ Equality : Distribute the call to the required member

Choose one of another two methods as ISDN phone doesn't support the 'Equality' method .

3. Press the [Station Group Information Tx] button to send the values to the system.

4. Selecting Menu

Database Management ⇒ Station DB Management ⇒ Station Group Configuration

5. Press Append Tx tab when the below screen appears. In Connect Tel. field, enter the phone numbers of users whom you want to connect with users who are appended now. Enter the phone numbers of users who are appended in Append Tel. field. Then the numbers are registered in the same field of phone numbers' group that consists of 8.

6. If you make a call with the main number of trunk or station group, a user who is not busy is looked up according to the hunting method and the call is received.

OPERATING PROCEDURES

A call that is incoming to the main number can be forwarded to ISDN user in station group who is not busy at the moment by this function. This is available after you make a contract with the service provider beforehand. There are two ways as follows, according to whom you forward the call among members in station group.

1. Sequential Hunting

When a call is coming to the main number, ISDN user who is not busy at the moment is looked up always according to the order registered in station group.

2. Equal Distribution

In order to distribute an incoming call to the main number equally, it is forwarded to ISDN user, who is not busy, next to the ISDN user who received a phone call most recently on the basis of registration order in

station group.

RESTRICTIONS

You should specify station group DB and service method in order to enable this function.

TP(Terminal Portability[Suspend/Resume])

FEATURE DESCRIPTION

This function provides portability to a user or an ISDN Phone during calls. BRI can connect several ISDN Terminal by using a multi connector on one port line. Normal operation recommends eight. Call can be continued by moving to another terminal connected by multi after temporarily disconnecting during a call, or connecting to another port by moving the user's telephone. The time limit between temporary disconnection and reconnection is three minutes. The difference from normal telephone is that the call is not disconnected even if the Phone is cut from the Line after temporary disconnection.

PROGRAMMING IN MAP

Setting TP Timer

Procedures to register timer that is specified for terminal in MAP is as follows:

1. Selecting Menu in the MAP

Database Management ⇒ System DB Management ⇒ System Timer

2. Set the following item and press the [Tx] button.

[119] ISDN Suspended Time : Initial(180Sec)

#. After specified period of time, suspended call is disconnect. It is impossible to resume.

Setting COS (Class Of Service)

1. Selecting Menu in the MAP

Database Management ⇒ System DB Management I ⇒ Class Of Service(COS)

2. Set the following item and press the [Tx] button.

[183] ISDN TP

OPERATING PROCEDURES

1. Select "park" with menu key while on the phone.
2. Enter call identity. Specify 2 digits of peculiar number for call identity. If you enter more than 2digits, only 2digits in the beginning are recognized. If you don't enter call identity, default value is saved.
3. A call is suspended if you press "Store".
4. Move the position: move the terminal or move to another terminal.
5. Press "pick up park" in the menu.
6. Pick up the handset or press "Speaker" key after entering call identity that you have entered for suspending. Call with the suspended party is resumed.
#. Above is description of operating TP function of ALCATEL ISDN Phone.

RESTRICTIONS

The operating procedure could be different according to ISDN terminal.

CW(Call Waiting)

FEATURE DESCRIPTION

Function which alerts the user of a waiting call if the user is using one of the 2B channels supported by one BRI port and a call is received to the other channel. This can be known by the indication on the LCD of the ISDN phone and the specific tone.

This is a function supported by the ISDN phone and does not require additional setup. Management of the waiting call is different according to the functions supported by each ISDN Phone.

OPERATING PROCEDURES

This function is one of the ISDN terminal functions, which lets a user know in case a call is forwarded through another channel when he is busy through one of BRI 2B channels. Handling of incoming calls is different according to function of the terminal.

1. ALCATEL ISDN Phone

- 1) When you are busy through 1B channel, a call is forwarded to another 1B channel.
- 2) LCD indicates XXXX calling and specific tone sounds.
- 3) You can accept or reject a waiting call.
- 4) If you accept, the person on the phone with you before is held and functions supported in the menu, such as conference, transfer function etc., are available under this condition.
- 5) If you reject, waiting call is disconnect and you keep talking with the previous one.

2. Philips ISDN Phone

- 1) A call is forwarded to another 1B channel while you are busy through 1B channel
- 2) LCD indicates CALL WAITING.
- 3) Press "Call Waiting" button.
- 4) The person on the phone with you before is held and you are connected with the person that was call-waiting.
- 5) You can change whom you talk with on the phone by "Call Waiting" button or "Hold" button.

RESTRICTIONS

Operation procedure could be different according to ISDN terminal.

Conference

FEATURE DESCRIPTION

Conference is divided into two types such as 'Add on Conference' and 'Three Party Service'. At present, there is no ISDN terminal to support 'Add on Conference' and only 'Three Party Service' is available. It is possible that only two users talk to each other on the phone while one party is held by a chairman in the conference state, and that conference resumes again later.

PROGRAMMING IN MAP

Setting COS (Class Of Service)

1. Selecting Menu in the MAP

Database Management ⇒ System DB Management I ⇒ Class Of Service(COS)

2. Set the following items and press the [Tx] button.
[95] ISDN 3 Party

OPERATING PROCEDURES

1. Select "enquiry" in menu while you are busy. The user on the phone before is held and you hear dial tone. LCD indicates "enquiry, please dial".
2. Press number of the user to whom you transfer the call. The user hears incoming call ringing when he is in normal state.
3. The user to whom you transferred the call answers. You are connected with him.
4. Press "conference" button in menu. Three Party Conference is made.

- **Ending Three party conference service**

The user as a chairman of conference cuts off, the three party service will be ended and the remaining two subscribers will be disconnected.

- **Optional call-holding depending on users**

Conference chairman is able to do one-to-one conversation on the phone after holding a certain user whom he wants. Press "conference" button to resume "Three Party Conference".

Optional call-ending depending on users

Conference chairman is able to optionally end a call of a certain user whom he wants. In this case, three party service terminates and one-to-one conversation on the phone begins. Three party conference is available through "1 – 4" fields of OPERATING PROCEDURES.

#. Above description is about operating ALCATEL ISDN Phone.

RESTRICTIONS

1. Above function is available with the ISDN Phone terminal that has three party service menu only.
2. The OPERATING PROCEDURES of three party service could be different depending on terminals.

AOC(Advice of Charge)

FEATURE DESCRIPTION

Function used to show charging information to the user on outgoing call. This function is managed in three ways.

First, shows the charging unit when a outgoing call is made with the called party (AOC-S).

Second, shows the current charge after a call has been made for a certain period of time (AOC-D).

Third, shows the charge at the end of the call. The AOC function is available only when information is received from the CO line, and the ISDN Phone must be able to manage the AOC data.

The system transmits as it is if the AOC data is available and the user is an ISDN user, and if the user is digital (DGP), the data is changed to ASCII and shown on the LCD.

OPERATING PROCEDURES

For each call in/call out, the AOC service will be provided only if the subscriber has applied for it and if so the AOC information for each call out will be transferred to the subscriber.

This function transfers the charging information to the ISDN telephone in the CONNECT/INFORMATION messages which are delivered from the C.O line. This information will be displayed on the LCD of the ISDN telephone.

Three different cases are follow, each depending on the time of advice detailing the charges.

- **AOC-S (Advice of Charging : Charging information at call set-up time)**

This is an additional service providing information for charging rates on each call forwarding to the ISDN subscriber. If charging information is included in CONNECT messages transferred from the CO line, the messages will be transferred to the ISDN telephone. This information will be indicated on the LCD of the ISDN telephone.

- **AOC-D (Advice of Charging : Charging information during call)**

This service provides up to date information of call charges during the call. If charging information is included in the INFORMATION or FACILITY messages transferred from the C.O line, the information will be transferred to the ISDN telephone. This information will be indicated on the LCD of ISDN telephone.

- **AOC-E (Advice of Charging : Charging information at the End of the call)**

This service provides information of call charges at the end of the call. If charging information is included in the DISCONNECT or RELEASE messages transferred from the station line, it will be transferred to the ISDN telephone. This information will be indicated on the LCD of ISDN telephone.

RESTRICTIONS

1. As for all information of AOC, get it from C.O to manage it.
2. ISDN terminal should be possible to show AOC information.
3. Formats of AOC information could be different depending on nations.

UUS(USER-to-USER-Signal)

FEATURE DESCRIPTION

UUS service is a service in which the user can send a limited amount of data to a user on another network. The data passes through the network unchanged and the network does not make any analysis or change to this data. This function is divided into three ways.

- 1) **UUS1** : The user can send the UUI at the beginning of the call. When the service is activated, any user will be able to send UUI when accepting service, rejecting service, or canceling a call. The calling party can send UUI, then disconnect the call before it is connected. UUS1 service is an Implicit service that is in a state that no service is requested. Sending a greeting in SETUP message would be a common example.
- 2) **UUS2** : Not available because it is only possible in Point-to-Point connections.
#. UUI is sent between the ALERT message and the CONNECT message.
- 3) **UUS3** : UUI is sent separately from call restriction message while the call is ACTIVE. Any user can send UUI after the service is activated. UUS3 service is an explicit service and it is activated by service request. Data is transmitted to User Information message.

This service is available only if the ISDN Phone supports the function.

PROGRAMMING IN MAP

Setting COS (Class Of Service)

1. Selecting Menu in the MAP

Database Management ⇒ System DB Management I ⇒ Class Of Service(COS)

2. Set the following items and press the [Tx] button.
[175] ISDN UUS

OPERATING PROCEDURES

According to the points of time to transfer/receive the information, the following three methods are suggested.

• UUS1

By using this method, the subscriber can transfer/receive the information at the time of calling out. If the service is activated, the subscriber can send UUI when any user accepts or rejects the service, or when he/she clears the call. The calling party may hang up before the call is connected, but after sending UUI. Using the UUS1 method, you may send set-up messages including greetings.

• UUS2

This method provides the capability to transfer/receive the information during the call but remember that it doesn't support for ISDN telephones.

• UUS3

By using this method, the information will be transferred separately from call controlling messages during the call. Any user can send UUI after the service is activated. The UUS3 service will, as an explicit service, be activated on a request.

RESTRICTIONS

1. Service is available when the terminal supports this function, and service method and OPERATING PROCEDURES could be different depending on ISDN terminals.

MCID(Malicious Call Identification)

FEATURE DESCRIPTION

Function used to show the calling party's telephone number on the called party's LCD, and is serviced at the called party's request. The called party can request the service while the phone is ringing and during call.

The function is available only when the ISDN Phone contains menus to request service.

At present time, only ALCATEL ISDN Phone supports the menu.

PROGRAMMING IN MAP

Setting COS (Class Of Service)

1. Selecting Menu in the MAP

Database Management ⇒ System DB Management I ⇒ Class Of Service(COS)

2. Set the following items and press the [Tx] button.
[123] Request of Caller Number(MCID)

OPERATING PROCEDURES

This function is provided to the called party, which indicates ISDN net ID and phone number of caller on the called party's LCD of his phone. The menu requiring MCID function should be on the ISDN Phone in order to use this service.

Called party can request service for ISDN ID and caller's number at points as follows:

- Before answering an incoming call
- While his line is busy
- DCS Gateway system receives network ID and caller's number as for incoming calls through ISDN network, and provides this information according to the called party's demand or service class. If network ID and number are not transmitted from ISDN network, this function is not available.

This function is available also for the incoming calls from PSTN network to ISDN users, in case DCS Gateway system has the caller's number and network ID information.

Set in MAP so as to get ISDN network ID and the caller's phone number information.

At present, ALCATEL ISDN Phone is possible to MCID function and the OPERATING PROCEDURES are as follows:

1. Select "identity" in menu when it rings.
Information such as "receiving number XXXX" is shown on LCD and it disappears after a moment.
2. Select "identity" in menu when it rings.
Information such as "receiving number XXXX" is shown on LCD and it disappears after a moment.

RESTRICTIONS

1. MCID is available when the caller's number information is provided by C.O.
2. Service is available after ISDN terminal indicates MCID information.

G4W E&M Board (Analog Board)

FEATURE DESCRIPTION

The G4W E&M Board (G4W E&M TIE Trunk Module) have two independent Voice Lines used to send a signal back and forth to another station. It is set up with TIP and RING on the calling party and TIP1 and RING1 on the called party. The Transformer does not require DC Power because the signal and the voice circuit are separate from each other. The DC signal occurs in M-LEAD and is detected from E-LEAD. G4W E&M Board have two independent Transformers used to send and receive Voice Signals to each port. The Hybrid of G4W E&M Board is used for three level Gain Control. It is more sensitive than 2W E&M Board. One Board has 6 Channels.

The main functions of the G4W E&M Board are as follows:

- Transformer and Impedance Matching Circuit are embodied.
- Capable of encoding analog signal to digital signal or decoding digital signal to analog signal using the PCM method.
- The control port of the Board has sending signal control logic and received signal detection logic.

DTMF Signal Method

FEATURE DESCRIPTION

A signaling method that uses DTMF Signal in case of transmitting digit to exchange when trunk calling. MFS(Multi-Frequency Sender)and MFR(Multi-Frequency Receiver) are used.

PROGRAMMING IN MAP

(1) DB configuration in the MAP

- Please refer to the 'PROGRAMMING IN MAP' section about DTMF Signal Method in DTRK3-E1.

(2) [Port Information(Total)] menu in the MAP

- Specify "4W E&M" for port type in the [Port Information(Total)] menu.
- One board has 6 channels(0~5) and the other ports have no port information.
- Set "Yes" for POLA usage.
- Enter Tenant(0), COS(0), DTS Number basically.
- Set other fields values as default setting.

Port Information (Total)

Node [0] Port [280] Port Type 4w E&M Trunk

Port Type	4w E&M Trunk	Trunk Group No.	
Physical Port Type			
Tenant [0 - 63]	0	PNA Tel.	
DTS No. [0 - 1919]	1500	T1/E1	E1
ID Tel.		Outside Comment	None
CDS [0 - 63]	0	OP Gain Control	Normal Gain Control
ACD Priority [0 - 2]	0	Ground Answer Detect [100 ms]	24
Adopt Gain Control	<input type="checkbox"/>	Incoming Only	<input type="checkbox"/>
Alarm Type	Critical	MDH Index [0 - 63]	
Answer Decision [50 ms]	6	Metering Pulse Kind	Ans.(PRS), Crk.
Answer Supervisor	<input type="checkbox"/>	Metering Pulse Detect	<input type="checkbox"/>
Bill Pay Method	After Pay	No Puls Disconnect	<input type="checkbox"/>
Calling Tel.	470		
Conversion	No Conversion	POLA	<input checked="" type="checkbox"/>
1st Digit Wait [100 ms]	6	PVMS Group	Not Use
		Seizure Ack. Detect	<input type="checkbox"/>
Dial Group No. [0 - 63]	0	Seizure ACK Detect [100 ms]	6
Disconnect Decision [100 ms]	6	Sensor Type	None
Name			

Node/Port Rx Tel. Rx PID Rx Port Delete Tx

Node 0 Port 280

(3) [Port Information(Total)] menu in the MAP

Specify "MFR/S" for port type field in the [Port Information(Total)] menu. MFM board should be installed to be sure and it has no value of specific field. One MFM board has 16 Channels and plays an important role in transmission and reception of DTMF signal actually.

NOTE : Take care not to select MFSR for port type because it is for totally different usage.

OPERATING PROCEDURE

Same with the operating procedure for DTMF Signalling of DTRK3-E1.

RESTRICTION

It is very important to select the appropriate signal method among Decadic and DTMF, according to the signal method of the opposite station. It is also necessary to set up the signal method according to the Site environment. There are cases where line related DB setup must be applied according to the Site environment.

DTMF Signaling Programming

PROGRAMMING IN MAP

A signaling method that uses DTMF signal in case of transmitting digits to exchange when you make a trunk call. MFS(Multi-Frequency Sender) and MFR(Multi-Frequency Receiver) are used.

(1) Setting DB of [System DB Management I] => [COS(Class Of Service)] in the MAP

Set [17] Trunk Outgoing Call as 'Enable'. Unless you set this field, "COS Block" happens and trunk outgoing call itself is impossible.

(2) Setting DB of [System DB Management I] => [Numbering Plan] in the MAP

Selecting Menu in the MAP

[DataBase DB Management] => [System DB Management I] => [Number Plan]

Select Trunk or LCR in the Feature field .

Index	Code	Feature	Input Len.	Anal. Len.	LCR Len.	LCR Virtual Tone
0	1	ATC	3	1	0	<input type="checkbox"/>
1	2	Station	3	1	0	<input type="checkbox"/>
2	3	Station	3	1	0	<input type="checkbox"/>
3	4	Station	3	1	0	<input type="checkbox"/>
4	5	Station	3	1	0	<input type="checkbox"/>
5	6	Station	3	1	0	<input type="checkbox"/>
6	7	Station	3	1	0	<input type="checkbox"/>
7	8	LCR	2	1	2	<input checked="" type="checkbox"/>
8	9	Trunk	2	1	0	<input type="checkbox"/>
9	*	Feature	3	1	0	<input type="checkbox"/>
10	#	Feature	3	1	0	<input type="checkbox"/>
11						<input checked="" type="checkbox"/>
12						<input checked="" type="checkbox"/>
13						<input checked="" type="checkbox"/>
14						<input checked="" type="checkbox"/>
15						<input checked="" type="checkbox"/>

Index Rx Append Tx Delete Tx Modify Tx

Code	Feature	Input Len.	Anal. Len.	LCR Len.	LCR Virtual Tone
CCC		3			<input type="checkbox"/>

Update

(3) Selecting Menu in the MAP

(5) Selecting Menu in the MAP: [Port Information(Total)]

The Port Information screen then comes up. Set up the following options.

- Select an appropriate line port type (2W E&M) for Port Type.
- Select E1 for T1/E1 availability.
- Select Sweden DID for DTRK Type.
- Select use for POLA usage.
- Use default values for the remaining fields values.

(6) [Port Information(Total)] menu in the MAP

If you set up port where MFM board installed, set port type for MFR /S in [Port Information(Total)] menu. It doesn't have any specific field value. One board has 16 channels, which play an important role in transmission and reception of DTMF signals.

.....

NOTE : Take care not to select MFSR for port type because it is for totally different usage.

.....

(7) LCR DB configuration in the MAP

Set up LCR related DB after setting up Trunk related DB.

☞ Refer to 'PROGRAMMING IN MAP' part in 'LCR' section of Chapter 5.

OPERATING PROCEDURES

- User picks up the handset.
- Enter the trunk access code(92) for DTMF trunk outgoing call.
- Press destination number
- It rings to called party's phone.
- Caller hears ring-back tone.
- If called party answers, speak on the phone with called party as usual.

.....

NOTE : DTMF trunk signaling is impossible to perform ANI function because caller's number information cannot be transmitted to the called party.

.....

- Hang up.

Configuring port with MFM Board installed

Designate MFR/S for Port Type in the [Port Information (Total)] menu to configure a port with R2-MRF Board installed. It does not have a particular field value. 1 Board contains 16 Channels. It takes on the important role of actual sending and receiving DTMF signals.

.....

NOTE : Do not select MFSR for Port Type. It is used for a completely different purpose.

.....