

**Corporate Network Solutions
Business Networks Systems Division**

**Technical
Information
Bulletin**

TITLE:

IVS 2000 R4.1 (D1) MAIN SOFTWARE

SYSTEM APPLICATION:

IVS 2000 / ICS M110 / 120 WITH IVS Retrofit CPU

SOFTWARE VERSION APPLICATION:

SC-2994 IVS BSC PROG-D1 7.06

ATTACHMENTS:

Doc-Reg ID:

<http://www.kbase.cns.nec.com.au/>

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OVERVIEW

Software Release R4.1 has some new features and enhancements to previous features. The MATWorX Ver 2.4.0 is required to make use of all features provided by this software version.

When upgrading from below R3.2 (C2) main program, the PN-AP01 and PN-CC01 will both need a firmware upgrade Refer to relevant TIB for R3.2 Main Software - NEC-6292

New Features

- Busy Lamp Field (BLF) – CCIS
- Voice Mail Private Password - CCIS
- CCIS Networking via IP / Alternate Routing for ISDN
- CID Call Routing
- Group Call by Pilot Number Dialling
- CID Call Back

Enhanced Features

- Message Centre Interface
- Delay Announcement – UCD / Automatic Change of Night Switch
- Automatic Wake Up / Timed Reminder
- DID
- Conference (3 /4 Party) – Radio 3AW enhancement request
- Malicious Call Trace (MCT) Feature by ETSI ISDN (OPTUS)
- Peg Count

MATWorX Enhancements

- Interoffice Station Data Copy Add-In
- GCR Enhancement
- IPT Setting Add-In
- IPLC Setting Add-In
- Day / Night Mode Change Add-In
- Traffic / Peg Count Add-In

MEMORY AREAS

Program Revision

F85 >	FF02	SC number read	2994	SC number
	FF03	Official Version read	D1	Official Version
	FF04	Official Revision read	0007	Official Revision
	FF05	Official Revision Read	06	Official Revision (Below decimal point)

Above example: SC2994 D1 7.06

Feature Read

F87 >	001~255	Feature Listing	A / R	A= Allowed R= Restricted Unbundling Read
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F89 >	01~16	Options 01 through to 16	XXX	Options Unbundled
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Checksums

CM E1 Y=0

01:1FAE	02:0BCE	03:4B58	04:EEE9
05:0000	06:0000	07:E85E	08:9E3D

NEW FEATURES

Busy Lamp Field (BLF) – CCIS

General Description

This feature allows the DSS / BLF Console to receive station status messages from stations in the opposite PABX via CCIS and show this status on the DSS / BLF Console.

Operating Procedure

To initiate a call

- Press the desired DSS key
- Lift the handset and converse when called party answers

OR

- Lift handset and receive dial tone
- Press the desired DSS key
- Converse when called party answers

To display Busy or Line Lockout status

- No manual operation is required

Service Conditions

Service conditions on network in general

- This feature is available from the network configured with IVS 2000 systems linked together with CCIS (T1/E1) or CCIS Networking via IP. The network linked to event based CCIS is not supported by this feature.
- This feature is available for the network configured with IVS systems only. This feature does not support the networking including IMX PBX's.
- BLF messages are sent when the station status changes (idle/busy, etc). If the CCIS link failure occurs, the messages cannot be resent.
- When this feature is implemented, the traffic over the CCIS is increased and a traffic study of the network may be required.
- The BLF message can be forwarded up to 8 times within the network. If the number of forwarding exceeds 8, the message is cancelled.

Service conditions on the system sending BLF messages

- Maximum number of destination offices for sending BLF messages is 8 per system and 8 per station.
- Station statuses sent over CCIS are idle, busy or line lockout.
- The BLF messages are sent in a 4 second cycle, so that some delay will occur to change the display in the destination office. In the network configured with more than 2 systems, it will take 4 ~ 5 seconds to change the display in the destination office.
- If the CCIS link fails, the BLF messages cannot be resent after the link recovers.

Service conditions on the system receiving BLF messages

- Receiving BLF messages over CCIS or not is assigned by CM A7 YY=30, on a CCH number basis.
- The BLF indication over CCIS is provided by assigning the station numbers in other offices as virtual station numbers in CM11 and assigning these numbers with DSS buttons on the DSS/BLF console units or Multiline Terminals.

NOTE. Max number of virtual stations assigned by CM11 is a total of virtual station numbers used in its own system plus those used for BLF indications of other offices.

- Pressing a DSS button on the DSS/BLF console unit or Multiline Terminal allows access to the programmed stations in the other office.
- Feature activation from DSS console (Message Wait, DND, Room Cut Off etc) is not available for stations within the other offices.

- When a BLF message is received for a station in another office, the BLF message for that station is forwarded to the destination office.

Programming

Data assignment for office sending BLF messages

START	DESCRIPTION	DATA
CM A8	Assignment of CCH Number DTI INITIAL	(1) 00001 ~ 16367: Destination Point Code (2) 0 ~ 7: CCH Number
CM A7	Assignment for sending BLF messages over CCIS DTI INITIAL	YY = 30 (1) 0 ~ 7: CCH Number (2) 0: Send BLF messages over CCIS
CM 12	Assignment for Destination of BLF messages by Station Number	YY = 30 ~ 37: (CCH 0 ~ 7) (1) x ~ xxxx: Station Number (2) 0: Send BLF messages over CCIS
CM 50	Assignment for Destination Point Code for sending of BLF messages	YY = 08 (1) 0 ~ 7: CCH Number (2) 00001 ~ 16367: Destination Point Code None: < default
CM 50	Assignment for Access Code and Office Code in Open Numbering Plan	YY = 07 (1) 0 (2) x ~ xxxx: Access Code + its own Office Code (x=0~9, A, B; 1~4 digits) None:< Not add the Acc Code + Office Code
CM 08	Assignment of BLF indication when Sub Line or Trunk Line is used in Multiline	(1) 269 (2) 0: BLF indication is provided for My line 1: BLF indication is effective for seized line (default)
END		

Data assignment for office receiving BLF messages

START	DESCRIPTION	DATA
CM A7	Assignment for sending BLF messages over CCIS <div style="border: 1px solid black; border-radius: 15px; padding: 5px; width: fit-content; margin: 10px auto;">DTI INITIAL</div>	YY = 30 (1) 0 ~ 7: CCH Number (2) 0: Send BLF messages over CCIS
CM 11	Assignment for Station Numbers in other offices	(1) 000 ~ 255: Virtual LEN number (2) x ~ xxxxxxx: Closed Numbering Plan > Station No. in the other office : Open Numbering Plan > Access Code + Office Code + Station Number in other office
CM 13	Assignment for Station Numbers in its own or other office	YY = 40 (1) x ~ xxxxxxx: Station Number/ Access code+Office code+station number of other office (2) 0: Station in other office 1: Station Number in own office (default)
CM 97	Assignment for Station Numbers in other office with DSS / BLF Console unit	(1) xx,yy: xx = DSS/BLF console Number yy = Button Number (2) x~xxxxxxxx: Closed No. Plan > Station No. in other office :Open No. Plan > Access Code + Office Code + Station No for other office
CM 74	Assignment for Station Numbers in other office with DSS Button on Multiline Terminal	Y = 0 (1) xyz: x = 1000-slot memory block number yy = 10-slot memory block No. z = Memory parcel No (0~9) (2) x~xxxxxxxx: Closed No. Plan > Station No. in other office :Open No. Plan > Access Code + Office Code + Station No for other office
CM 08	Assignment for Lockout status indication on DSS/BLF console	(1) 274 (2) 0: Indicate status 1: No indication (default)
END		

Voice Mail Private Password – CCIS

General Description

This feature enables the password to be masked with ‘*’ on the Dterm LCD instead of showing the actual password when the Voicemail is connected to another system via CCIS.

Programming

For system with Voicemail installed.

START	DESCRIPTION	DATA
<div style="border: 1px solid black; width: 60px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> CM 12 </div>	Service Restriction Class of Voicemail (PBX with VMS)	YY = 02 (1) x ~ xxxxxxxx: Station Number of Voicemail (2) xxyy: xx = Service Rest Class A (00 ~ 15) yy = Service Rest Class B (00 ~ 15)
<div style="border: 1px solid black; width: 60px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> CM 15 </div>	Service Restriction Class of Voicemail stations (Calling Office) Note: This System data is available to Service Restriction Class sent via CCIS and not available in its own system (should be unique SFC)	YY = 147 (1) 00 ~ 15: Service Rest Class A (2) 0: Voicemail Station
<div style="border: 1px solid black; width: 60px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> CM 65 </div>	Voicemail Password Privacy (Calling Office)	YY = 30 (1) 00 ~ 63: Tennant of Station calling Voicemail (2) 0: Allowed
<div style="border: 1px solid black; width: 40px; height: 20px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> END </div>		

CID Call Routing

General Description

This feature allows the terminating party to be designated by Incoming Caller ID received from the network

Service Conditions

Trunk type requirements

This feature is available for trunks receiving a calling party number from the network.

- **ISDN Note 1**

Note 1 This feature does not support incoming calls using Sub Address feature

Note 2 Equivalent feature is also available by Called ID Class itself.

Service conditions on Call Terminating system

This feature can designate the following type of call termination.

- Terminating to station
- Trunk – Direct Appearance
- Trunk – Direct Appearance and Trunk Answer any Station (TAS)
- Direct – in Termination
- Automated Attendant
- Attendant Console and TAS
- Attendant Console and Trunk – Direct Appearance
- Attendant Console and Trunk – Direct Appearance + TAS
- Attendant Console
- Direct Inward System Access (DISA)

Day/Night mode can be specified (Day Mode/Night Mode/Mode A/Mode B) and the mode to be applied depends on the following conditions:

1. In case of calls by DID
 - Priority – 1: Tenant number by calling party number (CM76 YY=09)
 - Priority – 2: Trunk Tenant number (CM30 YY=00)
 - Priority – 3: Tenant Number by DID number (CM30 YY=01)
2. In case of calls other than DID
 - Priority – 1: Tenant number by calling party number (CM76 YY=09)
 - Priority – 2: Trunk Tenant number (CM30 YY=01)

Service conditions on Calling Party Number

- To determine the call terminating system from the calling party number, the received calling party number is developed by the calling party development table. The calling party number is analysed by the leading few digits and if the number matches the specified by the system data, the call will be terminated by the system data assignment (not necessary to match all the digits of the number). If the number does not match, the call will be terminated based on the trunk number or received DID number as usual. For example: “0417” is assigned by the system data, the received calling party number “0417222222” is considered to be a match, while “0418222222” is not considered a match.
- When the calling party number is not received, the call will be terminated based on the trunk number or received DID number as usual.
- The development table for calling party number consists of 3072 blocks, as follows:
 - Basic memory – 256 blocks. Optional Expansion memory – 2816 blocks
 - As one digit of development requires one block, the maximum number of developed numbers depends on the number of digits to be developed.

For example: When four-digit number is assigned;

Basic memory : max 64 patterns can be assigned
Basic + Expansion memory : max 768 patterns can be assigned

When ten-digit number assigned;

Basic memory : max 25 patterns can be assigned
Basic + Expanded memory : max 300 patterns can be assigned

- Up to three development tables for calling party number can be used per system

Service conditions on calls via CCIS network

- This feature is not effective for incoming trunk calls via CCIS.

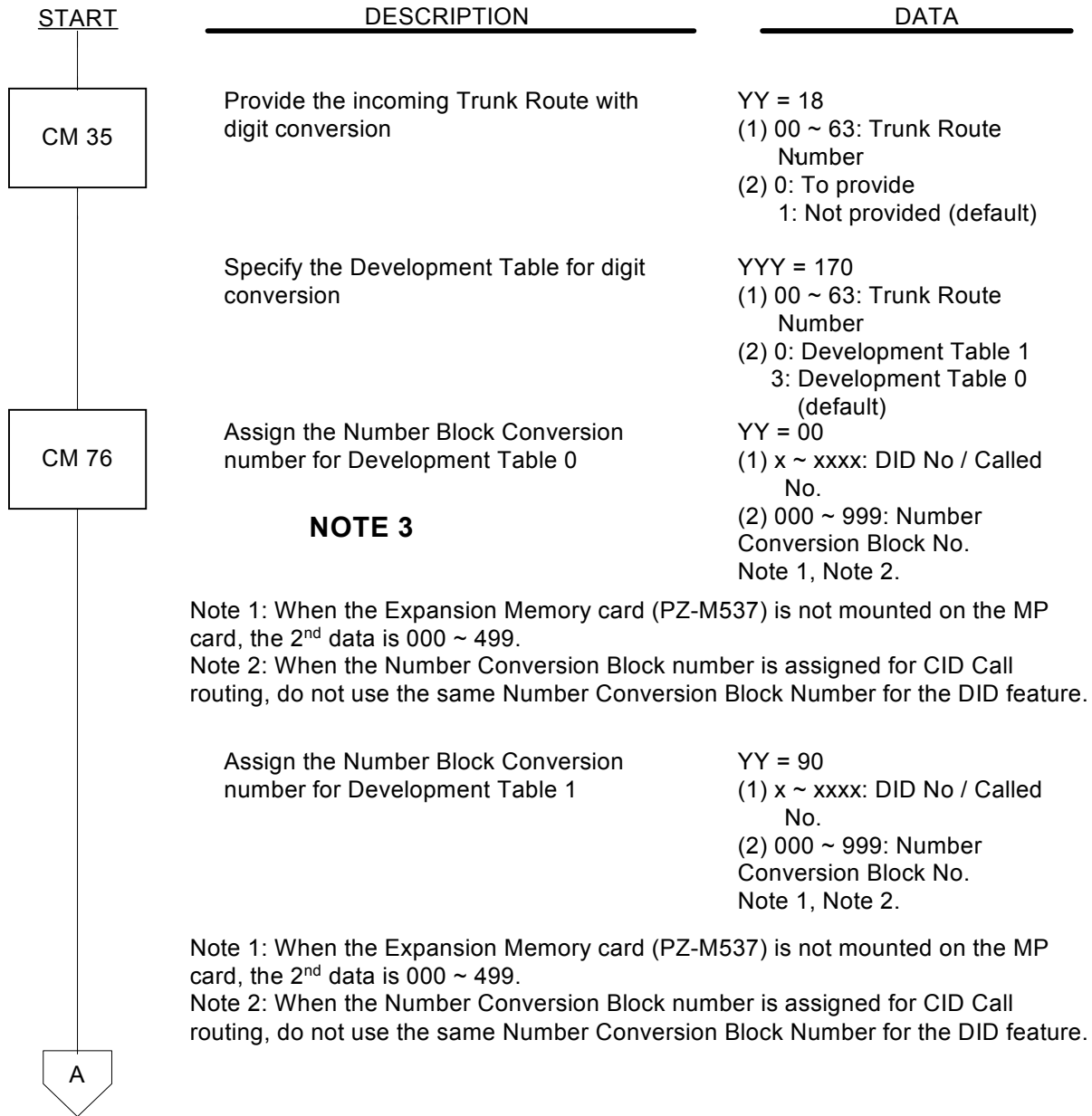
Service conditions on Multiline Terminal's display

- When an incoming call is terminated to the Multiline Terminal with LCD display after changing the call terminating system based on the calling party number, the upper line of the Multiline Terminal will display as follows:
 - In case of DID calls: Trunk type + Trunk Number or
Trunk type + DID number
 - In case of calls other than DID Trunk type + Trunk number

Interaction with other features

- Direct Inward Dialling
 - Current DID feature and this feature shares the same Number Conversion Block memory area (CM76), so be sure to avoid double assignment of the system data.
 - This feature is effective only when Digit Conversion on DID calls is effective (CM35 YY=18, 2nd data=0). If not effective, the DID call will terminate to the station.

Programming



A	DESCRIPTION	DATA
CM 76	<p>Provide the Calling Number Development Pattern and specify its Development Pattern for each Number Conversion Block number assigned by CM 76 Y = 00 / 90</p> <p>Note: For non DID on ISDN, Caller ID calls, this data is not effective and the data of CM 35 Y = 174 is effective</p>	<p>YY = 26 (1) Number Conversion Block No. assigned by CM 76 Y=00/90 (2) 0: To provide (Using Development Pattern 0) 1: To provide (Using Development Pattern 1) 2: To provide (Using Development Pattern 2) 3: Not provided (default)</p>
CM 2A	<p>Assign the Development Block number for each calling party number</p>	<p>YY = 50 Development Pattern 0 assigned by CM 76 Y=26 YY = 51 Development Pattern 1 assigned by CM 76 Y=26 YY = 52 Development Pattern 2 assigned by CM 76 Y=26 (1) x ~ xxxx: Calling Party No (Max 16 digits) x: 0 ~ 9 (2) 000 ~ 999: Development Block No. Note: Set the different number from the Number Conversion Block number assigned by CM 76 Y = 00/90</p>
CM 65	<p>Select the two kinds of mode change or the four kinds of mode change per tennant</p>	<p>Y = 29 (1) 00 ~ 63: Tennant No. (2) 0: Two kinds of mode (Day mode, Night mode) 1: Four kinds of Mode (Day mode, Night mode, Mode A, Mode B)</p>
CM 76	<p>Assign the station tennant for each calling party number</p>	<p>Y = 09 (1) 000 ~ 999: Development Block No. assigned by CM 2A Y = 50/51/51 (2) 00 ~ 63: Station Tennant No.</p>
	<p>Assign the data for interpreting the digits received</p> <p>Note: Day/Night mode, Mode A/B can be specified according to following conditions 1st Priority: Specified by Tennant No. for each calling party number (CM 76 Y=09) 2nd Priority: Specified by Trunk Tennant No. (CM 30 Y=01) 3rd Priority: Specified by tennant No for each DID (CM 76 Y=09)</p>	<p>Y = 01 Day mode Y = 02 Night mode Y = 03 Mode A Y = 04 Mode B (1) 000 ~ 999: Development Blk assigned by CM 2A Y=50/51/52 (2) x ~ xxxxxxxx: Station Number to be terminated Dxx: Change Term sys to: xx = 02: Trunk Line appearance 03: Trunk Line app + TAS 04: Direct-in Termination 09: Automated Attendant 10: Attcon + TAS 11: Attcon + Trunk line app 12: Att + Trunk line app+TAS 13: TAS 14: Attendant Console 16: Remote Access to Sys</p>
B		

B	DESCRIPTION	DATA
CM 76	<p>When CM 76 Y = 01/02/03/04 is set to D13 (TAS), assign the terminating tennant for each Day/Night Mode, Mode A/B per each calling party number.</p> <p>Note: When you set the other CM 76 (Y = 10, 11, 13~16, 18~25) for the Development Block number assigned by CM 2A Y = 50/51/52, these settings are also effective for each calling party number</p>	<p>Y = 05 Day Mode Y = 06 Night Mode Y = 07 Mode A Y = 08 Mode B (1) 000 ~ 999: Development Block No. assigned by CM 2A Y = 50/51/52 (2) 00 ~ 63: Trunk Tennant No.</p>
END		

NOTE: Due to the fact that some Australian phone carriers send the CLI without the Toll Code (leading '0'), CM2A tables will need to be set up to accommodate this. In these tables, the leading '0' should NOT be added to the number when entering in this command. I.e. When re-routing 0417222222 the "0" should not be entered in the table. CM 2A50>417222222 > 000 Note the deletion of the leading "0".

Programming Example.

DID calls terminating to TAS when the called number is xxxx1025 and the calling party number (CLI) 417 (0417 mobiles) is received.

CM 35 YY=18 (digit conversion on DID calls)

1st data = 00~63 (Trunk Route number)

2nd data = 0 (Digit conversion provided)

CM 76 YY=00 (Number conversion block number for DID calls)

1st data = 1025 (called party number)

2nd data = 000 (Number conversion block number)

CM 76 YY=26 (Number development pattern number for DID calls)

1st data = 000 (Block number assigned by CM7600)

2nd data = 0 (Development pattern number)

CM 2A YY=50 (Call terminating system pattern number assigned in CM76 YY=26)

1st data = 417 (Calling party number (CLI))

2nd data = 010 (Block number)

CM 76 YY=01~04 (Call terminating system by calling party number)

1st data = 010 (Block number assigned by CM 2A YY=50)

2nd data = D01 (TAS)

CM76 YY=05 (Tennant number by calling party)

1st data = 010 (Block number assigned by CM 2A YY=50)

2nd data = 01 (Tennant number)

CM 76 YY=05~08 (Tennant number for TAS)

1st data = 010 (Block number assigned by CM 2A YY=50)

2nd data = D01 (TAS)

Group Call by Pilot Number Dialling

General Description

This feature allows a station user (Dterm / Single Line Telephone / PS) or a trunk party to page a group of stations simultaneously by dialling a pilot number. After one of the paged stations answers, the paging becomes a 2-way call between the calling party and the first answered station and automatically stops the other stations ringing.

Station Application

All stations.

Operating Procedure

To page a group of stations:

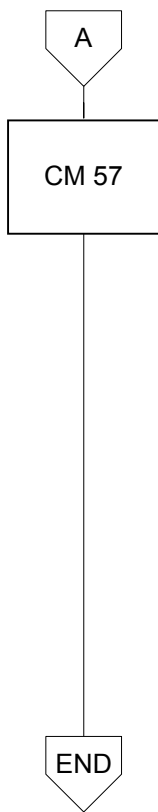
- From PS / Dterm / Single Line Telephone
 1. Press the L1 or L2 key, go off-hook, or press Speaker key and receive dial tone
 2. Dial the pilot number for a desired paging group and receive ring back tone.

OR

- From PS
 1. Dial the pilot number for a desired paging group
 2. Press L1 or L2 key and receive ring back tone
 3. After one of the paged parties answers, the calling party can converse with the answered station (2-way call). The paging to other stations will stop.

To answer the paging

1. When the paging call terminates, the called stations receive ringing signal.
2. Answer the ringing of paging from the calling party.
3. Paging stops after one of the paged stations answers.



DESCRIPTION	DATA
Assign the station numbers which are to be included in the Group Call group and their serial numbers in the group	Y = 10 ~ 29 Group Call No. 00 ~ 19 Note 3 (1) 00 ~ 31: Serial No. within the group (2) x ~ xxxxxxxx: Station No./ Virtual Station No. assigned in CM 10/11
Note 1: The maximum number of Group Call stations per group is as follows: Single line station/Dterm (My Line/Virtual Line): 32 stations PS: 8 stations (except the PS in roaming state)	
Note 2: The maximum number of simultaneous calling for single line stations/PS's is 12 per FP. When the number of single line stations/PS's exceeds 12, allocate the rest of stations to another FP. For a Dterm (My Line/Virtual Line), there is no limit as the above.	
Note 3: Y = 10 ~ 29 (Group Call No. 00 ~ 19) are available with the Expansion Memory card (PZ-M537) on the MP card. Y = 10 ~ 19 (Group Call No. 00 ~ 09) are available without the Expansion Memory card (PZ-M537) on the MP card.	

CID Call Back

General Description

When an incoming call is terminated to a station from a trunk with incoming caller ID (CLI), and called station does not answer, the calling number is registered to the system memory and MW lamp is lit. After the calling number is registered, confirmation / delete / call back is available from the station.

When the called station answers, the calling number is also registered to the Last Number Redial memory. The station can search and call back to that number by operation of Last Number Redial / Stack Dial feature.

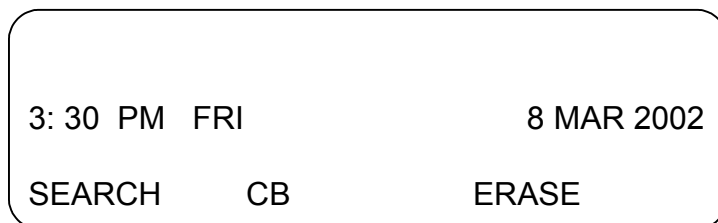
Station Application

All Dterms with LCD display.

Operating Procedure

To search, call back or erase the calling party number on unanswered calls from Dterms with Softkeys:

1. Lift the handset or press Speaker key.
2. Dial Access Code of Message Wait Search or pressing Message Waiting Search key.
3. Following Softkey messages will be displayed.



4. Press 'SEARCH' Softkey to search the desired number.

5. Press 'CB' Softkey to call back the desired number.
6. Press 'ERASE' to erase the desired number.

From Dterms without Softkeys:

1. Lift the handset or press the Speaker key.
2. Dial Access Code for Message Wait Search, or press Message Wait Search key.
3. Dial 1 to search the desired number.
4. Dial 2 to call back the desired number.
5. Dial 3 to erase the desired number.

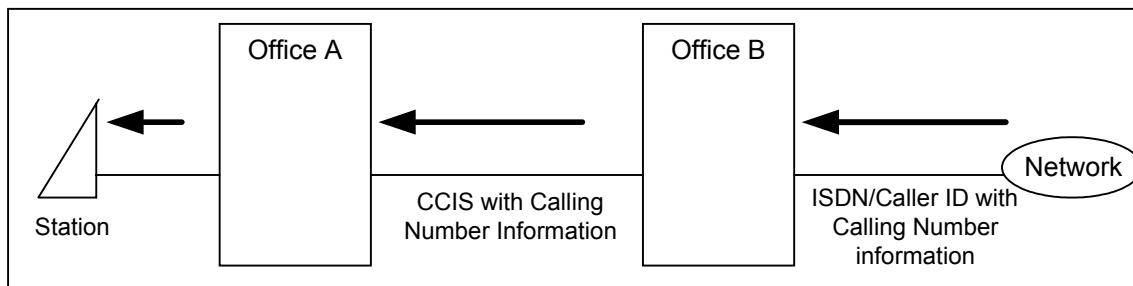
To search or call back the calling number on unanswered calls, refer to Last Number Redial or Stack Dial feature.

Service Conditions

Registration of calling numbers on unanswered calls

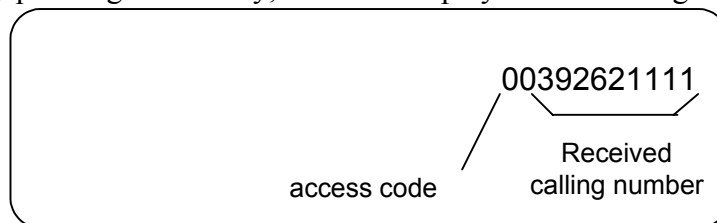
1. This feature is provided according to Class of Service.
2. For the calling number registration of the trunk calls, valid/invalid is selected on a trunk route basis.
3. For the calling number registration of station calls, valid/invalid is selected on a system basis.
4. This service is effective for the following incoming calls:
 - From station (except for station through CCIS)
 - From trunk through ISDN, CCIS, T1/E1, COT with calling number information.
5. When the incoming call is terminated to the station, which has set Call Forwarding – All Calls/Busy/Don't Answer, the calling number is not registered to that station. When the call is forwarded to the target station and not answered, the calling number is registered to the target station.
6. When the incoming call is picked up by another station with Call Pick up, the calling number is not registered.
7. A maximum number of registrations are up to 24 registrations per station (the number can be programmed on a 8, 16 or 24 station basis). A maximum number of registrations per system is as follows:
 - MP without Expansion Memory card: Max 512
 - MP with Expansion Memory card: Max 1024
8. When exceeding the maximum capacity (station: 24, system: without optional memory 512, with optional memory 1024), the calling number of next incoming call cannot be registered.
9. When the calling number is registered, the display shows the number and the MW lamp is lit.
10. When the station activates call back, the number is cleared automatically.
11. When the station activates call back to the trunk, the access code is added to the registered to the calling number. The access code is set by system programming with CM 35 YY=44. If the station is restricted from making outgoing call with that access code, the call back is not effective.
12. For the incoming call through CCIS, the calling number is registered in the following case:
 - The incoming call with calling number information is terminated to office B from network.
 - The call is transferred to office A through CCIS with calling number information. If station does not answer, the calling number is registered.

See diagram on following page:



Registration of calling numbers on unanswered calls

1. This feature is available for incoming calls only.
2. Type of trunks supported by this feature is as follows:
 - ISDN (CO Line, (Q.931) / Q931-a)
 - MFC / Caller ID
3. This feature is allowed or denied on a trunk route basis by system programming.
4. Calling numbers are registered when the called station answers the following type of call cases:
 - A trunk call to My Line
 - A trunk call to Sub Line (registered toward My Line)
 - A trunk call to Trunk Line (registered by Access Code + Calling Party Number)
 - A trunk call to Answer key (registered by Access Code + Calling Party Number)
 - A trunk call answered by Call Pickup using My Line
 - A trunk call answered by Call Pickup using Sub Line (registered toward My Line)
5. When registering in Last Number Redial memory, the Trunk Access Code should be assigned in CM 35 YY=44. When the trunk access code is not set, the calling number is not registered in Last Number Redial memory.
6. For outgoing trunk calls, this function is not available.
7. After registering in Last Number Redial memory, when confirming the number by pressing Redial key, the LCD displays the following:



8. The calling number is not registered when the same number is already registered in Last Number Redial memory by an outgoing call.
9. The dialled number is not registered by Last Number Redial feature when the same number is already registered in Last Number Redial memory by an incoming answered call.
10. When an incoming trunk call is terminated to Trunk Key or Line Key, Trunk Access code and received calling number are registered.

NOTE: Due to the fact that some Australian phone carriers send the CLI without the Toll Code (leading '0'), the LCR tables will need to be set up with a different access code for use by CID Call Back. In these tables, a '0' will need to be added to the outgoing number to complete the dialling. I.e. CM 8A5000>100>9000. CM 8A9000>0>0 The outside access code is determined in CM3544.

Programming

START	DESCRIPTION	DATA
CM 08	Specify Message Waiting Lamp indication on the Dterm to which Message Waiting/ Message Reminder is set.	(1) 294 (2) 0: Flashing 60 IPM 1:< Steady Lamp
	Specify the time display for Message Waiting/Message Reminder on Dterm with LCD.	(1) 280 (2) 0: 24-hour 1:< 12-hour
	Provide the system with CID Call Back	(1) 493 (2) 0: To provide
CM 13	Provide each Dterm with Message Waiting	Y = 03 (1) x ~ xxxxxxxx: Station Number (2) 0: To provide
CM 12	Assign the Service Restriction Class A for CID Call Back to the required stations	Y = 02 (1) x ~ xxxxxxxx: Station Number (2) xx: 00 ~ 15:< Service Restriction Class A
	Registration of Memory Area	Y = 38 (1) x ~ xxxxxxxx: Station Number (2) xxxxyy: xxxx=Top block Number 0000~1016 yy=No. of blocks 01~03 1: 8 blocks 2: 16 blocks 3: 24 blocks
CM 15	Allow CID Call Back in the Service Restriction Class A assigned by CM 12 Y=02	Y = 126 (1) 00 ~ 15: Service Restriction Class A (2) 0: Allow
CM 35	Provide the trunk route with CID Call Back	Y = 150 (1) 00 ~ 63: Trunk Route (2) 0: To provide
	Registration of Trunk Access code NOTE: This access code will need to differ to the one used for normal outside access	Y = 44 (1) 00 ~ 63: Trunk Route (2) x~xxx: Outside access code
CM 13	Provide the function to register the calling number into the Redial key on the Dterm when the call is answered, for the required station.	Y = 41 (1) X~XXXXXXXX (Station number) (2) 0: To Provide
CM 90	Registration of Message Waiting Search key	Y = 00 (1) X~XXXXXXXX,yy (Station number, key no.) (2) F0A46: Message Waiting Search
END		

ENHANCED FEATURES

Message Centre Interface (VM Integration Enhancement)

General Description

This feature is an enhancement to the existing feature to allow the type of signalling to a Voicemail system to be chosen on a station basis. Currently the setting is a system wide setting (CM 08 > 443)

Service Conditions

None.

Programming

START	DESCRIPTION	DATA
START ↓ [CM 08]	Type of Voicemail system.	(1) 443 (2) 0: According to CM12YY=25 1:< DTMF signaling
↓ [CM 12]	Type of Voicemail system.	YY = 25 (1) X~XXXXXXXXXX (Station number) (2) 0: DTMF signaling 1: (Not used) 2: (Not used) 3: < MCI
↓ [END]	Note: This system data only available when CM08 >443 :0	

Delay Announcement – UCD / Automatic Change of Night Service

General Description

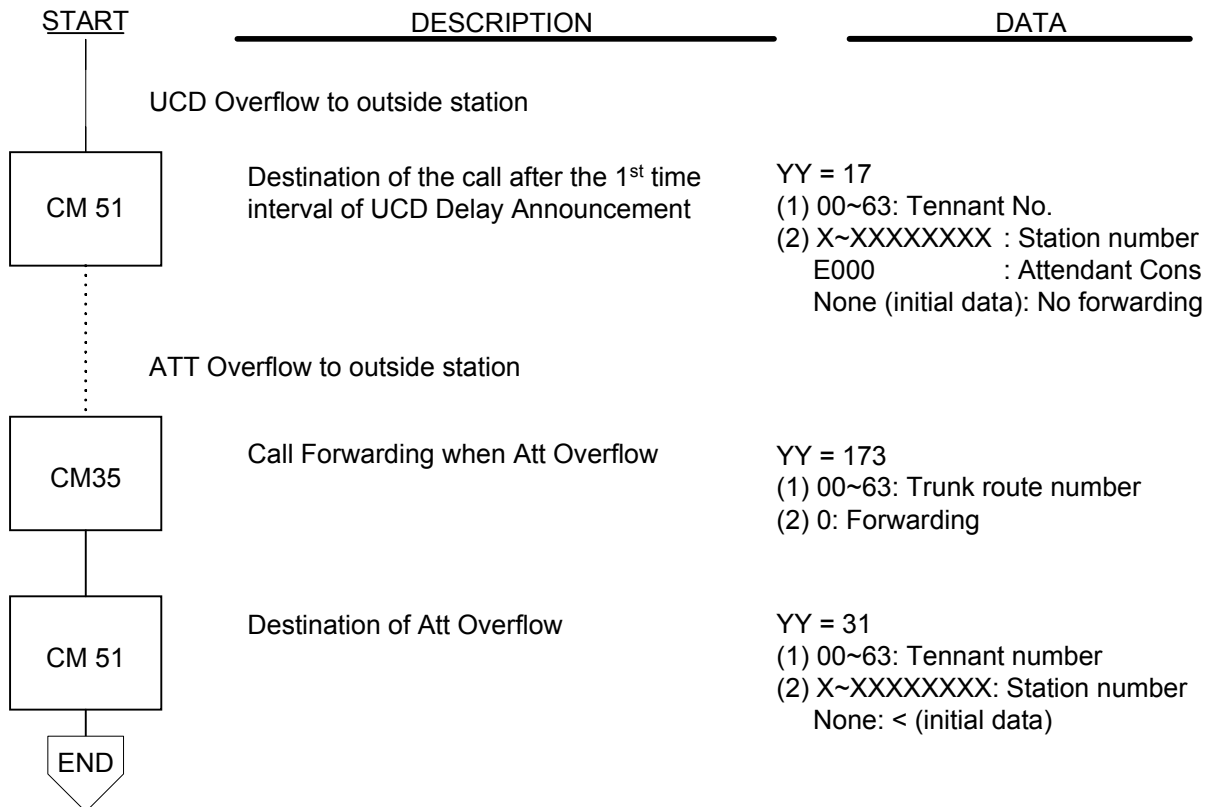
This feature allows for an outside number to be programmed as the destination for Delay Announcement – UCD / Automatic Change of Night Service.

Service Conditions

- UCD Delay Announcement to Outside number
 1. Overflow to outside station is realised by assigning a Virtual station number in CM51 YY=17 (current) and setting Call Forwarding – Outside for that Virtual station.
 2. After UCD Overflow has occurred, the incoming caller receives UCD Delay Announcement once and then is forwarded to outside station by Call Forwarding – Outside.
 3. If UCD Delay Announcement is not assigned, CF – Outside is not completed. (same as CF to internal station) (Keep the call ringing until UCD station becomes avail)
 4. When Call Forwarding – Outside, check whether trunks are idle or not. If trunks are all busy, the incoming caller is not forwarded and receives UCD Delay Announcement.
- Attendant Overflow to Outside station
 1. Set CM35 YYY=173 to decide if this function is available or not.
 2. This feature is available for incoming trunk calls only.

3. Forwarded destination is designated by system data CM51 YY=31 (new). Destinations will be stations only and call forwarding – outside is available by setting Virtual station number in CM51 YY=31 and set Call Forwarding – Outside for the Virtual station. (this can be done from Attendant console or Dterm Multiline station line key).
4. If CM51 YY=31 is not set, the Attendant Console will be called continuously.
5. Unanswered timer uses an existing timer, which is the same timer as Attendant Delay Announcement / Change of Night Service. Timer data is set in CM41 Y=0>01.
6. When Call Forwarding – Outside, check trunks idle status and if all trunks are busy, Attendant Console will be called continuously.

Programming



Automatic Wake-Up / Timed Reminder

General Description

This feature allows the user to hear an announcement when Automatic Wake-Up can not be set for either the desired time or the maximum number of stations for same wake up time has been reached.

Operating Procedure

The operating procedure is the same for that of normal Automatic Wake-Up / Timed Reminder operations.

Service Conditions

- Wake up call restriction announcement is repeated for 1 minute.
- If DAT is not assigned or system data of the restriction announcement not assigned, Reorder Tone will be heard.

- The announcement is multi-connection and up to 8 users can hear announcement at the same time per DAT.
- If all DAT busy, Reorder Tone will be heard.
- DAT built-in MP, PN-4DATC or PN-2DATA can be used.

Programming

START	DESCRIPTION	DATA
CM 20	Wake-Up / Timed Reminder access code	Y = 0~3 (Tennant Group No.) (1) 0~#: Access Code (2) A024: Wake-Up Call Set / Timed Reminder
CM 42	Maximum number of stations able to set Wake-Up call at the same time.	(1) 04: Number of stns set wake up call at the same time (2) 01~32: Maximum number of stns < : 10 (default)
CM 08	The operation when the number of wake-up calls set for the same time has been reached	(1) 806: The operation when the number of wake-up calls for the same time has been reached (2) 1: (default) Set the time 5 to 10 minutes before 0: Not set
CM 49	Digital Announcement trunk set	YY=00 (1) DAT card number (000~127) (2) 1900: Wake-up call restriction announcement
END		

Direct Inward Dialling

General Description

This feature accommodates for DID lines (Analog Indial) from plural carriers where the indial prefixes may be different and require conversion of more than 4 digits.

Service Conditions

- This feature requires an optional expansion memory card for MP.
- New digit conversion table (CM76 YY=90) resides in the expansion memory card. The digit conversion table is defined as follows:
 CM76 YY=00 :Table 0 (resides in the basic memory of MP)
 CM76 YY=90 :Table 1 (resides in the expansion memory card for the MP)
- Table 1 can be used for the following incoming trunk calls:
 - DID
 - ISDN
 - MFC
 - Analog Caller ID
- Table 1 cannot be used for CCIS calls (only Table 0 can be used)

- Table 1 provides up to 1000 number conversion blocks.
- In Table 1, specify the number conversion block by CM 76 YY=90, then assign individual parameters by CM76 YY=01 to 25.

Note: By using Table 0 and Table 1, the max. number of received DID numbers is 2000. (1000 for Table 0 and another 1000 for Table 1) However, because the system provides up to 500 number conversion blocks, the received DID numbers can be converted to a maximum of 500 stn numbers. Up to 1000 stn numbers if the expansion memory card is equipped on the MP.

- Using Table 0 or Table 1 can be specified on a trunk route basis by CM35 YY=170 (new). This command assignment is effective when CM35 YY18=0. (default data is set to 1, and use Table 0)

Data assignment and conditions on Table 0 is the same as existing conditions.

- For Table 1, the number of digits for digit conversion and that of received DID numbers are assigned by the separate command.

- The number of digits for digit conversion in Table 1 can be 1 to 8 digits, assigned by CM35 YY=171 (default data is 4 digits).

The digit conversion is based on the lower 1 to 8 digits of the received DID number.

- The number of digits for received DID numbers in Table 1 can be 1 to 14 digits, assigned by CM35 YY=172 (default data is 4 digits). This data assignment is effective for DID calls only (not effective for MFC and Analog Caller ID calls). The data assignment for Table 0 is provided by CM35 YY=12 the same as existing assignment.

- The following is an example of the number of digits for received DID number is 10 and the number of digits to be converted is 5.

Received number: 0392643111 :Digit conversion is applied to 43111

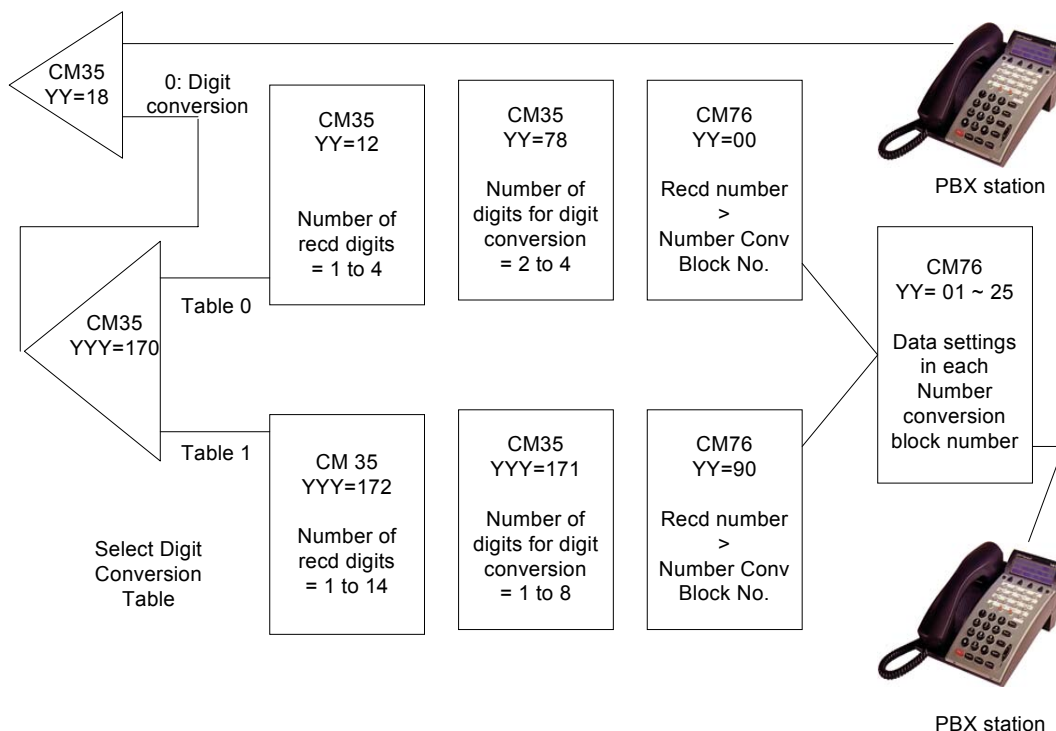
Received number: 0392623111 :Digit conversion is applied to 23111

- When a DID call is terminated to an attendant console, or Multiline Terminal by data assignment of CM35 YY=75 and CM35 YY=146, the LCD shows last 4 digits.

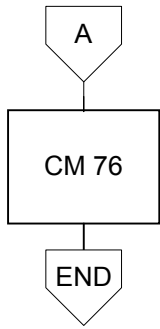
Eg. 3111

Programming

The following figure shows the relation of the data assignment.



START	DESCRIPTION	DATA
<div style="border: 1px solid black; width: 60px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> CM 35 </div>	Digit Conversion on DID calls	YY=18 (1) 00 ~ 63 :Trunk route No. (2) 0 :Digit Conversion is provided
	DID Conversion Table Number	YYY=170 (1) 00 ~ 63 :Trunk route No. (2) 0 :Digit Conv Table 1 1 :Not used 2 :Not used 3 :< Digit Conv Table 0
	Number of Digits for received DID numbers (Table 0)	YY=12 (1) 00 ~ 63 :Trunk route No. (2) 0 :1 Digit 1 : 2 Digits 2 : 3 Digits 3 :< 4 Digits
	Number of Digits for received DID numbers (Table 1)	YYY=172 (1) 00 ~ 63 :Trunk route No. (2) 00 :Not used 01 :1 to 14 digits 15 : 4 digits (default)
	Number of Digits for Digit Conversion of received DID number (for Table 0)	YY=78 (1) 00 ~ 63 :Trunk route No. (2) 00 :Not used 0 :Leading 2 to 4 digits 1 : Number of digits to be recd (default)
	Number of Digits for Digit Conversion of received DID number (for Table 1)	YYY=171 (1) 00 ~ 63 :Trunk route No. (2) 00 :Not used 01 to 08 :1 to 8 digits 09 to 14 :Not used 15 :4 digits
	<div style="border: 1px solid black; width: 60px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> CM 76 </div>	Number Conversion Block number (for Table 0)
Number Conversion Block number (for Table 1)		YY=90 (1) xx..x :Recd DID No. (1~8 digits x=0~9, *, #) (2) 000~999 :Number Conv Block No. :None (initial data)
Note: This data assignment is effective when an optional expansion memory card is equipped on the MP.		
<div style="border: 1px solid black; width: 40px; height: 40px; margin: 0 auto; display: flex; align-items: center; justify-content: center;"> A </div>		



DESCRIPTION	DATA
Parameter settings in each Number Conversion Block number Note: 1 st data = 500~999 can be assigned when an optional expansion memory card is equipped on the MP	YY=01~25 (1) 000~999 :Number Conv Block No. (2) As described in Command Manual

Conference (3 / 4 Party) – Radio 3AW Enhancement request

General Description

Currently, there are 2 ways to establish a 3-way conference call.

- From the 2 party connection, the conference leader calls the 3rd party and establishes 3-way conference.
- Whilst a 2 party conversation is in progress, the 3rd party (using Privacy Release), presses the Line/Trunk key that is in conversation.

This enhancement allows an additional method to make a 3-way conference, which is where the Multiline on hold can now participate in 3-way conference call.

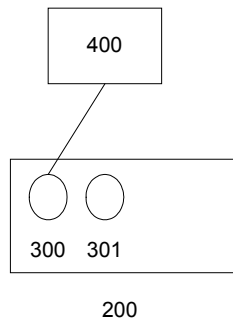
Operating Procedure

To make a call on hold participate in conference

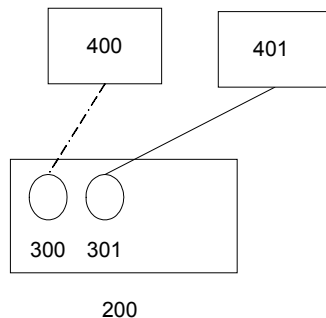
When there is a 2 party connection and a call on hold on another line, 3-way conference can be established by pressing CNF key and Line/Trunk key that is on hold.

Example 1. To make a call that has been held by a Dterm user participate in a 3-way conference. The virtual lines 300 and 301 are assigned on Dterm 200.

1. Dterm 400 dials 300 and the call is answered by 200

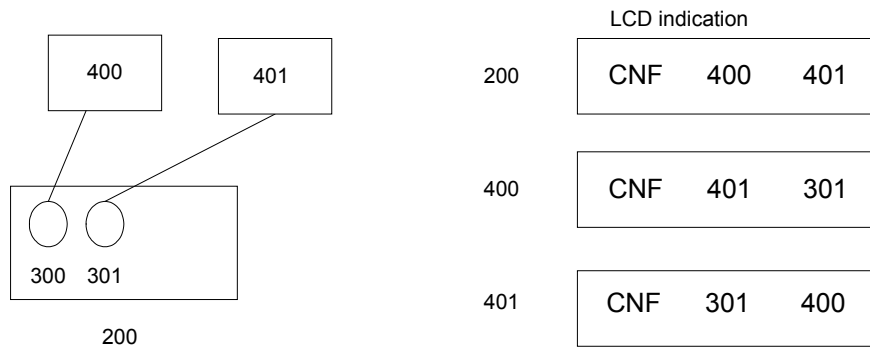


2. Dterm 401 dials 301. Dterm 200 holds 300 and answers the new call from 401



3. Dterm 200 presses conference key and goes to Privacy Release status.

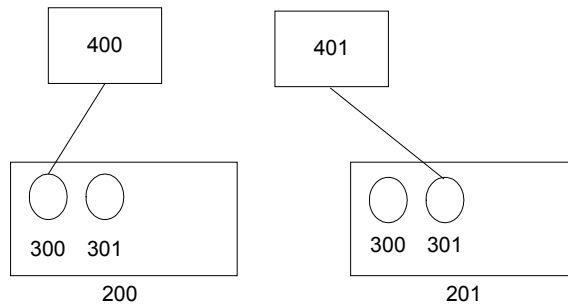
- Dterm 200 presses line key of 300 and 3-way conf is established between 200, 400 and 401.



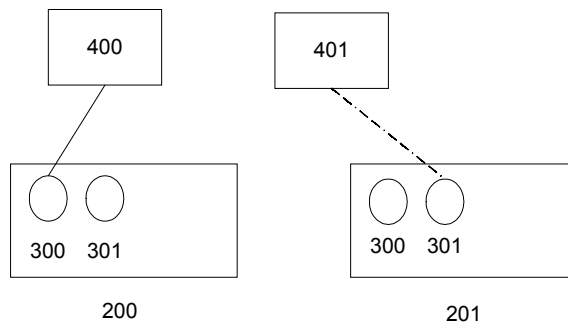
*Initially, the call from Dterm 400 is answered by 300, but LCD indicates 301 since Dterm 200 established conference call when it is connected to 301 Line key

Example 2. To make a call held by another Dterm user participate in conference. The virtual lines 300 and 301 are assigned to Dterm 200

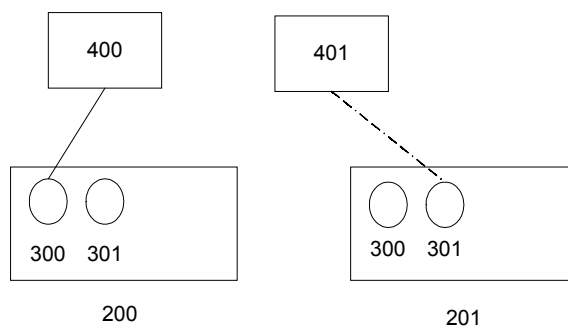
- Dterm 400 is connected with 300 (200) and Dterm 401 is connected with 301 (201).



- Dterm 201 holds 301.

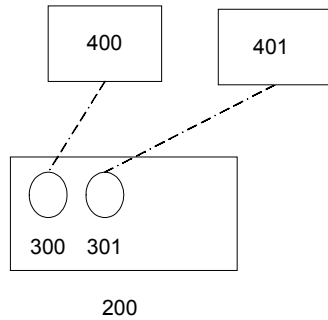


- Dterm 200 presses CNF key and then press Line key 301. Now, Dterm 200 is in 3-way conference with 400 and 401



To hold 2 parties at the same time in 3-way conference.

During the conference call that is established by the previous operating procedure, the conference leader presses the HOLD key to hold the other 2 parties at the same time.



From the above status, the conference can make 2 party connection by pressing the Line/Trunk key, which is on hold. In addition, press CNF and press Line/Trunk key which is on hold and the 3-way conference is re-established.

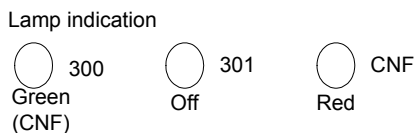
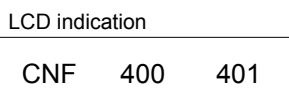
Service Conditions

- The conference leader must be a Dterm.
- Other participants can be: Dterm, Analog station, PS or trunk. These participants must be assigned to Dterm Multiline. The call held by Call Park cannot participate in 3-way conference.
- This feature is effected by CM65 YY=41 > 2nd data=0. If 2nd data=1, and conference leader presses Line/Trunk key, the associated line is disconnected and conference leader is connected with held call.
- This feature is available when Privacy Release is effective. (CM15 YY=63).
- This feature is available from 2 to 3-way conference connection, but is not available from 3 to 4-way conference connection. During 3-way conference, when CNF key is pressed, the 3-way conference status is continued.
- This service is not available for Attendant Console and Dterm connected with Att Con.

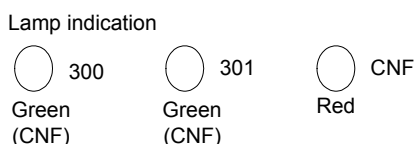
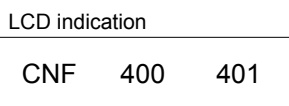
Service conditions during 3-way conference

- 3-way conference established by this method is different from existing 3-way conference since the conference leader held 2 lines at the same time. Thus, 2 lamps light green.

Existing 3-way CNF: When 200 (300) and 400 is in conversation, conference leader establishes 3-way conference by adding 301 (401) which is on hold.

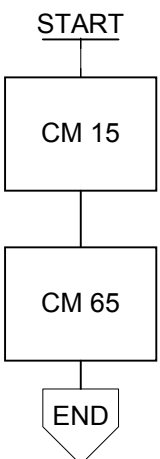



This 3-way CNF: When 200 (300) and 400 is in conversation, the conference leader presses the TRF key and dials 401 which is on hold.



- When conference leader presses HOLD key, the other party is placed into Exclusive Hold. (Associated Line/Trunk keys flash Green). When the participants other than conference leader press HOLD key, the 3-way connection is continued. Also, when the leader presses the HOLD key again whilst holding 2 parties, the leader cannot place himself on hold.
- During the 3-way conference, key operation other than HOLD key is not effective. Therefore, the following operations that are available in existing 3-way conference are not available:
 - Privacy Release by CNF key
 - 4 party conference or call using TRF key
 - To move 2 party connection by answer key (other party is placed on hold)
 Other than the conference leader, all key operation is not available.
- When any of the conference participants are disconnected, 2-way conference is established with the rest of the participants.

Programming

START	DESCRIPTION	DATA
 CM 15	Restriction of Privacy Release	YY=63 (1) XX :Service Rest Class B (2) 1 :Allowed
CM 65	Establish 3-way conference with held calls by CNF key and Line/Trunk key	YY=41 (1) 00~63 :Tennant Number (2) 0 :Effective
 END		

Malicious Call Trace

General Description

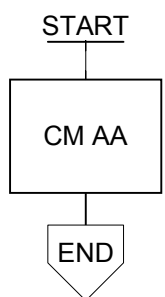
This feature enables the Carrier used for ETSI protocol ISDN and in particular enables ‘Optus’ to be specified as the carrier when using Malicious Call Trace.

Service Conditions

- The name of “Australian ETSI” (2nd data=22) of ISDN protocol type (CMAA YY=06) changes to “Australian ETSI (Telstra)”.
- The name of “ETSI” (2nd data=24) of ISDN protocol type changes to “ETSI standard”.
- Add “Australian ETSI (Optus)” (2nd data=29) to ISDN protocol type.
- The name of MCT coding “Australian ETSI” (bit2) of function bit changes to MCT protocol = “Australia ETSI (Telstra)”
- Add MCT protocol = “ETSI Standard” (bit32) to function bit. It is available when ISDN protocol type is ETSI Standard.
- Add MCT protocol = “Australian ETSI (Optus)” (bit33) to function bit. It is available when ISDN protocol type is Australian ETSI.
- Australia ETSI (Optus) function bit pattern to be added in ISDN protocol type is based on Australia ETSI (Telstra) function bit and make MCT protocol = Australia ETSI (Telstra) unavailable and MCT protocol = Australia ETSI (Optus) available.
- This feature is now available when function bit of ETSI Standard or Australia ETSI (Optus) is effective.
- When this feature is effective and CR Status is U10 (during conversation), the following command or message is sent or received in compliance with ETSI recommendations.

- MP Command – MCT request
- NW Message – Facility for MCT request
- When this feature is effective and CR Status is U12 (distant office released), the following command or message is sent or received in compliance with ETSI recommendations.
 - MP Command – MCT request
 - NW Message – Facility for MCT request
- When this feature is effective, the following command is ineffective except when CR Status is U10 or U12.
 - MP Command – MCT request
- When “Return result component type” is 0a2H at “Facility for MCT request” of NW Message, the system recognises that MCT request for NW is processed normally.

Programming

START	DESCRIPTION	DATA
	ISDN protocol type	YY=06 (1) XX :AP No. (04~15, 20~31) (2) 24 :ETSI Standard 29 :Australia ETSI(Optus)

PN-AP00B Default data setting

General Description

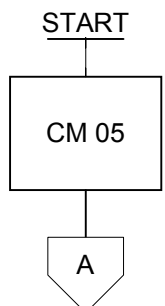
This feature enables quicker setup time of the PN-AP00B by providing ‘default data setting’. These settings are as follows:

- Language – English
- Monetary unit - \$(Dollar)
- Port 0 settings – 1200, Even Parity, SMDR0, IMS/IMX Message format, Free Wheel, SA=0, UA=!
- The remainder of the settings can be seen in the programming described later in this section.

Operating Procedure

The operating procedure is the programming procedure described in this section.

Programming

START	DESCRIPTION	DATA
	Registration of AP package <div style="border: 1px solid black; border-radius: 15px; padding: 5px; display: inline-block;">INITIAL</div>	Y=0 (1) XX :AP No. (04~15, 20~31) (2) 04 :AP00B

- Accommodate the PN-AP00B package into the PBX.
- Set the SW-1 switch as follows
 - 1: ON 2: OFF 3: OFF
- Enter the AP00B System data all clear command from the MAT.
 - CMD101 > 0000 > CCC
- Initialise the PN-AP00B billing memory

- CMD102 > 0000 > CCC
- Set SW-1 of PN-AP00B package as follows:
 - 1: ON 2: ON 3: ON
- Make busy and Make Idle the PN-AP00B using the toggle switch on the package
- The data has been set according to the following:

A	DESCRIPTION	DATA
CM D000	Language setting	(1) 2 :Language (2) 1 :English
	Monetary unit of the bill to be displayed	(1) 3 :Monetary unit (2) 1 :\$(Dollar)
	Designation of call charge	(1) 176 : (2) 0 :Charge by AP00 1 :AOC(Advice of Charge from ISDN network)
CM D001	Data speed for Port 0	(1) 20 : (2) 2 :1200 bps
	Parity for Port 0	(1) 22 : (2) 1 :Even Parity
	Function of Port 0	(1) 80 : (2) 4 :PMS/SMDR
	Message format of Port 0	(1) 82 : (2) 3 :IMS/IMX
	Protocol of Port 0	(1) 84 : (2) 1 :Free wheel
	Station Address (SA) of Port 0	(1) 85 : (2) 48 :0
	User Address (UA) of Port 0	(1) 86 : (2) 33 :!
CM D003	Maximum number of call records for CIS	(1) 28 : (2)100 :100 calls
	Maximum number of call records for SMDR 0	(1) 29 : (2)100 :100 calls
	Maximum number of call records for Printer 0	(1) 30 : (2)100 :100 calls
CM D016	Sending of detailed information of CO outgoing calls to the SMDR terminal set by 4 in CMD001 > 80/100/120/140	(1) 0016 : (2) 1 :To be sent
B		

	DESCRIPTION	DATA
B		
CM D027	Call charge development table	(1) 0000~0009, 000A~000B 1 st digit dialled (2) 9 :Send to SMDR terminal
CM D034	Designation of call charge	(1) 0000~0009, 000A~000B: 1 st digit dialled (2)11 :Local call
END		

Peg Count

General Description

This feature allows the following Peg Count and Traffic data for CS/ZT to be displayed on the MAT:

- Number of call origination
- Number of call termination
- Number of Location registration
- Number of Handover
- Traffic data
 - Percentage of B channel – all busy per hour in each CS/ZT
 - Traffic volume in each CS/ZT

Operating Procedure

The operation is discussed in the MATWorX help.

Service Conditions

Service Conditions on Peg Count

- The number of handover is counted as the data of CS/ZT, which initiates handover.
- Peg count data can be cleared in either initial operation or with CMB0 Y=4, 1st data=9999, 2nd data=CCC in each Peg count item. CMB0 Y=0, 1st data=999 cannot clear the Peg count data.
- Start time of the Peg count on a CS/ZT basis (CMB0 Y=4) cannot be assigned.
- Peg count for all CS/ZT is available without an optional expansion memory card for MP.

Service Conditions on Traffic measurement

- Traffic data (traffic volume and percentage of B channel – All Busy) for individual CS/ZT is checked in an 8 second cycle and is calculated in the system, so that there may be some slight errors from the actual status.
- Measured traffic is cleared when either a system initial is activated or measurement start time is assigned by CMB1 Y=8.
- CS/ZT traffic data (traffic volume and percentage of B channel – All Busy) can be measured for up to 32 CS/ZT's (CS00 ~ 31) without an optional expansion memory card on the MP. The traffic data for all 128 CS/ZT's can be measured with the expansion memory card on the MP.

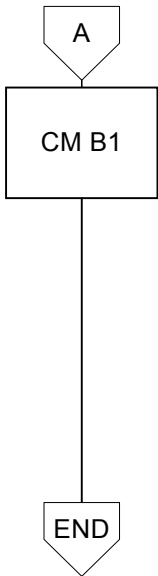
Programming

Data assignment for Peg Count

<u>START</u>	<u>DESCRIPTION</u>	<u>DATA</u>
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">CM B0</div>	<p>Clear all Peg count data (except for CS/ZT Peg count)</p> <p>Assignment of Measurement date and time</p> <p>Read Peg count data for individual CS/ZT</p>	<p>Y=0 (1) 999 : Clear all data (2) CCC</p> <p>Y=2 (1) 0 :Date and time for starting peg count 1 :Date and time for ending peg count (2) wwxyyzz :(ww=month, xx=day, yy=hour, zz=minute) FFFFFFFF :No data CCC :Clear data</p> <p>(1) 2 :Status of measurement (2) 0 :before measurement 1 :during measurement 2 :after measurement</p> <p>Y=4 (1) 0xxx :Number of call origination 1xxx :Number of call termination 2xxx :Number of location registration 3xxx :Number of handover xxx=CS/ZT number (000~127) (2) 00000~49999 :Peg count 0 :initial data</p> <p>(1) 9999 :clear all data (2) CCC :</p>

Data assignment for Traffic measurement

<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">CM B1</div> <div style="text-align: center; margin-top: 100px;"> <div style="border: 1px solid black; padding: 5px; width: fit-content;">A</div> </div>	<p>Measurement mode of CS/ZT traffic volume</p>	<p>Y=8 (1) 0 :Measurement mode of CS/ZT traffic volume (2) 0 :No measurement 1 :Measurement mode (by hour)</p> <p>(1) 1 :Date and time for starting measurement (2) MMDDHH :MM=month, DD=day, HH=hour Note:measurement time starts at 0 minute</p> <p>(1) 2 :Status of measurement (2) 0 :before measurement 1 :during measurement 2 :end of measurement</p>
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DESCRIPTION	DATA
<p>Read traffic data for individual CS/ZT</p> <p>Note: Meaning of 2nd data is as follows: 01 :1223 (1.223 erlang) 02 :3000 (3.000 erlang)</p> <p>Pressing 'step' key after 2nd data 24 is entered, "DATA ERROR" is displayed.</p> <p>When 2nd data is entered during traffic is being measured, "****" is displayed.</p>	<p>Y=9 (1) 000~127 :CS/ZT number (2) 00 :0000~3000 Traffic in present time period 01 :0000~3000 Traffic in 1st one hour period 02 :0000~3000 Traffic in 2nd one hour period 03 :0000~3000 Traffic in 3rd one hour period 24 :0000~3000 Traffic in 24th one hour period Note: All traffic measured in Erlangs</p>