

**NEC**

NDA-24274  
ISSUE 1  
STOCK # 152010

**NEAX<sup>®</sup>2000 IVS<sup>2</sup>**  
**INTEGRATED VOICE SERVER**  
**WCS Features and Specifications**  
**(for D<sup>term</sup> PSII)**

APRIL, 2000

NEC America, Inc.

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Printed in U.S.A.

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# NEAX2000 IVS<sup>2</sup>

## WCS Features and Specifications (for D<sup>term</sup> PSII)

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<b>Note 2</b>	—	—	X
<b>Note 3</b>	—	X	—
<b>Note 4</b>	—	X	X

X=available  
—=not available

# ANALOG PBX INTERFACE

## General Description

This feature allows the IVS-WCS to be integrated with many types of PBXs and to activate various PBX services by sending hookflash signal and DTMF tone.

## Configuration Application

PBX Adjunct (LC-COT)

## Operating Procedure

### To place a call using Overlap Dialing:

1. Press the L1 or L2 key and receive extension dial tone from the PBX.
2. Dial the desired number and receive ringback tone from the PBX.

### To place a call using Preset Dialing:

Dial the desired number, then press the L1 or L2 key and receive ringback tone from the PBX.

### To place an outside call using Overlap Dialing:

1. Press the L1 or L2 key and receive extension dial tone from the PBX.
2. Dial the trunk access code.
3. Receive outside dial tone.
4. Dial the desired outside number and receive ringback tone.

### To place an outside call using Preset Dialing:

Dial the trunk access code and the desired outside number, then press the L1 or L2 key and receive ringback tone.

### To send the hooking signal:

While engaged in a call, press the TRF key. The hooking signal is sent to the PBX.

### To send the DTMF signal:

While engaged in a call, press any digit key. DTMF signal is automatically sent from the IVS-WCS to the other party.

**Note:** Refer to the description of the feature, *DTMF Signal Sender*.

### To place a call on Consultation Hold:

While engaged in a call, press the TRF key and receive Feature Dial Tone from the PBX. The called party hears Music On Hold if the PBX provides the service.

### To transfer the call in progress:

1. While connected to the first party, press the TRF key and receive Feature Dial Tone. The number displayed on the LCD is cleared. The held party hears Music on Hold, if provided by the PBX.
2. Dial the third party number and receive ringback tone. The number is displayed.
3. Press the END key before the third party answers. The first and third parties will be connected when the third party answers.

OR

Wait for the third party to answer and announce the transfer. Press the END key, then the first and third parties will be connected.

### Service Conditions

1. The signal type of the following cases can be programmed on a route-by-route basis between the IVS-WCS and the PBX.
  - a. To dial for placing a call.
  - b. To dial for accessing to the PBX service.
  - c. To dial after sending hookflash.
2. The signal type of dial while a call is established is DTMF. It is not programmable.
3. If the PBX requires a pause timing between a trunk access code and an external number, the IVS-WCS can automatically insert the pause timing.
4. The called/calling party number is not displayed on the LCD of a D<sup>term</sup> PSII.
5. The interface between a PBX and the IVS-WCS is a LC and a COT. The same number of LC and COT as D<sup>term</sup> PSII are required.
6. Code Restriction and Class of Service are provided by the PBX.
7. Any type of call is originated via the PBX even a D<sup>term</sup> PSII-to-D<sup>term</sup> PSII call.
8. The trunk circuit of the IVS-WCS can recognize a momentary open signal as a release signal, if the PBX provides it.
9. The station number of a D<sup>term</sup> PSII can be assigned flexibly. The limitation of the number and maximum digits depends on the PBX.

# ANNOUNCEMENT - PS NO ANSWER / ANNOUNCEMENT - PS OUT OF ZONE

## General Description

This feature allows calls to a D<sup>term</sup> PSII which cannot be paged in a predetermined period of time to be routed to the announcement notifying the calling party that the D<sup>term</sup> PSII cannot answer. Announcements can be divided between Announcement-PS No Answer and Announcement-PS Out of Zone depending on the D<sup>term</sup> PSII condition.

## Configuration Application

IVS Wired for Wireless and PBX Adjunct

## Operating Procedure

No manual operation is required.

## Service Conditions

1. This feature is available to the D<sup>term</sup> PSII allowed in system data.
2. This feature is activated when any of the following apply to the called D<sup>term</sup> PSII.
  - a. Announcement - PS No Answer
    - The D<sup>term</sup> PSII does not answer in a predetermined period of time.
  - b. Announcement - Out of Zone
    - The power of the D<sup>term</sup> PSII is off.
    - The D<sup>term</sup> PSII is out of the service area.
    - All the channels of the calling area to which the D<sup>term</sup> PSII belongs are busy.
    - All the channels of the zone transceiver to which the D<sup>term</sup> PSII belongs are busy.
3. The default timer until the Announcement-PS No Answer activates is 32 seconds and until the Announcement-PS Out of Zone activates is 8 seconds. During this time, the calling party hears the ringback tone. The timer data for each announcement service can be specified by system data programming respectively.
4. A period of timer data to send each announcement can be specified by system data programming. Only one sort of data can be set per one system.
5. Sixty-four types of messages can be assigned to each tenant of the D<sup>term</sup> PSII and each D<sup>term</sup> PSII tenant group can have a different message. Besides, more than two tenant groups can share one message.
6. This feature can be allowed or denied according to the tenant class of the called D<sup>term</sup> PSII. If this feature is not allowed, the calling person keeps hearing the ringback tone.
7. The CO incoming calls are subject to charging.
8. The calling position registration of the D<sup>term</sup> PSII is available. During the announcement, the D<sup>term</sup> PSII cannot originate or receive calls. (The calling person hears the busy tone.)
9. The calling person hears the reorder tone if pre-set duration for sending the announcement elapses.



10. When several calls are connected with the Digital Announcement Trunk, an announcement for the first-connected call can be heard from the beginning. Announcement for other calls since second time will be heard from halfway during the predetermined time. If the Digital Announcement Trunk is all busy, the calling person keeps hearing the ringback tone.

# AUTOMATIC RELEASE - OUT OF ZONE CALLS

## General Description

When a D<sup>term</sup> PSII user engaged in a call moves out of the service area or enters a radio zone where all the channels are busy and the communication becomes unavailable, the call will be disconnected automatically, and the other party receives reorder tone.

## Configuration Application

IVS Wired for Wireless and PBX Adjunct

## Operating Procedure

No manual operation is required.

## Service Conditions

1. When the electric field strength becomes weak due to the D<sup>term</sup> PSII user moving out of the service area or entering a radio zone where all the channels are busy, Out of Zone Indication is activated.
2. When the electric field strength becomes so weak that communication is no longer available, the call will be disconnected automatically.

# CALL FORWARDING-NOT AVAILABLE

## General Description

When a PS is power off or out of zone, a call directed to the PS is forwarded to a VMS, and a voice mail message can be recorded to the VMS and checked from the PS. Also the VMS can page the PS automatically after the voice mail message is recorded.

## Configuration Application

IVS Wired for Wireless

## Operating Procedure

### To set Call Forwarding-Not Available:

1. Press L1 or L2 key and receive dial tone.
2. Dial access code and receive Service Set Tone.

OR

1. Dial access code.
2. Press L1 or L2 key and receive dial tone.

### To cancel Call Forwarding-Not Available:

1. Press L1 or L2 key and receive dial tone.
2. Dial access code and receive Service Set Tone.

OR

1. Dial access code.
2. Press L1 or L2 key and receive dial tone.

### To check a voice mail message from the PS by accessing the VMS:

1. Press L1 or L2 key.
2. Dial the VMS station number and receive ringback tone.
3. Follow the instruction given by the VMS.

### To check a voice mail message from the PS by hearing dial tone, Special Dial Tone or Voice Guide:

1. Press L1 or L2 key and receive dial tone or Special Dial Tone.

Special Dial Tone:	Message exists.
Dial Tone:	No message exists.
Announcement:	Message exists.

2. Press End key.

### To check a voice mail message by paging from the VMS (if provided by the VMS):

1. When a voice mail message is recorded, the VMS pages the PS automatically.

## Service Conditions

1. After an incoming call to a “Not Available-PS” is forwarded, if the PS becomes available (power on or goes into zone), the PS can originate or receive a call even if the pervious incoming call is connected to the VMS.
2. This feature has a priority to Announcement PS-No Answer/PS-Out of Zone features.
3. A maximum of three digits can be used for the access codes for setting and canceling Call Forwarding-Not Available.
4. The type of dial tone that the PS receives when there is a message, either dial tone, Special Dial Tone or Voice Guide, can be specified by the system data programming.

# CCIS INTERFACE

## General Description

This feature allows the IVS-WCS to be integrated with NEC PBXs with CCIS interface.

## Configuration Application

PBX Adjunct (CCIS)

## Operating Procedure

### To place a call using Overlap Dialing:

1. Press the L1 or L2 key and receive extension dial tone.
2. Dial the desired number and receive ringback tone.

### To place a call using Preset Dialing:

Dial the desired number, then press the L1 or L2 key and receive ringback tone.

### To place an outside call using Overlap Dialing:

1. Press the L1 or L2 key and receive extension dial tone.
2. Dial the trunk access code.
3. Receive outside dial tone.
4. Dial the desired outside number and receive ringback tone.

### To place an outside call using Preset Dialing:

Dial the trunk access code and the desired outside number, then press the L1 or L2 key and receive ringback tone.

### To send the DTMF signal:

While engaged in a call, press any digit key. DTMF signal is automatically sent from the IVS-WCS to the other party.

**Note:** Refer to the description of the feature, *DTMF Signal Sender*.

### To place a call on Consultation Hold:

While engaged in a call, press the TRF key and receive Feature Dial Tone. If the PBX provides the service, the called party hears Music on Hold.

**To transfer the call in progress:**

1. While connected to the first party, press the TRF key and receive Feature Dial Tone. The number displayed on the LCD is cleared. If the PBX provides the service, the held party hears Music on Hold.
2. Dial the third party number and receive ringback tone. The number is displayed.
3. Press the END key before the third party answers. The first and third parties will be connected when the third party answers.

OR

Wait for the third party to answer and announce the transfer. Press the END key, then the first and third parties will be connected.

**Service Conditions**

1. The service conditions of each feature are the same as those of the Single Line Telephone of CCIS features, except the following features:
  - a. Calling Number Display - PS
  - b. Last Number Redial - PS
  - c. Speed Dial - PS
2. If the PBX requires a pause timing between a trunk access code and an external number, the IVS-WCS can automatically insert the pause timing.
3. The interface between a PBX and the IVS-WCS is CCIS. The number of voice link depends on the traffic except PS-to-PS calls.
4. Code Restriction and Class of Service are provided by the PBX.
5. Any type of call is originated via the PBX even a D<sup>term</sup> PSII-to-D<sup>term</sup> PSII call.
6. The station number of D<sup>term</sup> PSII can be assigned flexibly. The maximum digits of PS number is eight.
7. If the SMDR is needed, PN-AP00 card is required and the upper PBX must have a center node feature of Centralized Billing - CCIS.

## CALLING NAME DISPLAY - PS

### General Description

Without answering incoming calls or hold calls terminates to the D<sup>term</sup> PSII, the calling party's name can be confirmed by the indications on the LCD.

### Configuration Application

IVS Wired for Wireless and PBX Adjunct with CCIS interface

### Operating Procedure

No manual operation is required.

### Service Conditions

1. One of the followings is displayed on the LCD.
  - a. Guest Name Display
  - b. Station Name Display
  - c. Caller ID Class
  - d. CCIS
2. A maximum of 11 letters of the calling party's name can be displayed. When more than 11 letters are received, the digits move from right to left, displaying only the most recently received letters.
3. When an incoming call terminates to a D<sup>term</sup> PSII, both of the calling party's name and number will be displayed during ringing and only name will be displayed during the conversation.
4. When only calling party's name is received, only the name is displayed and when only calling party's number is received, only the number is displayed. Neither calling party's name nor number is received, an indication "CALL" is displayed.
5. When a call terminates to L2 while the D<sup>term</sup> PSII user is busy on L1, information of the call terminates to L2 is displayed for approximately 10 seconds, and then returns to the previous display.
6. When a call is forwarded to the D<sup>term</sup> PSII by Call Forwarding-All Calls/-Busy Line/-No Answer/-Not Available, an indication "CF" is displayed in the left side of the LCD.

## CALLING NUMBER DISPLAY - PS

### General Description

This feature provides a display on the LCD of a D<sup>term</sup> PSII receiving a call, indicating the station number.

### Configuration Application

IVS Wired for Wireless and PBX Adjunct with CCIS interface

### Operating Procedure

No manual operation is required.

### Service Conditions

1. For internal or CCIS incoming calls, the calling extension number will be displayed. For trunk calls, the calling subscriber's number for ANI and the calling ISDN terminal number will be displayed. The trunk number cannot be displayed.
2. A maximum of 11 digits of the calling number can be displayed. When more than 11 digits are received, the digits move from right to left, displaying only the most recently received digits.
3. When an incoming call terminates to a D<sup>term</sup> PSII and begins ringing, the calling number will be displayed (no flashing) and continues to be displayed throughout conversation. Once the display is cleared by pressing a Feature key (F1/F2/F3), the number will not be displayed again.



## DTMF SIGNAL SENDER

### General Description

This feature allows a D<sup>term</sup> PSII user to send the DTMF signal (tone) to the called party (terminal, voice mail system, etc.) while engaged in communication.

### Configuration Application

IVS Wired for Wireless and PBX Adjunct

### Operating Procedure

#### To send the DTMF signal:

While engaged in communication, press a digit key. The IVS-WCS automatically sends the corresponding signal tone to the called party.

### Service Conditions

1. When the DTMF signal is sent, there may be an interruption in the communication.
2. The DTMF signal tone varies between 64 ms to 128 ms.
3. When this feature is activated, the number pressed is displayed on the LCD. The display on the LCD is cleared after 20 seconds, but the called party number previously displayed will not be displayed again.

# GROUP CALL-AUTOMATIC CONFERENCE (6/10-PARTY)

## General Description

This feature permits a D<sup>term</sup> PSII user, D<sup>term</sup> user or Single Line Telephone user within the system to establish a conference among as many as six or ten parties. From a D<sup>term</sup> PSII/D<sup>term</sup>/Single Line Telephone, a maximum of nine PSs can be paged simultaneously except the conference leader. The PSs are assigned to the simultaneous paging groups as a participants by the system data beforehand.

## Configuration Application

IVS Wired for Wireless

## Operating Procedure

### To make a conference call

From D<sup>term</sup> PSII/D<sup>term</sup>/Single Line Telephone;

1. Press the L1 or L2 key or go off hook, and receive a dial tone.
2. Dial the access code or press feature access key (D<sup>term</sup> only) for a desired paging group, and receive a ringback tone.

OR

From D<sup>term</sup> PSII;

1. Dial the access code for a desired paging group.
2. Press the L1 or L2 key and receive a ringback tone.

If all CFT trunks are busy or the originator is not assigned as the conference leader with service feature class, a reorder tone is heard.

3. You can converse sequentially with the participants of the conference in order of their answering.

### To answer the paging

1. When the conference call terminates, the LCD shows the station number of the conference leader.
2. Answer the ringing of paging from the conference leader.
3. You can converse with the conference leader and other participants.

### To participate in the middle of the conference

From D<sup>term</sup> PSII/D<sup>term</sup>/Single Line Telephone;

1. Press the L1 or L2 key or go off hook, and receive a dial tone.
2. Dial the access code or press feature access key (D<sup>term</sup> only) for re-participation to the paging group.

OR

From D<sup>term</sup> PSII;

1. Dial the access code for re-participation to the paging group.
2. Press the L1 or L2 key.

If the CFT trunks are all busy, a reorder tone is heard.

You can participate in the conference if the CFT trunk has an idle circuit.

## Service Conditions

1. A maximum of nine stations are paged simultaneously except the conference leader.  
Even if more than nine stations are assigned to one group except the leader, the first nine stations are paged in order of registered number on the system data.
2. Single Line Telephones, D<sup>term</sup>s, D<sup>term</sup> PSII's can be assigned as the stations within the conference groups (Virtual line cannot be assigned). A station can belong to multiple groups.
3. Up to eight groups can be assigned as the conference group by system data.
4. The maximum number of participants which can be connected in a conference is:
  - Six participants (inclusive of the leader) when one CFT trunk is used.
  - Ten participants (inclusive of the leader) when two CFT trunks are used.

Up to four CFT trunks can be accommodated in the system.

The maximum number of conference groups per system when using four CFT trunks (maximum) is:

- Four, 6-party conference groups
- Two, 10-party conference groups
- Two, 6-party conference groups and one, 10-party conference group

A CFT trunk is used for either a 6-party or 10-party conference. Dialed access codes determine which CFT trunk is used for a conference. If the leader dials the access code or press the feature access key for a 10-party conference when only one CFT trunk is idle, the leader is restricted and hear reorder tone.

5. A Single Line Telephone, D<sup>term</sup>, and D<sup>term</sup> PSII can be a conference leader and make a conference call to a group, even if it does not belong to the group.
6. A Single Line Telephone, D<sup>term</sup> and D<sup>term</sup> PSII which does not belong to the group, can be a participant of a conference by dialing the re-participation access code or by pressing the feature access key (D<sup>term</sup> only), when the CFT trunk has an idle circuit.
7. A conference leader cannot page two or more groups simultaneously.  
A group cannot be paged simultaneously by the plural conference leaders.  
A group cannot be paged while a conference of the group is in progress.
8. If all stations within the paged group are busy, the conference leader hears the reorder tone.  
If a station does not answer the paging by certain time (which is determined by the system data), the conference leader hears the busy tone.
9. When a station cannot answer the paging by out of zone, paging time out, or busy state, the station can participate in the conference by dialing the re-participation access code or by pressing the feature access key (D<sup>term</sup> only) while the conference is in progress and when the CFT trunk has an idle circuit.

10. If a conference leader left from the conference once, he can re-participate by dialing the re-participation access code or by pressing the feature access key ( $D^{\text{term}}$  only) while the conference is in progress and when the CFT trunk has an idle circuit.
11. A station can be paged while idle state. When the station is busy at the time of paging, the station cannot be paged even if the station returns to idle afterward.
12. Even if a station sets Call Forwarding, the conference leader can page the station.
13. If a paged  $D^{\text{term}}$  PSII is out of zone or its power is off or it is roaming, the system keeps paging by the certain time. While the paging is in progress, the  $D^{\text{term}}$  PSII can be paged when it returns into the zone or when its power returns to on.
14. During a conference, Handover of  $D^{\text{term}}$  PSII is available. But a hooking operation or camp-on setting is not available.

## GROUP CALL - 2 WAY CALLING

### General Description

This feature permits a D<sup>term</sup> PSII/D<sup>term</sup>/Single Line Telephone can page a maximum of fifteen parties simultaneously except the group call leader. After one of paged parties answers, the paging becomes the 2 Way Calling between the leader and the first answered party, and paging other parties stops automatically. The PSs are assigned to the simultaneous paging groups as a participants by the system data beforehand.

### Configuration Application

IVS Wired for Wireless

### Operating Procedure

#### To page stations of a group

From D<sup>term</sup> PSII/D<sup>term</sup>/Single Line Telephone;

1. Press the L1 or L2 key or go off hook, and receive a dial tone.
2. Dial the access code or press feature access key (D<sup>term</sup> only) for a desired paging group, and receive a ringback tone.

OR

From D<sup>term</sup> PSII;

1. Dial the access code for a desired paging group.
2. Press the L1 or L2 key and receive a ringback tone.  
If the paged stations are all busy or the leader is not assigned as the conference leader with service feature class, a reorder tone is heard.
3. Paging stops after one of paged parties answered.

#### To answer the paging

1. When the paging call terminates, the LCD shows the station number of the group call leader.
2. Answer the ringing of paging from the group call leader.
3. Paging stops after one of paged PSs answered.

### Service Conditions

1. A maximum of fifteen stations are paged simultaneously except the group call leader.  
Even if more than fifteen stations are assigned to one group except the leader, the first fifteen stations are paged in order of registered number on the system data. Also one station can belong to plural groups.
2. Single Line Telephones, D<sup>term</sup>s, D<sup>term</sup> PSIIs can be assigned as the stations within the group call groups (Virtual line cannot be assigned). A station can belong to plural groups.
3. Up to eight groups can be assigned as the call group by system data, including voice paging and Group Call-Automatic Conference.
4. A Single Line Telephone, D<sup>term</sup>, and D<sup>term</sup> PSII can be a group call leader and page a group, even if it does not belong to the group.

5. A group call leader cannot page two or more groups simultaneously.  
A group cannot be paged simultaneously by the plural group call leaders.
6. If all stations within the paged group are busy, the group call leader hears a reorder tone.  
The Group Call leader will continue to hear ringback tone until the page is answered. It does not time out.
7. A station can be paged while idle state. When the station is busy at the time of paging, the station will not be paged even if the station returns to idle afterward.
8. Even if a station sets Call Forwarding, the group call leader can page the station.
9. If a paged D<sup>term</sup> PSII is out of zone, its power is off or it is roaming, the system keeps paging by the certain time. While the paging is in progress, the D<sup>term</sup> PSII can be paged when it returns into the zone or when its power returns to on.
10. During a group call, Handover of D<sup>term</sup> PSII is available.

# HANDOVER

## General Description

When the signal transmission quality becomes inferior, a D<sup>term</sup> PSII re-originates a call automatically and seizes another radio channel, making the IVS-WCS handover the call to another zone transceiver to maintain the speech quality.

## Configuration Application

IVS Wired for Wireless and PBX Adjunct

## Operating Procedure

No manual operation is required. The D<sup>term</sup> PSII sends Handover request to the IVS-WCS automatically.

## Service Conditions

1. This feature is activated when a D<sup>term</sup> PSII is engaged in communication.
2. The communication may be interrupted during operation of the Handover. The interruption is usually within a second, to a maximum of ten seconds.
3. This feature is also available when a D<sup>term</sup> PSII user moves to the far end of the radio zone and encounters poor transmission quality. In this case, the D<sup>term</sup> PSII searches for the radio zone with stronger electric signal, and if the radio zone is found, Handover is activated and the conversation is continued in that zone. If there is no idle channel in the new radio zone, the conversation is continued in the current zone until the communication becomes unavailable, and then, Automatic Release - Out of Zone Calls is activated.
4. PS Authorization is activated every time this feature is activated.

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# INDIVIDUAL PS CALLING

## General Description

This feature allows the calling party to page the individual D<sup>term</sup> PSII.

## Configuration Application

IVS Wired for Wireless and PBX Adjunct

## Operating Procedure

### To activate:

1. Dial the unique number assigned to each D<sup>term</sup> PSII. The designated D<sup>term</sup> PSII will be called. If the calling number display is available, the lower 11 digits of the number are displayed on the LCD of the called D<sup>term</sup> PSII.
2. There are two answering options:
  - a. L1 / L2 answering mode  
The called D<sup>term</sup> PSII user presses L1 or L2 keys to answer.
  - b. Automatic answering mode  
The called D<sup>term</sup> PSII is connected automatically after the answer timer programmed in the D<sup>term</sup> PSII has expired. See the D<sup>term</sup> PSII Operation Guide.

## Service Conditions

1. The D<sup>term</sup> PSII will be paged in the paging area where its location has been registered.
2. This feature is available for:
  - a. calls from a D<sup>term</sup> PSII
  - b. calls from a PBX station (D<sup>term</sup>, single line) or Attendant Console
  - c. Direct Inward Termination (DIT) calls
  - d. Direct Inward Dialing (DID) calls
  - e. Direct Inward System Dialing (DISA) calls
  - f. Tie Line calls.
3. If the D<sup>term</sup> PSII cannot be called as the D<sup>term</sup> PSII user is out of the service area, the announcement can be provided to the calling party (The PN-2DAT or PN-4DAT cards are required). If the called D<sup>term</sup> PSII is out of the service area, Out of Zone Indication is activated.
4. When all speech channels of the zone transceiver in the paging area are busy, Announcement - PS Out of Zone is activated, if allowed in the tenant basis service feature class. If not allowed in the service feature class, the D<sup>term</sup> PSII user receives reorder tone.
5. PS Authorization is activated for every call termination.
6. The answering options, the any-key answering mode, and the automatic answering mode can be selected by the D<sup>term</sup> PSII user, using the FNC key.



## LAST NUMBER REDIAL - PS

### General Description

This feature enables a D<sup>term</sup> PSII to store the numbers dialed in the previous five calls including the last number dialed. The stack dial numbers are sequentially displayed on the LCD, allowing the station user to make an outgoing call by selecting the desired dialed number from the display.

### Configuration Application

IVS Wired for Wireless and PBX Adjunct

### Operating Procedure

#### To store the number:

Dial the desired number, using either Overlap dialing or Preset Dialing. The number dialed is stored automatically.

#### To redial the stored number:

1. Press the LNR softkey. The last number dialed is displayed.
2. Press the ∇ key to select the desired number.
3. Press the L1 or L2 key to dial the selected number.

### Service Conditions

Refer to the D<sup>term</sup> PSII User Guide.

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## MULTI-LINE OPERATION - PS

### General Description

D<sup>term</sup> PSII equipped with two line keys, L1 key and L2 key, and different station numbers can be assigned to each of two lines. The number assigned to L1 key of the PS is called My Line and the other number assigned to L2 key is called Sub Line. My Line and Sub Line of a D<sup>term</sup> PSII can be assigned to appear on the Flexible Line Keys of a D<sup>term</sup> and the D<sup>term</sup> can share the D<sup>term</sup> PSII lines.

### Configuration Application

IVS Wired for Wireless and PBX Adjunct

### Operating Procedure

Refer to the D<sup>term</sup> PSII User Guide.

### Service Conditions

1. A Sub Line number of D<sup>term</sup> PSII cannot be overlapped with station numbers of My Line/Sub Line of D<sup>term</sup>, SLT, and My Line of D<sup>term</sup> PSII, but the same Sub Line number of D<sup>term</sup> PSII can be assigned to plural D<sup>term</sup> PSII's.
2. There is no limitation in the number of D<sup>term</sup> PSII which can share a Sub Line.
3. Some PBX services are available for My Line as well as for sub-line, but some of the services such as roaming and "Message Waiting" are not available to sub-line.
4. When a call terminates to a Sub Line, all PSs sharing the Sub Line ring and each L2 key of the PSs lights for 60 seconds. If one of those PSs originates or holds on the Sub-Line call, each L2 key of other PSs does not light.
5. While either My Line or Sub Line is in communication, Multiline Hold is available by pressing HLD key and other PSs/D<sup>term</sup>s sharing the line can answer by pressing the held line key. Exclusive Hold is available by pressing HLD key twice and only the PS on Exclusive Hold can answer the call. Other PSs receive ROT and cannot answer the call.
6. While either Sub Line or My Line is in communication, the D<sup>term</sup> PSII user can answer an incoming call and a call on Multiline Hold, or originate an outgoing call on the other line, by pressing HLD key and the other line key. If the D<sup>term</sup> PSII user answers the second line without pressing HLD key, the first line is disconnected.
7. Sub Line becomes unavailable while the D<sup>term</sup> PSII is roaming or out of zone.
8. Handover on Sub Line is available as well as the My Line.
9. When a call is terminating to a Sub Line which is not set Announcement-PS No Answer/-PS Out of Zone, paging continues for 60 seconds, then stops.

# MULTI-SITE ROAMING

## General Description

The D<sup>term</sup> PSII user can originate or receive a call in any place of a network if the multiple PBXs are interfaced by JT-Q931-a.

## Configuration Application

IVS Wired for Wireless and PBX Adjunct with CCIS interface

## Operating Procedure

No manual operation is required.

## Service Conditions

1. A roaming service network can be provided by maximum 512 PBXs.
2. One AP00 card for Data Base Module (DBM) is required per PBX.
3. Visitor Location Register (VLR) information for maximum 512 Visitor PSs can be recorded to a system. When the VLR information exceeds for more than 512 Visitor PSs, AP00 deletes the oldest VLR information in the system.
4. When a call terminates to a Multiline Terminal from a PS, the ringing of the Multiline Terminal is as follows, regardless of Home PS or Visitor PS;
  - When the PS is under control of the same PBX: Ringing for Internal call
  - When the PS is under control of the other PBX: Ringing for External call
5. When the Home PS is roaming, the Home PBX cannot route Announcement-PS No Answer /-PS Out of Zone to the calling party. If the Visitor PBX allows to inform the Home PBX that the PS cannot answer, the Home PBX activates Call Forwarding-Not Available.
6. Billing of Home PS is executed to its Virtual LC Number.
7. While the Home PS is roaming, billing information cannot be recorded.
8. The Visitor PS can allow following service features.
  - a. Originating a call to a station of the same office
  - b. Originating a call to a station of the different office
  - c. Terminating a call from a roaming trunk
  - d. PS Exclusive Hold
  - e. Call Forwarding
9. Maximum 64 Visitor PSs can originate or receive a call in a network at the same time.
10. The Visitor PS can answer a call only from the roaming trunk.
11. Billing of Visitor PS is executed to its Virtual LC Number.
12. Billing information for the Visitor PS can be recorded only when the Visitor PS originates a call.

# NEAX2000 IVS<sup>2</sup> WIRED FOR WIRELESS

## General Description

This feature allows the NEAX2000 IVS<sup>2</sup> to include the Wireless PBX. NEAX2000 IVS<sup>2</sup> integrated features in addition to the adjunct configurations.

## Configuration Application

IVS Wired for Wireless

## Operating Procedure

### To place a call using Overlap Dialing:

1. Press the L1 or L2 key and receive extension dial tone.
2. Dial the desired number and receive ringback tone.

### To place a call using Preset Dialing:

Dial the desired number, then press the L1 or L2 key, and receive ringback tone.

### To place an outside call using Overlap Dialing:

1. Press the L1 or L2 key and receive extension dial tone.
2. Dial the trunk access code.
3. Receive outside dial tone.
4. Dial the desired outside number and receive ringback tone.

### To place an outside call using Preset Dialing:

Dial the trunk access code and the desired outside number, then press the L1 or L2 key and receive ringback tone.

### To send the DTMF signal:

While engaged in a call, press any digit key. DTMF signal is automatically sent from the IVS-WCS to the other party.

\* Refer to the description of the feature, DTMF Signal Sender.

### To place a call on Consultation Hold:

While engaged in a call, press the HLD key. If the PBX provides the service, the called party hears Music on Hold.

**To transfer the call in progress:**

1. While connected to the first party, press the TRF key; receive feature dial tone. The number displayed on the LCD is cleared. If the PBX provides the service, the held party hears Music on Hold.
2. Dial the third party number; receive ringback tone and the number is displayed.
3. Press the END key before the third party answers. The first and third parties will be connected when the third party answers.

OR

Wait for the third party to answer and announce the transfer. Press the END key, then the first and third parties will be connected.

**Service Conditions**

1. The service conditions of each feature are the same as for the Single Line Telephone, except for the following:
  - a. Calling Number Display - PS
  - b. Last Number Redial - PS
  - c. Speed Dial - PS
2. The station number of a D<sup>term</sup> PSII can be assigned flexibly. The limitation of the number and maximum digits are the same as the regular NEAX2000 IVS<sup>2</sup>.

# NUMBER SHARING

## General Description

This feature allows the D<sup>term</sup> user to have a D<sup>term</sup> PSII as Sub Station and to get service with one telephone number.

If that one user has both D<sup>term</sup> and D<sup>term</sup> PSII, with this feature used, the user is not required to have two separate telephone numbers.

- When user is at his desk, a call is terminated to D<sup>term</sup>.
- When user leaves his desk with D<sup>term</sup> PSII, a call is automatically terminated to D<sup>term</sup> PSII.

In this feature, the D<sup>term</sup> and D<sup>term</sup> PSII are referenced as Main Station and Sub Station, respectively.

## Configuration Application

IVS Wired for Wireless

## Station Application

Main Station : D<sup>term</sup> My Line

Sub Station : D<sup>term</sup> PSII, Single Line Telephone

## Operating Procedure

### To forward a call to D<sup>term</sup> PSII

1. To set from the D<sup>term</sup> (Main Station)  
While in idle state, press the feature key for this feature.  
→ The lamp associated with the feature key lights red.
2. To cancel from the D<sup>term</sup> (Main Station)  
While in idle state, press the feature key for this feature.  
→ The lamp associated with the feature key goes out.
3. To set from the D<sup>term</sup> PSII (Sub Station)  
Off hook and dial the access code for this feature.  
→ Receive Service Set Tone.  
→ The lamp associated with the feature key on the D<sup>term</sup> (Main Station) lights red.
4. To cancel from the D<sup>term</sup> PSII (Sub Station)  
Off hook and dial the cancel code for this feature.  
→ Receive Service Set Tone.  
→ The lamp associated with the feature key on the D<sup>term</sup> (Main Station) goes out.

**Note:** *This setting is usually done from D<sup>term</sup>.*

## Service Conditions

1. Calling Number Display to D<sup>term</sup>  
When D<sup>term</sup> -A is connected to the D<sup>term</sup> PSII (Sub Station), the station number of the D<sup>term</sup> (Main Station) instead of D<sup>term</sup> PSII (Sub Station) is displayed on D<sup>term</sup> -A.
  - a. Main Station number is always displayed even if D<sup>term</sup> PSII (Sub Station) is called up by directly dialing D<sup>term</sup> PSII's number irrespective of forwarding being set.
  - b. As for Name Display, D<sup>term</sup> PSII name is displayed to calling D<sup>term</sup> -A. The same name can be assigned to D<sup>term</sup> PSII/D<sup>term</sup> by CM77.
2. Calling Number Display through CCIS  
When D<sup>term</sup> -A is connected to the D<sup>term</sup> PSII (Sub Station) through CCIS, the station number of the D<sup>term</sup> (Main Station) instead of D<sup>term</sup> PSII (Sub Station) is displayed on D<sup>term</sup> -A.
  - a. Main Station number is always displayed even if D<sup>term</sup> PSII (Sub Station) is called up by directly dialing D<sup>term</sup> PSII's number irrespective of forwarding being set.
  - b. As for Name Display, D<sup>term</sup> PSII name is displayed to calling D<sup>term</sup> -A. The same name can be assigned to D<sup>term</sup> PSII/D<sup>term</sup> by CM77.
3. When a call is originated from D<sup>term</sup> PSII (Sub Station) to ISDN, the Sub Station number is sent out.
4. When a call is originated from D<sup>term</sup> PSII (Sub Station) or a call is terminated to D<sup>term</sup> PSII (Sub Station), service class and tenant number assigned to D<sup>term</sup> PSII (Sub Station), are referred.

**Note:** Do not assign data as follows;

- Main Station : Allow to access ISDN

- Sub Station : Restrict to access ISDN

In this case, D<sup>term</sup> PSII is not able to access ISDN when forwarding is set from D<sup>term</sup>.

5. When a call is originated from the D<sup>term</sup> PSII (Sub Station), billing information is recorded as a call originated from the D<sup>term</sup> (Main Station).  
When a call is transferred from the D<sup>term</sup> PSII (Sub Station) to the Voice Mail System by Call Forwarding - All Calls/Busy Line/Don't Answer, the voice mail is recorded on the mail box of the D<sup>term</sup> (Main station). The system controls Message Waiting Indication on both the D<sup>term</sup> (Main Station) and D<sup>term</sup> PSII (Sub Station).
6. When a call is terminated to Main Station while this feature is setting, services assigned to Main Station, such as Call Forwarding - All Calls/Busy Line/Don't Answer/Station Hunting/UCD/DND, are invalid. The services assigned to D<sup>term</sup> PSII (Sub Station) are valid.
7. When a call is terminated to D<sup>term</sup> PSII (Sub Station) but the D<sup>term</sup> PSII (Sub Station) is busy, the following services can be assigned to D<sup>term</sup> PSII (Sub Station).
  - Call Forwarding - Busy Line
  - Call Back
  - Call Waiting
  - Whisper Page
  - Attendant Camp On
  - Executive Right of Way

# OUT OF ZONE INDICATION

## General Description

When a D<sup>term</sup> PSII user moves out of the service area and the electric field strength becomes weak, this feature notifies it to the user with the warning tone and the LCD display.

## Configuration Application

IVS Wired for Wireless and PBX Adjunct

## Operating Procedure

No manual operation is required.

## Service Conditions

1. When a D<sup>term</sup> PSII user turns the power on while he/she is out of the service area or when the user moves out of the service area while idle, Out of Zone Indication is displayed.
2. When the electric field strength becomes so weak that communication cannot be continued, Automatic Release - Out of Zone Calls is activated.



# OVERLAP DIALING

## General Description

This feature allows a D<sup>term</sup> PSII user to receive dial tone and dial the desired number to originate a call.

## Configuration Application

IVS Wired for Wireless and PBX Adjunct

## Operating Procedure

### To originate a call:

1. Press the L1 or L2 key and receive dial tone.
2. Dial the desired number. The dialed numbers will be displayed on the LCD.

## Service Conditions

1. A maximum of 24 digits (numbers 0 to 9, #, and \*) can be dialed. A maximum of 11 digits can be displayed on the LCD.
2. The D<sup>term</sup> PSII user can dial the number before hearing dial tone.
3. The interdigit timer after receiving dial tone is 10 seconds, and if no number is dialed within this period, the user receives reorder tone.
4. If the interdigit timer expires while the user is dialing the number, the numbers dialed before the timer will be sent out.
5. PS Authorization is activated for every call origination.

# PS AUTHORIZATION

## General Description

This feature is to confirm the identity of a D<sup>term</sup> PSII to avoid an unauthorized D<sup>term</sup> PSII from accessing the system.

## Configuration Application

IVS Wired for Wireless and PBX Adjunct

## Operating Procedure

No manual operation is required.

The D<sup>term</sup> PSII identity is confirmed automatically by checking whether the D<sup>term</sup> PSII possesses the key information unique to each D<sup>term</sup> PSII. This check is performed between the IVS-WCS and the D<sup>term</sup> PSII.

## Service Conditions

1. This feature is activated in the following circumstances:
  - a. when the D<sup>term</sup> PSII user originates a call.
  - b. when a call terminates to the D<sup>term</sup> PSII.
  - c. when Handover service is activated.
  - d. when the D<sup>term</sup> PSII registers its location to the system (when idle).

## PS LOCATION REGISTRATION

### General Description

This feature allows the IVS-WCS to supervise the location of each D<sup>term</sup> PSII, upon receiving the location registration request, to allow call termination.

### Configuration Application

IVS Wired for Wireless and PBX Adjunct

### Operating Procedure

No manual operation is required.

### Service Conditions

1. This feature is activated every time a D<sup>term</sup> PSII enters a different paging area. A maximum of 32 calling areas can be installed in an IVS-WCS.
2. A maximum of 128 zone transceivers can be installed in a calling area.
3. PS Authorization is activated every time the D<sup>term</sup> PSII requests location registration.

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# PRESET DIALING

## General Description

This feature allows a D<sup>term</sup> PSII user to confirm the number to be dialed before originating a call.

## Configuration Application

IVS Wired for Wireless and PBX Adjunct

## Operating Procedure

### To originate a call:

1. Dial the desired number. The number will be stored and displayed on the LCD.
2. After confirming the number, press the L1 or L2 key. The number will be displayed on the LCD throughout the conversation.

## Service Conditions

1. A maximum of 24 digits (numbers 0 to 9, #, \*, and pause) can be stored. A maximum of 11 digits can be displayed on the LCD. When more than 12 digits are dialed, the digits exceeding 12 move from right to left, displaying only the most recently dialed digits.
2. If a wrong number is dialed, press the FNC key. The number just dialed will be cleared. If the FNC key is pressed for more than two seconds, the numbers will be cleared successively. Also, if no number is entered for 20 seconds, the service is cleared, and the D<sup>term</sup> PSII returns to the idle state (stand by status).
3. If the user dials a number after pressing the L1 or L2 key, it will be recognized as a DTMF signal sending.
4. PS Authorization is activated for every call origination.

## RADIO CHANNEL CHANGEOVER

### General Description

This feature is to supervise and changeover the channel automatically to avoid the interference and to maintain the speech quality.

### Configuration Application

IVS Wired for Wireless and PBX Adjunct

### Operating Procedure

No manual operation is required.

### Service Conditions

1. There is no interruption in the speech when this feature is activated.
2. The new channel is assigned to the party which has moved into the service area.
3. When there is no idle channel, the call is continued on the same channel until communication becomes unavailable, then Automatic Release - Out of Zone Calls is activated.

# SPEECH ENCRYPTION

## General Description

This feature protects a call from being tapped.

## Configuration Application

IVS Wired for Wireless and PBX Adjunct

## Operating Procedure

No manual operation is required.

## Service Conditions

1. This feature is activated for every originating call from a D<sup>term</sup> PSII and every terminating call to a D<sup>term</sup> PSII. For every call, the encryption assignment message is sent from the D<sup>term</sup> PSII to the zone transceiver.
2. Speech Encryption is automatically activated throughout the call. Encryption cannot be canceled during the call.

## SPEED DIAL - PS

### General Description

This feature allows a D<sup>term</sup> PSII user to dial the certain frequently called numbers using two-digit abbreviated call codes.

### Configuration Application

IVS Wired for Wireless and PBX Adjunct

### Operating Procedure

Refer to Speed Dial in the D<sup>term</sup> PSII User Guide.

### Service Conditions

Refer to the D<sup>term</sup> PSII User Guide.

# VOICE MAIL INDICATION

## General Description

When a message is mailed in the D<sup>term</sup> PSII, an indication of the envelop icon is displayed in the LCD of the D<sup>term</sup> PSII.

## Configuration Application

IVS Wired for Wireless

## Operating Procedure

### To retrieve a voice mail message

1. Press the L1 or L2 key and receive dial tone.
2. Dial the VMS station number and receive ringback tone.
3. Follow the instruction given by the VMS.
4. Listen to the message.

## Service Conditions

1. An envelop icon is displayed only when a message is mailed to the L1(My Line PS).
2. VMI (Voice Mail Indication) is displayed only for a message mailed to My Line. When the message is mailed, the PBX sends a VMI signal to D<sup>term</sup> PSII only once. At that time, if PS is out of zone or PS's power is off, the VMI is not displayed until the D<sup>term</sup> PSII connects to the PBX and disconnects again.
3. When the message is mailed to the My Line PS, the PBX sends an envelop icon on signal to D<sup>term</sup> PSII only once. At that time, if PS is out of zone or PS's power is off, the envelop icon is not displayed until the D<sup>term</sup> PSII connects to the PBX and disconnects again.
4. Other service conditions are in common with those of "Message Waiting" in Business/Hotel/Data Features and Specifications.



This page is for your notes.

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## APPENDIX A: D<sup>term</sup> FIXED FUNCTION KEYS

Series E	Series III	Description
Answer	ANS	To answer a waiting call
Conf	CNF	To establish three-way conversation
Feature	FNC	To activate terminal setup functions and to program One-Touch Speed Dial/Feature Keys
Hold	HOLD	To place an internal or external call on hold
Recall	LNR/SPD	To terminate established call and re-seize internal dial tone
Redial	RECALL	To active Last Number Call and Speed Calling
Speaker	SPKR	To control the built-in speaker which can be used for Hands Free dialing/monitoring
Transfer	TRF	To transfer established calls to another station, without attendant assistance

## APPENDIX B: D<sup>term</sup> LCD DISPLAYS

Description	Series E	Series III
Clock/Calendar Display	10:06 PM    MON 21    APR 1999	10:06 PM    TUE 14
Busy	BUSY                    XXXX	BUSY                    XXXX
Restriction	RESTRICT            XXXX	RST                     XXXX
Do Not Disturb	DND                    XXXX	DND                    XXXX
Call Forwarding - All Calls	CF ALL                XXXX	FDA                     XXXX
Call Forwarding - Busy Line	CF BUSY              XXXX	FDB                     XXXX
Call Forwarding - No Answer	CF NANS              XXXX	FDN                     XXXX
Call Transfer	TRANSFER            XXXX	XFR                     XXXX
Conference	CONF                XXXX    XXXX	CNF                XXXX    XXXX
Non Exclusive Hold	HOLD                    XXXX	HLD                     XXXX
Exclusive Hold	E-HOLD                XXXX	EHD                     XXXX
Stack Dial	REDIAL[*/#]/SPEED    -1 82625563	RDL[*/#]/SPD                    -1 82625563