

INTUITY™

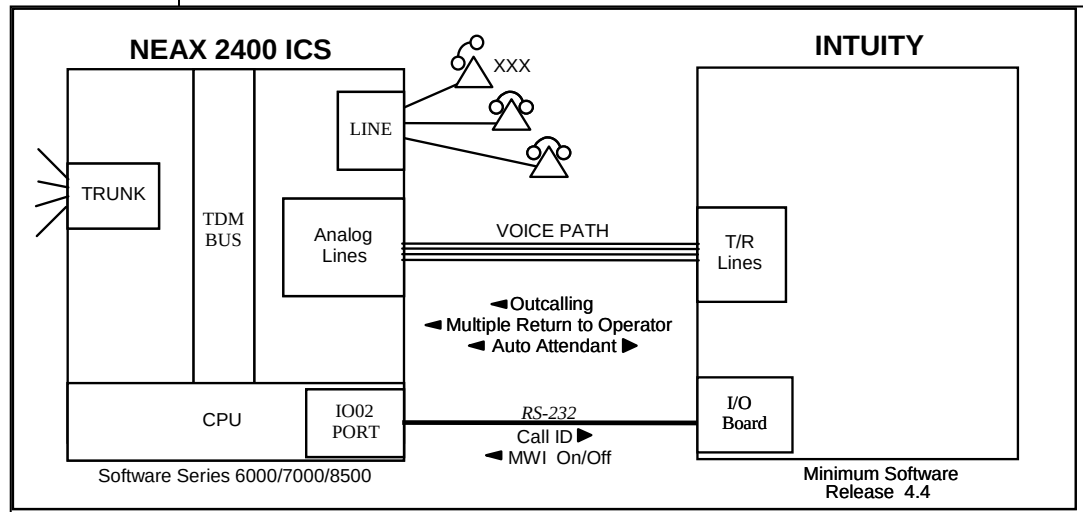
AUDIX Message

Server

Configuration Note 9106 - Version A 6/03

NEC NEAX 2400 ICS/IMX

with Series 6000/7000/8500 software



With RS232 integration, call information is transmitted over a digital RS232 link between the PBX and the INTUITY™

1.0 METHOD OF INTEGRATION

With RS-232 integration, call information is transmitted over a digital RS-232 link between the PBX and the INTUITY™. Voice communications are provided by a separate path created by analog lines on the PBX that connect to the INTUITY™. When an incoming call is received, it is accompanied by a digital message from the PBX containing call information. The INTUITY™ then answers the call and plays the appropriate greeting. To set or cancel message-waiting notification, the INTUITY™ sends a digital message over the RS-232 link to the PBX.

2.0 AVAYA INTUITY ORDERING INFORMATION

Avaya INTUITY™ Requirements

- Voice Port Cards (IVC6), six analog connections per card
- Multi-Port Serial Card (Provides 8 RJ11 connections)
- INTUITY Software Release 5.1 (or later) platform software
- Serial and Inband Integration Software
- DB9 to DB25 pin Serial cables (same as 3920 modem, 25 male to 25 female cable) Com code 846 823 680 /4

Disclaimer: Configuration Notes are designed to be a general guide that reflects AVAYA Inc.'s experience configuring its systems. These notes cannot anticipate every configuration possibility given the inherent variations in all hardware and software products. Please understand that you could experience a problem not detailed in a Configuration Note. If so, please notify the TAC/TSO at (408) 922-1822, and if appropriate, we will include the problem in our next revision. AVAYA Inc. accepts no responsibility for errors or omissions contained herein.

3.0 PBX HARDWARE REQUIREMENTS

- Standard, single-line extension appearances, 16LC-BE or 16LC-Q; *see section 8.2*
- One analog port for remote service access
- One NEC MCI I/O 19 or I/O 02 port with I/O 2400 RS-232 data link cable
- One P/N NR559037-107 or NR553925-110 cable for the data link
- 80 Vdc power supply model 15842-001 (for message-waiting on single-lines)
- **NOTES:**
- If an additional I/O card must be ordered, also order a MISC TTY CA.
- The 2 PORTS I/O CA is used with the I/O-19 card, and the 68PH S 2PORTS CA-A is used with the I/O-24 card as the MISC TTY CA.

3.1 PBX SOFTWARE REQUIREMENTS

- Software ICS Series 6000 and IMX 7000 Series

4.0 SUPPORTED FEATURES

- Station forwarding to personal greeting
 - busy
 - no answer
 - all calls
 - RNA/Busy
- Multiple Greetings
 - busy
 - no answer
- Message Waiting Indicator
 - lights
 - LCD display (if available)
- Multiple return-to-operator
- Automated Attendant
- Call Sender
- Outcalling
- Direct Call
- Personal greeting of original-called party on multiple-call forward

Supported integration features

- Separate greeting message for Busy and No Answer is supported.
- Separate greeting message for both internal and external calls is supported
- Transfers - Only blind analog transfers to a valid extension are supported. Transfer time will be in the range of 5-8 seconds. To avoid silence period during transfer, turn on Music-On-Hold on the Switch.
- Auto-attendant - DID calls may require proper Switch translation and routing setup. INTUITY™ Express Messaging can be set up using a dummy extension on the Switch.
- Message Waiting Indicator updates. Stations with MWI have Lamp indication. Other stations have stutter tone.
- Disconnect - Switch sends disconnect code on serial line when caller hangs up. INTUITY™ recognizes this and disconnects. For far-end disconnect, proper disconnect tone administration will be required.
- Voice Mail Access - direct voice mail access from stations is supported. Users are required to dial # prior to entering the password.
- Only TCP/IP, AMIS analog or low-speed digital networking can be supported when the INTUITY™ is connected to NEC 2400. The high-speed digital networking using DCP interface is not supported on NEC 2400.
- The Intuity™ does not support the Leave Word Calling (some times known as call back message notification).

5.0 CONFIGURING THE NEC 2400 TO INTEGRATE

- Each PBX can support up to 2 I/O-19 or I/O-24 cards for a total of 8 I/O ports. Each I/O card supports up to four I/O ports. Locate an available I/O port that will be used for the voice mail data link. Assign it as an MCI port through the ASYD system one indexes 28 and 29.

- The standard assignment for index 28 is '20H'. Do not alter it without consulting NEC Engineering.
- The standard assignments for index 29 are as follows:

01H = I/O port 0
 02H = I/O port 1
 04H = I/O port 2
 08H = I/O port 3
 10H = I/O port 4
 20H = I/O port 5

Configuring the NEC 2400 data
link

40H = I/O port 6

80H = I/O port 7

- Refer to the NEC Manual for additional information on these indexes.

- ☐ ASYD system two index 6 bit 0 should be set to '1' to enable the MCI feature.
- ☐ Baud rate, parity, stop bits and data length are assigned using the AIOC command with the following, 9600,odd,2,7
- ☐ The I/O-19 card has no switch settings. The I/O-24 card has one switch which determine if ports 0-3 or ports 4-7 reside on the card.
- ☐ Verify the guard timer is set to zero for the MCI port, through the ASYD command, Index 28, bits 0 - 4.

NOTE: If the PBX is taken out of service and restarted, the MCI port might not operate. If this is the case, unplug the RS-232 link from the Intuity voice system, then have the PBX vendor reset the system processor in the ICS/IMX configuration. In the SIM/IMG configurations reset the I/O card.

Configuring the single-line ports for the INTUITY System

5.1 CONFIGURING THE VOICE LINES IN THE NEC PBX

- ☐ Assign single-line ports for the INTUITY system in the ASDT (Assign Station Data Table) with TEC=3.
- ☐ Assign a Service Feature Class (SFC) to those ports. The SFC should have Service Feature Index 48, Distinctive Ringing, set to 0. This will *disable* Distinctive Ringing. If this feature is enabled, problems with ringing detection will occur.
- ☐ Assign the INTUITY voice ports to a UCD group using the ASHU command.

The pilot number of the above UCD group is the **INTUITY**

Access Number. It is used by subscribers to call the INTUITY voice module to retrieve their messages. It is also used by subscribers to forward their phones to the INTUITY system.

- ☐ Create a single-line extension in the PBX. Set call forward all-calls to the pilot number of the UCD group. Do *not* create a voice mailbox for this extension. This extension is used as the INTUITY voice module **Transfer Target Number**. Any call to be transferred to the voice module should be transferred to this number so that the caller will hear the general system greeting instead of the direct call greeting.

5.2 SUPPORTING UNSUPERVISED TRANSFERS TO THE ATTENDANT CONSOLE

Unsupervised transfers to the attendant console are supported with Series 6000 E9.00 Software

Unsupervised transfers to the attendant console are supported with Series 6000 E9.00 Software.

NOTES:

Reorder tone is sent to an extension attempting to transfer a caller to an attendant in Night Mode, unless a station has been programmed in the PBX as the Attendant Night Transfer Target in the ASID command.

- If the attendant does not answer an unsupervised transfer within the predetermined time set for Transfer Call Recall, the call will be sent back to the INTUITY voice module and the caller will hear the system greeting. The Transfer Recall Timer is set in ASYD SYS1, Index 145.

5.3 CONFIGURING THE PBX TO SUPPORT MORE THAN 20 VOICE MAIL PORTS

Configuring the PBX to support more than 20 voice mail ports

6000 software supports one UCD group of 20 members which can overflow to a second UCD group of 20 members. Only one overflow is allowed for a total of 40 ports.

If more than 40 integrated ports are required, add a third UCD group (overflowing to a fourth UCD group, if necessary) with the required number of ports. ***However, creating a third (and possibly fourth) UCD group, requires splitting subscribers between UCD groups and requires two different access numbers.*** Multiple MCI links are not needed.

- ☐ Configure an overflow target for a UCD group using the AUOG (Assign UCD Overflow Group) command.

6.0 CONFIGURING THE INTUITY

- ☐ The following define the steps required on the INTUITY™

HINT: When changes to the Switch Interface Administration are completed, a message appears on the screen indicating to restart the INTUITY™ voice system. However, this task is not required after each step. Once ALL changes are completed the system must then be restarted.

Step 1:

Navigate to **Switch Selection** screen.

INTUITY™ Main Menu

Select **Switch Interface Administration**

Switch Selection

Ensure that the **Country** and **Switch** are already properly chosen. If not then select the proper Country, then select NEC 2400 as the switch and save the screen. Do not save the screen if the already configured Country and the Switch are already configured.

Step 2

- Serial Interface (port) Configuration
Select “Switch Interface Administration”
Select “Switch Link Administration”.
Select “Serial Interface Administration”.
- Assign parameter values that match the NEC 2400 integration serial port.

Select “Switch Link Administration”. Assign parameter values that match the NEC integration serial port.

Select the serial port by pressing “CHOICES” button. Select serial port /dev/tty00 if the NEC serial port on the INTUITY is connected to Com 1.

Select any one port from /dev/ttysaa onwards (ports from multi-port serial Card).

NOTE: TTY SAA is the right most jack when viewed from the rear.

Step 3

- Assign PBX Extensions to Channels
Select “Voice System Administration” menu
Select “Voice Equipment” menu
Select “Actions “ option
From the “Assign.Change” screen,
Select “PBX Extension to Channel” option
Assign the extension numbers computed in the above step to all used voice channels.
Assign DNIS as a service to all channels.

Step 4

- Assignment of Channel to Groups
Select “Voice system Administration” menu
Select “Voice Equipment” menu
Select “ACTIONS” button, this will bring up the Actions menu.
Select “Assign/Change” option
From the Assign/Change screen, select “Channels to Groups” option.

NOTE 1: By default all channels are assigned to group 2. The dedicated MWI channel *must* be assigned to a *different group* to ensure that the same channel that turns on MWI lamp turns off the lamp. This is a switch limitation. Dedicated MWI channels that are assigned to a different group must also be “unassigned” from group 2. If more than one dedicated MWI channel, each channel should be in a different group. By convention the highest channels are used as dedicated MWI channels.

Important: In some installations this field was left blank and the integration worked. Regardless please bear in mind if there is a problem with MWI it may be due to the fact that the MWI channel is incorrectly assigned. If more than one channel is used these must be assigned to different groups.

Step 5

- Message Waiting MWI Device Assignment
Select “Switch Interface Administration” menu
Select “Call Data Interface Administration” menu
Select “MWI Administration” menu
Select “Device Assignment” option
Administer parameters as follows:
Link Test[Y/N]: N Link Test Interval: <leave default>
Populate the first entry in the table as follows:
Switch Number device ID Link Test Number 1 <Serial Port from step 2 above <leave this blank>
If the group of channels for MWI updates is 2, the screen will look like figure 1.

Link Test [Y/N]: N	Link Test Interval:	
Switch Number	Device Number	Link Test Number
1	/dev/ttysaa	

Figure 1

Step 6

- System Translation Administration
Select “Switch Interface Administration” menu
Select “Call Data Interface Administration” menu
Select “System Translation Administration” menu
Select “Dial Plan Translation” option
Administer the following:
INTUITY Extension Length: <Switch Subscriber extension length>
Switch Network Access Code: MUST be blank
Administer extension ranges in the table as follows:
- 1) Leave “Switch Prefix” field blank
2) Enter the valid extension ranges in “Switch Start Ext.” and “Switch End Ext.” fields
3) Leave “INTUITY™ Prefix” field blank
4) Enter the Switch number if the entry. This is the same number used in the AUDIX subscriber database
5) Enter”N” in the remote [Y/N] field

The following provides an example of how this form should be filled, if the extension length is 4 digits on the INTUITY™ and the valid extension ranges on the switch begin 1111 through 1222 and 5555 through 2999, while INTUITY™ subscribers ranges are 1211 through 2222, 5555 to 9999.

INTUITY Extension Length: 3				Switch Network Access Code:	
Switch Prefix	Switch Start Ext.	Switch End Ext.	INTUITY Prefix	Switch Number[Y/N]	Remote
1	111	222		1	N
2	555	999		1	N

Step 7

- Transfer Parameters
Select “Switch Interface Administration”:
Select “Telephone Interface Administration”
Select “Analog Interface:”
Select “Transfer Parameters”

Step 8

- Transfer Security Assignment
- Select “Voice System Administration” menu
Select “Transfer Security” menu
Assign restrictions if any used.

Step 9

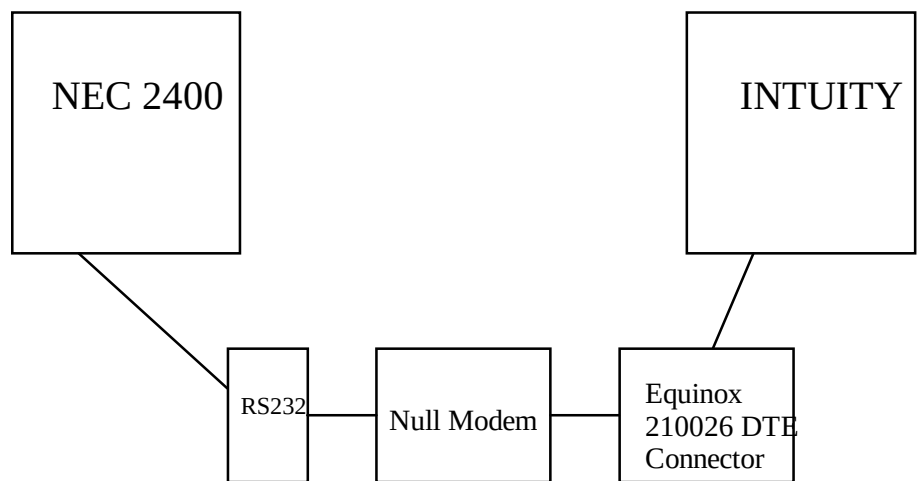
- Auto Attendant Setup for Day/Night Service
- Administer the appropriate Business Schedule and Holiday Schedule
Select “AUDIX Administration” menu
Enter “Change Auto-attendant-routing-routing table”
Administer parameters as follows:

AUTO_ATTENDANT ROUTING TABLE					
Route Table Administration					
Incoming Called Number	Business Schedule	Holiday Schedule	Day Service Mailbox	Night Service Mailbox	Alternate Service
Mailbox ???	Bus1	Hol1	???	???	

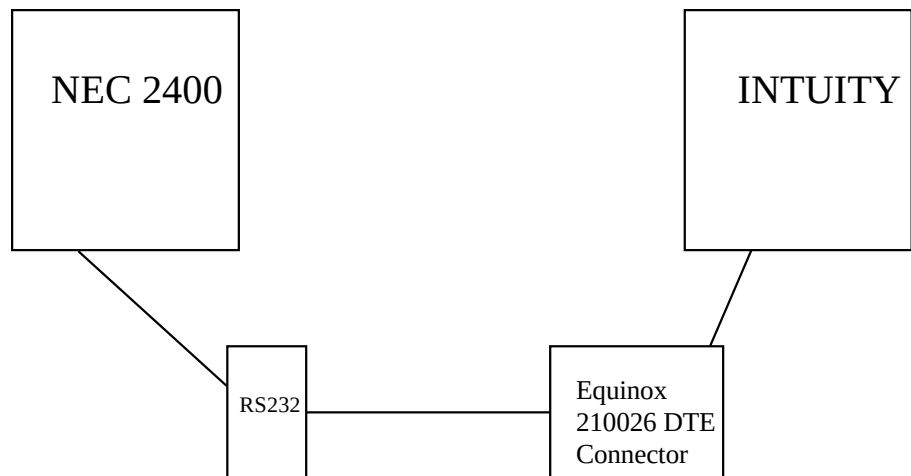
NOTE: Day Service and Night Service Mailboxes will have to be administered and an appropriate greeting must be recorded.

7.0 HARDWARE INSTALLATION

- There are two ways in which the NEC 2400 can connect to the INTUITY.
- The following connection uses a Null Modem when connecting to the NEC 2400.



- The following connection does not use the Null Modem when connecting to the NEC 2400.



Connecting analog voice lines

7.1 CONNECTING ANALOG VOICE LINES

Each analog IVC6 supports 6 voice ports.

- ☐ Physically connect the lines used for the voice path between the switch and the INTUITY. The voice lines are connected to the switch using customer-supplied cables.

Installing the integrations data link on the INTUITY

7.2 INSTALLING THE INTEGRATIONS DATA LINK

The I/O board supports up to 4 integration links.

- ☐ Physically connect the RS232 link to the INTUITY. The end of the cable with the DB-25 connector is connected to the PBX I/O port.

Testing the installation when complete

7.3 TESTING THE INSTALLATION

- ☐ Refer to the AUDIX installation manual for further details on testing the installation.
- ☐ Create two mailboxes associated with two test extensions. Record a name and personal greeting for each mailbox.

- ☐ System forward one test extension to the Intuity Pilot Access Number.
- ☐ Using one test extension, call the other test extension. You should hear the personal greeting. Leave a message. Verify that message waiting indication turns on.
- ☐ Review the message in the mailbox.
- ☐ Delete the message. Verify that message waiting indication turns off.
- ☐ Verify that return-to-operator works properly.
- ☐ Call the Intuity from a test extension. Do you hear “Please enter your password”.
- ☐ Use the automated attendant and transfer to an extension, answer the incoming call.
- ☐ Transfer to a station that is in a Do-Not-Disturb mode, busy mode, RNA mode.
- ☐ Set up outcall notification in the test mailbox, leave a message to generate an outcall. Make sure ports are configured for Outcall
- ☐ Place an internal call and document the time it takes the Intuity to disconnect after the caller hangs up. Repeat this step instead placing an external call.
- Call Disconnection Failure
 - The call disconnection fails when dial tone is not properly configured on INTUITY. Capture the dial tone using the procedure given in Tone Capture and Analysis Users’ guide Compas ID: 61338. Configure the dial tone and stop and start Voice System.
- ☐ Call the test extension from a fax machine and transmit a fax. Enter the mailbox and print the fax.

Important notes regarding this integration

8.0 CONSIDERATIONS

- 8.1 Without specific PBX programming, unsupervised call transfers to extensions that are ring-no-answer do not forward to the ring-no-answer destination.** Calls ring at the extension and then recall to the extension that transferred the call. Program through the ASYD SYS 1 command to allow the call to forward under these conditions.
- 8.2 Supported NEC line cards.** The 16LC-BE provides a programmable open-loop disconnect signal for the Tip/Ring IVC6 to detect. The PBX also sends a fast busy signal for disconnect which the Intuity system does recognize. The 16LC-AD and the

16LC-BJ cards are -24Vdc line cards, which are **incompatible** with the IVC6 cards and, therefore, are not supported.

8.3 AVAYA will not support line drivers or devices exceeding the 50 feet distance limitation for RS-232 connections.

8.4 Expanded MCI is not supported.

8.5 AVAYA highly recommends that INTUITY voice ports be distributed among different port cards/shelves on the PBX. This reduces the possibility that a single card/shelf failure will affect a large number of Intuity ports. Depending on PBX architecture, performance could also be an issue on some PBX's during high traffic if a large number of calls are being processed on the same card or shelf.

Document History		
Revision	Issue Date	Reason for Change
DRAFT 0.1	03/11/02	Initial Release
Version A	06/04/03	Note was validated during field implementation 5/03. One addition made: <i>Important</i> statement at end of Step 4 in section 6.0 "Configuring the Intuity"

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