

Smooth Operator Configuration Note

For Smooth Operator Family of Products

Octel

Voice

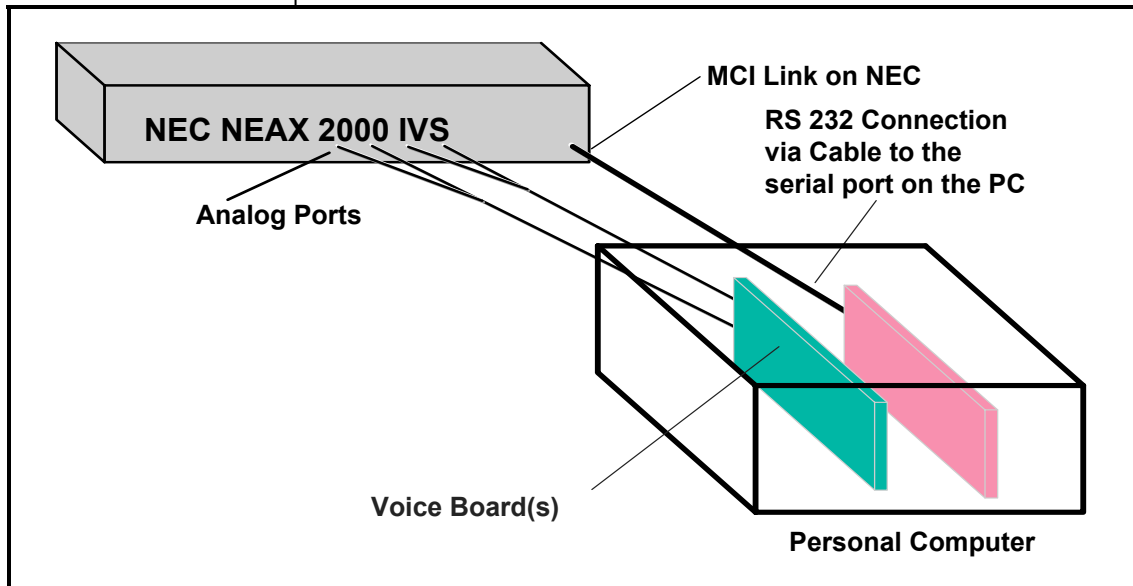
Processing

Module

Configuration Note 77173

NEC NEAX 2000 IVS* with Direct Serial Link

Revised 9/17/97



Communications between the
NEAX 2000 and the Smooth
Operator are through a RS-232
Connection to the serial port on
the PC.

Smooth Operator Ordering Information

1.0 METHOD OF INTEGRATION

RS-232 / Direct Serial Integration. Smooth Operator communicates with the NEC2000 using Feature 2 of the Message Center Interface (MCI). Call forward to personal greeting is achieved by call information being sent over the MCI link to the RS232 port on Smooth Operator when calls are forwarded to the Voice Mail UCD group. Message Waiting Lights are set and canceled using the NEC message center feature. A hookflash followed by the extension transfers the caller to the operator.

2.0 SMOOTH OPERATOR ORDERING INFORMATION

There are many options available for both kit and turnkey versions of this product, depending on the application. Please consult with your sales representative.

The Special Integration diskette NEC 2400 FOR DOS version 3.2, part number S-COM-1031, and Modem cable (BEL-ATHAY10), part number H-COM-2215 must be used..

Disclaimer: Configuration Notes are designed to be a general guide reflecting Octel'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 may experience a problem not detailed in a Configuration Note. If so, please notify Sales Engineering at (408)324-3066, and if appropriate we will include it in our next revision. Octel accepts no responsibility for errors or omissions contained herein.

PBX hardware requirements

3.0 PBX HARDWARE REQUIREMENTS

- Single line circuits on PN-4LCJ card, one per Smooth Operator port
(Note: the PN-4LCJ card provides four ports with momentary loop open for positive disconnect.
- An I/O port on a PN-AP00 Card with cable RS RVS-15S CA-A
- Register Sender card PN-8RSTA (DTMF receiver), one per every eight Smooth Operator ports.
- One RJ-14 jack with 4-conductor line cord for every two Smooth Oper ports
- One analog line for remote service access
- One RJ-11 Jack for above and 2-conductor modular telephone cord.
- If FaxMail is installed.
 - One analog line per FAX port.
 - One RJ-11 Jack for every Brooktrout TR-112 fax port OR one RJ-14 Jack for every two Brooktrout TR-114 fax ports, along with 4-conductor modular telephone cords.

PBX software requirements

3.1 PBX SOFTWARE REQUIREMENTS

- Software Series 1230 *Note: MCI is not supported on any prior versions of software.*
- Software Series 1300 NJ3.04 *Note: See Section 7.4*

Supported integration features

4.0 SUPPORTED FEATURES

[✓] Items are supported

System Forward to Personal Greeting		Message Waiting	
All Calls	[]	LCD Display	[✓]
Ring/no answer	[]	LED	[]
Busy	[]	Lamp	[✓]
Busy/No Answer	[]	Audible / Stutter Dial Tone	[]
Do Not Disturb	[]	Multiple Return to Operator	[✓]
Station Forward to Personal Greeting		Direct Call	
All Calls	[✓]	Auto Attendant	[✓]
Ring/no answer	[✓]	Outcalling	[✓]
Busy	[✓]	Personal Greeting of Original-Called Party	
Busy/No Answer	[]	Multiple Call Forward	[✓]
Do Not Disturb	[]	Double Call Forward	[]
Flexible Forwarding		Call Coverage	[]
Forward to No Answer Greeting	[✓]	Intercom Paging	
Forward to Busy Greeting	[✓]	Supervised Transfers	
Intercom/CO Forwarding	[]	Call Screening	[✓]
		Call Queuing	[✓]
		Intercom Paging	[✓]
		Record Telephone Conversation	
			[]

**Programming PBX system
parameters****4.1 DISCONNECT TYPE**

Positive disconnect is achieved by Drop in Loop Current. For proper external disconnect supervision, Ground start or Supervised Loop start CO lines are recommended.

5.0 CONFIGURING THE NEAX 2000 IVS WITH DIRECT SERIAL LINK

Refer to the NEAX 2000 System Manager Manual for information on entering, saving, and exiting database programming. Before you begin, we recommend that a hard copy of the customer database be completed using NEAX 2000 System Manager programming records to verify existing programming.

To configure the NEAX 2000 for call processing with Smooth Operator, data must be entered into the following database tables:

- ☐ System Parameters
 - Set prepause timer for VMS
 - Disable Automatic Message Waiting Light Cancel
 - Assign Message Waiting Set/Cancel Feature Codes
- ☐ Configure the Smooth Operator Single Line Ports
 - Assign Smooth Operator Extensions to Circuit Interface Ports
 - Designate Smooth Operator Extensions as "VMSST"
 - Program Momentary Loop Open for Positive Disconnect
 - Disable Message Waiting capability on all Smooth Operator ports.
- ☐ Configure UCD group for Smooth Operator ports
 - Place Smooth Operator Extensions into a UCD
- ☐ Configure MCI port.

5.1 PROGRAM SYSTEM PARAMETERS**Set prepause timer for VMS**

CM41 y=0, Function 44=13 (where 13 equals .5 seconds)

Disable Automatic Message Waiting Light cancel as follows:

CM08 (Basic Service Features)

Set the following service features to their corresponding values

233=1 (1=not assigned)

234=0 (0=not available)

235=1 (1=not available)

If Optional Return Message Scheduling is enabled:

CM08 (Basic Service Features)

334=0 (0=disabled) return reorder tone.

5.2 CONFIGURE SMOOTH OPERATOR SINGLE LINE PORTS

Assign CPP Extensions to Circuit Interface Ports using CM10.

Designate CPP Extensions as "VMSST" ports as follows:

CM13 yy=10 (VMSST)

Enter the Smooth Operator Extension number

Function=0 (enabled)

Program for momentary open for positive disconnect.

This procedure has two parts. CM13 enables momentary open on the Smooth Operator ports and CM41 sets the momentary loop open timer.

CM13 yy=22 (for MOPN)

Enter the Smooth Operator Extension Number

Function=0 (enabled)

CM41 y=1, Function 08=05 (where 5 = 512 - 640 Milliseconds)

Configure Smooth Operator ports for Message Waiting Ability

Assign Service Restriction Class as follows:

CM12 yy=02

Enter the Smooth Operator Extension number

Function=1515 (15 is an unrestricted Service Restriction Class by default, 1515 sets the SRC for both Day and Night Modes).

Disable set and cancel Message Waiting for CPP extensions as follows:

CM15 yy=47 (Message Reminder, Setting Side)

Enter the Service Restriction Class assigned to the Smooth Operator Extensions (our example uses SRC 15)

Function=0 (0 = disabled)

NOTE: All subscribers should have message waiting and message reminder disabled, otherwise this could cause conflict and confusion if message waiting is turned on/off from both Smooth Operator and subscribers.

5.3 CONFIGURE UCD GROUP FOR SMOOTH OPERATOR PORTS

Place Smooth Operator Extensions into a UCD group.

This procedure has three parts. The first part assigns extension numbers one by one in the order of hunting. The second part assigns the UCD pilot number. The third part assigns the Smooth Operator extensions to a UCD group number.

Use CM17, y=0 (determines the Call Distribution order based on the order of entry).

Enter the first Smooth Operator Extension Number (this will be the UCD pilot Number), hit Data Enter.

Enter the next Smooth Operator Extension Number. Repeat until all Smooth Operator ports have been assigned to the UCD group.

Use CM17, y=1 (where 1=Pilot YES)

Enter the First Smooth Operator Extension Number (this will be the pilot number for Smooth Operator)

Use CM17, y=2 (where 2=UCD group)

Enter the first Smooth Operator extension Number, hit Data Enter

Enter the two digit UCD Group Number (valid UCD Groups are 00-15)

Repeat for each Smooth Operator port.

5.4 CONFIGURING THE MCI PORT

Please refer to the Feature Programming Manual for a detailed description of all programming options. Figure 1 below shows the layout of the PN-AP00 I/O card.

The following system parameters must be configured

CM08 443 = 0 (0 = MCI, 1 = In-band)

444 = 0 (0 = MCI, 1 = In-band)

376 = 0 (0 = CCIS support)

Use CM001 to define the MCI link parameters as 1200 baud, no parity, eight data bits, and one stop bit (1200, 8,N,1).

The second data field in CM05 must be set to 04 for AP00 card. The rotary sense switch on the card must be set to match this parameter.

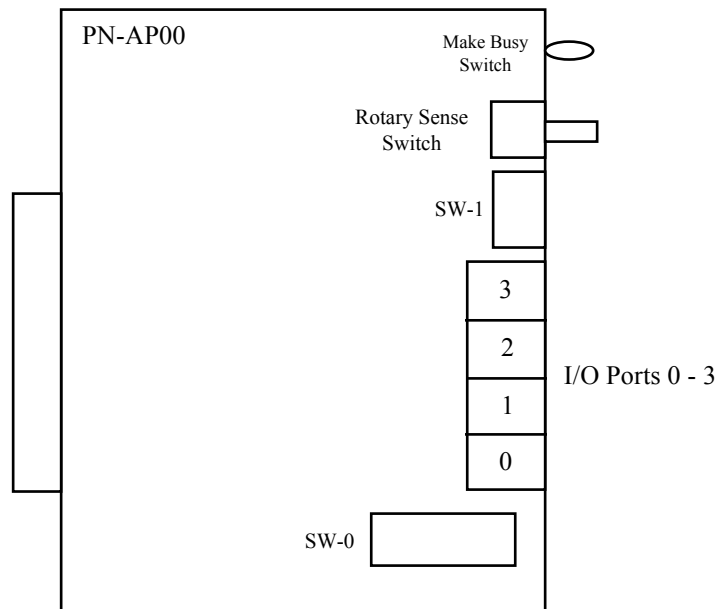


Figure 1

SW-0 should have 1,2, and 3 OFF and 4,5,6,7, and 8 ON.

SW-1 should have all 4 switches ON.

NOTES:

The Make Busy switch must be in the down position when active and up to busy-out the card before removing.

Port 3 has a different pin-out configuration than ports 0 - 2. It is recommended to use only ports 0, 1, or 2.

Smooth Operator programming

6.0 CONFIGURING THE SMOOTH OPERATOR

During the install process, run the Integrator program and choose the NEC NEAX 2000 IVS Direct Serial Link. The Integrator will place appropriate feature codes into the Smooth Operator Setup.

The following codes should be inserted by the integrator. Four digit extensions are assumed.

Outside Line Access Code	9,
Off Hook Delay (OFFHDLY)	50
Hook Flash Interval (FLINTVL)	50
DTMF Tone Length (TONELEN)	8

Message Waiting Parameters

Permit Message Waiting Lights	X	<i>(Enabled)</i>
Use MW Data from Serial Port [COMMMWL]	X	<i>(Enabled)</i>

Inband Parameters

Total Number of DID Digits	10	
Seconds to Wait for First Digit	1	
Location of Inband Signaling Code	1	
Millisecs to Wait for Next Digit	100	
Code for Go to Voice Mail	F	
Start at End of String for Go to Voice Mail	X	<i>(Enabled)</i>
Location of Mailbox Number for Go to Voice Mail	4	
Code for Immediate Subscriber Login to Mailbox	C	
Start at End of String for Immediate Login	X	<i>(Enabled)</i>
Location of Mailbox Number for Immediate Login	4	
Code for Busy Extension	B	
Start at End of String for Busy Extension	X	<i>(Enabled)</i>
Location of Mailbox Number for Busy Extension	4	
Code for No Answer Extension	N	
Start at End of String for No Answer Extension	X	<i>(Enabled)</i>
Location of Mailbox for No Answer Extension	4	
Start at End of String for Default Code	X	<i>(Enabled)</i>
Location of Mailbox Number for Default Code	4	

Note: *Verify these dialing sequences for your installation.*

In addition to running the Integrator, ensure the following parameters are set to their corresponding values in System Setup:

SMDI Parameters

Use SMDI ✓

Note: *Verify all these dialing sequences for your switch*

Inband Dialing Parameters Definition

6.1 INTEGRATION CONFIGURATION PROGRAM

When the Integration Configuration Program is run, ensure that the Serial Communication Protocol matches the NEAX 2000, which was set in section 5.4 of this document to 1200 baud, no parity, eight data bits, and one stop bit (1200, 8,N,1). Set Timeout to 2.

Next, select PORT ID button, enter the extension numbers connected to the corresponding Smooth Operator ports.

6.2 INBAND DIALING PARAMETERS DEFINITION

The following is presented to help interpret the inband dialing string seen with the Smooth Operator's digit grabber turned on. The data seen by the internal digit grabber is not the same as what comes in the Serial Link.

1	2	3	4	5	6	7	8	9	10
c	s	s	s	s					

Data	Value	Remarks
c	F C B N	Call Type Call Forward All Direct Call If busy Ring No Answer
s		For c= C, Calling Party:
s		For c = F, B, or N Called Party

Important notes concerning this integration

7.0 CONSIDERATIONS / ALTERNATIVES

The following items should be considered, below:

- ☐ Message Waiting Considerations
- ☐ Supervised Transfers
- ☐ CCIS Network
- ☐ NEC NEAX 2000 Release 1300 Must be Version NJ3.04

7.1 MESSAGE WAITING CONSIDERATIONS

We recommend that only Smooth Operator be allowed MWI activation. This will prevent phones from having their message waiting lamps lit when there are no new messages.

**Important notes concerning this
integration****7.2 SUPERVISED TRANSFERS**

The NEAX 2000 has a complex and highly flexible call handling capability making unsupervised transfer the preferred method. Condition the mailbox Class Of Service in Smooth Operator by changing the Max Rings to zero.

If the Smooth Operator is programmed to execute a supervised transfer, Handsfree Announce must be disabled. If call forwarding is on at the station, ensure that it is for Ring/No Answer only, and that the ring timer is greater than the Maximum Rings in the Mailbox Class of Service.

When Call Queuing is in use and CO lines do not provide disconnect supervision, enable the option, "Require Caller to Press Star to Stay in Queue," in the Smooth Operator Setup, Call Queuing Parameters. Unsupervised CO lines will cause the Subscriber to receive phantom calls because of callers who hang-up while waiting in queue. This will alleviate the perception that the called subscriber is losing calls.

7.3 CCIS NETWORK

Centralized Voice Mail requires Virtual extensions on the hub. Call forwarding to personal greeting for subscribers on a remote site is accomplished by setting up Virtual Extensions on the hub system using CM11. The Virtual Extensions are always forwarded to the Smooth Operator pilot number. Subscribers on the remote are then forwarded to the Virtual Extension. Message Waiting Indicator is not yet supported across the CCIS network.

7.4 NEC NEAX 2000 RELEASE 1300 MUST BE VERSION NJ3.04

With the Release of 1300 software a problem was encountered when a call to an ACD Group overflowed into VoiceMail. The NEC would send the Tenet group number in the MCI stream. The NEC driver did not know how to handle the new data. NEC has fixed this problem and the upgrade to version NJ3.04 is free. If your system has 1300 software the version level can be verified in CM F82 y=0. The data display is an 8 bit word and the version level will be the last 3 digits (xxxxx304).

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