Release Notes

NEAX®2000 IPS
NEAX®IPS^{DM}

Business / CCIS

3200 Series Software R6.2 Release

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1. Overview

3200 Series R6.2 Software is being released in conjunction with Remote PIM over IP. In addition to the software enhancement, NEC is also announcing the release of IPS 1035i Router Card. 3200 Series R6.2 Software provides many enhancements to IP Telephony networking features.

2. New Business & CCIS Features

2.1 Remote PIM over IP (NEAX IPS^{DMR})

Remote PIM over IP is being provided with the NEAX IPS^{DMR}. The NEAX IPS^{DMR} (Internet Protocol Server Distributed Model Remote) has been optimized for Remote PIM over IP applications. The NEAX IPS^{DMR} uses new SPN-CP31 as the Main Processor. This system targets users who have 1-7 relatively small offices that accommodate 10-30 extensions at the Remote Site.

The NEAX IPS^{DMR} is designed primarily for distributed IP networking but also supports traditional analog and digital trunks for connection to the Public Switched Telephone Network (PSTN). The NEAX IPSIPS^{DM} supports up to 128 peer-to-peer IP stations and 40 TDM ports in a single modular chassis. Up to two chassis can be stacked providing maximum capacity of 80 TDM ports while still supporting as many as 128 peer-to-peer IP stations.

The MP card at the remote site has the same system data as the CPU at the host site; the host site automatically downloads system data to the remote site at the time of setup. In normal operation, Main Site automatically downloads the system data to the remote site through the network once a day.

Because the CP31 is designed as a Remote PIM CPU, the following options that are built-in on the CP24 are not available with the CP31:

- No built-in modem.
- No built-in DAT.
- Only one RS Port.
- No built-in DK (external/relay key).
- No MN Alarm Indication

2.1.1 NEAX IPS^{DMR} Capacity

Total Network Capacity is 512 Ports (This includes main site & all NEAX IPS^{DMR} sites)			
Description		**Number of Chassis**	
		1	**2**
Analog CO Trunk ports	No. of Analog CO Trunks per DMR	40	80
Analog Single Line ports per DMR ***Note[1]***	4LC w/RGU Card	20	40
	8LC	32	64
Digital Dterm ports	No. of Digital ports per DMR	40	80
Dterm IP/ INASET (Peer to Peer IP)	No. Peer to Peer IP per DMR	128	128
IP-PAD	No. of channel per DMR	32	64
IP-PAD	No. of channel per System	Up to 256 per network	
Legacy, IP PAD and Peer to Peer ports per system	No. of LT and Peer to Peer IP per System	Up to 512 per system	
AP card	No. of ports	Up to 256 ports per system	
Dterm PS		(Host Only)	
Cell Station (CS) / Zone Transceiver (ZT)		(Host Only)	
ISDN Station		(Host Only)	
Central Office Trunk (Lines)	Loop /Ground Start	40	80
	DID w/4DIT	20	40
Tie Line Trunk (Lines)	2W E&M	10	20
	4W E&M	10	20
CCIS Trunk (Peer to Peer Connection)		(Mounted in Host system, accessible to DMR)	
DTI/ Digital Link	1.5M-AMI	5	10
	2M-AMI	5	8
ISDN	1.5/2M-AMI(PRT)	5	8
	4BRT (card)	5	10
IP Trunk		(Mounted in Host system, accessible to DMR)	
PFT Connections	4PFT (Line)	4	8
3-4 Party Conference		Max. 16 conference per system	

Note[1] *The power supply in the DMR does not provide Ring Generator (RG). When 8LC card is used, one 4LC w/RGU is required to be mounted in the same module. The 4LC will provide RG to the back plane distributing RG to each card slot in the module.*

Description		Number of Chassis	
		1	2
6-/10-Party Conference	6-Party	(Host Only)	
	10-Party		
32-Party Conference		(Host Only)	
Built-in Router		Option	
DTMF Sender on CPU		Max. 32 circuits per system	
DTMF Receiver		4 Build-in to CPU, 8RSTG N/A	
SN716 Desk Console/D^{term} ATT Position		(Host Only)	
SMDR Interface		(Mounted in Host system, accessible to DMR)	
PMS Interface			
ACD / MIS or OAI Interface			
Remote PIM over IP (Number of Remote Sites)		1 - 7	
DID Dial Conversion		1,000	
Call Forwarding-Outside Set		496	
Authorization Code / Forced Account Code / DISA Code per system		3,000	
Message Reminder Set		1,024	
Name Display / Guest Name Display		512	
Speed Calling-Station (Station Speed Dial) Set		10,000	
MP built-in SMDR Call Record		(Mounted in Host system, accessible to DMR)	
Music On-Hold (TDM stations, analog/digital trunks)		Locally connected to mini phono jack on CPU or via COT. PN-TNT N/A for DMR	

2.1.2 Network Conditions and Payload

Network Requirements

Item	Requirement	Remarks
Protocol	TCP/IP transparent	
Maximum Delay Time	120ms(one way)/240ms(return) (Recommended) 150ms(one way)/300ms(return)	Support the quality class A, B of IP Telephone ***Note*^{2}**

***Note*^{2}** *If the network is short of the requirements, it may cause delay operation of system, delay and deterioration of voice packets, disconnection of calls and frequent changeover to survival mode at Remote Site.*

Bandwidth Requirement

Established Voice Calls		With VCT (G729a, 8K)	Without VCT (G711, 64K)	Established Voice Calls		With VCT (G729a, 8K)	Without VCT (G711, 64K)
6	Control	4.1 Kbps	4.1 Kbps	32	Control	4.9 Kbps	4.9 Kbps
	Voice	48 Kbps	432 Kbps		Voice	256 Kbps	2304 Kbps
8	Control	4.3 Kbps	4.3 Kbps	48	Control	4.9 Kbps	4.9 Kbps
	Voice	64 Kbps	576 Kbps		Voice	384 Kbps	3456 Kbps
12	Control	4.3 Kbps	4.3 Kbps	64	Control	5.8 Kbps	5.8 Kbps
	Voice	96 Kbps	864 Kbps		Voice	512 Kbps	4608 Kbps
16	Control	4.5 Kbps	4.5 Kbps	72	Control	5.8 Kbps	5.8Kbps
	Voice	128 Kbps	1152 Kbps		Voice	576 Kbps	5184 Kbps
24	Control	4.5 Kbps	4.5 Kbps	96	Control	6.7 Kbps	6.7 Kbps
	Voice	192 Kbps	1728 Kbps		Voice	768 Kbps	6912 Kbps

This information is an estimation based on an established call.
Slightly Higher Control values will occur at time of call origination and termination.

<Base values>
Originating from a station: 9.6 Kbps/Call (estimated)
Terminating to a station: 5.76 Kbps /Call (estimated)
Originating to C.O: 11.5 Kbps/Call (estimated)
Terminating from C.O: 5.76 Kbps/Call (estimated)
Keep Alive to Remote Site: 0.032Kbps (estimated)
Other control packets for Remote Site: 4Kbps (estimated)
G729a voice: 8Kbps (one-way)
G711 voice: 64Kbps (one-way)

The above base values are primarily used for call setup with the exception of keep alive; 0.032Kbps with no voice traffic.
Connections between IP PADs are half duplex; in the above table established call utilization is G711 64Kbps or G729a 8Kbps. Compression can be specified by location numbers in system data. Peer-to-peer IP station calls even though full duplex will utilize one-way for bi-directional networks such as T1. Peer-to-peer IP station calls over asymmetrical networks such as ADSL may realize higher bandwidth utilization. Compression can be specified by location numbers in system data.

2.1.3 Software Framework Overview

With the release of R6.2 software and Remote PIM over IP several areas of previously fixed frameworks are now flexible frameworks. With R6.1 and earlier software, 32 FP/AP are available. FP 0, 1, 2 and 3 were fixed for physical FP's, AP 4 through 15 were fixed as AP Lower Highway, FP 16, 17, 18 and 19 were fixed as Virtual FP and AP 20 through 31 were fixed as AP Upper Highway. Also with R6.1, 32 IP PAD card maximum was 8 cards per system. With the exception of FP 0, R6.2 allows all FP/AP's flexible allocation with a maximum of 128 ports per FP and flexible allocation of IP PAD channels on a 8 channel basis, up to 256 IP pad channels can be assigned. For example, you can assign FP22 as a physical FP for Remote PIM 1 and FP10 as a Virtual FP for Remote PIM 1 and specify how many ports would be used in Remote PIM 1. FP22 assigns 24 LT ports, 8 for stations, 8 for analog COT and 8 for IP PAD, VFP10 assigns 8 IP station ports (assignment of ports

is sequential and in increments of 8 for each FP). The Remote PIM network has a maximum of 512 total ports; the remaining 480 ports can then be assigned elsewhere in the Remote PIM network. Each remote site can accommodate one built-in FP (up to 128 LT ports) on the CP31 and two virtual FP's (64 IP station ports per virtual FP).

2.1.4 Advantages

- The system regards the terminals accommodated in both Host Site and Remote Site as the extensions in the same office. Feature transparency is superior to CCIS.
- The Digital Remote PIM cannot accommodate AP cards; Remote PIM over IP can accommodate AP cards, such as ISDN PRI and T1.
- This feature can reduce the bandwidth used on the WAN by using CO lines at the Remote Site, rather than Dterm IP at remote locations.
- Since all Remote PIM over IP sites are treated as extensions in the same office, software and applications only have to be implemented in the host site. This provides centralized use of application for example distributing ACD agents in the DMR locations. CCIS requires each location to have separate software and applications.
- CCIS over IP can be combined with Remote PIM over IP to accommodate larger network configurations. Up to 255 host sites can be connected via CCIS, each host site can have up to 7 Remote PIM over IP locations.

2.1.5 Service Conditions

- This feature is available from R6.2 software. R6.2 software must be used at the host Site.
- The Host site can be NEAX 2000 IPS or NEAX IPS DM. The host site can also be an upgraded NEAX 2000 IVS^2 equipped with CP24A/B or CP27A.
- This feature is not available for NEAX 1000 IVS/NEAX 2000 IVS Retrofit with CP26A or CP28A even if upgraded to R6.2.
- Digital Remote PIM is not available from R6.2 software.
- R6.2 software and Key FD for the whole system must be loaded at the host site. No software or key's can be loaded into the remote site.
- All system data changes for the whole system must be performed in the host site. No system data changes can be done in the remote site.
- The CPU card at Remote Site has the same system data as the CPU at main site, the host site automatically downloads its system data to the remote site at the time of setup. In normal operation, the host site automatically copies the system data to the remote site through the network once a day.
- The remote site automatically operates by itself (survival mode) when Keep Alive signal (sent every 30 seconds) between the host site and remote sits is interrupted. When

Keep Alive is interrupted the Remote Site is reset to change the operation from normal mode to survival mode.

- Remote site in survival mode checks at 30 seconds intervals if the communications to Main Site are possible. When Keep Alive is detected, the remote site automatically is reset to change the operation from survival mode to normal mode.

- When unstable conditions occur in the network, the remote site can be manually set to survivable mode (override automatic) until stability in the network is established. This prevents the remote site from resetting to normal mode from survivable mode etc..

2.1.6 Required Hardware and Software

- **Host Site**
  - IP STARTER 8 SEAT SYSTEM PKG-A (IPS) or IPS DM 8 SEAT IP SYS PKG
  - SPN-32IPLAA IP PAD-C (included w/SYSTEM PKG)
  - SPN-16VCTAA IP PAD-A for compression or T.30 FAX (Optional)
  - 64 PORT SYS SOFTWARE 3200 SERIES R6.2 (FD) (included w/SYSTEM PKG)
  - LT PORT KEYS (qty must equal Host site plus all Remote sites)
  - 8 SEAT IP LICENSE (qty must equal Host site plus all Remote sites)
  - R-PIM 1 SITE LICENSE (1 required for each Remote site)

  Note: Registration of Host CPU and software required

- **DMR Site**
  - NEAX IPS DMR SYSTEM PACKAGE
  - SPN-32IPLAA IP PAD-C (included w/SYSTEM PKG)
  - 16VCT for compression or T.30 FAX (Optional)

  Note: Registration “not” required

2.2 T.30 Fax over IP

T.30 ITU-T standard FAX handshake protocol is being introduced to help facilitate FAX over a much broader range of customer premise equipment. The facsimile transmission procedure (T.30) is supported via T.30 FAX relay on the VCT package.

2.2.1 Service Conditions

1. If no VCT is used, T.30 facsimile transmission and reception are not available. PN-32IPLA-C card and PN- 16VCTA-A card must be used.

2. Facsimiles can be sent between NEAX 2400 IPXs and NEAX 2000 IPS, 2000 IPS and 2000 IPS is available.

3. If a Super G3 facsimile is used, the transmission speed will be equivalent to G3.

4. Previously, FAX over IP was supported with R6.1 and earlier software on the NEAX 2000 IPS with G.711. Minimum network requirements such as available bandwidth,

QoS, jitter buffer value larger than network assumed value, and clock synchronization play an important factor for successful G.711 FAX transmissions. In some applications bandwidth is extremely limited making network problems virtually impossible to avoid. For these applications T.30 FAX is recommended.

Connectable combinations between facsimile stations are shown below.

Connectable Combinations			Remarks
Source	**Via**	**Destination**	
IPS FAX station	Local	IPS FAX station	Station-to-Station connection
IPS FAX station	Peer-to-Peer CCIS	IPS FAX station	
IPS FAX station	Peer-to-Peer CCIS	IPS^{DM} FAX station	
IPS FAX station	Peer-to-Peer Local	IPS^{DMR} FAX station	Station-to-Station connection (Remote PIM over IP)
IPS FAX station	Peer-to-Peer CCIS	IPX FAX station	
IPS FAX station	Peer-to-Peer CCIS	IPX MC FAX station	

Required bandwidth for FAX Connection

Connection Conditions	Required Bandwidth (One-way)
G711, Payload=40ms	150 Kbps (estimated)
T.30, G729a, Payload=40ms, Communication speed=14.4Kbps (No IP Header compression in Router)	23.6 Kbps (FAX Payload=78byte)
T.30, G729a, Payload=40ms, Communication speed=14.4Kbps (with IP Header compression in Router)	16.6 Kbps (FAX Payload=78byte)

2.2.2 T.30 Required Hardware and Software

- SPN-32IPLAA IP PAD-C and SPN-16VCTAA IP PAD-A
- 64 PORT SYS SOFTWARE 3200 SERIES R6.2 (FD)

2.3 CCIS/Remote PIM over IP Link Down Notification

This feature displays the occurrence of abnormal link state on the designated Dterm/Dterm IP, at Main Office and Remote Office (CCIS connection or Remote PIM), and the users at both offices can recognize the link state. This feature provides for cost effective maintenance.

When a Link Down occurs, a button on the Dterm that has been designated in system data “flashes rapidly in red”. Press the flashing button. An error message is displayed on the center line of LCD. (LCD error message example: Link down to site #1)

When the Link recovers, the operations are as follows. - In **CCIS over IP**, the lamp goes out. - In **Remote PIM over IP**, the lamp "flashes intermittently in green." When the Remote Office returns to normal operation, the lamp goes out.
Conditions for CCIS over IP

1) This notification service is available only for Dterm and DtermIP accommodated in 2000 IPS. This is not available for a single line telephone and Attendant Console.

2) After pressing LD button, notification message will be displayed regardless of idle or busy state of Dterm. The Link message will replace the present display, after six seconds the display returns to the time display automatically.

3) The system detects Link Down condition when Peer-to-Peer CCIS is interrupted for 15-20 seconds.

Conditions for Remote PIM over IP

1) The system detects a Link Down condition when the connection between the Main Office and the Remote Office is interrupted for 20-50 seconds.

2) The system detects the Link ready recover condition between the Main Office and the Remote for 0-30 seconds. During survival mode operation, the system detects the Link ready after 90-120 seconds (Variable setting in system data).

2.4 In-Skin Router (PN-RTA)

The In-Skin Router is an IPv6 high-speed access router that can be accommodated in NEAX 2000 IPS. With its full security functions, it allows you to create reliable, high-speed and high-quality networks.

The In-Skin Router supports standard IPv6 functions, accommodating IPv4 and IPv6 dual stacks. It also supports tunneling functions such as IPv6 over IPv4 and IPv4 over IPv6, making it easy for you to shift to an IPv6 network while taking advantage of your existing IPv4 network.

With the PPPoE protocol equipped, the router allows you to use broadband services such as ADSL and FTTH. The In-Skin Router provides IPsec functions, allowing you to create a VPN over the Internet. Dynamic filtering functions, the router protects the internal network from illegal access and attack from the outside.

Optional T1 daughter board (PZ-M649) is available to connect to Frame Relay and PPP WAN networks. Built-In CSU/DSU with drop and insert provides a convenient method of combining voice and data channels (DS0) over a single T1.

The In-Skin Router utilizes a single card slot in a NEAX 2000 IPS PIM or DM/DMR module. The internal/external battery of NEAX 2000 IPS is available as the backup power for the In-Skin Router, in case of power failure etc. Backup power for the In-Skin Router is not required.

3. Enhanced Business and CCIS Features

3.1 Call Forwarding No Answer Timer Enhancement

This enhancement allows the Call Forwarding – No Answer (CF-NA) timer to be set on a station basis. CF-NA can be set for each station from 4 sec. to 120 sec. with 4 sec. increments via system data.

Previously – The CF– NA timer could only be set on a system basis.

3.2 Alternate Routing CCIS Enhancement

Peer-to-Peer CCIS; This enhancement automatically provides alternate tandem routing of incoming Central Office Call to outgoing Central Office Trunk if the IP network is down. (Incoming CO Trunk destination is distant office)

IP Trunk CCIS; This enhancement allows incoming calls to be routed to an idle IPT card when destination IPT is busy. A maximum of eight destination IP addresses can be set per one destination office. If the destination IPT has a failure, calls can be originated to another IPT other than the faulty IPT in the destination office.

Previously – Peer-to-Peer CCIS; Alternate routing during IP failure was not available for tandem office. Only Routing to station in same system was available.
IP Trunk CCIS; In IPT Point-to-Multipoint CCIS connection, even if the opposite office has multiple IPT, only one IPT can be set as the destination. Therefore, if the destination IPT has a failure, the calls to its office cannot be connected. Alternate Routing at IP Link failure or all busy was not available for tandem office. Only Routing to station in same system was available.

3.3 SNMP – Private MIBS Enhancement

This feature supports read / write of standard MIB (Management Information Base) and private MIB information of the NEAX 2000 IPS, and automatic output of the PBX fault information to the SNMP manager by Trap (fault message notification) command, using SNMP manager by remote. (Trap destination: Maximum 4.)

The private MIB information provided is as follows:

- MJ/MN status of the PBX
- Fault messages of the PBX

By system data assignment of Trap source IP address, management via Network Address Translation (NAT) is possible. By system data assignment of SNMP manager IP address, it is possible to restrict the access from any other addresses. This enhances the security.

The following issue of SNMP security hole is supported:

CERTR Advisory CA-2002-03 Multiple Vulnerabilities in Many Implementations of the Simple Network Management Protocol (SNMP)

The NEAX 2000 IPS can support the same level of SNMP functions provided by the NEAX 2400 IPX.

Advantages
When the 2000 IPS is connected to a LAN, the information related to the LAN data and PBX fault information inside the PBX can be retrieved from the network management system. Thus the NEAX 2000 IPS can be managed like host PCs or routers.

Previously – The NEAX 2000 IPS did not support the same level of SNMP functions provided by the NEAX 2400 IPX.

3.4 Station Speed Dial (One Touch) Enhancement

This enhancement allows Forced Authorization access code + Authorization code + Trunk Access code + 1 or 011 + area code/country code + number to be set to One Touch Key (not to exceed 26 digit maximum).

Previously – Could not be set to a single One Touch Key

3.5 DiffServ Support Enhancement

The following have been added to DiffServ (Differentiated Services) type of QoS support.

- Dterm IP to Dterm IP
- Dterm IP to IPPAD
- Dterm IP/IPPAD to Peer to Peer CCIS

Previously – Diffserv support was only for:

- Peer-to-Peer CCIS
- Point-to-Multipoint IP Trunk -CCIS
- H.323 Trunking

4. Hardware and Software

4.1 New Hardware & Software

Part Number	Description	Comments
New Software		
150585	64 PORT SYS SOFTWARE - 3200 SERIES R6.2 (FD)	R6.2 System Software
150680	R-PIM 1 SITE LICENSE	Site License for DMR, one License per site
New System Packages		
150681	IVS TO IPS TDM UPGRADE KIT-A (512) ➢ SPN-CP26A (CPU) ➢ 64 Port Sys Software - 3200 Series R6.2 ➢ KEY KEEPER (FD) ➢ LT Port 48/64 to 512 ➢ IPS RETROFIT SYSTEM GUIDE ➢ MATWorX IPS	Supports up to 512 TDM ports License agreement required Note: No support for IP Remote PIM (DMR) and Digital Remote PIM. For digital Remote PIM use part number 150635.
150682	IVS TO IPS 16 SEAT IP UPGRADE KIT-A (512) ➢ 64 Port Sys Software - 3200 Series R6.2 ➢ PZ-M606-A ➢ SPN-32IPLAA IP PAD-C ➢ KEY KEEPER (FD) ➢ LT Port 48/64 to 512 ➢ 16 Seat Licenses ➢ IPS RETROFIT SYSTEM GUIDE ➢ MATWorX IPS	Supports up to 512 TDM ports and provides for 16 IP Seat Licenses. License agreement required Note: No support for IP Remote PIM (DMR) and Digital Remote PIM. For digital Remote PIM use part number 150654.
150088	NEAX IPS DMR SYSTEM PACKAGE ➢ ICS VS PIMMF(UA) ➢ SPN-CP31A (CPU) ➢ SPN-32IPLAA IP PAD-C ➢ AC CORD-E-U ➢ RACK MOUNT KIT (U) ➢ ICS VS PIMMF(UA) ➢ 24 PORT PATCH PANEL	Supports up to 40 TDM ports and up to 128 IP stations. Remote PIM Site License required.

Part Number	Description	Comments
150089	NEAX IPS DMR EXPANSION MODULE ➢ IPS DM PIMMF ➢ AC CORD-E-U ➢ RACK MOUNT KIT (U) ➢ JOINT BRACKET KIT ➢ BUS-0.4 CA-PA	Adds five card slots for 40 additional TDM ports.
New Hardware		
151239	PN-RTA	In-Skin Router Card 10/100BASE-TX: 1, 10BASE-T: 1, RS-232C (D-sub 9pin)
151496	PZ-M649	T1 Digital Trunk Interface (1.5 Mbps) Mounts on PN-RTA Card Built-in CSU/DSU
151495	PZ-M623	Ether Control Card Mounts on PN-RTA Card Additional 10BASE-T port
151257	SPN-32IPLAA IP PAD-C	IP to TDM gateway, supports G.711 (64K). Supports T.30 FAX with 16VCT.
150230	24 PORT PATCH PANEL	Patch Panel for 24 TDM Ports

4.2 Replacement Parts

Part Number	Description	Comments
151424	SPN-CP31A (UA)	Remote PIM Central Processor
150008	IPS DM PIMMF	IPS DM/DMR PIM
151037	AC CORD-E-U	AC Power Cord
151377	RACK MOUNT KIT (U)	Brackets for 19” Rack Mount
150230	24 PORT PATCH PANEL	Patch Panel for 24 TDM Ports
151378	JOINT BRACKET KIT	Bracket to join multiple modules

5. Technical Documentation

5.1 New Technical Documentation

Part Number	Description	Comments
152056	NEAX IPS ROUTER INSTALLATION GUIDE	This manual explains the system description, the hardware installation, each settings and operation, information for management and maintenance, and specifications for the In-Skin Router.
152066	CONFIGURATION EXAMPLE FOR IPS ROUTER	
152059	FUNCTION DESCRIPTION FOR IPS ROUTER	

5.2 Updated Technical Documentation

Part Number	Description	Comments
152025	NEAX 2000 IPS DM INSTALLATION	Perfect Bound
152033	NEAX 2000 IPS SYSTEM MANUAL	Perfect Bound Includes DMR
152034	NEAX 2000 IPS UPGRADE GUIDE	Loose-leaf shrink-wrap with tab
152035	NEAX 2000 IPS OAI SYS MANUAL	Loose-leaf shrink-wrap with tab
152036	NEAX 2000 IPS CCIS FEATURE & SPEC	Loose-leaf shrink-wrap with tab
152037	NEAX 2000 IPS ISDN FEATURE & SPEC	Loose-leaf shrink-wrap with tab
152038	NEAX 2000 IPS WCS FEATURE & SPEC	Loose-leaf shrink-wrap with tab
152039	NEAX 2000 IPS BUS/HOTEL/DATA F&S	Loose-leaf shrink-wrap with tab
152040	NEAX 2000 IPS CCIS SYS MANUAL	Perfect Bound
152041	NEAX 2000 IPS COMMAND MANUAL	Three Ring Binder
152043	NEAX 2000 IPS FEATURE PROGRAM	Three Ring Binder
152044	NEAX 2000 IPS INSTALLATION MANUAL	Perfect Bound
152048	NEAX 2000 IPS RETROFIT SYS GUIDE	Loose-leaf shrink-wrap with tab
152050	NEAX 2000 IPS RFP GUIDE	Perfect Bound
152051	NEAX 2000 IPS CONFIGURATION GUIDE	Loose-leaf shrink-wrap with tab
152052	NEAX 2000 IPS GENERAL DESC	Three Ring Binder
152055	NEAX 2000 IPS WCS SYS MAN (PCS)	Perfect Bound

6. IP PAD Compatibility Table

	151226 SPN-16VCTA IP PAD	151236 SPN-16VCTAA IP PAD-A	FAX over IP (FoIP)
151227 SPN-32IPLA IP PAD	Required G711/G.729/G.723	Required G711/G.729/G.723	G.711
151237 SPN-32IPLA IP PAD-A Supports G.711	Optional G711/G.729/G.723	Optional G711/G.729/G.723	G.711
151247 SPN-32IPLAA IP PAD-B Supports G.711	Optional G711/G.729/G.723	Optional G711/G.729/G.723	G.711
151257 SPN-32IPLAA IP PAD-C Supports G.711	Optional VoIP G711/G.729/G.723 FoIP G.711	Optional VoIP G711/G.729/G.723 FoIP T.30	G.711/ T.30
151226 SPN-16VCTA IP PAD	Yes FoIP G.711	Yes FoIP T.30	G.711/ T.30
151236 SPN-16VCTAA IP PAD-A	Yes FoIP G.711	Yes FoIP T.30	G.711/ T.30

6.1 32IPLA IP PAD

For applications requiring compression and G.711 FoIP, you can mix 151226 SPN-16VCTA IP PAD with 151236 SPN-16VCTAA IP PAD-A on the same SPN-32IPLA card. Each SPN-32IPLA card in the system can accommodate up to quantity two of 151236 SPN-16VCTA IP PAD or 151236 SPN- 16VCTAA IP PAD-A. When T.30 FoIP is required, 151257 SPN-32IPLAA IP PAD-C and 151236 SPN-16VCTAA IP PAD-A must be used for all locations utilizing T.30 FoIP send and receive.

7. 24 Port Patch Panel

The 24-Port Patch Panel is specifically designed for use on the NEAX 2000 IPS, NEAX IPS-DM and NEAX IPS-DMR. One Patch Panel provides connectivity for 24 legacy stations or trunks (three 8 port card slots). 1 RU rack mount provides a clean and convenient method for connecting up to 24 RJ-11 or RJ-45 connectors. The panel provides one 50-pin male champ connector and convenient breakout of the alarm signal leads pin 25 and 50 to the PBX. The NEAX IPS-DMR SYSTEM PACKAGE is equipped with one 24-Port Patch Panel.