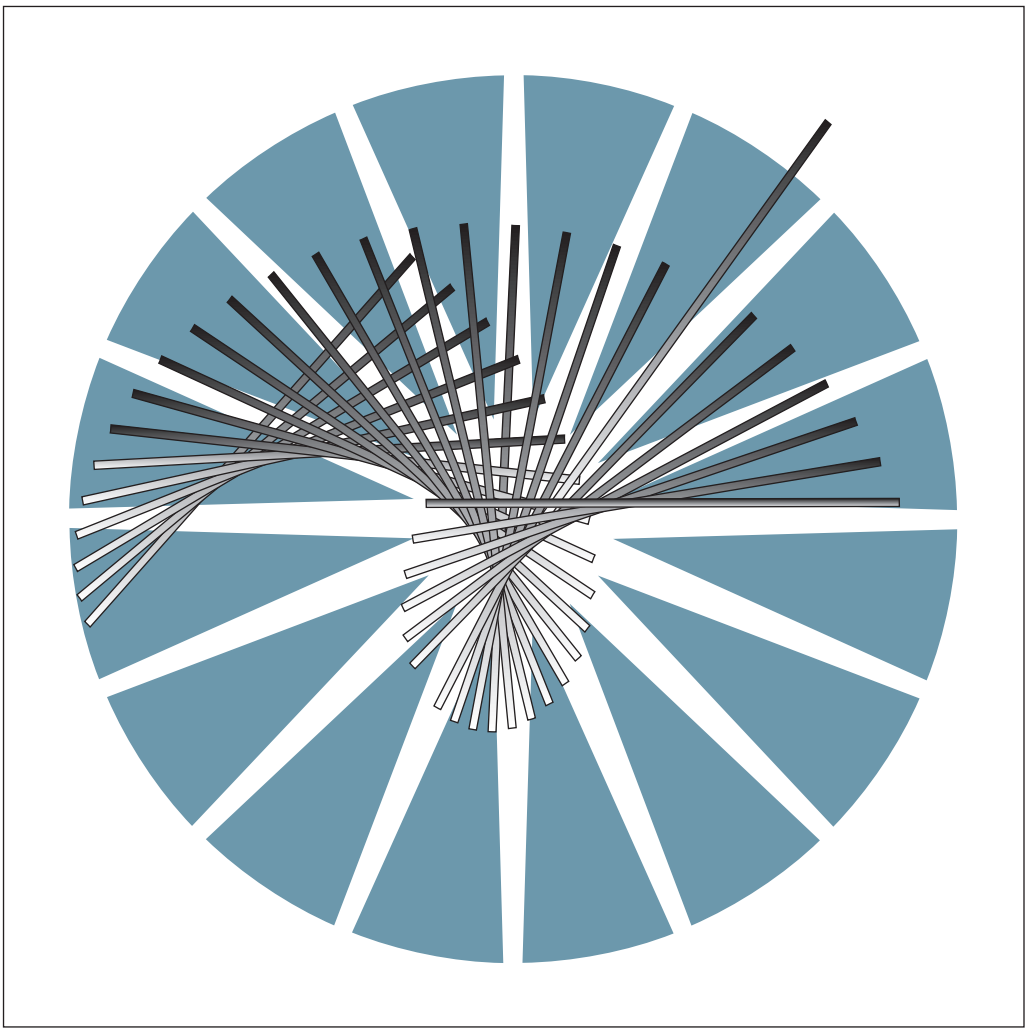
3746 Nways Multiprotocol Controller
Models 900 and 950

Network Node Processor Installation and Maintenance (based on 6275)



SY33-2126-01

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Models 900 and 950

Network Node Processor Installation and Maintenance (based on 6275)

SY33-2126-01

Note!

Before using this information and the product it supports, be sure to read the general information under “Notices” on page ix.

Second Edition (May 1999)

This edition applies to the network node processor based on 6275 Models 56U or 83U.

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例如，有一「危險」聲明以數字 1 開始，則該「危險」聲明的譯文將出現在「安全資訊」(Safety Information) 一書的「聲明」1 中。

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For the **network node processor safety notices** refer to Appendix A, “Safety Information” on page A-1.

For *Safety Notices* refer to *IBM 3745 Communication Controller All Models*, *IBM 3746 Expansion Unit Model 900*, *IBM 3746 Nways Multiprotocol Controller Model 950*, *Safety Information*, GA33-0400.

Safety Notices for United Kingdom

1. The IBM 3746 Expansion Unit Model 900 and IBM 3746 Nways Multiprotocol Controller Model 950 are manufactured according to the International Safety Standard EN 60950 and as such are approved in the UK under the General Approval Number NS/G/1234/J/100003 for indirect connection to the public telecommunication network.
2. The network adapter interfaces housed within the IBM 3746 Expansion Unit Model 900 and IBM 3746 Nways Multiprotocol Controller Model 950 are approved separately, each one having its own independent approval number. These interface adapters, supplied by IBM, do not use or contain excessive voltages. An excessive voltage is one that exceeds 42.4 V peak ac or 60 V dc. They interface with the IBM 3746 Expansion Unit Model 900 and IBM 3746 Nways Multiprotocol Controller Model 950 using Safety Extra Low Voltages (SELV) only. In order to maintain the separate (independent) approval of the IBM adapters, it is essential that other optional cards, not supplied by IBM, do not use mains voltages or any other excessive voltages. Seek advice from a competent engineer before installing other adapters not supplied by IBM.

Service Inspection Procedures

The Service Inspection Procedures help service personnel check whether the 3745/3746 conforms to IBM safety criteria. They have to be used each time the 3745/3746 safety is suspected. The *Service Inspection Procedures* section is located at the beginning of the:

- *3745 Communication Controller Models 210 to 61A Maintenance Information Procedures*, SY33-2054
- *3745 Communication Controller Models 130 to 17A Maintenance Information Procedures*, SY33-2070

- *3746-950 Service Guide*, SY33-2108
- *3746-900 Service Guide*, SY33-2116.

For the network node processor, see the Service Inspection Procedures in “Safety Inspection Guide” on page A-3.

About This Book

Who Should Use This Book

The IBM personnel using this manual should be:

- Trained to service the network node processor, IBM 3745 Communication Controller, 3746-900, and 3746-950.
- Familiar with the network node processor service documentation,
- Familiar with the configuration of the 3745 Communication Controller, 3746-900, and 3746-950.

How to Use This Book

This manual provides procedures for installing and maintaining a network node processor. To ensure the most efficient installation:

- Read the instructions carefully before attempting to do them,
- Complete each step before going to the next one,
- Go through the chapters sequentially.

How This Book is Organized

Chapter 1	Presents the procedures to install and connect the network node processor.
Chapter 2	Presents the problem determination procedures for the network node processor.
Chapter 3	Gives MAPs for the network node processor troubleshooting.
Chapter 4	Presents the diagnostics and tests available on the network node processor and how to invoke them.
Chapter 5	Gives the procedure for network node processor FRU exchange.
Chapter 6	Gives the CE leaving procedure.
Appendix A	Provides safety notices for the network node processor.
Appendix B	Provides 6275 specifications.
Appendix C	Provides parameter worksheets for the network node processor.
Appendix D	Gives the locations of the controller expansion components and how to install or remove a 6275 in controller expansion.
Appendix E	Provides network node processor external cable references.
Appendix F	Provides network node processor aids for FRU location and removal, and for configuration and setup.

Appendix G Provides network node processor parts number.

Appendix H Gives the **service and customer documentation bibliography**,

A **list of abbreviations**, and an **index** are provided at the end of this manual.

Where to Find More Information

For a complete list of the network node processor, 3745, 3746-900, and 3746-950 customer and service information manuals, see at the end of this manual. In this *NNPIM*, references are made to the following publications:

3745 Communication Controller Models 210 to 61A Maintenance Information Procedures, SY33-2054

3745 Communication Controller Models 130 to 17A Maintenance Information Procedures, SY33-2070

3746-950 Service Guide, SY33-2108

3746-900 Service Guide, SY33-2116

Nways Multiprotocol Controller Models 900 and 950 Migration and Planning Guide, GA33-0349

3745 Communication Controller Models A and 3746 Expansion Unit Model 900: Migration and Planning Guide, GA33-0183

World Wide Web

You can access the latest news and information about IBM network products, customer service and support, and microcode upgrades via the Internet at the URL: http://www.networking.ibm.com/

Online Documentation from CD-ROM

Starting at EC F12380 with the service processor is now shipped a CD which contains the LIC and a copy of the 3746 web site. You will find from this web page, marketing, PE, and all information about CCP products.

To access this page:

1. Insert the CD into the CD disk drive of the SP.
2. From the MOSS-E primary menu, click on **Information**
3. Double click on **CD-ROM documentation**
4. Then if you want to display the CCP documentation, click on **Documentation**
5. Click on **La Gaude Information Development: Communication Controllers Information**

Note: To have the very last version of the web site, connect to Internet at: http://w3.lagaude.ibm.com/ccp/3746.htm

Service Personnel Definitions

See the *3745 Communication Controller Models 210 to 61A Maintenance Information Procedures*, SY33-2054, *3745 Communication Controller Models 130 to 17A Maintenance Information Procedures*, SY33-2070 or *3746-950 Service Guide*, SY33-2108.

Chapter 1. Installing and Setting Up Your Network Node Processor

Network Node Processor Overview

The network node processor can be based on an **6275-560**, **7585-P02** or **3172 Model 003**. In this manual only the network node processor based on 6275 is addressed.

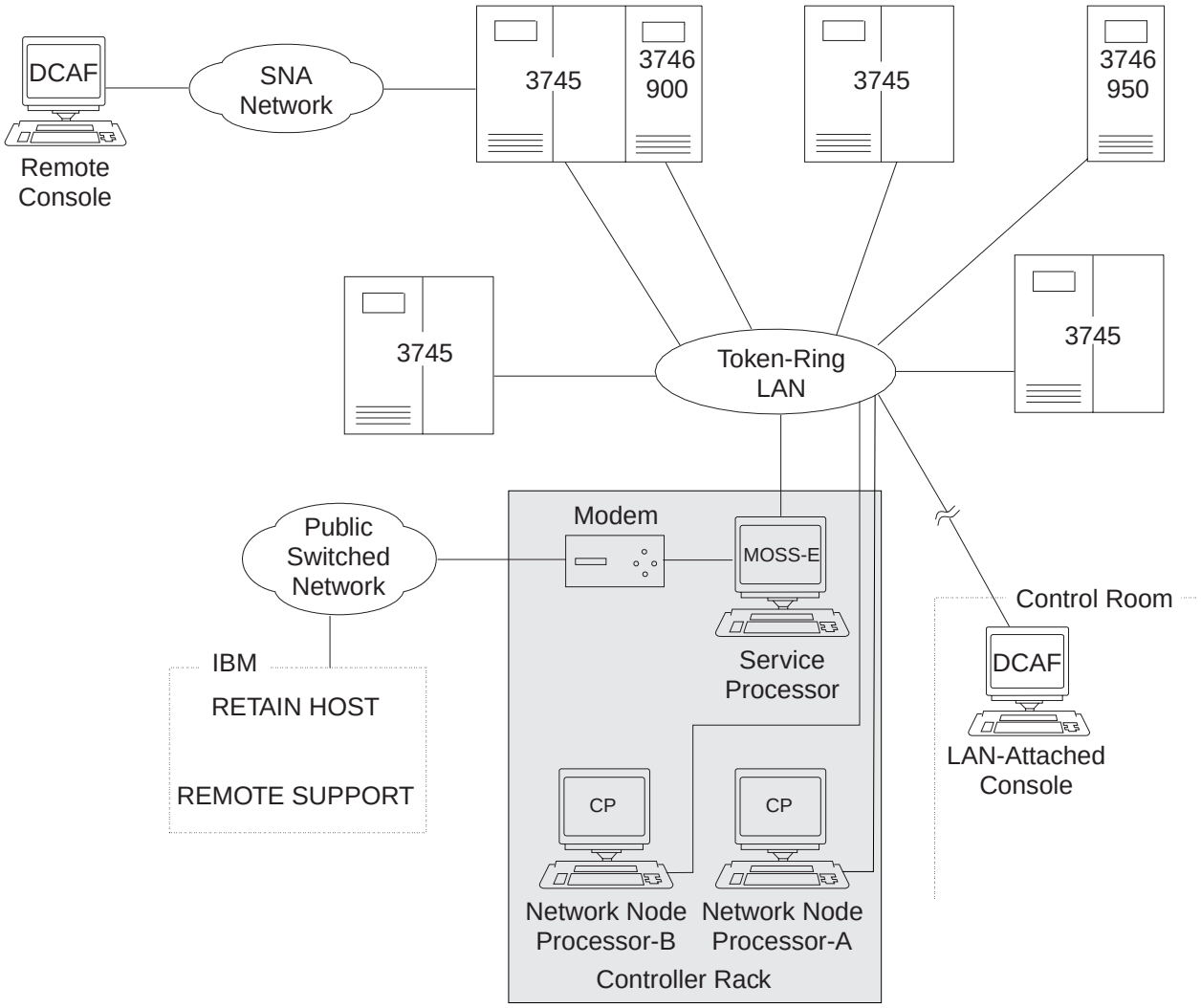


Figure 1-1. Network Node Processor Environment

Preparing Your Installation

Installation Time

- The average time for installing the network node processor is 2.0 hours.

Note

Under the installation service code, only report the time spent on the procedures described in this manual. Other activities must be reported on another service code according to your general reporting instruction guide.

Making Ready to Install

1. ____ Before starting the installation, connect to the following web site http://www.lagaude.ibm.com/3746pe, and download all mandatory fixes according to the level of the code that you are going to install.
2. ____ You have received two diskettes with the Network Node Processor. Using a felt-tipped pen, identify one diskette as **Normal** and the other as **Backup**.
3. ____ Obtain from the customer the following **Parameter worksheet**:
   - **"Definition of Service LAN IP Addresses" on page C-1**

   This parameter worksheet is part of the *3745 Communication Controller Models A and 3746 Models 900 and 950: Planning Guide*, GA33-0457 Appendix A and must be filled in by the customer. A copy of this parameter worksheet is given at the end of this manual see Appendix C, "Parameter Worksheet" on page C-1.

Attention

The network node processor is connected to a **220V** power receptacle, if you connect other units on the ac outlet distribution box verify the voltage of these units.

Go To

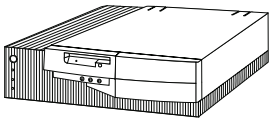
- **"Installing Your Network Node Processor (6275)" on page 1-4** .

Installing Your Network Node Processor (6275)

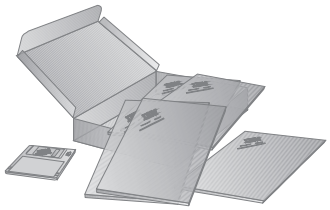
1. ____ **Unpack** Your Network Node Processor

   For installing a **NNP-A** or a **NNP-B**, you need the following items to complete this installation:

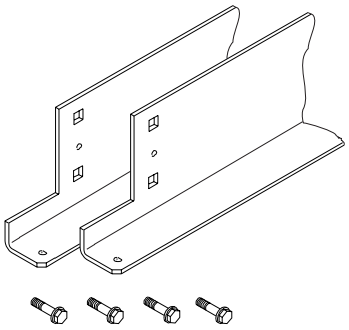
   - □ Network Node Processor (6275) and Power Cord



   - □ Publications and diskette



   - □ Brackets and screws



2. ____ Using label (PN 0782966), **identify** your Network Node Processor-A or Network Node Processor-B by sticking the appropriate label **A** on the front side of the unit (refer to Figure 1-2).

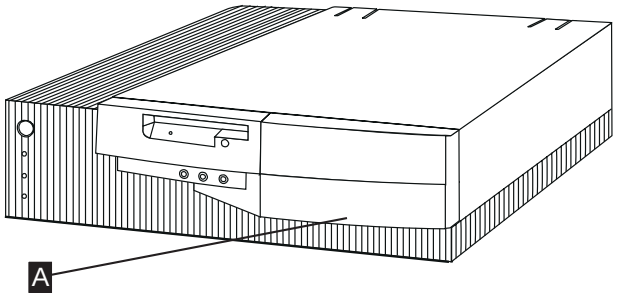


Figure 1-2. Installing Label on the Front Side of the Network Node Processor (6275)

Go To

If you are installing:

- **NNP-A**, go to “Installing the 6275 Network Node Processor - A” on page 1-6
- **NNP-B**, go to “Installing the 6275 Network Node Processor - B” on page 1-9

Installing the 6275 Network Node Processor - A

Note: The location of the NNP can be in different places in the controller expansion. It depends on the type of service processor and if other units are installed in this controller expansion. Go to Appendix D, “Controller Expansion Component Locations” on page D-1 and refer to Figure D-1 on page D-2 and Figure D-2 on page D-3 to determine with your customer where the NNP can be installed.

1. ____ Open the front and rear doors of the controller expansion. and locate the position to install the brackets used for the NNP-A (refer to Figure D-3 on page D-4). Install the left and right brackets **1** (PN 58G5752) and secure using four screws **2** (PN 2665527). If the captive nuts are already installed, go to “Installing the 6275 System Unit (NNP-A) in the Controller Expansion” on page 1-7, otherwise go to step 2.

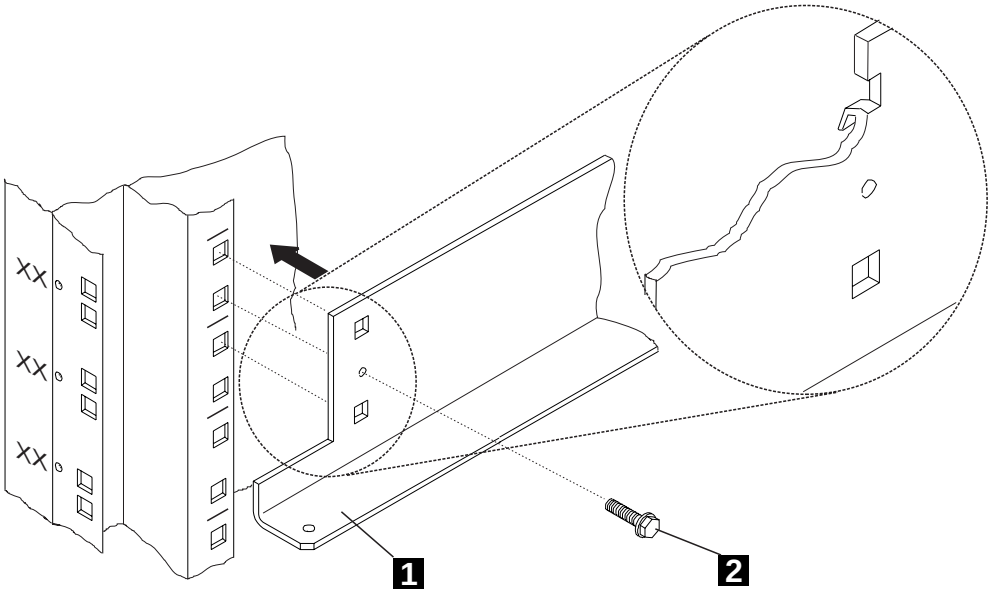


Figure 1-3. Installing the NNP-A Brackets

2. ____ Refer to Figure 1-4 and install four captive nuts (PN 58G5766) on the left and right side of the controller expansion.

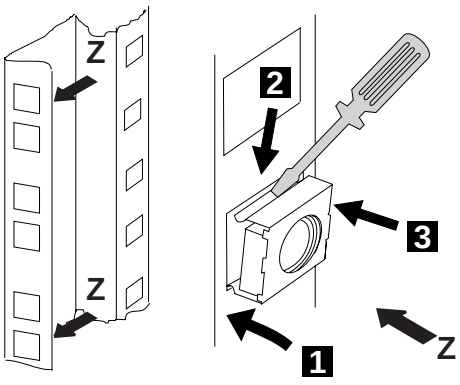


Figure 1-4. Installing the Captive Nuts for the 6275

Installing the 6275 System Unit (NNP-A) in the Controller Expansion

Slide the network node processor unit in the controller expansion from the front side as shown in Figure 1-5, then go to “Connecting the 6275 (NNP-A)” on page 1-8.

Note: If you have any problem to slide the network node processor into the controller expansion refer to “Installing the 6275 into the Controller Expansion” on page D-12, then go to “Connecting the 6275 (NNP-A)” on page 1-8.

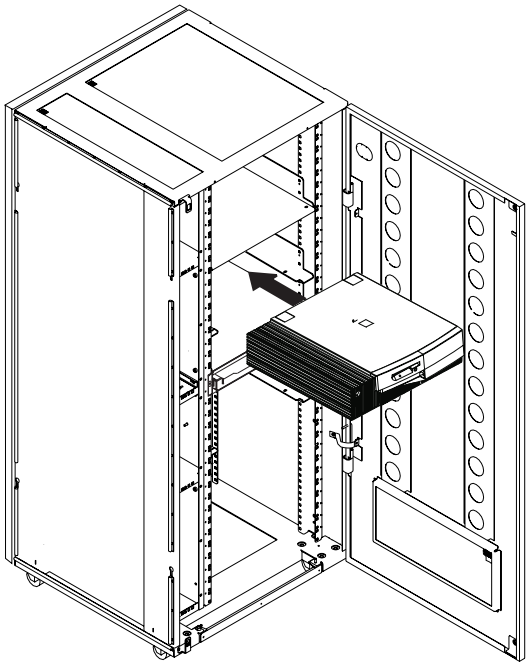


Figure 1-5. Installing the 6275 NNP-A Unit in the Controller Expansion (Front Side)

Connecting the 6275 (NNP-A)

1. ____ Plug connector **1** of cable **A** (PN 6339098) to the token-ring card connector.
2. ____ Using a sticker, identify the cable **A** as the "network node processor cable" and plug connector **2** to **any plug** of the 8228 from **1 to 8**
3. ____ Connect power cord **3** from J2 to the ac outlet of the NNP-A.

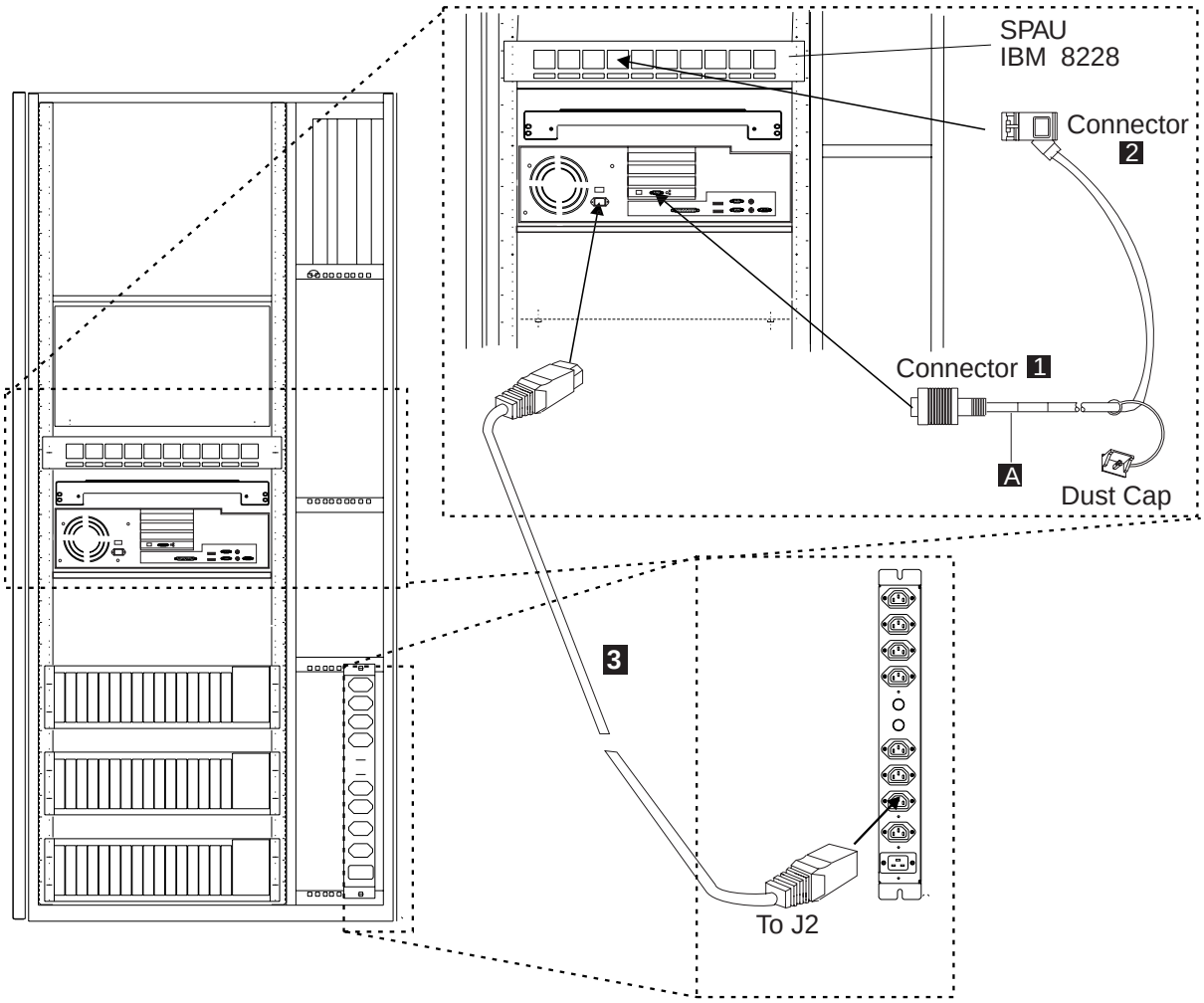


Figure 1-6. Connecting the 6275 NNP-A

Go To

Do you have to install a **NNP-B**?

- **Yes**, go to “Installing the 6275 Network Node Processor - B” on page 1-9.
- **No**, go to “Installing the Code on the Network Node Processor” on page 1-14.

Installing the 6275 Network Node Processor - B

Note: The location of the NNP can be in different places in the controller expansion. It depends on the type of service processor and network node processor-A, and if other units are installed in this controller expansion. Go to Appendix D, “Controller Expansion Component Locations” on page D-1 and refer to Figure D-1 on page D-2 and Figure D-2 on page D-3 to determine with your customer where the NNP can be installed.

1. ____ Open the front and rear doors of the controller expansion and locate the position of the brackets used to install the NNP-B (if the service processor and the NNP-A are two 6275, refer to Figure D-3 on page D-4).
2. ____ Install the left and right brackets **1** (PN 58G5752) and secure using four screws **2** (PN 2665527). If the captive nuts are already installed, go to “Installing the 6275 System Unit (NNP-B) in the Controller Expansion” on page 1-10, otherwise go to step 3

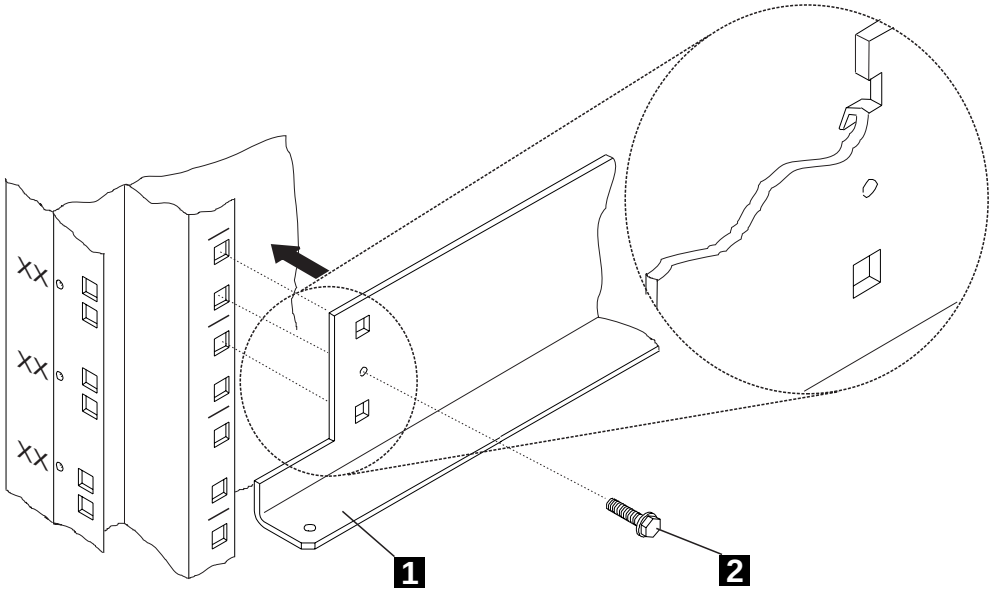


Figure 1-7. Installing the NNP-B Brackets

3. ____ Refer to Figure 1-8 and install four captive nuts (PN 58G5766) on the left and right side of the controller expansion.

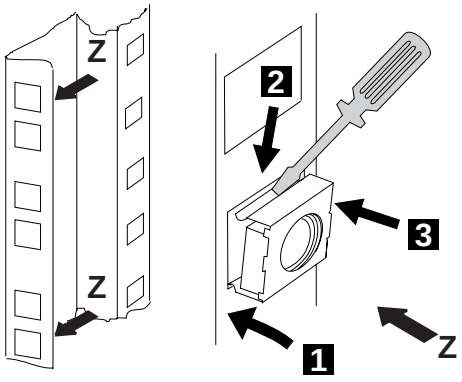


Figure 1-8. Installing the Captive Nuts for the 6275

Installing the 6275 System Unit (NNP-B) in the Controller Expansion

Slide the network node processor unit in the controller expansion from the front side as shown in Figure 1-9.

Note: If you have any problem to slide the network node processor into the controller expansion refer to “Installing the 6275 into the Controller Expansion” on page D-12.

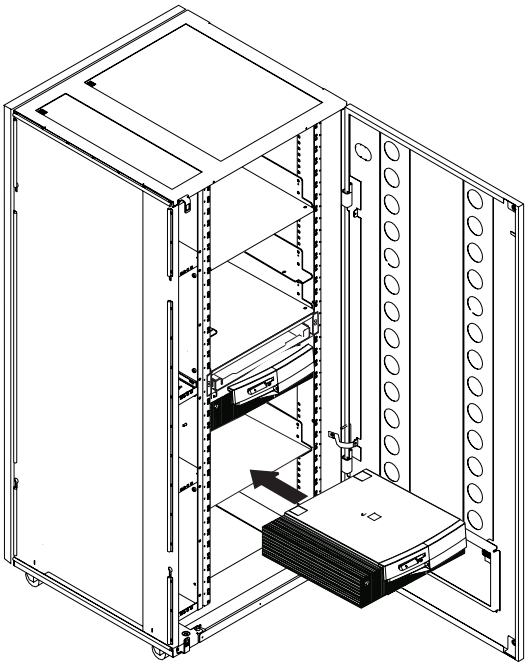


Figure 1-9. Installing the 6275 NNP-B Unit in the Controller Expansion (Front Side)

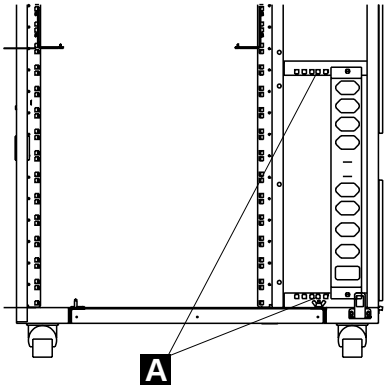
Go To

Do you have to install a second **ac outlet distribution box** ?

- **Yes**, go to “Installing a Second ac Outlet Distribution Box” on page 1-11.
- **No**, go to “Connecting the 6275 Network Node Processor - B” on page 1-13.

Installing a Second ac Outlet Distribution Box

1. ____ **Identify** the location to install the two captive nuts **A** (second hole from the left) , if already installed go to step 3, otherwise go to step2.



Rear View

Figure 1-10. Locating the Captive Nuts

2. ____ Refer to Figure 1-11 to **install** the two captive nuts (PN 58G5766).

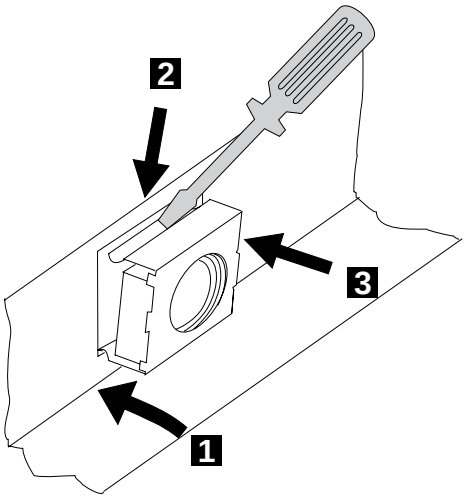


Figure 1-11. Installing the Captive Nuts

3. ____ Refer to Figure 1-12 on page 1-12, using one lockwasher (PN 1622319), one starwasher (PN 1622347), and one screw (PN1673983), **connect** the ground jumper **A** (PN 63F2459) to the new ac outlet distribution box. Then, **install** the second ac outlet distribution box close to the first ac outlet distribution box and fasten using two screws **C** (PN 1621230).

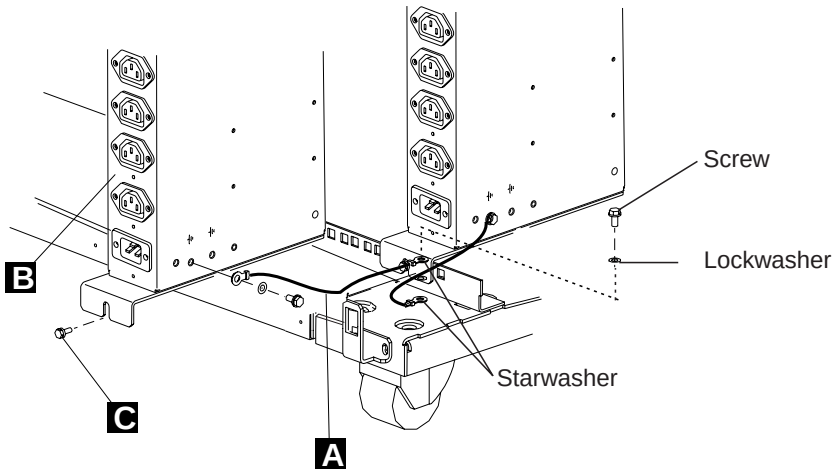


Figure 1-12. Installing the Second ac Outlet Distribution Box

4. ____ Using the same washers and screw used to connect the first ac outlet distribution box, **connect** the other lead of the ground jumper **A** to the frame.
5. ____ Plug the power cord **A** (country dependant) into location **IN** of the ac outlet distribution box. Then route and connect the other lead of the power cord to the customer's power socket.

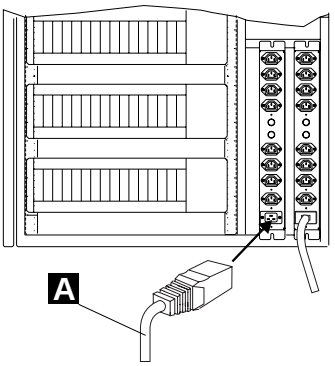


Figure 1-13. Power Cord Installation

6. ____ Switch or ask the customer to switch ON the circuit breaker to be used for the ac outlet distribution box.
7. ____ Verify that the phase is distributed as shown below: **if not, notify the customer and do not proceed until the problem is corrected**.

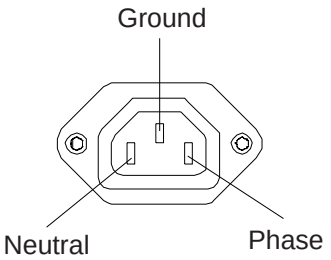


Figure 1-14. Power Distribution

Connecting the 6275 Network Node Processor - B

1. ____ Plug connector **1** of cable **A** (PN 6339098) to the token-ring card connector.
2. ____ Using a sticker, identify the cable **A** as the "network node processor cable" and plug connector **2** to **any plug** of the 8228 from **1 to 8**
3. ____ Connect power cord **3** from J5 to the ac outlet of the NNP-B.

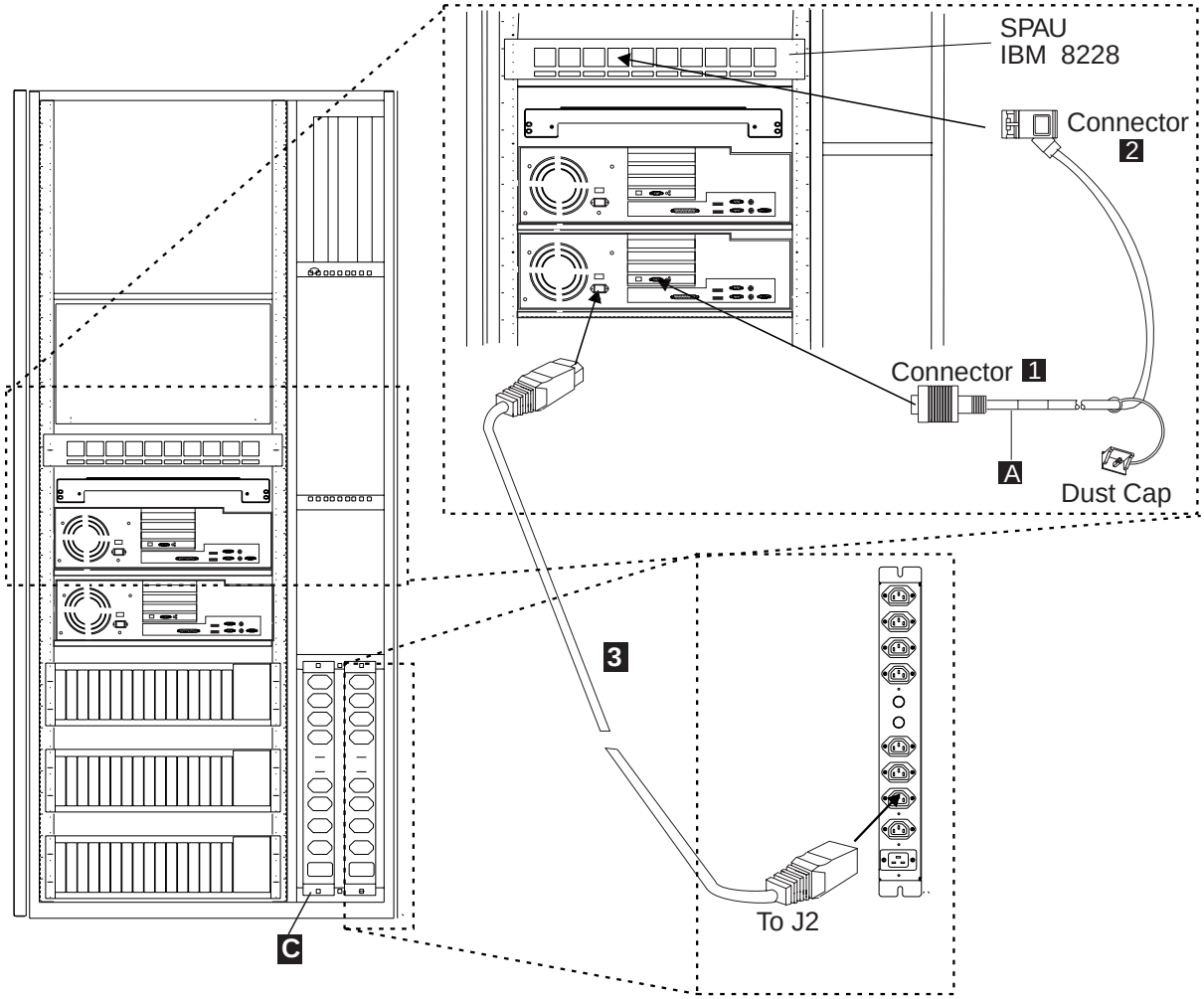


Figure 1-15. Connecting the NNP-B (6275)

Go to "Installing the Code on the Network Node Processor" on page 1-14.

Installing the Code on the Network Node Processor

Notes

For any unexpected message or error concerning the network node processor:

- Go to, “MAP: Entry Point for Problem Isolation” on page 2-1

For any other message or error displayed on the control panel, go to:

- The **START** page of the *3745 Communication Controller Models 210 to 61A Maintenance Information Procedures*, SY33-2054, if you are working on a **3745 Model X1A**.
- The **START** page of the *3745 Communication Controller Models 130 to 17A Maintenance Information Procedures*, SY33-2070, if you are working on a **3745 Model 17A**.
- Or go to the **START** page of the *3746-950 Service Guide*, SY33-2108, if you are working on a **3746-950**.

1. ____ Double click on the 3746-950 or 3746-900 icon where you are going to install the NNP.
2. ____ From the 3746-9x0 menu, click on **Network Node Processor (NNP) Management**.

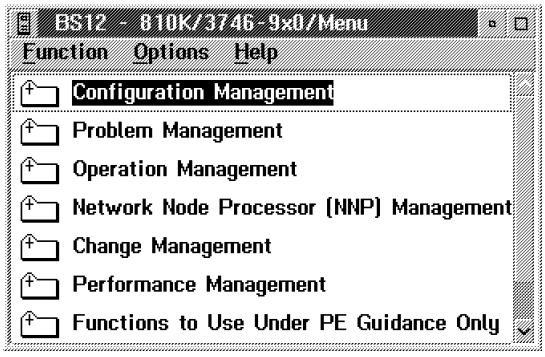


Figure 1-16. 3746-9x0 Menu

3. ____ Double click on **(M) Install/Remove/Change/Restore LIC/NNP**.

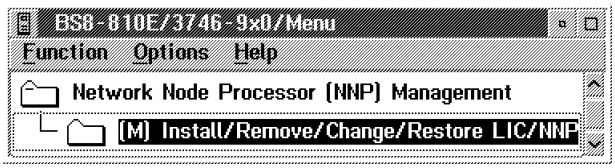


Figure 1-17. Network Node Processor Menu

If you are installing:

- **NNP-A**, go to step 4 on page 1-15
- **NNP-B**, go to step 7 on page 1-16

4. ____ Select the NNP-A, then click on **Install NNP**.

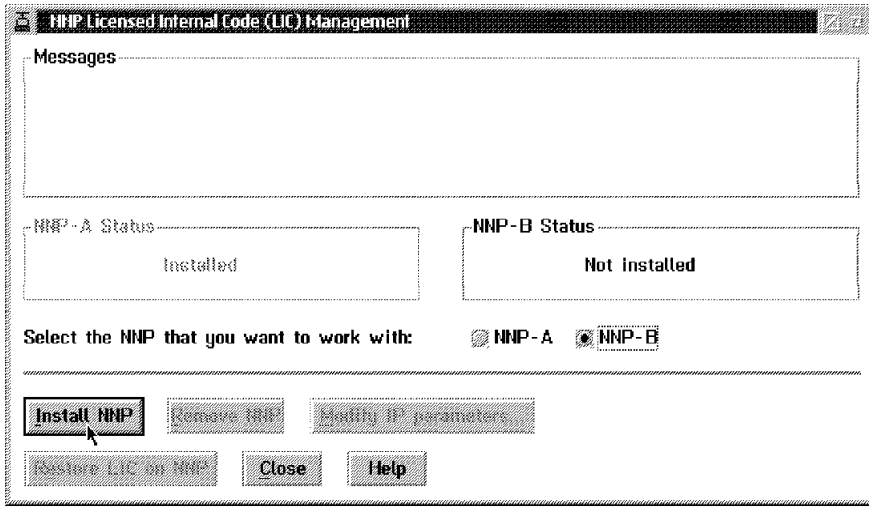


Figure 1-18. NNP-A LIC Management Menu

5. ____ Read the information message, then click on **OK**.
6. ____ If necessary, modify the **IP address** for the **service processor**, **NNP-A**, and **3746 NN** according to the values recorded by the customer on the worksheet **"Definition of Service LAN IP Addresses" on page C-1** . The **Subnet mask** can also be modified for the service processor but will be automatically updated for the **NNP-A**, and **3746 NN**. Otherwise keep the default values and record the hostnames for later use.

   Notes:

   a. If the customer defines with CCM an IP configuration file, the IP address and the subnet mask for the adapter 2080 must be defined in the same IP subnet. That means in this example, IP address 192.9.200.4 and subnet mask 255.255.255.240.
   b. The hostnames can't be modified but they will be used in the alerts and alarms sent to NetView™.

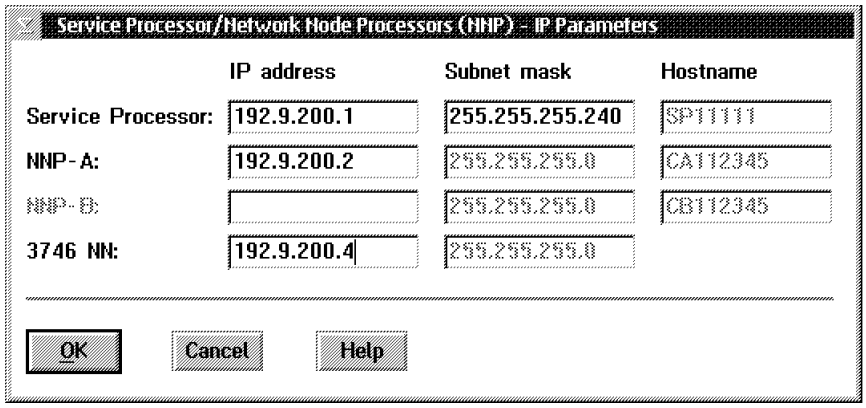


Figure 1-19. Network Node Processor IP Parameters Menu

Then go to step:

- **10 on page 1-17** , if you do **not** have to install a **NNP-B**
- **7 on page 1-16** , if you have to install a **NNP-B**

7. ____ Select the NNP-B, then click on **Install NNP**.

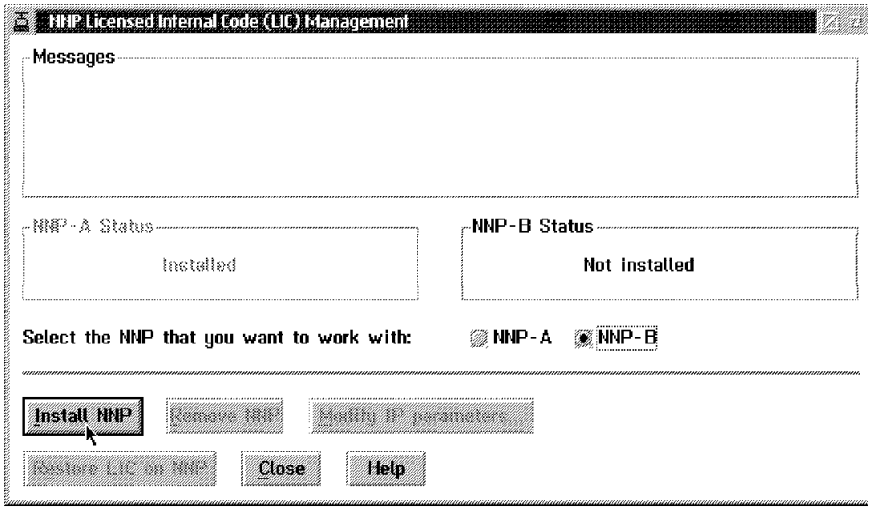


Figure 1-20. NNP-B LIC Management Menu

8. ____ Click on **OK**.
9. ____ If necessary, modify the **IP address** and the **Subnet mask** for the **NNP-B** according to the values recorded by the customer on the worksheet **"Definition of Service LAN IP Addresses" on page C-1** . Otherwise keep the default values and record the hostnames for later use.

   Notes:

   a. If the customer defines with CCM an IP configuration file, the IP address and the subnet mask for the adapter 2080 must be defined in the same IP subnet. That means in this example, IP address 192.9.200.4 and subnet mask 255.255.255.240.

   b. The hostnames can't be modified but they will be used in the alerts and alarms sent to NetView.

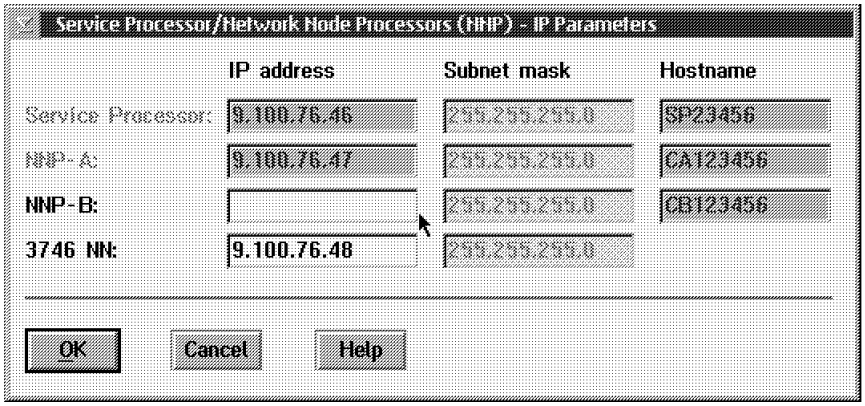


Figure 1-21. Network Node Processor IP Parameters Menu

10. ____ Click on **OK**, then insert the **Network Node Processor installation diskette** in the diskette drive of the **service processor**, then click on **OK**.

11. ____ Select the type **6275**, then click on **OK**.

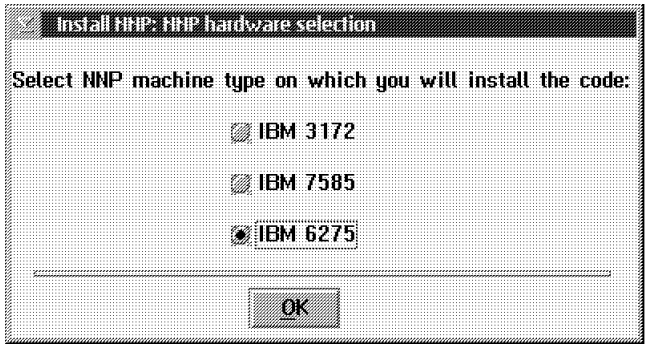


Figure 1-22. Network Node Processor Selection

12. ____ When the process is completed, record the following procedures listed on Figure 1-23, then click on **OK**.

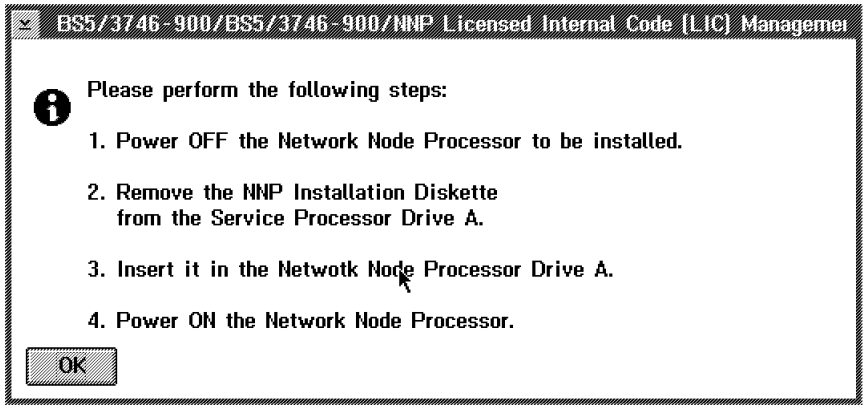


Figure 1-23. NNP-A Licensed Internal Code Management

13. ____ To follow the progress of the installation, read the messages prompted in '**Messages**' box.

    Note: It takes about 20 minutes to complete the installation

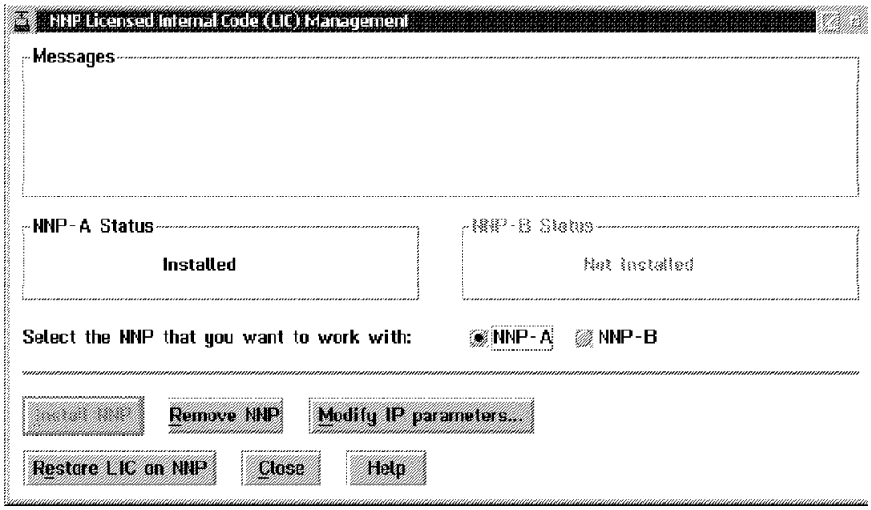


Figure 1-24. Network Node Processor LIC Management Menu

14. ____ As indicated in the following information message, remove the Network Node Processor installation diskette, then click on **OK**.

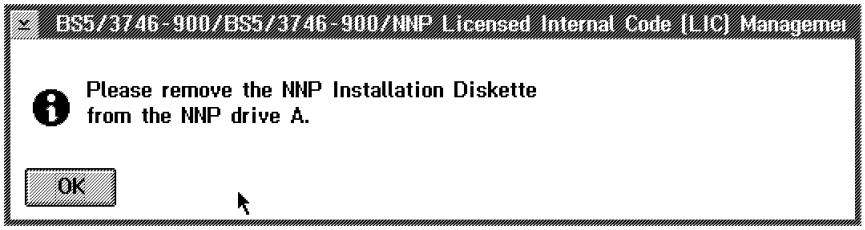


Figure 1-25. NNP-A Licensed Internal Code Management Information Message

15. ____ The installation is completed, click on **OK**, then click on **Close**.

Complete Your Installation

End of Network Node Processor Installation

Return where you left the previous installation procedure using one of the following guide, if you are installing a:

- **3746-900**, return to the *3746-900 Installation Guide*, SY33-2114.
- **3746-950**, return to the *3746-950 Installation Guide*, SY33-2107.

Chapter 2. Network Node Processor Problem Determination

MAP: Entry Point for Problem Isolation

You are here because you have a problem on the network node processor.

001

Are you here for a network node processor power ON problem?

Yes **No**

002

Go to "MAP: Network Node Processor Problem Determination" on page 2-7.

003

- Check that the suspected network node processor is powered ON.
- If not switch the power ON button to the ON position.

Is the network node processor powered ON?

Yes **No**

004

Is the network node processor connected to the ac outlet distribution box of a controller rack?

Yes **No**

005

Go to Step 011 on page 2-2.

006

Go to Step 008.

007

Problem solved. Go to Chapter 6, "CE Leaving Procedure" on page 6-1.

008

Check that the ac power cable of the network node processor is well connect to:

- The rear of the network node processor
- On the ac outlet distribution box.

(Step **008** continues)

008 (continued)

Is the problem solved?

Yes **No**

009

Continue with Step 016.

010

Problem solved. Go to Chapter 6, “CE Leaving Procedure” on page 6-1

011

Check that the ac power cable of the network node processor is well connected to:

- The rear of the network node processor
- The ac wall socket.

Is the problem solved?

Yes **No**

012

Connect a know working device, such as a lamp, into the ac wall socket.

Is the device work OK?

Yes **No**

013

The ac wall socket is defective. Inform the customer to have it repaired.

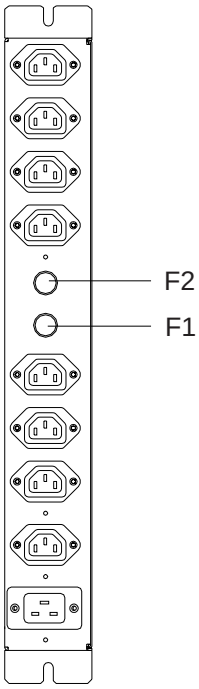
014

Suspect a power problem in the network node processor. Go to “MAP: Network Node Processor Troubleshooting” on page 3-2.

015

Problem solved. Go to Chapter 6, “CE Leaving Procedure” on page 6-1.

016



Fuse Location on ac outlet distribution box

- On the ac outlet distribution box:
  - Fuse F1 controls the range of connectors J1 to J4
  - Fuse F2 controls the range of connectors J5 to J8.
- Check if other units are connected to the same range of connectors than the suspected unit.

Are there other units connected to the same range than the suspected unit?

Yes **No**

017

Go to Step 026 on page 2-4.

018

Check that the other units have their power ON/OFF switch to ON.

Are other units powered ON?

Yes **No**

019

Go to Step 021

020

Go to Step 029 on page 2-4.

021

Check the corresponding fuse.

Is the fuse OK?

Yes **No**

022

(Step **022** continues)

022 (continued)

- Switch to OFF all the units controlled by this fuse.
- Exchange the defective fuse.
- Switch ON all the units controlled by this fuse.

Is the fuse blown again?

Yes **No**

023

Problem solved go to Chapter 6, “CE Leaving Procedure” on page 6-1.

024

- Suspect a power problem in a unit powered through the ac outlet distribution box.
- Switch to OFF all the units controlled by this fuse.
- Exchange the fuse.
- Switch one by one the units controlled by this fuse to identify the unit which has a problem.
- Once you have identified the faulty unit continue with Step 033 on page 2-5.

025

Suspect the ac wall socket.

026

Check the corresponding fuse.

Is the fuse OK?

Yes **No**

027

- Switch to OFF the network node processor controlled by this fuse.
- Exchange the defective fuse.
- Switch ON the network node processor.

Is the fuse blown again?

Yes **No**

028

Problem solved go to Chapter 6, “CE Leaving Procedure” on page 6-1.

029

Suspect a power problem in the network node processor. Go to “MAP: Network Node Processor Troubleshooting” on page 3-2.

030

Are all other units installed in the controller rack powered ON?

Yes **No**

031

Suspect the ac wall socket.

032

Suspect a power problem in the network node processor. Go to “MAP: Network Node Processor Troubleshooting” on page 3-2.

033

According to the defective unit type select, the action to be performed.

Unit Type	Action
Service Processor	Refer to the service processor documentation.
Network Node Processor	• If your network node processor is based on 6275, go to "MAP: Network Node Processor Troubleshooting" on page 3-2. • If your network node processor is based on 3172, refer to the *3172 Interconnect Controller Maintenance Information Model 3*, SY27-0334 manual to identify the problem. • If your network node processor is based on 7585, refer to the *7585 P02 Industrial Computer Installation, Operation, Hardware Maintenance*, S76H-3792 manual to identify the problem.
Display	Exchange it. Refer to the corresponding *Service Processor Installation and Maintenance* manual on which the display is connected.
Optical Disk or CD-ROM	Exchange it. Refer to the corresponding *Service Processor Installation and Maintenance* manual on which the optical disk or the CD-ROM is connected.
Modem	Refer to the following modem documentation: • For the IBM 7855, refer to the *7855 Modem Model 10 Guide to Operation*, GA33-0160 • For the IBM 7857, refer to the *IBM 7857 Guide to Operation*, GA13-1839 • For the IBM 7858, refer to the *IBM 7858 Professional Modem Guide to Operation*, GA13-1981 • For other modems, refer to the corresponding documentation.
Other Units	Refer to the corresponding documentation shipped with the unit.

MAP: Network Node Processor Problem Determination

You are here because you suspected

- **A network node processor problem**
- **A connection problem between the network node processor and a 3746-900 or a 3746-950.**

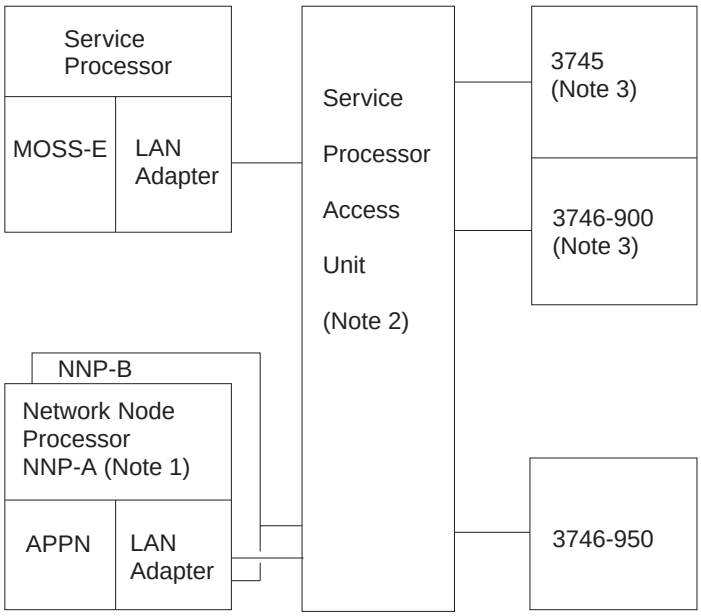


Figure 2-1. LAN attached to the Service Processor

Notes:

1. The network node processor is an optional feature which is present only when APPN™ is installed. A backup network node processor can be also present. Until four network node processors can be installed on the same LAN.
2. Up to two service processor access units (8228) can be used depending on the number of network node processor used.
3. Only 3745, 3746-900, 3746-950, service processor and network node processor can be connected to the LAN when APPN is installed.

Important

To continue this procedure you must have a display and keyboard connected to the network node processor Refer to “How to Install a Display and Keyboard on your Network Node Processor” on page 2-10.

001

Switch OFF the network node processor, then after few seconds, switch ON the network node processor.
(Step **001** continues)

001 (continued)

Is there something displayed on the network node processor attached display?

Yes **No**

002

Go to "MAP: Network Node Processor Troubleshooting" on page 3-2.

003

Is the service processor IML complete with MOSS-E View window displayed?

Yes **No**

004

Is there a message SYSxx-xxxxx (OS/2 message) displayed on screen?

Yes **No**

005

Go to "MAP: Network Node Processor Troubleshooting" on page 3-2.

006

Call support for assistance.

007

Is the keyboard locked?

Yes **No**

008

Go to Step 012 on page 2-9.

009

- Check that the keyboard cable is properly plugged into the keyboard and into the rear of the service processor.

Do you find the problem?

Yes **No**

010

Replace the system board. Go to Chapter 5, "Network Node Processor FRU / Display Exchange" on page 5-1

011

Go to Step 012 on page 2-9.

012

- Check that the service processor LAN cable is correctly connected at the rear of the service processor and in the service processor access unit.
- Check that all the LAN cables are correctly connected in the service processor access unit.

Did you find the problem?

Yes **No**

013

- Run diagnostics on the service processor, go to "Starting the IBM PC Enhanced Diagnostics Program" on page 4-4 to identify the problem. Then if you have to exchange a FRU, go to Chapter 5, "Network Node Processor FRU / Display Exchange" on page 5-1.

014

Problem solved go to Chapter 6, "CE Leaving Procedure" on page 6-1.

How to Install a Display and Keyboard on your Network Node Processor

1 Have a display and keyboard.

2 Power OFF the network node processor.

3 Connect the display and keyboard at the rear of the network node processor.

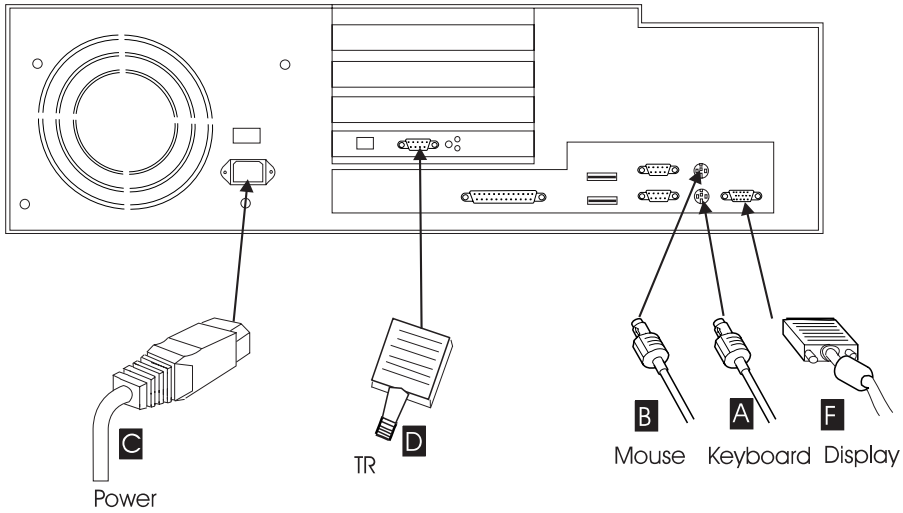


Figure 2-2. How to Connect the Display and the Keyboard on Network Node Processor

4 Connect the display power cable to a know working ac source.

5 Power ON the network node processor and the display.

6 Return to the procedure where you came from.

Chapter 3. Service Processor Troubleshooting

MAP: Network Node Processor Troubleshooting

Note about POST error code

The zeros before and after the error code may be not present for some PS/2 models. Messages might appears on your screen as three-, four-, or five-characters messages. When this occurs, add two zeros after the last characters and one, two, or three zeros before the first character, so that you can look up the error as an eight-character message.

Example:

101 displayed means 00010100

1701 displayed means 00170100

16680 displayed means 01668000

Notes:

1. If you have both an error message and an incorrect audio response, diagnose the error message first.
2. If you cannot run the diagnostic tests, or you get a diagnostic error code when running a test, but did receive a POST error message, diagnose the POST error message first.
3. If you did not receive any error message, look for a description of your error symptoms in the first part of this index.
4. Check all power supply voltages before you replace the system board. (See "Power-Supply" on page 3-26)
5. Check the hard disk drive jumper settings before you replace a hard disk drive. (See "Hard Disk Drive Jumper Settings" on page 3-37).

Important

- Some errors are indicated with a series of beep codes. See "Beep Symptoms" on page 3-21 for an explanation of the beep codes.
- The network node processor based on 6275 computer is default to come up quiet (No beep and no memory count and checkpoint code display) when no errors are detected by POST. To enable Beep and memory count and checkpoint code display when a successful POST occurs:
  - Enable **Power on Status** in Setup. See "Network Node Processor Configuration / Setup Utility" on page F-8.
- The processor is a separate FRU from the system board; that is, the processor is not included with the system board FRU. See "Before Replacing a System Board" on page 3-29 before replacing the system board.

001

- Power-off the system.
- Check all cables and power cords.
- Make sure there are no diskettes in the drives.

(Step **001** continues)

001 (continued)

- Set all display controls to the middle position.
- Power-on the system.

Note: If you get a POST error code, press the pause key (while the error code is on the screen). Write down any error codes that are displayed, then press F1 to continue.

DID YOU RECEIVE A POST ERROR CODE?

Yes **No**

002

Go to Step 006 on page 3-15

003

Check your FIRST POST ERROR with the following list.

Symptom / Error	FRU / Action
000 SCSI Adapter not enabled.	1 **Be sure adapter device and Bus Master fields are enabled in PCI configuration program. See documentation shipped with computer.**
02X	1. **SCSI Adapter**
08X Check SCSI terminator installation.	1. **SCSI Cable** 2. SCSI Terminator 3. SCSI Device 4.SCSI Adapter
101 System board Interrupt failure.	1. **System Board**
102 Timer board timer error.	1. **System Board**
106	1. **System Board**
110 System board memory parity error.	1.**Memory Module** 2. System Board
111 I/O channel parity error.	1. **Reseat adapters** 2. Any Adapter 3. System Board
114 Adapter ROM error.	1. **Adapter Module** 2. System Board
129 Internal cache test error.	1.**Processor** 2. L2 Cache Memory 3. System Board
151 Real-time clock failure.	1. **System Board**
161 Bad CMOS battery.	1. **Run Configuration/Setup Utility** 2. CMOS Backup Battery (See Appendix A, “Safety Information” on page A-1) 3. System Board

Symptom / Error	FRU / Action
162 Configuration mismatch	1. **Run Setup and verify Configuration** 2. Clock Battery 3. System Board
162 And unable to run diagnostics.	1. **Diskette Drive** 2. System Board 3. Diskette Drive Cable
163 Clock not updating or invalid time set.	1. **Time and Date Set?** 2. CMOS Backup Battery (See Appendix A, “Safety Information” on page A-1) 3. System Board
164 POST detected a base memory or extended memory size mismatch error.	1. **Run Setup. Check System Summary menu for memory size change. (See “Network Node Processor Configuration / Setup Utility” on page F-8).** 2. Run the Extended Memory Diagnostic tests.
166 Boot Block Check Sum Error.	1. **Run Flash Recovery using Boot Block. See “Flash Recovery Boot Block Jumper” on page 3-33** 2. System Board
167 Microprocessor installed that is not supported by the current POST/BIOS	1. **Run Setup. Check Stepping level for the BIOS level needed, then perform the flash update.** 2. Processor
168 Alert on LAN error.	1. **Run Setup. Check to see that Ethernet and Alert on LAN are enabled** 2. System Board 3. Riser Card, if installed.
17X, 18X	1. **C2 Security**
175	1. **Run Configuration (See “Network Node Processor Configuration / Setup Utility” on page F-8).** 2. Riser Card, if installed 3. System Board
176	1. **Covers were removed from the computer**
177 Corrupted Administrator Password.	1. **Riser Card** 2. System Board
178	1. **Riser Card** 2. System Board
183	1. **Enter the administrator password**
184 Password removed due to check-sum error.	1. **Enter new password**
185 Corrupted boot sequence.	1. **Set configuration and reinstall the boot sequence**
186	1. **Riser Card** 2. System Board

Symptom / Error	FRU / Action
187	1. **Clear Administration password** 2. System Board
189	1. **More than three password attempts were made to access the computer**
190 Chassis intrusion detector was cleared. This is information only, no action required. If this code does not clear:	1. **System Board.** 2. Riser Card, if installed
1XX Not listed above.	1. **System Board**
201, 20X Memory data error.	1. **Run Enhanced Diagnostic Memory Test** 2. Memory Module 3. System Board
225	1. **Unsupported Memory**
229 External cache test error.	1. **L2 Cache Memory** 2. System Board
262 POST detected a base or extended memory type error.	1. **Run Setup. Check System Summary menu for memory type change. (See "Network Node Processor Configuration / Setup Utility" on page F-8.)** 2. Run the extended Memory Diagnostic tests.
301	1. **Keyboard** 2. Keyboard Cable 3. System Board
303 With an 8603 error.	1. **Mouse** 2. Keyboard 3. Keyboard Cable 4. System Board
303 With no 8603 error.	1. **Keyboard** 2. Keyboard Cable 3. System Board
3XX Not listed above	1. **Keyboard** 2. Keyboard Cable 3. System Board
5XX	1. **Video Adapter** (if installed) 2. System Board
601	1. **Diskette Drive A** 2. Diskette Drive Cable 3. System Board
602	1. **Bad Diskette ?** 2. Verify Diskette and retry.

Symptom / Error	FRU / Action
604 And able to run diagnostics.	1. **Run Setup and verify diskette configuration settings** 2. Diskette Drive A/B. 3. Diskette Drive Cable 4. Riser Card if drive cable connected 5. System Board
605 POST cannot unlock the diskette drive.	1. **Diskette Drive** 2. Diskette Drive Cable 3. System Board
662	1. **Diskette drive configuration error or wrong diskette drive type**
6XX Not listed above.	1. **Diskette Drive** 2. System Board 3. External Drive Adapter 4. Diskette Drive Cable 5. Power Supply
762 Math coprocessor configuration error.	1. **Run Setup** 2. Processor 3. System Board
7XX Not listed above.	1. **Processor** 2. System Board
962 Parallel port configuration error.	1. **Run Configuration** 2. Parallel Adapter (if installed) 3. System Board
9XX	1. **Printer** 2. System Board
1047	1. **16-Bit AT Fast SCSI Adapter**
107X Check SCSI terminator installation.	1. **Check SCSI terminator installation**. 2. SCSI Cable 3. SCSI Terminator 4. SCSI Device 5. SCSI Adapter
1101 Serial connector error, possible system board failure.	1. **Run Advanced Diagnostics**
1101, **1102**, **1106**, **1108**, **1109**	1. **System Board** 2. Any Serial Device
1107	1. **Communications Cable** 2. System Board
1102 Card selected feedback error.	1. **Run Advanced Diagnostics**
1103 Port fails register check.	1. **Run Advanced Diagnostics** 2. System Board
1106 Serial option cannot be turned off.	1. **Run Advanced Diagnostics** 2. System Board
1107	1. **Serial Device Cable** 2. System Board
1110 Register test failed.	1. **Run Advanced Diagnostics** 2. System Board

Symptom / Error	FRU / Action
1116 Interrupt error.	1. **Run Advanced Diagnostics**
1117 Failed baud rate test.	1. **Run Advanced Diagnostics**
1162 Serial port configuration error.	1. **Run Configuration** 2. Serial Adapter (if installed) 3. System Board
11XX Not listed above.	1. **System Board**
1201	1. **System Board** 2. Any Serial Device
1202, **1206**, **1208**, **1209**, **12XX**	1. **Dual Async Adapter/A** 2. System Board 3. Any Serial Device
1207	1. **Communications Cable** 2. Dual Async Adapter/A
13XX	1. **Game Adapter**
1402 Printer not ready.	Information only
1403 No-paper error, or interrupt failure.	Information only
1404 System board timeout failure.	1. **Run Advanced Diagnostics**
1405 Parallel adapter error.	1. **Run Advanced Diagnostics**
1406 Presence test error.	1. **Run Advanced Diagnostics**
14XX Not listed above. Check printer before replacing system board.	1. **See "Printer" on page 3-25** 2. System Board
15XX	1. **SDLC Adapter**
1692 Boot sequence error.	1. **Run FDISK to ensure at least one active partition is set active**
16XX	1. **36/38 Workstation Adapter**
1762 Hard disk drive configuration error.	1. **Run Configuration/Setup Utility (See "Network Node Processor Configuration / Setup Utility" on page F-8.)**
1780 (Disk Drive 0) **1781** (Disk Drive 1) **1782** (Disk Drive 2) **1783** (Disk Drive 3)	1. **See "Power-Supply" on page 3-26** 2. Hard Disk Drive 3. Riser Card, if hard disk cable connected 4. System Board 5. Hard Disk Cable 6. Power Supply

Symptom / Error	FRU / Action
180X, 185X PCI configuration or resource error.	1. **Run Setup and verify PCI/ISA configuration settings** 2. If necessary, set ISA adapters to "Not available" to allow PCI adapters to properly configure. 3. Remove any suspect ISA adapters. 4. Rerun diagnostics. 5. PCI Adapter 6. PCI Riser Card.
1962 Boot sequence error.	1. **Possible hard disk drive problem, see “Hard Disk Drive Boot Error” on page 3-32**
209X	1. **Diskette Drive** 2. Diskette Cable 3. 16-bit AT Fast SCSI Adapter
20XX Not listed above	1. **BSC Adapter** 2. Riser Card
21XX	1. **SCSI Device** 2. 16-bit AT Fast SCSI Adapter 3. Alternate BSC Adapter 4. Riser Card
2401, 2402 If screen colors change.	1. **Display**
2401, 2402 If screen colors are OK.	1. **System Board** 2. Display
2409	**Display**
2410	1. **System Board** 2. Display
2462 Video memory configuration error.	1. **Check cable and connections.** 2. Run Setup and verify video configuration settings. 3. Video Memory Modules 4. Video Adapter (if installed) 5. System Board
3015, 3040 Check for missing wrap or terminator plug on the adapter.	1. **Network Attached?** 2. LF Translator 3. Cable Problem 4. PC Network Adapter 5. Riser Card
30XX	1. **PC Network Adapter** 2. LF Translator 3. Cable Problem? 4. Riser Card
3115, 3140	1. **Network Attached?** 2. LF Translator 3. Alternate PC Network-Adapter 4. Cable Problem 5. Riser Card

Symptom / Error	FRU / Action
31XX	1. **Alternate PC Network Adapter** 2. LF Translator 3. Cable Problem? 4. Riser Card
36XX	1. **GPIB Adapter** 2. Riser Card
38XX	1. **DAC Adapter** 2. Riser Card
4611, **4630**	1; **Multiport/2 Interface Board** 2. Multiport/2 Adapter
4612, **4613 4640**, **4641**	1. **Memory Module Package** 2. Multiport/2 Adapter
4650	1. **Multiport Interface Cable**
46XX Not listed above.	1. **Multiport/2 Adapter** 2. Multiport/2 Interface Board 3. Memory Module
5600	1. **Financial System Controller Adapter**
5962 An IDE devicev (other than hard drive) configuration error.	1. **Run Configuration** 2. CD-ROM Drive 3. CD-ROM Adapter 4. ZIP or other ATAPI device 5. System Board
62XX	1. **1st Store Loop Adapter** 2. Adapter Cable
63XX	1. **2nd Store Loop Adapter** 2. Adapter Cable
64XX	1. **Network Adapter**
71XX	1. **Voice Adapter**
74XX	1. **Video Adapter** (if installed) 2. Riser Card
76XX	1. **Page Printer Adapter**
78XX	1. **High Speed Adapter**
79XX	1. **3117 Adapter**
80XX	1. **PCMCIA Adapter**
84XX	1. **Speech Adapter** 2. Speech Control Assembly 3. Riser Card
8601, **8602**	1. **Pointing Device** (Mouse) 2. System Board
8603, **8604**	1. **System Board** 2. Pointing Device (Mouse)
86XX Not listed above	1. **Mouse** 2. System Board
89XX	1. **PC Music Adapter** 2. MIDI Adapter Unit 3. Riser Card

Symptom / Error	FRU / Action
91XX	1. **Optical Drive** 2. Adapter
96XX	1. **SCSI Adapter** 2. Any SCSI Device 3. System Board
10101, **10102**, **10104** **10105**, **10106**, **10107** **10108**, **10109**, **10111** **10112**, **10113**, **10114** **10115**, **10116**	1. **Have customer verify correct operating system device drivers are installed and operational** 2. Modem
10103, **10110**, **101171**	1. **System Board** 2. Data/Fax Modem
10117 Not listed above.	1. **Check system speaker** 2. Check PSTN cable 3. External DAA (if installed) 4. Modem
10118	1. **Run Diagnostics and verify the correct operation of the modem slot** 2. Modem
10119	1. **Diagnostics detected a non-IBM modem** 2. Modem
10120	1. **Check PSTN Cable** 2. External DAA (if installed) 3. Modem
10132, **10133**, **10134** **10135**, **10136**, **10137** **10138**, **10139**, **10140** **10141**, **10142**, **10143** **10144**, **10145**, **10146** **10147**, **10148**, **10149** **10150**, **10151**, **10152**	1. **Modem**
10153	1. **Data/Fax Modem** 2. System Board
101XX Not listed above.	1. **Modem Adapter/A** 2. Data/Fax Modem 3. System Board
10450, **10451**, **10490** **10491**, **10492**, **10499** Read/write error.	1. **Run Advanced Diagnostics** 2. Riser Card 3. Hard Disk Drive 4. System Board
10452 Seek test error.	1. **Run Advanced Diagnostics**
10453 Wrong drive type?	Information only
10454 Sector buffer test error.	1. **Run Advanced Diagnostics**
10455, **10456** Controller error.	1. **Run Advanced Diagnostics**

Symptom / Error	FRU / Action
10459 Drive diagnostic command error.	Information only
10461 Drive format error	1. **Run Advanced Diagnostics**
10462 Controller seek error.	1. **Run Advanced Diagnostics**
10464 Hard Drive read error.	1. **Run Advanced Diagnostics**
10467 Drive non-fatal seek error.	1. **Run Advanced Diagnostics**
10468 Drive fatal seek error.	1. **Run Advanced Diagnostics**
10469 Drive soft error count exceeded.	1. **Run Advanced Diagnostics**
10470, **10471**, **10472** Controller wrap error.	1. **Run Advanced Diagnostics**
10473 Corrupt data. Low-level format might be required.	Information only
10480	1. **Hard Disk Drive** (ESDI) 2. Drive Cable 3. System Board
10481 ESDI drive D seek error.	1. **Run Advanced Diagnostics**
10482 Drive select acknowledgement bad.	1. **Run Advanced Diagnostics**
106X1	1. **Check Configuration** 2. Ethernet Adapter
10635	1. **Power-off computer, wait ten seconds, then power-on the computer** 2. Ethernet Adapter
10651, 10660	1. **Check Cables** 2. Ethernet Adapter
106XX Not listed above.	1. **Ethernet Adapter**
107XX	1. **5.25-inch External Diskette Drive** 2. 5.25-inch Diskette Drive Adapter/A
109XX Check the adapter cables.	1. **ActionMedia Adapter/A** 2. System Board
112XX This adapter does not have cache.	1. **SCSI Adapter** 2. Any SCSI Device 3. System Board
119XX	1. **3119 Adapter**
121XX	1. **Modem Adapter** 2. Any Serial Device 3. System Board

Symptom / Error	FRU / Action
136XX	1. **ISDN Primary Rate Adapter** 2. System Board
137XX	1. **System Board**
141XX	1. **Realtime Interface Co-Processor** **Portmaster Adapter/A**
143XX	1. **Japanese Display Adapter** 2. System Board
14710, **14711**	1. **System Board Video Adapter** 2. Adapter Video Memory
148XX	1. **Video Adapter**
14901, **14902** **1491X**, **14922**	1. **Video Adapter** (if installed) 2. System Board 3. Display (any type)
14932	1. **External Display** 2. Video Adapter
16101	1. **Riser Card Battery** (See Appendix A, “Safety Information” on page A-1)
161XX	1. **FaxConcentrator® Adapter**
164XX	1. **120MB Internal Tape Drive** 2. Diskette Cable 3. System Board
16500	1. **6157 Tape Attachment Adapter**
16520, **16540**	1. **6157 Streaming Tape Drive** 2. 6157 Tape Attachment Adapter
166XX, 167XX	1. **Token Ring Adapter** 2. System Board 3. Riser Card
18001 to **18029**	1. **Wizard Adapter** 2. Wizard Adapter Memory
18031 to **18039**	1. **Wizard Adapter Cable**
185XXXX	1. **DBCS Japanese Display Adapter/A** 2. System Board
20001 to **20003**	1. **Image Adapter/A** **Image-I Adapter/A** 2. Memory Module DRAM, VRAM
20004	1. **Memory Module DRAM, VRAM** 2. Image Adapter/A Image-I Adapter/A
20005 to **20010**	1. **Image Adapter/A** **Image-I Adapter/A** 2. Memory Module DRAM, VRAM
200XX Not listed above.	1. **Image Adapter/A** **Image-I Adapter/A** 2. Memory Module DRAM, VRAM 3. System Board

Symptom / Error	FRU / Action
20101 to **20103**	1. **Printer/Scanner Option** 2. Image Adapter/A 3. Memory Module DRAM, VRAM
20104	1. **Memory Module DRAM, VRAM** 2. Printer/Scanner Option 3. Image Adapter/A
20105 to **20110**	1. **Printer/Scanner Option** 2. Image Adapter/A 3. Memory Module DRAM, VRAM
Image Adapter/A Memory Test failure indicated by graphic of adapter.	1. **Replace memory module (shown in graphic).**
206XX	1. **SCSI-2 Adapter** 2. Any SCSI Device 3. System Board
208XX Verify there are no duplicate SCSI ID settings on the same bus.	1. **Any SCSI Device**
210XXXX Internal bus, size unknown. **210XX**X**1** External bus, size unknown.	1. **SCSI Hard Disk Drive** 2. SCSI Adapter or System Board 3. SCSI Cable 4. SCSI ID Switch (on some models)
212XX	1. **SCSI Printer** 2. Printer Cable
213XX	1. **SCSI Processor**
214XX	1. **WORM Drive**
215XXXC **215XX**XD **215XX**XE **215XX**XU If an external device and power-on LED is off, check external voltages.	1. **CD-ROM Drive I** **CD-ROM Drive II** **Enhanced CD-ROM Drive II** **Any CD-ROM Drive** 2. SCSI Cable 3. SCSI Adapter or System Board
216XX	1. **Scanner**
217XX If an external device and power-on LED is off, check external voltages.	1. **Rewritable Optical Drive** 2. SCSI Adapter or System Board 3. SCSI Cable
218XX Check for multi-CD tray, or juke box.	1. **Changer**
219XX	1. **SCSI Communications Device**
24201Y0, **24210**Y0 Be sure wrap plug is attached.	1. **ISDN/2 Adapter** 2. ISDN/2 Wrap Plug 3. ISDN/2 Communications Cable
273XX	1. **1M bps Micro Channel® Infrared LAN Adapter**
27501, **27503** **27506**, **27507**	1. **ServerGuard Adapter** 2. System Board
27502, **27504**, **27510** **27511**, **27533**, **27534** **27536**, **27537**	1. **ServerGuard Adapter**

Symptom / Error	FRU / Action
27509	1. **Remove redundant adapters, run Auto Configuration program, then retest**
27512	1. **WMSELF.DGS diagnostics file missing** 2. WMSELF.DGS diagnostics file incorrect.
27535	1. **3V Lithium Backup Battery** 2. ServerGuard Adapter
27554	1. **Internal Temperature out of range** 2. ServerGuard Adapter
27555, **27556**	1. **ServerGuard Adapter** 2. Power Supply
27557	1. **7.2V NiCad Main Battery Pack** 2. ServerGuard Adapter
27558, **27559** **27560**, **27561**	1. **PCMCIA Type II Modem** 2. ServerGuard Adapter
27562	1. **External Power Control not connected** 2. External Power Control 3. ServerGuard Adapter
27563, **27564**	1. **External Power Control** 2. ServerGuard Adapter
275XX	1. **Update Diagnostic Software**
27801 to **27879**	1. **Personal Dictation System Adapter** 2. System Board
27880 to **27889**	1. **External FRU** (Speaker, Microphone)
I999030X Hard disk reset failure.	1. **Possible hard disk drive problem** (See “Hard Disk Drive Boot Error” on page 3-32).

DID YOU FIND YOUR POST ERROR CODE IN THE LIST?

Yes **No**

004

Error Range Is Not Listed

If the error code *range* presented is not listed in this index, it may be generated by a device that requires an additional service package. Refer to that service package.

005

- **Action:**
  - **Change the FRU suspected**, go to Chapter 5, “Network Node Processor FRU / Display Exchange” on page 5-1.

(Step **005** continues)

005 (continued)

– **or perform the specified action.**

006

Check your service processor symptom with the following list.

ERROR MESSAGE

Symptom / Error	FRU / Action
Address Exceeds the Size of Your Memory An invalid memory address was entered. Diagnostics Tests display this message during the Locate Bad Chips option.	1. **Enter the correct address.** 2. Memory Module 3. System Board
Arithmetic Functions Failed An error was detected during the CPU Test.	1. **Microprocessor** 2. System Board
Base Memory Test Failed An error was detected in base memory.	1. **Memory Module** 2. System Board
Boot Sector Unreadable A boot sector read error was detected on the hard disk drive.	1. **Hard Disk Drive** 2. Hard Disk Drive Cable 3. Hard Disk Drive Adapter (if installed) 4. System Board
Bus Noise Test Failed RAM Test detected an error in the memory bus.	1. **Memory Module** 2. System Board
Butterfly Cylinder Access Test Failed Hard Disk Drive Test detected mismatch between the data read and the data stored on the drive.	1. **Hard Disk Drive** 2. Hard Disk Drive Cable 3. Hard Disk Drive Adapter (if installed) 4. System Board
Clock Stopped Real-time clock has stopped working.	1. **Real-Time Clock Assembly** 2. System Board
CMOS Clock Test Failed Time and Date Settings for CMOS and DOS **do not** Match.	1. **Real-Time Clock Assembly** 2. System Board
Controller Diagnostic Test Failed An error was detected while testing the Hard Disk Controller (Adapter).	1. **Hard Disk Drive Adapter** (if installed) 2. Hard Disk Drive 3. System Board
Cylinder 0 errors Test detected an error reading the first cylinder of the hard disk drive.	1. **Hard Disk Drive** 2. Hard Disk Drive Adapter (if installed) 3. System Board
Device is Not Ready **Ready the Device...** **or** **Press Any Key**	1. **Ensure the device is powered-on.** 2. Replace failing device 3. Device Adapter (if installed) 4. System Board
Disk Error Encountered Opening Output File Press Any Key To Continue.	1. **Hard Disk Drive** 2. Hard Disk Drive Adapter (if installed) 3. System Board
DMA #X Failed Main Components Test detected an error while testing the DMA controller.	1. **System Board**

Symptom / Error	FRU / Action
DMA Page Register Failed DMA page register error	1. **System Board**
Drive (x) Media (y) Mismatch FAT ID mismatch with installed drive.	1. **Check diskette and diskette drive capacity.** 2. Diskette Drive 3. System Board
Error in video buffer. **Bad bits.** Video memory test error.	1. **Video Adapter** 2. System Board 3. Display
Exception Interrupt In Protected Mode **Diags Cannot Continue** Server error, remove one adapter at a time until the symptom goes away.	1. **Any Adapter** 2. System Board 3. Processor
Extended Memory Test Failed Extended memory error.	1. **Memory Module** 2. System Board
Floppy Drive Failed Diskette drive(s) failed.	1. **Diskette Drive** 2. System Board 3. Diskette Drive Cable
General Function Failed Remove one adapter at a time until the symptom goes away.	1. **Any Adapter** 2. System Board 3. Processor
Hard Drives Failed Hard Disk Drive test error.	1. **Hard Disk Drive** 2. Hard Disk Drive Adapter (if installed) 3. System Board
Incorrect DOS version	1. **Ensure you are using DOS version 3.0 or higher.**
INT Mask Register Failed INT Mask Register error.	1. **Microprocessor** 2. System Board
Invalid Date Clock/DOS date mismatch.	1. **Real-Time Clock Assembly** 2. System Board
Invalid Time Clock/DOS time mismatch. Back-up clock and DOS time of day settings do not match.	1. **Real-Time Clock Assembly** 2. System Board
Linear Cylinder Access Test Failed Hard disk drive error.	1. **Hard Disk Drive** 2. Hard Disk Drive Cable 3. Hard Disk Drive Adapter (if installed) 4. System Board
Logic Function Failed CPU Logic test error.	1. **Microprocessor** 2. System Board
Loopback Error COM Port Test or Parallel Port error. A wrap plug must be installed to successfully complete these tests.	1. **System Board** 2. Wrap Plug
Main Components Failed System board error.	1. **System Board** 2. Processor
Memory test cannot run at this location in memory Not enough free memory available to start the memory test.	1. **Memory Module** 2. System Board

Symptom / Error	FRU / Action
Missing QAPlus/PRO Files(s) One or more diagnostic support files are missing.	1. **Diagnostic Diskette**
NO LOOP-BACK PLUG. Skipping External loopback test No wrap plug installed.	1. **Install wrap plug on the serial port, rerun test** 2. System Board
Not ready Printer not on-line or not ready.	1. **Ready Printer** 2. Printer 3. Printer Cable 4. System Board
No 'type-amatic' repeat At least one repeat key must be tested during this test or an error will occur. Type-amatic test error.	1. **Keyboard** 2. System Board
Not used by any standard device IRQ is not currently being used by a non-standard device.	1. **System Board**
Numeric Proc Failed NPU test error.	1. **Microprocessor** 2. System Board
Parallel Ports Failed Test Report Summary message.	1. **System Board**
Pass (N): ** Errors ** Drive (X) Failed Diskette drive read/write test error.	1. **Diskette Drive** 2. System Board 3. Diskette Drive Cable
Pass (N) Drive Not Ready Diskette drive door is open or defective.	1. **Ensure diskette drive is ready** 2. Diskette Drive 3. System Board 4. Diskette Drive Cable
Pass (N): Drive (X) Write Protected or Unformatted	1. **Insert a non-write protected, formatted diskette into the diskette drive; then rerun the test** 2. Diskette Drive 3. System Board 4. Diskette Drive Cable
Pass (N): Unknown Media Drive (X) Diskette Drive Test error.	1. **Diskette** 2. Diskette Drive 3. System Board 4. Diskette Drive Cable
Place Hi-density Media in Drive Media/drive mismatch.	1. **Diskette** 2. Diskette Drive 3. System Board 4. Diskette Drive Cable
Printer Failed Printer powered-on and ready?	1. **Printer** 2. Printer Cable 3. System Board
Printer Fault Printer powered-on and ready?	1. **Printer** 2. Printer Cable 3. System Board
Printer Not Selected Ensure the printer is powered-on and ready.	1. **Printer** 2. Printer Cable 3. System Board

Symptom / Error	FRU / Action
Program or File Not Found **Press Any Key** Diagnostics cannot find the USER(N).COM file.	1. **Diagnostic Diskette** 2. Diskette Drive 3. System Board
Program Too Big To Fit In Memory Too many Terminate and Stay Resident programs in memory.	1. **Reboot the system from the Diagnostic Diskette**
QAPlus/PRO Cannot Be Re-run Because Of Error In Relocating Program Diagnostics failed to relocate the Diagnostics Test programs so the memory space it resides in was not tested.	1. **Diagnostic Diskette** 2. Memory Module 3. System Board
RAM Memory Error in Block n. Bad bits n Memory error.	1. **Memory Module** 2. System Board
RAM Test Failed Memory error.	1. **Memory Module** 2. System Board
Read error on cylinder n Hard disk drive format error.	1. **Hard Disk Drive** 2. Hard Disk Drive Adapter (if installed) 3. System Board
Read Errors Diskette drive read error.	1. **Diskette** 2. Diskette Drive 3. System Board 4. Diskette Drive Cable
Receive Error Serial Port loopback test error.	1. **Serial Port Cable** 2. System Board
Refresh Failure Diagnostics Test detected an error while testing the DMA controller's RAM refresh cycle.	1. **Memory Module** 2. System Board
RTC Interrupt Failure Diagnostics Test cannot detect the Real-Time clock interrupt.	1. **Real-Time Clock Assembly** 2. System Board
Serial Chip Error COM Port error, general.	1. **Serial Port Cable** 2. System Board
Serial Compare Error COM Port error, information transmitted is not the same as information received.	1. **Serial Port Cable** 2. System Board
Serial Time-out Error COM Port error, time interval is too long between transmitted and received data.	1. **Serial Port Cable** 2. System Board
Serious Memory Error — Diags Cannot Continue Memory Test error.	1. **Memory Module** 2. System Board
Sorry You Need A Mouse Mouse or mouse driver was not detected.	1. **Mouse** 2. System Board
System Hangs Go to “Undetermined Problems” on page 3-29.	1. **Any device** 2. Any adapter 3. System Board

Symptom / Error	FRU / Action
The Address Exceeds The Size Of Your Memory An invalid memory address was entered. The Diagnostics Tests display this message during the Locate Bad Chips option under the interact menu if an invalid memory address was entered at the "Enter Memory Address Of Bad Chip" prompt.	1. **Enter correct address** 2. Memory Module 3. System Board
That Number is Out Of Range An invalid bit number was entered. Diagnostics Tests display this message during the Locate Bad Chips option.	1. **Enter the correct number** 2. Memory Module 3. System Board
Too Many Errors — Test Aborted Too many errors, the Diagnostics Test cannot continue.	1. **Microprocessor** 2. System Board
Transmit Error Internal or external serial port loopback test failure.	1. **Serial Port Cable** 2. System Board
Video Adapter Failed Test Result Summary, displayed if "Fail" was at the Quit/Fail/Pass menu of any video test.	1. **Video Adapter** 2. System Board 3. Display
Write error on cylinder n Hard disk drive write error.	1. **Hard Disk Drive** 2. Hard Disk Drive Adapter (if installed)
Write Errors Diskette drive write error.	1. **Diskette** 2. Diskette Drive 3. System Board 4. Diskette Drive Cable
Write Protected or Unformatted Diskette is Write Protected or not formatted.	1. **Insert a non-write protected, formatted diskette into the diskette drive; then rerun the test** 2. Diskette Drive 3. System Board 4. Diskette Drive Cable
You Cannot Delete the Motherboard "Remove Board" option was selected. The Diagnostics Tests display this message during the Locate Bad Chips option.	1. **Make the correct selection** 2. Memory Module 3. System Board 4. Processor
SCSI ID on rotary switch does not match SCSI ID set in configuration. Verify drive switches inside cover are set to zero.	1. **Rotary Switch Circuit Board** 2. Circuit Board Cable 3. Tape Drive

MISCELLANEOUS ERROR MESSAGES

Message/Symptom	FRU/Action
Changing colors.	1. **Display**

Message/Symptom	FRU/Action
CMOS Backup Battery inaccurate.	1. **CMOS Backup Battery (see Appendix A, "Safety Information" on page A-1).** 2. System Board
Computer will **not** power-off. See "Power-Supply" on page 3-26.	1. Power Switch 2. System Board
Computer will **not** RPL from server	1. **Ensure Network is in startup sequence as first device or first device after diskette.** 2. Ensure Network adapter is enabled for RPL. 3. Network adapter (advise network administrator of a new MAC address)
Computer will **not** Wake On LAN	1. **Check power supply and signal cable connections to network adapter.** 2. Ensure Wake On LAN feature is enabled in Setup/Configuration. See "Network Node Processor Configuration / Setup Utility" on page F-8. 3. Ensure Network network administrator is using correct MAC address. 4. Ensure no interrupt or I/O address conflicts. 5. Network adapter (Advise network administrator of new MAC address).
Dead computer.	1. **See "Power-Supply" on page 3-26** 2. Power Switch 3. Power Supply 4. System Board
Diskette drive in-use light remains on or does not light when drive is active.	1. **Diskette Drive** 2. System Board 3. Diskette Drive Cable
Flashing cursor with an otherwise blank display.	1. **System Board** 2. Primary Hard Disk Drive 3. Hard Disk Drive Cable
Incorrect memory size during POST.	1. **Run the Memory tests** 2. Memory Module 3. System Board
"Insert a Diskette" icon appears with a known-good diagnostics diskette in the first 3.5-inch diskette drive.	1. **Diskette Drive** 2. System Board 3. Diskette Drive Cable 4. Network Adapter
Intensity or color varies from left to right of characters and color bars.	1. **Display** 2. System Board
No power, or fan not running.	1. **See "Power-Supply" on page 3-26**
Nonsystem disk or disk error-type message with a known-good diagnostic diskette.	1. **Diskette Drive** 2. System Board 3. Diskette Drive Cable
Other display symptoms not listed above (including blank or illegible display).	1. **See "Display" on page 3-24** 2. System Board 3. Display

Message/Symptom	FRU/Action
Power-on indicator or hard disk drive in-use light not on, but computer works correctly.	1. **Power Supply** 2. System Board 3. LED Cables
Printer problems.	1. **See "Printer" on page 3-25**
Program loads from the hard disk with a known-good diagnostics diskette in the first 3.5-inch diskette drive.	1. **Check the Configuration/Setup Utility** 2. Diskette Drive 3. Diskette Drive Cable 4. System Board 5. Power Supply
RPL computer cannot access programs from its ownn hard disk.	1. **If network admin. is using LCCM Hybrid RPL, check startup sequence: First device: network; Second device: hard disk** 2. Hard disk drive
RPL computer does not RPL from server.	1. **Check startup sequence** 2. Check the "Token-Ring Adapter Card LED Status" on page 3-35.
Serial or parallel port device failure (system board port).	1. **External Device Self-Test OK?** 2. External Device 3. Cable 4. System Board
Serial or parallel port device failure (adapter port).	1. **External Device Self-Test OK?** 2. External Device 3. Cable 4. Alternate Adapter 5. System Board 6. Riser Card
Some or all keys on the keyboard do not work.	1. **Keyboard** 2. Keyboard Cable 3. System Board

Beep Symptoms

Beep symptoms are short tones or a series of short tones separated by pauses (intervals without sound). See the following example.

Beep Symptom	Description
1-2-X	• One beep • A pause (or break) • Two beeps • A pause (or break) • Any number of beeps
4	Four continuous beeps

Beep Symptom	FRU/Action
1-1-3 CMOS read/write error	1. **Run Setup** 2. System Board
1-1-4 ROM BIOS check error	1. **System Board**

Beep Symptom	FRU/Action
1-2-X DMA error	1. **System Board**
1-3-X	1. **Memory Module** 2. System Board
1-4-4	1. **Keyboard** 2. System Board
1-4-X Error detected in first 64KB of RAM.	1. **Memory Module** 2. System Board
2-1-1, 2-1-2	1. **Run Setup** 2. System Board
2-1-X First 64KB of RAM failed.	1. **Memory Module** 2. System Board
2-2-2	1. **Video Card** 2. System Board
2-2-X First 64KB of RAM failed.	1. **Memory Module** 2. System Board
2-3-X	1. **Memory Module** 2. System Board
2-4-X	1. **Run Setup** 2. Memory Module 3. System Board
3-1-X DMA register failed.	1. **System Board**
3-2-4 Keyboard controller failed.	1. **System Board** 2. Keyboard
3-3-4 Screen initialization failed.	1. **Video Adapter** (if installed) 2. System Board 3. Display
3-4-1 Screen retrace test detected an error.	1. **Video Adapter** (if installed) 2. System Board 3. Display
3-4-2 POST is searching for video ROM.	1. **Video Adapter** (if installed) 2. System Board
4	1. **Video Adapter** (if installed) 2. System Board
All other beep code sequences.	1. **System Board**
One long and one short beep during POST. Base 640KB memory error or shadow RAM error.	1. **Memory Module** 2. System Board
One long beep and two or three short beeps during POST. (Video error)	1. **Display Adapter** (if installed) 2.System Board
Three short beeps during POST.	1. **See “System Board Memory” on page 3-31** 2. System Board
Continuous beep.	1. **System Board**

Beep Symptom	FRU/Action
Repeating short beeps.	1. **Keyboard stuck key?** 2. Keyboard Cable 3. System Board

No Beep Symptoms

Symptom/Error	FRU/Action
No beep during POST but computer works correctly	1. **System Board**
No beep during POST	1. **See "Undetermined Problems" on page 3-29** 2. System Board 3. Memory Module 4. Any Adapter or Device 5. Riser Card 6. Power Cord 7. Power Supply

DID YOU FIND YOUR SYMPTOM IN THE LIST?

Yes **No**

007

Go to "Undetermined Problems" on page 3-29.

008

- **Action:**
  - **Change the suspected FRU**, go to Chapter 5, "Network Node Processor FRU / Display Exchange" on page 5-1.
  - **or perform the specified action.**

Display

If the screen is rolling, replace the display assembly. If that not correct the problem, replace the video adapter (if installed) or replace the system board.

If the screen is not rolling, do the following to run the display self-test.

1. Power off the computer and display.
2. Disconnect the display signal cable.
3. Power on the display.
4. Turn the brightness and contrast controls to their maximum setting.
5. Check for the following conditions:
   - The screen should be white or light gray, with a black margin (test margin) on the screen.
   - You should be able to vary the screen intensity by adjusting the contrast and brightness controls.

   Note

   The location of the test margin varies with the type of display. The test margin might be on the top, bottom, or one or both sides.

   If you do not see any test margin on the screen, or if you cannot adjust either the brightness or contrast with their respective controls, replace the display. If there is a test margin on the screen, replace the video adapter (if installed) or replace the system board.

   Note

   During the first two or three seconds after the display is powered on, the following might occur while the display synchronizes with the computer.

   - Unusual patterns or characters
   - Static, crackling, or clicking sounds
   - A “power-on hum” on larger displays

   A noticeable odor might occur on new displays or displays recently removed from storage.

   These sounds, display patterns, and odors are normal; do not replace any parts.

   If you are unable to correct the problem, go to “Undetermined Problems” on page 3-29.

Keyboard

Note: If a mouse or other pointing device is attached, remove it to see if the error symptom goes away. If the symptom goes away, the mouse or pointing device is defective.

001

– Power-off the computer.
– Disconnect the keyboard cable from the system unit.
– Power-on the computer and check the keyboard cable connector on the system unit for the voltages shown.
  All voltages are ± 5%.

Pin	Voltage (Vdc)
1	+5.0
2	Not Used
3	Ground
4	+5.0
5	+5.0
6	Not Used

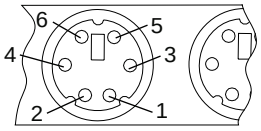


Figure 3-1. Keyboard Connector Voltages

ARE THE VOLTAGES CORRECT?

Yes **No**

002

Replace the system board.

003

On keyboards with a detachable cable, replace the cable. If the problem remains or if the cable is permanently attached to the keyboard, replace the keyboard. If the problem remains, replace the system board.

Printer

1. Make sure the printer is properly connected and powered on.
2. Run the printer self-test.

If the printer self-test does not run correctly, the problem is in the printer. Refer to the printer service manual.

If the printer self-test runs correctly, install a wrap plug in the parallel port and run the diagnostic tests to determine which FRU failed.

If the diagnostic test (with the wrap plug installed) do not detect a failure, replace the printer cable. If that does not correct the problem, replace the system board or adapter connected to the printer cable.

Power-Supply

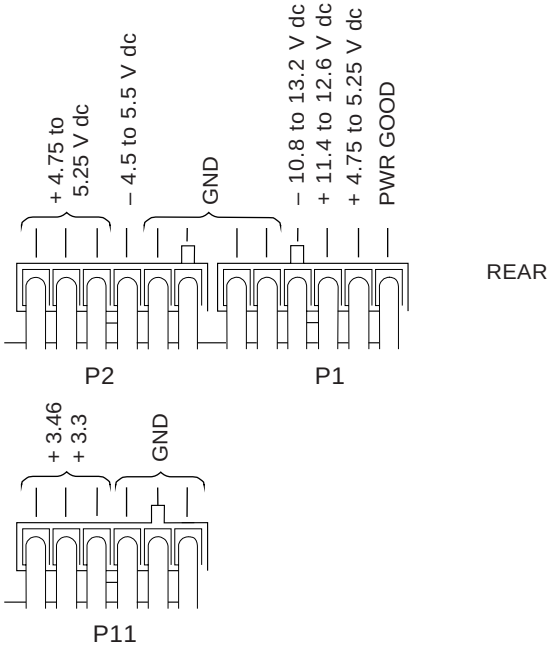
If the power-on indicator is not on, if the power-supply fan is not running, or the computer will not power on, do the following.

Check/Verify	FRU/Action
1. Verify that the voltage-selector switch is set for the correct voltage.	**Correct the voltage-selector switch setting.**
2. Check the following for proper installation. • Power Cord • On/Off switch connector • On/Off switch power supply connector • System board power supply connectors	**Reseat**
Check the power cord for proper continuity	**Power Cord**
Check the power-on switch for continuity	**Power-on switch**

If the above are correct, check the following voltages (see “Power-Supply Connections”).

Power-Supply Connections

Note: These voltages must be checked with the power supply cables connected to the system board.

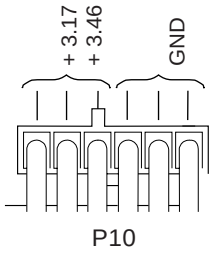


If the voltages are not correct, and the power cord is good, replace the power supply.

If the voltages are correct, and the computer you are servicing has a power supply connector on the riser card, check the following riser card voltages.

Riser Card Connections

Note: These voltages must be checked with the power supply cable connected to the riser card.



If the voltages are not correct, and the power cord is good, replace the power supply.

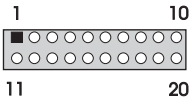
20-Pin Main Power Supply Connection

The 20-pin main power supply connector is located on the riser card.

See “Riser card Layout” on page F-7 and “Network Node Processor (Type 6275) Pentium II, Pentium III System Board” on page F-4 for connector location.

Attention

These voltages must be checked with the power supply cables connected to the system board or riser card.



Pin	Signal	Function
1	3.3 V	+3.3 V dc
2	3.3 V	+3.3 V dc
3	COM	Ground
4	5 V	+5 V dc
5	COM	Ground
6	5 V	+5 V dc
7	COM	Ground
8	POK	Power Good
9	5VSB	Standby Voltage
10	12 V	+12 V dc
11	3.3 V	+3.3 V dc
12	-12 V	-12 V dc
13	COM	Ground
14	PS-ON	DC Remote Enable

Pin	Signal	Function
15	COM	Ground
16	COM	Ground
17	COM	Ground
18	-5 V	-5 V dc
19	5 V	+5 V dc
20	5 V	+5 V dc

Undetermined Problems

If an undetermined problem exists, check the power supply voltages (see “Power-Supply” on page 3-26). If the voltages are correct, return here and continue with the following steps.

1. Power-off the computer.
2. Remove or disconnect the first (or next) of the following:
   a. Non-IBM devices
   b. External devices (modem, printer, or mouse)
   c. Any adapters
   d. Riser card
   e. Memory modules, other that Bank 0
   f. Extended video memory
   g. External Cache
   h. External Cache RAM
   i. Hard drive
   j. Diskette drive
3. Power-on the computer to re-test the system.
4. Repeat steps 1 through 3 until you find the failing device or adapter.

If all devices and adapters have been removed, and the problem continues, replace the system board (see “Before Replacing a System Board”). If the problem continues after replacing the system board, reinstall the old system board and replace the microprocessor (see Chapter 5, “Network Node Processor FRU / Display Exchange” on page 5-1).

Before Replacing a System Board

Notes

1. The BIOS and Vital Product Data (VPD) for the network node processor must be installed on the new system board after it is installed in the network node processor. To do this, **you must run the Flash Update Diskette.** See “Flash (BIOS/VPD) Update Procedure” on page 3-33.
2. Always ensure the latest level of BIOS is installed on the computer. A down level BIOS may cause false errors and unnecessary replacement of the system board.
3. The processor is a separate FRU from the system board and is not included with the system board FRU. If you are instructed to replace the system board, do the following.
4. Remove the processor from the old system board and install it on the new system board.
5. Remove any of the following installed options on the old system board, and install them on the new system board.
   - External cache memory and cache tag RAM
   - Memory modules
   - Extended video memory
6. Ensure that the new system board jumper settings match the old system board jumper settings.
7. If the new system board does not correct the problem, reinstall the options on the old system board, reinstall the old system board, then replace the processor.

Devices List

Follow the instructions on the screen for the installed devices list.

Attention:
A customized setup configuration (other than default settings) might exist on the computer you are servicing. Running the Configuration/Setup Utility program (see “Network Node Processor Configuration / Setup Utility” on page F-8) might alter those settings. Note the current configuration settings and verify that the settings are in place when service is complete.

If the number of diskette drives shown in the installed devices list is not correct, do the following.

1. Restart the computer.
2. Run the Configuration/Setup Utility program to correct the drive information.
3. Run the diagnostic tests.
4. If you cannot correct the drive information, replace FRUs, in the following order, until the problem goes away:
   - Diskette drive
   - Diskette-drive cable
   - System board

If the number of hard disk drives shown in the installed devices list is not correct, do the following.

1. Check the hard disk drive jumper settings. All supported hard disk drives use jumpers or tabs to set drives as either primary or secondary. Refer to the jumper instructions that came with your hard disk drives.
2. Check the voltages to the hard disk drives (see “Power-Supply” on page 3-26).
3. Restart the computer and check the configuration.
   - If the first drive is missing, replace the primary drive.
   - If any other drive is missing, replace that drive.
   - If all drives are missing, replace the primary drive.
   - If the problem remains, replace the drive cable.
   - If the problem still remains, replace the system board.

If any other adapter or device is missing from the installed devices list, run the Configuration/Setup Utility program. Check to see if any adapter or device is set to a conflicting address with any other adapter or device. Also be sure that any adapter or device missing from the list is not set to “disabled.”

Note: If the device is still missing from the list, run the diagnostics provided with that device.

System Board Memory

The network node processor based on 6275-56U or on 6275-83U supports the following memory modules.

DIMM sizes of 16MB, 32 MB, 64 MB, and 128 MB are acceptable. Starting filling DIMM socket 0, then 1, then 2. Uses 3.3 V unbuffered 100 MHz. SDRAM Non-Registered DIMMMs only. Non-parity or ECC DIMMs are supported. Install only ECC DIMMs to enable ECC. See the following table for DIMM size, speed, and type.

Computer Name	Module		
	Size	Speed	Type
PC 300 Pentium II, Pentium III Type 6275	16 MB 32 MB 64 MB 128 MB 384 MB Maximum	100 MHz	SDRAM ECC or Non-Parity Industry Standard

Attention

For SIMM memory, this computers support gold-plated SIMMs.

If a problem with memory modules is suspected, perform the memory test procedure. See “IBM Advanced Memory Diagnostics” on page 4-5.

Hard Disk Drive Boot Error

A hard disk drive boot error (error codes 1962 and I999030X) can be caused by the following:

cause	Actions
The start-up drive is not in the boot sequence in configuration.	Check the configuration and ensure the start-up drive is in boot sequence.
No operating system installed on the boot drive.	Install an operating system on the boot drive.
The boot sector on the start-up drive is corrupted.	The drive must be formatted, do the following: 1. Attempt to access and recover (back-up) the failing hard disk drive. 2. Using the operating systems programs, format the hard disk drive. 3. Go to “Preparing the Hard Disk for Use.”
The drive is defective.	Replace the hard disk drive.

Preparing the Hard Disk for Use

Notes

1. The Low-level format is not available on all diagnostic diskettes.
2. Before formatting the hard disk drive, make a backup copy of the files on the drive to be formatted.

1. Run the low-level format.
2. Restore to the hard disk all the files that you previously backed-up, or go to “After Hard Disk Drive Exchange” on page 5-18.

Flash (BIOS/VPD) Update Procedure

Important

Refer to the information label located inside the system unit cover for any model-specific information.

1. Power OFF the network node processor.
2. Insert the flash update diskette into the drive A.
3. Power ON the network node processor.
4. When the Update Utility appears; select your country/keyboard, then press **Enter**.
5. If the network node processor serial number was previously recorded, the number is displayed with an option to update it. Press **Y** to update the serial number.
6. Type the 7-digit serial number of the network node processor you are servicing; then press **Enter**.
7. Follow the instructions on the screen to complete the flash (BIOS/VPD) update procedure.
8. Return to the procedure where you come from.

Flash Recovery Boot Block Jumper

Attention

If an interruption occurs during a Flash/BIOS upgrade, the BIOS might be left in an unusable state. The Boot Block jumper or switch enables you to restart the system and recover the BIOS.

To perform a Flash/BIOS recovery using the Boot Block jumper:

1. Power-off the computer and remove the cover.
2. Move the system board Boot Block jumper or switch to the **recover** position. Refer to “Network Node Processor (Type 6275) Pentium II, Pentium III System Board” on page F-4 or the information label inside the computer for more information.
3. Insert the upgrade diskette into the diskette drive.
4. Power-on the computer. The IBM Logo will appear.
5. When the Flash Update Utility appears; select your country/keyboard, then press **Enter**.
6. If the computer serial number was previously recorded, the number is displayed with an option to update it. Press **Y** to update the serial number.
7. Type the 7-digit serial number of the computer you are servicing; then, press **Enter**.
8. Follow the instructions on the screen to complete the flash (BIOS/VPD) update procedure.
9. When you are instructed to reboot the computer, power-off the computer and move the Boot Block jumper or switch to the **normal** position. Then, replace the cover and power-on the computer.

BIOS Levels

An incorrect level of BIOS can cause false error and unecessary FRU replacement. Use the following information to determine the current level of BIOS installed in the computer, the latest BIOS available for the computer, and where to obtain the latest level of BIOS.

- Current level BIOS information.
  - Run the Configuration/setup utility (see “Network Node Processor Configuration / Setup Utility” on page F-8) to determine the level of BIOS installed.
- Sources for determining the latest level BIOS available.
  1. IBM PC Compagny Home Page **http://www.pc.ibm.com/us/**.
  2. PC Partnerinfo-Technical Database (CTSTIPS.NSF)
  3. Bulletin Board System (BBS)
  4. HelpCenter®
  5. Levels 1 and 2 Support
  6. RETAIN®
- Sources for obtaining the latest level BIOS available.
  1. IBM PC Compagny Home Page **http://www.pc.ibm.com/us/**.
  2. PC Partnerinfo-Technical Database (CTSTIPS.NSF)
  3. Bulletin Board System (BBS)
  4. HelpCenter
  5. Levels 1 and 2 Support

  To update (flash) the BIOS, see “Flash (BIOS/VPD) Update Procedure” on page 3-33.

Token-Ring Adapter Card LED Status

Use the table below to determine the status of the Token-Ring adapter card for diagnosing network problems.

Amber	Green	Explanation
Blinking	Blinking	The adapter is waiting for initialization (during POST).
Off	Off	The adapter initialization is in progress (during POST), or the computer is powered off.
Off	Blinking	The adapter did not detected any problems during its self-diagnostic tests and is waiting to open. If this LED state occurs after the adapter has been opened, this state indicates that the adapter has been closed under software control.
Off	On	The adapter is open and operating correctly.
On	Off	The adapter self-diagnostic tests failed or there is a problem with the adapter. Replace: • Adapter • Riser card • System board
Blinking	Off	The adapter is closed due to an undetected error. One of the following exists: • The adapter open failed. • The adapter detect a wire fault. • The adapter failed the auto-removal test.
Blinking	On	The adapter has detected beaconing or hard error. If network is known good, check cable between computer and network receptacle. Replace: • Adapter • Riser card • System board
On	On	The adapter has failed before running the self-diagnostic tests. Replace: • Adapter • Riser card • System board

Note: See “Token-Ring Table Terms and Definitions” on page 3-36 for definition of terms in this table.

Token-Ring Table Terms and Definitions

Auto-removal The state in which a token-ring adapter port removes itself from the network to perform self-tests to verify that is not the cause of hard error. If the tests are successfull, the port will reattach itself to the network.

Beaconing The state that a token-ring adapter port enters after it has detected a hard error. The error condition is reported to the other devices on the network. Beaconing can result in the port removing itself from the network (auto-removal) to determine whether it is the cause of the hard error.

Hard error An error condition on a network that requires removing the source of the error or reconfiguring the network before the network can resume reliable operation.

Initilization The first step taken to prepare the port for use after the computer has been booted. During initialization, the port runs a series of internal self-diagnostic tests.

Open The state in which the port has established connection with other devices on the ring.

Wire fault An error condition caused by a break or short circuit in the cable segment that connects the port to its access unit, such as an IBM 8230 Token-Ring Network Controller Access Unit.

Hard Disk Drive Jumper Settings

IDE hard disk drives for the 6275 use jumpers to set the drives as primary (master) or secondary (slave).

Attention

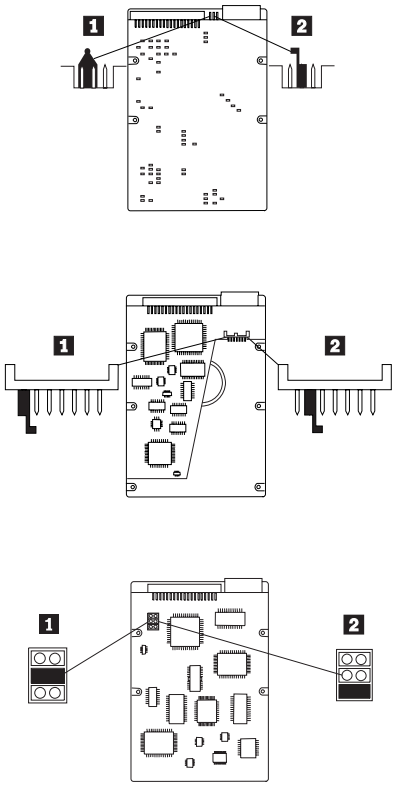
For drives not listed below, refer to the label on the hard disk drive for the hard disk drive settings.

IDE Hard Disk Drive Settings

1 Primary (Master) Hard Disk Drive

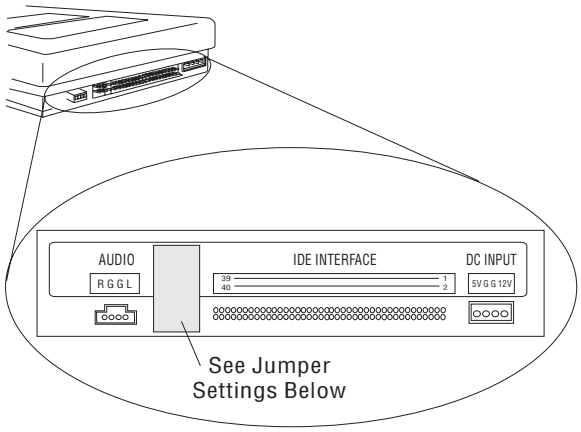
2 Secondary (Slave) Hard Disk Drive

IDE Drives



CD-ROM, PD/CD-ROM Drive Jumper Settings

CD-ROM and PD/CD-ROM drives use jumpers or tabs to set the drives as primary (master) or secondary (slave). Refer to the drive connector labels or the figures below for the drive settings.



CD-ROM, PD/CD-ROM Type	Primary (Master)	Secondary (Slave)
2X CD-ROM FRU 06H5906	: : ▮ : :	: ▮ : : :
4X CD-ROM FRU 06H7654	: : ▮ : :	: ▮ : : :
6X CD-ROM	: : ▮	: ▮ :
8X CD-ROM	: : ▮	: ▮ :
6X PD/CD-ROM	: : ▮	: ▮ :
16X Max CD-ROM	: : ▮	: ▮ :
24X Max CD-ROM	: : ▮	: ▮ :
32X Max CD-ROM	: : ▮	: ▮ :
40X Max CD-ROM	: : ▮	: ▮ :

Chapter 4. Network Node Processor Diagnostics and Test Information

The following tools are available to help identify and resolve hardware-related problems:

- Power-on self-test (POST)
- POST Beep Codes
- Error Code Format
- Diagnostic Test Programs (IBM PC Enhanced Diagnostics)

Power-On Self-Test (POST)

Each time you power-on the system, it performs a series of tests that check the operation of the system and some options. This series of tests is called the *power-on self-test*, or *POST*. POST does the following:

- Checks some basic system-board operations
- Checks the memory operation
- Starts the video operation
- Verifies that the diskette drive is working
- Verifies that the hard disk drive is working

If the POST finishes without detecting any problems, a single beep sounds and the first screen of your operating system or application program appears.

Note

The network node processor based on 6275 computer is default to come up quiet (No beep and no memory count and checkpoint code display) when no errors are detected by POST.

To enable Beep and memory count and checkpoint code display when a successful POST occurs:

1. Enable **Power on Status** in setup. See “Network Node Processor Configuration / Setup Utility” on page F-8.

If the POST detects a problem, an error message appears on your screen. A single problem can cause several error messages to appear. When you correct the cause of the first error message, the other error messages probably will not appear on the screen the next time you turn on the system.

POST Beep Codes

The Power On Self-Test generates a beeping sound to indicate successful completion of POST or to indicate that the tests detect an error.

One beep and the appearance of text on the display indicates successful completion of the POST. More than one beep indicates that the POST detects an error.

Note

The network node processor based on 6275 computer is default to come up quiet (No beep and no memory count and checkpoint code display) when no errors are detected by POST.

To enable Beep and memory count and checkpoint code display when a successful POST occurs:

1. Enable **Power on Status** in setup. See "Network Node Processor Configuration / Setup Utility" on page F-8.

Error Code Format

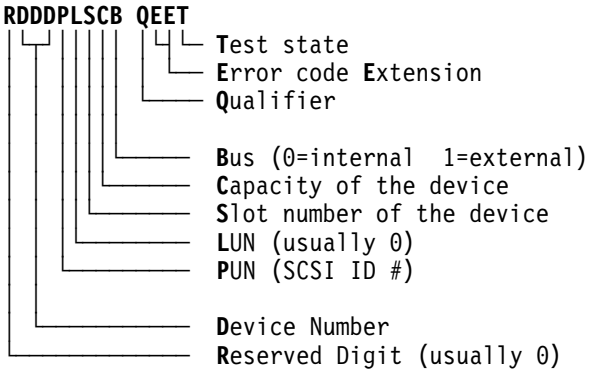
This section provides an explanation of the encoded non-SCSI and SCSI POST error codes.

Error messages are displayed on the screen as three, four, five, eight, twelve, or thirteen digits. An "X" in an error message can be any number or letter. The shorter POST errors are highlighted in the Symptom-to-FRU Index. Some digits will represent different information for SCSI errors versus non-SCSI errors.

The following figure shows which digits display the shorter POST errors. The figure also defines additional SCSI information.

Notes

- Non-IBM device error codes and documentation supersede this list.
- Duplicate SCSI ID settings will cause misleading error symptoms or messages.



Diagnostics Test Programs

IBM PC Enhanced Diagnostics

The IBM PC Enhanced Diagnostics programs use a full range of diagnostic utilities to determine the operating condition of the computers hardware components. The user interface is WaterGate's PC-Doctor which serves as the control program for running the IBM Advanced Memory Diagnostics and the suite of diagnostic tests provided by PC-Doctor (diagnostic diskette PN 42L2837).

Updates for the IBM PC Enhanced Diagnostics are available on-line at:
http://www.pc.ibm.com/us/

- Select **Support**
- Select **IBM IntelliStation Support**
- Select **Downloadable Files**
- Select **Diagnostics**

This diagnostic diskette includes:

- A new user interface (WaterGate Software's PC-Doctor)
  - This interface serves as the control program for running both the IBM Advanced Memory Diagnostics and the suite of diagnostic tests provided by PC-Doctor.
- IBM Advanced Memory Diagnostics
  - The memory diagnostic tests determine which memory module (SIMM or DIMM) is defective and report the socket where the failing module is located. The Memory diagnostics can run a quick and full test of the system. Diagnostics can also be run on a single SIMM or DIMM.

Note

See “Diagnostic Error Codes” on page 4-9 for the IBM PC Enhanced Diagnostics error codes.

Starting the IBM PC Enhanced Diagnostics Program

To start the program:

1. Shut down and power-off the system.
2. Wait 10 seconds.
3. Insert the IBM Enhanced Diagnostics Diskette into diskette drive A.
4. Power-on the system.

The initial diagnostics menu will be displayed.

Navigating Through the Diagnostic Programs

Use either the mouse or the keyboard to navigate through the Enhanced Diagnostics program.

- Use the cursor movement keys to navigate within the menus.
- The **Enter** key is used to select a menu item.
- The **Esc** key is used to back up to the previous menu.
- For online help select F1.

Running diagnostic tests

There are four ways to run the diagnostic tests:

1. Using the cursor movement keys, highlight **Run Normal Test** or **Run Quick Test** from the Diagnostics Menu and then press **Enter**.

   This will automatically run a pre-defined group of tests from each test category. **Run Normal Test** runs a more extensive set of tests than does **Run Quick Test** and takes longer to execute.
2. Press **F5** to automatically run all selected tests in all categories. See “Test Selection.”
3. From within a test category, press **Ctrl-Enter** to automatically run only the selected tests in that category. See “Test Selection.”
4. Using the cursor movement keys, highlight a single test within a test category and then press **Enter**. This will run only that test.

Press **Esc** at any time to stop the testing process.

Test results, (N/A, PASSED, FAILED, ABORTED), are displayed in the field beside the test description and in the test log. See “Viewing the Test Log” on page 4-8.

Test Selection

To select one or more tests:

1. Open the corresponding test category.
2. Using the cursor movement keys, highlight the desired test.
3. Press **Space bar**.

   A selected test is marked with a chevron, **>>**. Pressing the space bar again de-selects a test and removes the chevron.
4. Repeat steps 2 and 3 above to select all desired tests.

IBM Advanced Memory Diagnostics

The IBM Advanced Memory Diagnostics provide the capability to identify a particular memory module (SIMM/DIMM) which fails during testing. See “Network Node Processor (Type 6275) Pentium II, Pentium III System Board” on page F-4 to locate the memory sockets.

Follow the steps below to locate the IBM Advanced Memory Diagnostics test options.

1. Select the DIAGNOSTICS option on the toolbar and press **Enter**.
2. Highlight either the 'Memory Test-Full' or 'Memory Test-Quick option and press **Enter**.

- Memory Test-Full

  The full memory test will take about 80 seconds per MB of memory and will detect marginal, intermittent, and solid (stuck) memory failures.

- Memory Test-Quick

  The quick memory test will take about 20 seconds per MB of memory and will detect solid (stuck) memory failures only.

Notes

Either level of memory testing can be performed on all memory or a single SIMM/DIMM socket.

Only sockets containing a SIMM or DIMM can be selected for testing. Unpopulated sockets are noted by **.....** besides the test description.

Alert On LAN Test

The Alert On Lan test does the following:

- Determines if Alert On LAN is supported on the system.
- Checks the revision ID register.
- Verifies the EEPROM checksum.
- Validates that a software alert can be sent.

Asset ID Test

The Asset ID test does the following:

- Determines if Asset ID is supported on the system.
- Verifies the EEPROM areas.
- Performs an antenna detection test.

Test Results

IBM PC Enhanced Diagnostic test results will produce this error code format:

Function Code	Failure Type	DeviceID	Date	ChkDigits	Text

Function Code: Represents the feature or function within the PC.
Failure Type: Represents the type of error encountered.
DeviceID: Contains the component's unit-id which corresponds to either a fixed disk drive, removable media drive, serial or parallel port, processor, specific DIMM, or a device on the PCI bus.
Date: Contains the date on which the diagnostic test was run. Date is retrieved from CMOS and displayed using the YYYYMMDD format.
ChkDigits: Contains a 2-digit check-digit value to ensure that:

- Diagnostics were run on the specified date
- Diagnostics were run on the specified IBM computer
- The diagnostic error code is recorded correctly

Text: Description of the error.

Note

See “Diagnostic Error Codes” on page 4-9 for the IBM PC Enhanced Diagnostics error codes.

Quick and Full Erase - Hard Drive

The IBM PC Enhanced Diagnostics Program offers two hard drive format utilities:

- Quick Erase Hard Drive
- Full Erase Hard Drive

The Quick Erase Hard Drive provides a DOS utility that performs the following:

- Destroys the Master Boot Record (MBR) on the hard drive.
- Destroys all copy of the FAT Table on all partitions (both the master and backup).
- Destroys the partition table.
- Provides messages that warn the user that this is a non-recoverable process.

The Full Erase Hard Drive provides a DOS utility that performs the following:

- Performs all the steps in Quick Erase.
- Provides a DOS utility that writes random data to all sectors of the hard drive.
- Provide an estimate of time to completion along with a visual representation of completion status.
- Provides messages that warn the user that this is a non-recoverable process.

Important

Make sure customer backs up all data before using the Quick or Full Erase function.

To select the Quick Erase or Full Erase Hard Drive utility:

1. Select the UTILITY option on the toolbar and press enter.
2. Select either the QUICK ERASE or FULL ERASE HARD DISK option and then, follow the instructions.

Asset EEPROM Backup

When replacing a system board, this utility allows the backup of all Asset information from the EEPROM to diskette. This utility also restores data to the EEPROM from diskette after replacement of the system board.

To run this utility:

- Select **Utility**
- Select **Asset EEPROM Backup**
- Follow instructions on screen.

Viewing the Test Log

Errors reported by the diagnostic test will be displayed by the program as a failed test.

To view details of a failure or to view a list of test results, do the following from any test category screen:

- Press **F3** to activate the log File
- Press **F3** again to save the file to diskette or F2 to print the file.

SIMM/DIMM Memory Errors

SIMM/DIMM error messages issued by the IBM PC Enhanced Diagnostics:

Message	Failure Found	Recommended Actions
2xx-1y	A memory error was detected in SIMM socket Y	Replace the SIMM in the socket identified by the last digit of the error code. Re-run the test. If the same error code occurs again, replace the system board.
2xx-2y	A memory error was detected in DIMM socket Y	Replace the DIMM in the socket identified by the last digit of the error code. Re-run the test. If the same error code occurs again, replace the system board or where memory is on the processor card, replace the processor card.
Corrupt BIOS	Information in BIOS is not as expected. Not able to find expected DMI information from BIOS. Memory controller chipset vendor ID does not match expected value.	Reflash the BIOS. Replace the system board.
Test aborted by user	User stopped test.	Restart test.
Note: "Y" is the SIMM/DIMM socket number. See “Network Node Processor (Type 6275) Pentium II, Pentium III System Board” on page F-4 to locate memory socket.		

Diagnostic Error Codes

Refer to the following Diagnostic Error Codes when using the IBM PC Enhanced Diagnostics test. See “Diagnostics Test Programs” on page 4-3 for information about the IBM PC Enhanced Diagnostics program.

In the following index, “X” can represent any number.

Diagnostic Error Code	FRU/Action
000-000-XXX BIOS Test Passed	1. **No action**
000-002-XXX BIOS Timeout	1. **Flash the system** 2. System board
000-024-XXX BIOS Addressing test failure	1. **Flash the system** 2. System board
000-025-XXX BIOS Checksum Value error	1. **Flash the system** 2. Boot block 3. System board
000-026-XXX FLASH data error	1. **Flash the system** 2. Boot block 3. System board
000-027-XXX BIOS Configuration/Setup error	1. **Run Setup** 2. Flash the system 3. Boot block 4. System board
000-034-XXX BIOS Buffer Allocation failure	1. **Reboot the system** 2. Flash the system 3. Run memory test 4. System board
000-035-XXX BIOS Reset Condition detected	1. **Flash the system** 2. System board
000-036-XXX BIOS Register error	1. **Flash the system** 2. Boot block 3. System board
000-038-XXX BIOS Extension failure	1. **Flash the system** 2. Adapter card 3. System board
000-039-XXX BIOS DMI data error	1. **Flash the system** 2. System board
000-195-XXX BIOS Test aborted by user	1. **Information** 2. Re-start the test, if need to
000-196-XXX BIOS test halt, error threshold exceeded	1. **Depress F3 to review the log file. See “Viewing the Test Log” on page 4-8.** 2. Re-start the test to reset the log file.
000-197-XXX BIOS test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test

Diagnostic Error Code	FRU/Action
000-198-XXX BIOS test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to “Undetermined Problems” on page 3-29
000-199-XXX BIOS test failed, cause unknown	1. **Go to “Undetermined Problems” on page 3-29.** 2. Flash the system and re-test 3. Replace component under function test.
000-250-XXX BIOS APM failure	1. **Flash the system** 2. System board
000-270-XXX BIOS ACPI failure	1. **Flash the system** 2. System board
001-000-XXX System Test Passed	1. **No action**
001-00X-XXX System Error	1. **System board**
001-01X-XXX System Error	1. **System board**
001-024-XXX System Addressing test failure	1. **System board**
001-025-XXX System Checksum Value error	1. **Flash the system** 2. System board
001-026-XXX System FLASH data error	1. **Flash the system** 2. System board
001-027-XXX System Configuration/Setup error	1. **Run Setup** 2. Flash the system 3. System board
001-032-XXX System Device Controller failure	1. **System board**
001-034-XXX System Device Buffer Allocation failure	1. **Reboot the system** 2. Flash the system 3. Run memory test 4. System board
001-035-XXX System Device Reset condition detected	1. **System board**
001-036-XXX System Register error	1. **System board**
001-038-XXX System Extension failure	1. **Adapter card** 2. System board
001-039-XXX System DMI data structure error	1. **Flash the system** 2. System board
001-040-XXX System IRQ failure	1. **Power-off/on system and re-test** 2. System board
001-041-XXX System DMA failure	1. **Power-off/on system and re-test** 2. System board

Diagnostic Error Code	FRU/Action
001-195-XXX System Test aborted by user	1. **Information** 2. Re-start the test, if need to
001-196-XXX System test halt, error threshold exceeded	1. **Depress F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Re-start the test to reset the log file.
001-197-XXX System test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
001-198-XXX System test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to "Undetermined Problems" on page 3-29
001-199-XXX System test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-29.** 2. Flash the system and re-test 3. Replace component under function test.
001-250-XXX System ECC error	1. **System board**
001-254-XXX **001-255-XXX** **001-256-XXX** **001-257-XXX** System DMA error	1. **System board**
001-260-XXX **001-264-XXX** System IRQ error	1. **System board**
001-268-XXX System IRQ1 failure	1. **device on IRQ1** 2. System board
001-269-XXX System IRQ2 failure	1. **device on IRQ2** 2. System board
001-270-XXX System IRQ3 failure	1. **device on IRQ3** 2. System board
001-271-XXX System IRQ4 failure	1. **device on IRQ4** 2. System board
001-272-XXX System IRQ5 failure	1. **device on IRQ5** 2. System board
001-273-XXX System IRQ6 (diskette drive) failure	1. **Diskette Cable** 2. Diskette drive 3. System board
001-274-XXX System IRQ7 failure	1. **device on IRQ7** 2. System board
001-275-XXX System IRQ8 failure	1. **device on IRQ8** 2. System board

Diagnostic Error Code	FRU/Action
001-276-XXX System IRQ9 failure	1. **device on IRQ9** 2. System board
001-277-XXX System IRQ10 failure	1. **device on IRQ10** 2. System board
001-278-XXX System IRQ11 failure	1. **device on IRQ11** 2. System board
001-279-XXX System IRQ12 failure	1. **device on IRQ12** 2. System board
001-280-XXX System IRQ13 failure	1. **device on IRQ13** 2. System board
001-281-XXX System IRQ14 (hard disk drive) failure	1. **Hard disk drive Cable** 2. Hard disk drive 3. System board
001-282-XXX System IRQ15 failure	1. **device on IRQ15** 2. System board
001-286-XXX **001-287-XXX** **001-288-XXX** System Timer failure	1. **System board**
001-292-XXX System CMOS RAM error	1. **Run Setup and re-test** 2. System board
001-293-XXX System CMOS Battery	1. **Battery** 2. System board
001-298-XXX System RTC date/time update failure	1. **Flash the system** 2. System board
001-299-XXX System RTC periodic interrupt failure	1. **System board**
001-300-XXX System RTC Alarm failure	1. **System board**
001-301-XXX System RTC Century byte error	1. **Flash the system** 2. System board
005-000-XXX Video Test Passed	1. **No action**
005-00X-XXX Video error	1. **Video card, if installed** 2. System board
005-010-XXX **005-011-XXX** **005-012-XXX** **005-013-XXX** Video Signal failure	1. **Video card, if installed** 2. System board
005-016-XXX Video Simple Pattern test failure	1. **Video Ram** 2. Video card, if installed 3. System board
005-024-XXX Video Addressing test failure	1. **Video card, if installed** 2. System board
005-025-XXX Video Checksum Value error	1. **Video card, if installed** 2. System board

Diagnostic Error Code	FRU/Action
005-027-XXX Video Configuration/Setup error	1. **Run Setup** 2. Video drivers update 3. Video card, if installed 4. System board
005-031-XXX Video Device Cable failure	1. **Video cable** 2. Monitor 3. Video card, if installed 4. System board
005-032-XXX Video Device Controller failure	1. **Video card, if installed** 2. System board
005-036-XXX Video Register error	1. **Video card, if installed** 2. System board
005-038-XXX System BIOS extension failure	1. **Video card, if installed** 2. System board
005-040-XXX Video IRQ failure	1. **Video card, if installed** 2. System board
005-195-XXX Video Test aborted by user	1. **Information** 2. Re-start the test, if need to
005-196-XXX Video test halt, error threshold exceeded	1. **Depress F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Re-start the test to reset the log file.
005-197-XXX Video test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
005-198-XXX Video test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to "Undetermined Problems" on page 3-29
005-199-XXX Video test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-29.** 2. Flash the system and re-test 3. Replace component under function test.
005-2XX-XXX **005-3XX-XXX** Video subsystem error	1. **Video card, if installed** 2. System board
006-000-XXX Diskette interface Test Passed	1. **No action**
006-0XX-XXX Diskette interface error	1. **Diskette drive Cable** 2. Diskette drive 3. System board
006-195-XXX Diskette interface Test aborted by user	1. **Information** 2. Re-start the test, if need to

Diagnostic Error Code	FRU/Action
006-196-XXX Diskette interface test halt, error threshold exceeded	1. **Depress F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Re-start the test to reset the log file.
006-197-XXX Diskette interface test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
006-198-XXX Diskette interface test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to "Undetermined Problems" on page 3-29
006-199-XXX Diskette interface test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-29.** 2. Flash the system and re-test 3. Replace component under function test.
006-25X-XXX Diskette interface Error	1. **Diskette drive Cable** 2. Diskette drive 3. System board
011-000-XXX Serial port Interface Test Passed	1. **No action**
011-001-XXX Serial port Presence	1. **Remove external serial device, if present** 2. Run setup, enable port 3. System board
011-002-XXX **011-003-XXX** Serial port Timeout/Parity error	1. **System board**
011-013-XXX **011-014-XXX** Serial port Control Signal/Loopback test failure	1. **System board**
011-015-XXX Serial port External Loopback failure	1. **Wrap plug** 2. System board
011-027-XXX Serial port Configuration/Setup error	1. **Run Setup, enable port** 2. Flash the system 3. System board
011-03X-XXX **011-04X-XXX** Serial port failure	1. **System board**
011-195-XXX Serial port Test aborted by user	1. **Information** 2. Re-start the test, if need to

Diagnostic Error Code	FRU/Action
011-196-XXX Serial port test halt, error threshold exceeded	1. **Depress F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Re-start the test to reset the log file.
011-197-XXX Serial port test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
011-198-XXX Serial port test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to "Undetermined Problems" on page 3-29
011-199-XXX Serial port test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-29.** 2. Flash the system and re-test 3. Replace component under function test.
011-2XX-XXX Serial port signal failure	1. **External serial device** 2. System board
014-000-XXX Parallel port Interface Test Passed	1. **No action**
014-001-XXX Parallel port Presence	1. **Remove external parallel device, if present** 2. Run setup, enable port 3. System board
014-002-XXX **014-003-XXX** Parallel port Timeout/Parity error	1. **System board**
014-013-XXX **014-014-XXX** Parallel port Control Signal/Loopback test failure	1. **System board**
014-015-XXX Parallel port External Loopback failure	1. **Wrap plug** 2. System board
014-027-XXX Parallel port Configuration/Setup error	1. **Run Setup, enable port** 2. Flash the system 3. System board
014-03X-XXX **014-04X-XXX** Parallel port failure	1. **System board**
014-195-XXX Parallel port Test aborted by user	1. **Information** 2. Re-start the test, if need to
014-196-XXX Parallel port test halt, error threshold exceeded	1. **Depress F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Re-start the test to reset the log file.

Diagnostic Error Code	FRU/Action
014-197-XXX Parallel port test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
014-198-XXX Parallel port test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to “Undetermined Problems” on page 3-29
014-199-XXX Parallel port test failed, cause unknown	1. **Go to “Undetermined Problems” on page 3-29.** 2. Flash the system and re-test 3. Replace component under function test.
014-2XX-XXX **014-3XX-XXX** Parallel port failure	1. **External parallel device** 2. System board
015-000-XXX USB port Interface Test Passed	1. **No action**
015-001-XXX USB port Presence	1. **Remove USB Device(s) and re-test** 2. System board
015-002-XXX USB port Timeout	1. **Remove USB Device(s) and re-test** 2. System board
015-015-XXX USB port External Loopback failure	1. **Remove USB Device(s) and re-test** 2. System board
015-027-XXX USB port Configuration/Setup error	1. **Flash the system** 2. System board
015-032-XXX USB port Device Controller failure	1. **System board**
015-034-XXX USB port buffer allocation failure	1. **Reboot the system** 2. Flash the system 3. Run memory test 4. System board
015-035-XXX USB port Reset condition detected	1. **Remove USB Device(s) and re-test** 2. System board
015-036-XXX USB port Register error	1. **System board**
015-040-XXX USB port IRQ failure	1. **Run setup and check for conflicts** 2. Flash the system 3. System board
015-195-XXX USB port Test aborted by user	1. **Information** 2. Re-start the test, if need to
015-196-XXX USB port test halt, error threshold exceeded	1. **Depress F3 to review the log file. See “Viewing the Test Log” on page 4-8.** 2. Re-start the test to reset the log file.

Diagnostic Error Code	FRU/Action
015-197-XXX USB port test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
015-198-XXX USB port test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to “Undetermined Problems” on page 3-29
015-199-XXX USB port test failed, cause unknown	1. **Go to “Undetermined Problems” on page 3-29.** 2. Flash the system and re-test 3. Replace component under function test.
018-000-XXX PCI Card Test Passed	1. **No action**
018-0XX-XXX PCI Card Failure	1. **PCI card** 2. Riser card, if installed 3. System board
018-195-XXX PCI Card Test aborted by user	1. **Information** 2. Re-start the test, if need to
018-196-XXX PCI Card test halt, error threshold exceeded	1. **Depress F3 to review the log file. See “Viewing the Test Log” on page 4-8.** 2. Re-start the test to reset the log file.
018-197-XXX PCI Card test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
018-198-XXX PCI Card test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to “Undetermined Problems” on page 3-29
018-199-XXX PCI Card test failed, cause unknown	1. **Go to “Undetermined Problems” on page 3-29.** 2. Flash the system and re-test 3. Replace component under function test.
018-250-XXX PCI Card Services error	1. **PCI card** 2. Riser card, if installed 3. System board
020-000-XXX PCI Interface Test Passed	1. **No action**
020-0XX-XXX PCI Interface error	1. **PCI card** 2. Riser card, if installed 3. System board

Diagnostic Error Code	FRU/Action
020-195-XXX PCI Test aborted by user	1. **Information** 2. Re-start the test, if need to
020-196-XXX PCI test halt, error threshold exceeded	1. **Depress F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Re-start the test to reset the log file.
020-197-XXX PCI test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
020-198-XXX PCI test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to "Undetermined Problems" on page 3-29
020-199-XXX PCI test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-29.** 2. Flash the system and re-test 3. Replace component under function test.
020-262-XXX PCI system error	1. **PCI card** 2. Riser card, if installed 3. System board
025-000-XXX IDE interface Test Passed	1. **No action**
025-00X-XXX **025-01X-XXX** IDE interface failure	1. **IDE signal cable** 2. Check power supply 3. IDE device 4. System board
025-027-XXX IDE interface Configuration/Setup error	1. **IDE signal cable** 2. Flash the system 3. IDE device 4. System board
025-02X-XXX **025-03X-XXX** **025-04X-XXX** IDE Interface failure	1. **IDE signal cable** 2. Check power supply 3. IDE device 4. System board
025-195-XXX IDE interface Test aborted by user	1. **Information** 2. Re-start the test, if need to
025-196-XXX IDE interface test halt, error threshold exceeded	1. **Depress F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Re-start the test to reset the log file.

Diagnostic Error Code	FRU/Action
025-197-XXX IDE interface test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
025-198-XXX IDE interface test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to “Undetermined Problems” on page 3-29
025-199-XXX IDE interface test failed, cause unknown	1. **Go to “Undetermined Problems” on page 3-29.** 2. Flash the system and re-test 3. Replace component under function test.
030-000-XXX SCSI interface Test Passed	1. **No action**
030-00X-XXX **030-01X-XXX** SCSI interface failure	1. **SCSI signal cable** 2. Check power supply 3. SCSI device 4. SCSI adapter card, if installed 5. System board
030-027-XXX SCSI interface Configuration/Setup error	1. **SCSI signal cable** 2. Flash the system 3. SCSI device 4. SCSI adapter card, if installed 5. System board
030-03X-XXX **030-04X-XXX** SCSI interface error	1. **SCSI signal cable** 2. Check power supply 3. SCSI device 4. SCSI adapter card, if installed 5. System board
030-195-XXX SCSI interface Test aborted by user	1. **Information** 2. Re-start the test, if need to
030-196-XXX SCSI interface test halt, error threshold exceeded	1. **Depress F3 to review the log file. See “Viewing the Test Log” on page 4-8.** 2. Re-start the test to reset the log file.
030-197-XXX SCSI interface test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
030-198-XXX SCSI interface test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to “Undetermined Problems” on page 3-29

Diagnostic Error Code	FRU/Action
030-199-XXX SCSI interface test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-29.** 2. Flash the system and re-test 3. Replace component under function test.
035-000-XXX RAID interface Test Passed	1. **No action**
035-0XX-XXX RAID interface Failure	1. **RAID signal cable** 2. RAID device 3. RAID adapter card, if installed 4. System board
035-195-XXX RAID interface Test aborted by user	1. **Information** 2. Re-start the test, if need to
035-196-XXX RAID interface test halt, error threshold exceeded	1. **Depress F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Re-start the test to reset the log file.
035-197-XXX RAID interface test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
035-198-XXX RAID interface test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to "Undetermined Problems" on page 3-29
035-199-XXX RAID interface test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-29.** 2. Flash the system and re-test 3. Replace component under function test.
071-000-XXX Audio port Interface Test Passed	1. **No action**
071-00X-XXX **071-01X-XXX** **071-02X-XXX** **Audio port error**	1. **Run Setup** 2. Flash the system 3. System board
071-03X-XXX Audio port failure	1. **Speakers** 2. Microphone 3. Audio card, if installed 4. System board
071-04X-XXX Audio port failure	1. **Run Setup** 2. Audio card, if installed 3. System board
071-195-XXX Audio port Test aborted by user	1. **Information** 2. Re-start the test, if need to

Diagnostic Error Code	FRU/Action
071-196-XXX Audio port test halt, error threshold exceeded	1. **Depress F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Re-start the test to reset the log file.
071-197-XXX Audio port test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
071-198-XXX Audio port test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to "Undetermined Problems" on page 3-29
071-199-XXX Audio port test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-29.** 2. Flash the system and re-test 3. Replace component under function test.
071-25X-XXX Audio port failure	1. **Speakers** 2. Audio card, if installed 3. System board
080-000-XXX Game Port interface Test Passed	1. **No action**
080-XXX-XXX Game Port interface Error	1. **Remove the game port device and re-test the system**
080-195-XXX Game Port interface Test aborted by user	1. **Information** 2. Re-start the test, if need to
080-196-XXX Game Port interface test halt, error threshold exceeded	1. **Depress F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Re-start the test to reset the log file.
080-197-XXX Game Port interface test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
080-198-XXX Game Port interface test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to "Undetermined Problems" on page 3-29
080-199-XXX Game Port interface test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-29.** 2. Flash the system and re-test 3. Replace component under function test.

Diagnostic Error Code	FRU/Action
086-000-XXX Mouse Port interface Test Passed	1. **No action**
086-001-XXX Mouse Port interface Presence	1. **Mouse** 2. System board
086-032-XXX Mouse Port interface Device controller failure	1. **Mouse** 2. System board
086-035-XXX Mouse Port interface Reset	1. **Mouse** 2. System board
086-040-XXX Mouse Port interface IRQ failure	1. **Run Setup** 2. Mouse 3. System board
086-195-XXX Mouse Port interface Test aborted by user	1. **Information** 2. Re-start the test, if need to
086-196-XXX Mouse Port interface test halt, error threshold exceeded	1. **Depress F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Re-start the test to reset the log file.
086-197-XXX Mouse Port interface test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
086-198-XXX Mouse Port interface test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to "Undetermined Problems" on page 3-29
086-199-XXX Mouse Port interface test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-29.** 2. Flash the system and re-test 3. Replace component under function test.
089-000-XXX Microprocessor Test Passed	1. **No action**
089-XXX-XXX Microprocessor failure	1. **Microprocessor(s)** 2. System board
089-195-XXX Microprocessor Test aborted by user	1. **Information** 2. Re-start the test, if need to
089-196-XXX Microprocessor test halt, error threshold exceeded	1. **Depress F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Re-start the test to reset the log file.

Diagnostic Error Code	FRU/Action
089-197-XXX Microprocessor test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
089-198-XXX Microprocessor test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to “Undetermined Problems” on page 3-29
089-199-XXX Microprocessor test failed, cause unknown	1. **Go to “Undetermined Problems” on page 3-29.** 2. Flash the system and re-test 3. Replace component under function test.
170-000-XXX Voltage Sensor(s) Test Passed	1. **No action**
170-0XX-XXX Voltage Sensor(s) failure	1. **Flash system** 2. System board
170-195-XXX Voltage Sensor(s) Test aborted by user	1. **Information** 2. Re-start the test, if need to
170-196-XXX Voltage Sensor(s) test halt, error threshold exceeded	1. **Depress F3 to review the log file. See “Viewing the Test Log” on page 4-8.** 2. Re-start the test to reset the log file.
170-197-XXX Voltage Sensor(s) test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
170-198-XXX Voltage Sensor(s) test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to “Undetermined Problems” on page 3-29
170-199-XXX Voltage Sensor(s) test failed, cause unknown	1. **Go to “Undetermined Problems” on page 3-29.** 2. Flash the system and re-test 3. Replace component under function test.
170-250-XXX **170-251-XXX** Voltage Sensor(s) Voltage limit error	1. **Power supply** 2. System board
170-254-XXX Voltage Sensor(s) Voltage Regulator Module error	1. **Voltage Regulator Module (VRM)** 2. Microprocessor 3. System board
175-000-XXX Thermal Sensor(s) Test Passed	1. **No action**

Diagnostic Error Code	FRU/Action
175-0XX-XXX Thermal Sensor(s) failure	1. **Flash system** 2. System board
175-195-XXX Thermal Sensor(s) Test aborted by user	1. **Information** 2. Re-start the test, if need to
175-196-XXX Thermal Sensor(s) test halt, error threshold exceeded	1. **Depress F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Re-start the test to reset the log file.
175-197-XXX Thermal Sensor(s) test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
175-198-XXX Thermal Sensor(s) test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to "Undetermined Problems" on page 3-29
175-199-XXX Thermal Sensor(s) test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-29.** 2. Flash the system and re-test 3. Replace component under function test.
175-250-XXX **175-251-XXX** Thermal Sensor(s) limit error	1. **Check fans** 2. Check Power supply 3. Microprocessor 4. System board
185-000-XXX Asset Security Test Passed	1. **No action**
185-XXX-XXX Asset Security failure	1. **Assure Asset Security Enabled** 2. Flash system 3. System board
185-278-XXX Asset Security Chassis Intrusion	1. **C2 Cover Switch** 2. System board
201-000-XXX System Memory Test Passed	1. **No action**
201-XXX-XXX System Memory error	1. **Replace the memory module called out by the test** 2. System board
202-000-XXX System Cache Test Passed	1. **No action**
202-XXX-XXX System Cache error	1. **Cache, if removable** 2. System board 3. Microprocessor
206-000-XXX Diskette Drive Test Passed	1. **No action**

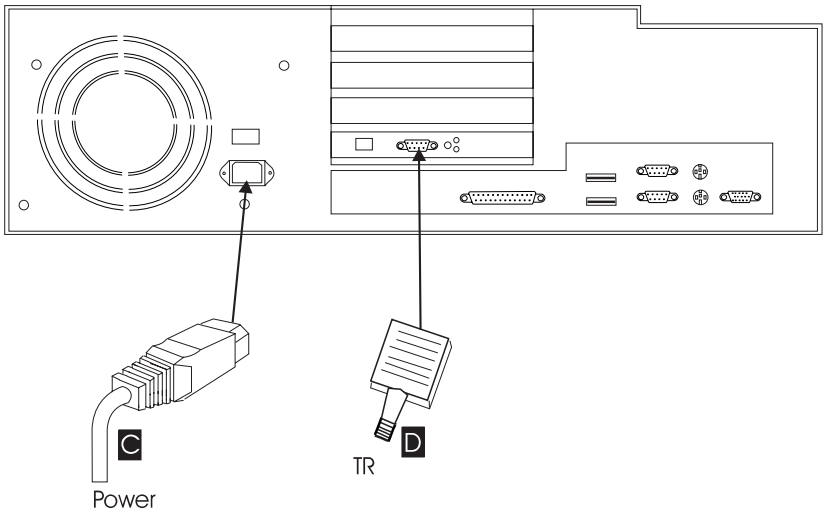
Diagnostic Error Code	FRU/Action
206-XXX-XXX Diskette Drive error	1. **Diskette Drive Cable** 2. Check power supply voltages 3. Diskette drive 4. System board
215-000-XXX CD-ROM Drive Test Passed	1. **No action**
215-XXX-XXX CD-ROM Drive error	1. **CD-ROM Drive Cable** 2. Check power supply voltages 3. CD-ROM drive 4. System board
217-000-XXX Hard Disk Drive Test Passed	1. **No action**
217-25X-XXX **217-26X-XXX** Hard Disk Drive (IDE) error	1. **Hard Disk Drive Cable** 2. Check power supply voltages 3. Hard Disk drive (IDE) 4. System board
217-28X-XXX **217-29X-XXX** Hard Disk Drive (SCSI) error	1. **Hard Disk Drive Cable** 2. Check power supply voltages 3. Hard Disk drive (SCSI) 4. SCSI adapter card 5. System board
220-000-XXX Hi-Capacity Cartridge Drive Test Passed	1. **No action**
220-XXX-XXX Hi-Capacity Cartridge Drive error	1. **Remove the Hi-Capacity Cartridge Drive and re-test the system**
301-000-XXX Keyboard Test Passed	1. **No action**
301-XXX-XXX Keyboard error	1. **Keyboard** 2. Check and test Mouse 3. System board
302-000-XXX Mouse Test Passed	1. **No action**
302-XXX-XXX Mouse error	1. **Mouse** 2. Check and test Keyboard 3. System board
303-000-XXX Joystick Test Passed	1. **No action**
303-XXX-XXX Joystick error	1. **Remove the Joystick and re-test the system**
305-000-XXX Monitor DDC Test Passed	1. **No action**
305-250-XXX Monitor DDC self test failure	1. **Run Setup to enable DDC** 2. Cable 3. Monitor 4. Video card 5. System board
415-000-XXX Modem Test Passed	1. **No action**

Diagnostic Error Code	FRU/Action
415-XXX-XXX Modem error	1. **Remove the Modem and re-test the system**

Chapter 5. Network Node Processor FRU / Display Exchange

Removing and Installing Network Node Processor FRU

1. Switch OFF the display and the network node processor using their respective power ON/OFF switch located on the front panel.
2. On the rear of the network node processor disconnect all the cables present.

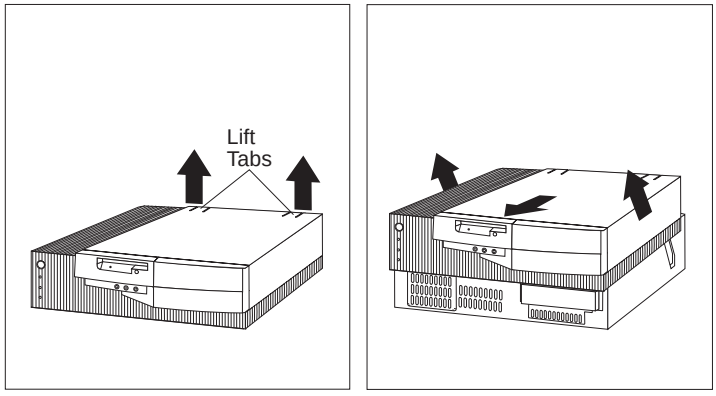


3. If your network node processor is installed in the controller expansion go to Step 4. Otherwise go to Step 5.
4. Slide out the network node processor from the rack and install it on a table to continue the FRUs removal. If you have any problem to slide out the network node processor from the controller expansion refer to “Removing the 6275 From the Controller Expansion” on page D-13, then continue with the following steps.

Warning

Be careful the weight of the processor is about 12 kg.

5. Open the network node processor using the following figure.



Unlock cover from back of the system unit before removing cover.

6. Some FRUs need a special procedure or attention. Use the following table to select the appropriate procedure.

Important

Each time you change a FRU, check the presence of jumpers. Install the jumpers on the new FRU as they were on the defective FRU.

Network Node Processor FRU to Exchange	Action
Battery	Go to “Battery Exchange” on page 5-3.
Board	Go to “Board Exchange” on page 5-4.
CD-ROM	Go to “CD-ROM Exchange” on page 5-8.
Diskette Drive	Go to “Diskette Drive Exchange” on page 5-9.
Hard Disk Drive	Go to “Hard Disk Drive Exchange” on page 5-7.
LAN Adapter	Go to “LAN Adapter Exchange” on page 5-10.
Processor	Go to “Processor Exchange” on page 5-6.
Other FRU	Go to “Other FRUs Exchange” on page 5-11.

Battery Exchange

Safety

Refer to Appendix A, “Safety Information” on page A-1.

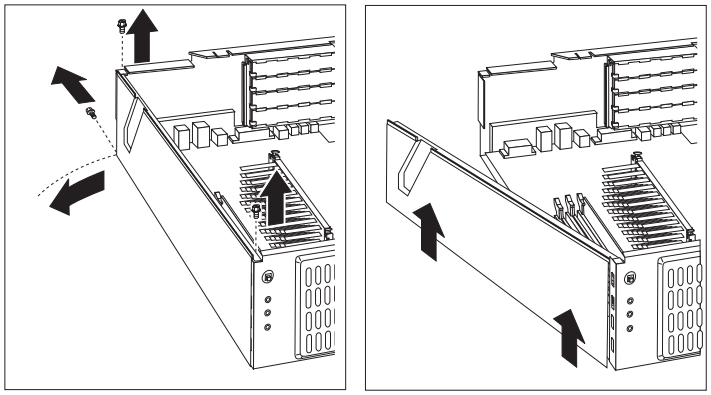
1. Locate the battery on the board.
2. Note the orientation of the battery on the system board and remove it.
3. Install the new battery.
4. Re-install network node processor cover.
5. Go to “After FRU Exchange” on page 5-12.

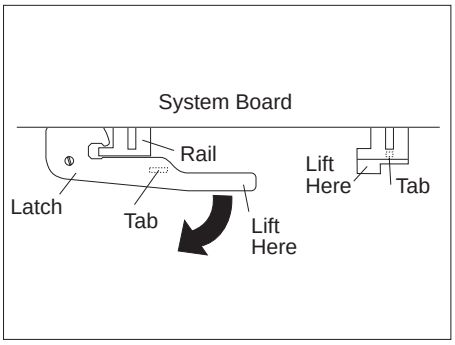
Board Exchange

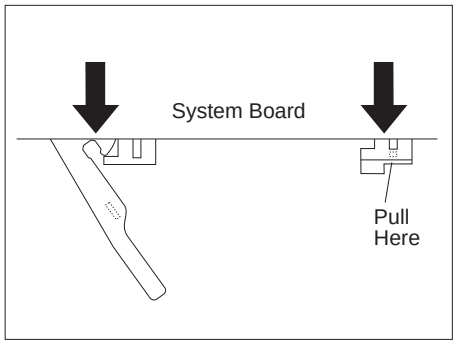
Note

A new system board comes without microprocessor, no memory options on it. You must transfer all such components from the system board being removed.

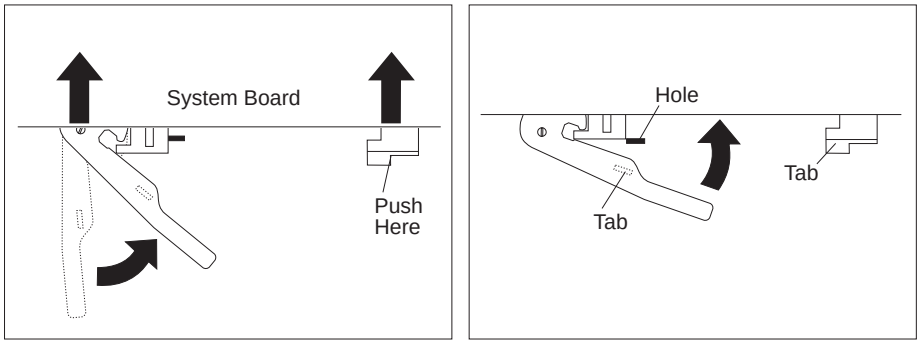
1. Remove the system board using the following figures.







2. Unpack the new system board.
3. Remove the processor from the old system board and install it on the new system board.
4. Remove any of the following installed options on the old system board, and install them on the new system board.
   - External cache memory and cache tag RAM
   - Memory modules
   - Extended video memory
5. Ensure that the new system board jumper/switch settings match the old system board jumper/switch settings.
6. Re-install the system board using the following figures.



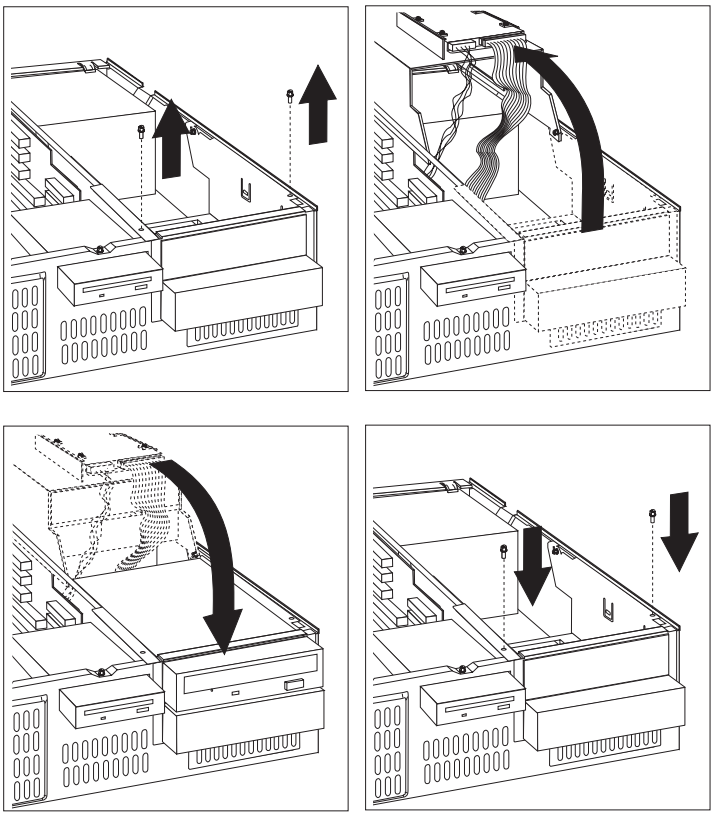
7. Re-install the network node processor cover.
8. Go to “After FRU Exchange” on page 5-12.

Processor Exchange

1. Locate the processor on the board (for details see “Network Node Processor (Type 6275) Pentium II, Pentium III System Board” on page F-4).
2. Note the orientation of the processor on the system board and remove it.
3. Unpack and install the new processor on the system board..
4. Re-install network node processor cover.
5. Go to “After FRU Exchange” on page 5-12.

Hard Disk Drive Exchange

1. Locate the hard disk drive in the bottom of the drive cage.
2. Using the following figures:

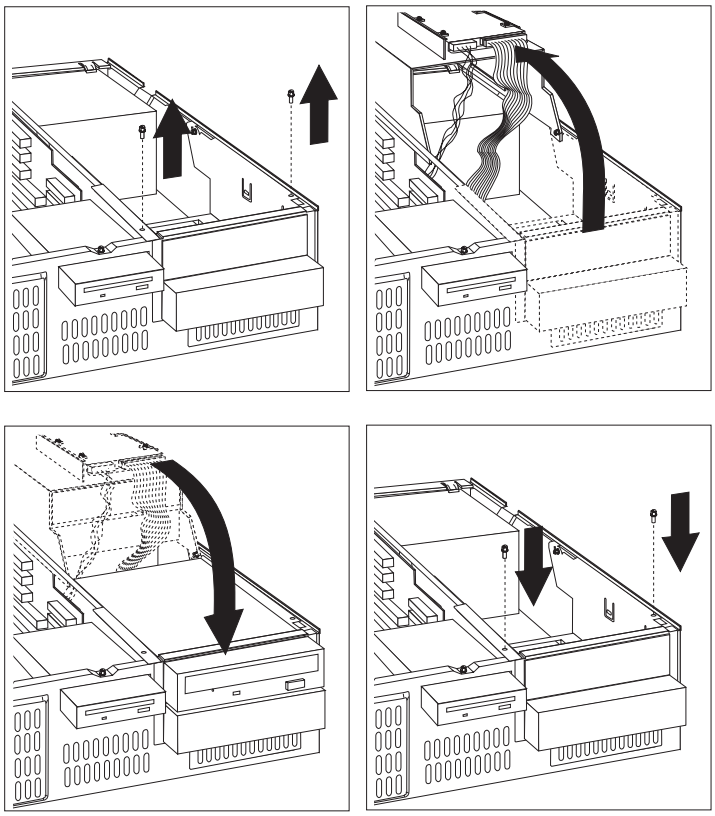


   a. Remove the two screws (one on each side of the drive cage).
   b. Rotate the drive cage to the rear.
   c. Unplug the cables from the hard disk drive.
   d. Remove the screws which secure the hard disk drive in the drive cage.
   e. Unpack the new hard disk drive.
   f. Check the jumper settings on the new hard disk drive and set them to correspond to the old hard disk drive settings. Otherwise see “Hard Disk Drive Jumper Settings” on page 3-37.
   g. Install and secure the new hard disk drive into the drive cage using the screws previously removed.
   h. Re-plug the cables previously removed.
   i. Rotate the drive cage at its initial position.
   j. Secure the drive cage with the two screws previously removed.

3. Re-install the network node processor cover.
4. Go to “After FRU Exchange” on page 5-12.

CD-ROM Exchange

1. Locate the CD-ROM on the top of the drive cage.
2. Using the following figures:



   a. Remove the two screws (one on each side of the drive cage).
   b. Rotate the drive cage to the rear.
   c. Unplug the cables from the CD-ROM drive.
   d. Remove the four screws which secure the CD-ROM drive in the drive cage.
   e. Unpack the new CD-ROM drive.
   f. Check the jumper settings on the new CD-ROM drive and set them to correspond to the old CD-ROM drive settings. Otherwise see “CD-ROM, PD/CD-ROM Drive Jumper Settings” on page 3-38.
   g. Install and secure the new CD-ROM drive into the drive cage using the four screws previously removed.
   h. Re-plug the cables previously removed.
   i. Rotate the drive cage at its initial position.
   j. Secure the drive cage with the two screws previously removed.
3. Re-install the service processor cover.
4. Go to “After FRU Exchange” on page 5-12.

Diskette Drive Exchange

1. Remove the diskette drive:
   a. Unplug the cables at the rear of the diskette drive.
   b. On the front frame remove the screw.
   c. Slide out the diskette support assembly, then remove the diskette drive from its support.
   d. Unpack the diskette drive and secure it on its support assembly.
   e. Slide the diskette support assembly into the front frame.
   f. Secure the diskette assembly with the screw previuosly removed.
   g. Replug the cables previously removed.
2. Re-install the network node processor cover.
3. Go to “After FRU Exchange” on page 5-12.

LAN Adapter Exchange

1. Locate the LAN adapter card.
2. Remove the screw that maintains the retainer on the rear of the computer.
3. Unplug the LAN cable from the rear of the card.
4. Unplug the LAN adapter card from the riser card.
5. Unpack and install the new LAN adapter card.
6. Install the retainer and secure it with the screw previously removed.
7. Plug the cable previously removed to the rear of the LAN adapter card.
8. Re-install the network node processor cover.
9. Go to “After FRU Exchange” on page 5-12.

Other FRUs Exchange

1. Locate the FRU to exchange.
2. With the help of figures given in “Network Node Processor Exploded View” on page F-1 remove the FRU.
3. Unpack and install the new FRU.
4. Re-install the network node processor cover.
5. Go to “After FRU Exchange” on page 5-12.

After FRU Exchange

1. For Setting up the network node processor after FRU exchange use the following steps:
   a. If the network node processor was installed in a controller rack continue with Step 1b. Otherwise go to Step 1c.
   b. Slide the network node processor into the rack. If you have any problem to slide the network node processor into the controller expansion refer to “Installing the 6275 into the Controller Expansion” on page D-12, then continue with the following steps.
   c. At the rear of the network node processor re-connect all the cable previously removed.
2. Use the following table to find the procedure you need to follow after exchanging an FRU.

Network Node Processor FRU to Exchange	**Action**
Battery	Go to “After Battery or Board Exchange” on page 5-13.
Board	
Hard Disk Drive	Go to “After Hard Disk Drive Exchange” on page 5-18.
LAN Adapter	Go to “After LAN Adapter Exchange” on page 5-14.
Other FRUs	Go to “After Other FRUs Exchange” on page 5-21.

After Battery or Board Exchange

You are here after battery or board exchange.

1. Power ON the network node processor and its attached display.
2. A count of computer memory appears at the upper-left corner of the display.
3. If an error is detected, a message is displayed requesting an action. Select **Continue**, then press **Enter**.
4. Follow the prompts to continue untill the **Configuration/Setup Utility** window is displayed.
5. On the **Configuration/Setup Utility** window the area where the configuration has been modified is pointed by an arrow. Refer to “Network Node Processor Configuration / Setup Utility” on page F-8 to check the configuration and correct it if necessary.
6. At the end of configuration, a message asks you if you want to save your changes.
7. Select **Yes** and press **Enter** to reboot the network node processor.
8. Go to Chapter 6, “CE Leaving Procedure” on page 6-1.

After LAN Adapter Exchange

You are here after LAN adapter card exchange.

Important

For this procedure be sure that the LAN cable **is not connected** to the LAN adapter card.

1. Insert the **Token-Ring Adapter Card Configuration** diskette in the network node processor.
2. Power ON the network node processor and the attached display.
3. Wait until the following window is displayed:

```
LANAID V2.21 for IBM Auto/Turbo ISA Adapter

MAC Address                 Alternate Format
xx-xx-xx-xx-xx-xx           xx-xx-xx-xx-xx

            Select a function Below

        -   Adapter Configuration

        -   Software Installation

        -   Diagnostics


Exit    Help
```

4. Using the **Tab** key select the **Adapter Configuration**, then press **Enter**.
5. The following window is displayed

   Note: The values given here are for references as it could be sligthly different depending on the card.

```
           View Adapter Configuration

  Configurable                  |                  Hardware

Select <Suggest> or <Change> to make changes to the configuration below
Then press <Store> to store these changes to the adapter.

  Mode           Enhanced       Adapter Plug and Play    Automatic
 Remote IPL:     Enabled         Interrupt:               15
 Data Rate:      16 MBps         I/O Address:             EFC-EFF
 Auto Sens       Enabled         ROM Address              C8000-C9FFF
 Bus Width       16 bits         RAM Address


  Suggest     Change     Defaults      Store

  Done        Cancel     Help
```

6. Using the **Tab** key select the **Change** and press **Enter**.
7. The following window is displayed.

```
          Change Configuration Parameters

Adapters Mode   |    Plug and Play    |    Other Parameters

           Select each mode for a detailed description

          Adapter Modes

        - Enhanced Modes

        - Auto 16 Mode

        - ISA 16 Mode


OK          Cancel     Help
```

8. Using the **Up** and **Down** keys select the **ISA 16 Mode** (note that the response time is very slow) then press simultaneously **Alt** and **P** keys to select the **Plug and Play** window.
9. The following window is displayed.

```
          Change Configuration Parameters

Adapters Mode   |    Plug and Play    |    Other Parameters

       Make any Changes to the configuration, then select <OK>


        - Plug and Play Automatic Configuration

        - Manual (locked) Configuration for Plug and Play systems

        - Manual Configuration for no Plug and Play (legacy) systems



OK          Cancel     Help
```

10. Select the **Manual Configuration for no Plug and Play (legacy) systems**, using the tab key select **Interrupt**, and using the arrow key, select interrupt: **7**
11. Press simultaneously the **Alt** and **R** keys.
12. The following window is displayed.

```
          Change Configuration Parameters

     Remote IPL                  Data Rates

     o Enable                    o 16 Mbps
     o Disable                   o  4 Mbps

     Auto Sense                  Bus Wide

     o Enable                    o 16 Mbps
     o Disable                   o  8 Mbps


OK          Cancel     Help
```

13. Using the **Up**, **Down**, and **Tab** keys select:

- Remote IPL: **Disable**
- Data Rates: **16 Mbps**
- Auto Sense: **Disable**
- Bus Wide: **16 bits**

Select **OK** and press **Enter**.

14. The following window is displayed.

```
            View Adapter Configuration

  Configurable                    |                    Hardware

Select <Suggest> or <Change> to make changes to the configuration below
Then press <Store> to store these changes to the adapter.

  Mode            ISA 16        Adapter Plug and Play    Manual (legacy)
 Remote IPL:     Disabled        Interrupt:               7
 Data Rate:      16 MBps         I/O Address:             A20-A23
 Auto Sens       Disabled        ROM Address              CA000-CBFFF
 Bus Width       16 bits         RAM Address              C8000-C9FFF


  Suggest     Change     Defaults      Store

  Done        Cancel     Help
```

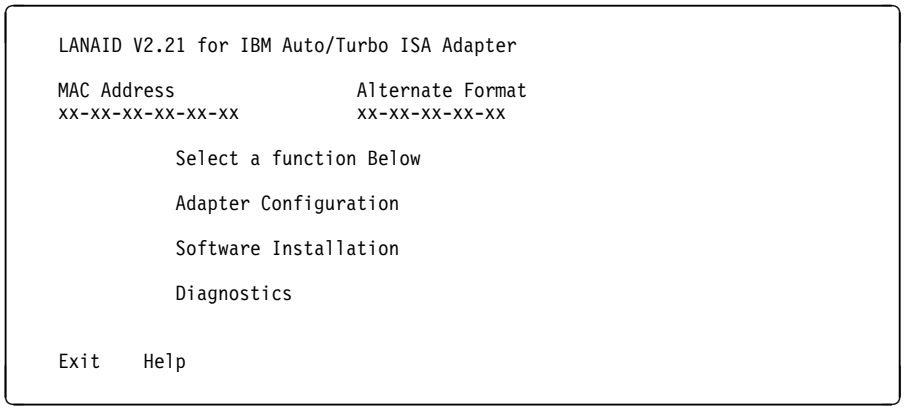
15. Using the **Up** and **Down** keys select the **Store**, then press **Enter**.
16. The adapter configuration is stored. Wait until the following window is displayed.

```
            Storing Configuration

The adapter configuration settings that you have chosen are
now stored.

NOTE: Changes made to the adapter do not become effective
until your computer is powered OFF and back ON: A reboot
will not activate the changes.


                         OK
```

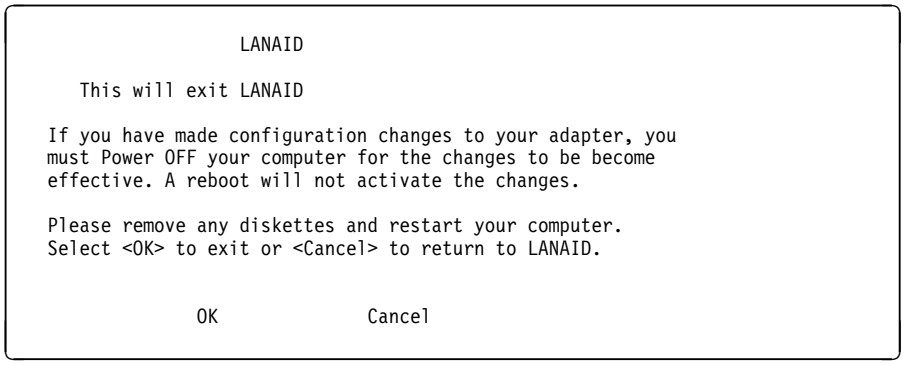
17. Press **Enter**.
18. The following window is displayed.

```
            View Adapter Configuration

  Configurable                    |                    Hardware

Select <Suggest> or <Change> to make changes to the configuration below
Then press <Store> to store these changes to the adapter.

  Mode            ISA 16        Adapter Plug and Play    Manual (legacy)
 Remote IPL:     Disabled        Interrupt:               7
 Data Rate:      16 MBps         I/O Address:             A20-A23
 Auto Sens       Disabled        ROM Address              CA000-CBFFF
 Bus Width       16 bits         RAM Address              C8000-C9FFF


  Suggest     Change     Defaults      Store

  Done        Cancel     Help
```

19. If not selected, using the **Tab** key, select **Done**, then press **Enter**.
20. The following window is displayed.



21. Using the **Tab** key, select **Exit**, then press **Enter**.
22. The following window is displayed.

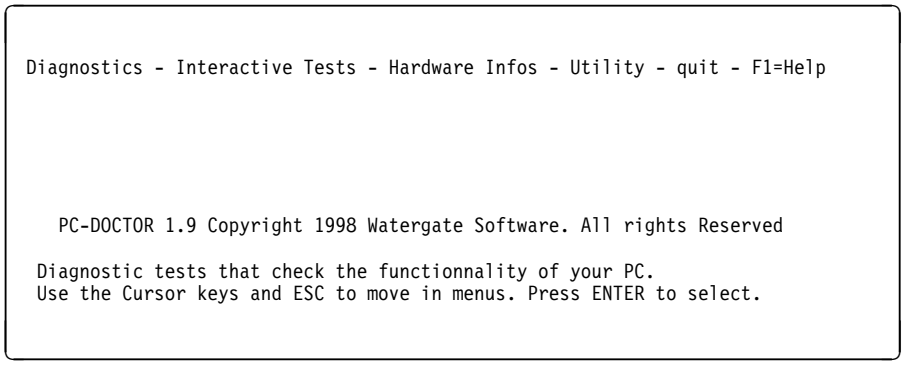


23. Using the **Tab** key, select **OK**, then press **Enter** and remove the diskette.
24. Power OFF the network node processor.
25. Reconnect the LAN adapter cable to the rear of the LAN adapter card.
26. Go to Chapter 6, “CE Leaving Procedure” on page 6-1.

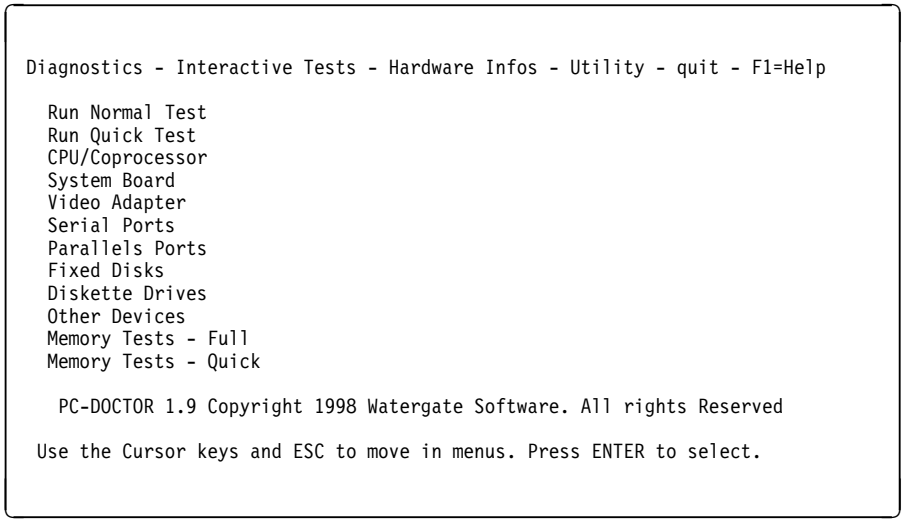
After Hard Disk Drive Exchange

You are here after hard disk drive exchange.

1. Insert the **Diagnostic Diskette**
2. Power On the service processor and its attached display.
3. Do not press **F1** when the icon appears.
4. Several messages are displayed. Wait until the following window is displayed.



5. Select the **Diagnostics** option in the title bar and press **Enter**.
6. The following window is displayed:



7. Select the **Fixed Disks** option, then press **Enter**.
8. The following window is displayed:

```
              FIXED DISK TEST CATEGORY (6/10)

                          Disk 0     Disk1    Disk2    Disk3
                          3228 MB
  Controller            >>
  Hi-Low                >>
  Funnel Seek           >>
  Track to Track Seek   >>
  Random Seek           >>
  Linear Verify         >>
  Random Verify         >>

                 Start Track    0
                 End Track


 Clear All - Run Screen - Run All - Options - Next Cat - Prev Cat
```

9. Select the **Clear All** option to remove all the chevrons >>.
10. With the arrow keys and the space bar select the test that you want to run on the disk. At each selection a chevron >> is displayed.
11. Select the **Run Screen** option at the bottom of the window. All the tests previously selected are started.

    When the hard disk has been successfully tested, the **Fixed Disk Test Category** window is again displayed. The test result appears in front of each selected test.
12. Is the diagnostic error free?

    No Restart the problem determination.
    Yes You must restore the network node processor hard disk after its replacement. Continue with Step 13.
13. Press **esc** for exit from the test window.
14. Select **Quit** in the title bar, then press **Enter**.
15. Select **Exit Diags**, then press **Enter**. The following appears on the Screen:

    ```
    a:\>
    ```
16. Return on the ***service processor*** console to load the licensed internal code on the NNP, using the following procedure:
    a. Return to the **MOSS-E View** window.
    b. Double click on the **3746-900** or **3746-950** icon.
    c. On the **3746-9x0 Menu** select the **Network Node Processor (NNP) Management** option.
    d. On the **Network Node Processor (NNP) management** window double click on the **Install/change/Restore LIC/NNP** option.
    e. The **3746-900/NNP Licensed Internal Code (LIC) Management** window is displayed.
    f. Select the NNP (A or B), then click on **Restore LIC on NNP**
    g. On the following window click on **OK**
    h. Follow the prompts to insert the **Network Node Processor Diskette Installation** in the ***service processor*** then click on **OK**.

i. Follow the prompts to insert the **Network Node Processor Diskette Installation** in the ***network node processor*** then click on **OK**.

j. The **3746-900/NNP Licensed Internal Code (LIC) Management** window is displayed with a message for waiting (Installation duration is about 30 minutes).

k. When installation is complete a message warms you to remove the **Network Node Processor Diskette Installation** from the ***network node processor*** then click on **OK**.

l. A new message indicates that the "NNP LIC Restoration, Operation Successfully Completed", click on **OK**.

m. The **3746-900/NNP Licensed Internal Code (LIC)** is displayed, click on **Close** to return to the **MOSS-E View** window.

17. Then go to Chapter 6, “CE Leaving Procedure” on page 6-1.

After Other FRUs Exchange

1. Run the diagnostics on the network node processor see “Starting the IBM PC Enhanced Diagnostics Program” on page 4-4.
2. Is the diagnostic error free?

   No Restart the problem determination.

   Yes Return the network node processor to the customer, then go to Chapter 6, “CE Leaving Procedure” on page 6-1.

Chapter 6. CE Leaving Procedure

Check List

1 If you have installed a display and keyboard on the network node processor continue with Step **2** , otherwise go to Step 7

2 Refer to **"Network Node Processor Configuration / Setup Utility" on page F-8** and check that:

a. In window **3** the following option:

`Mouse (Not Installed)`

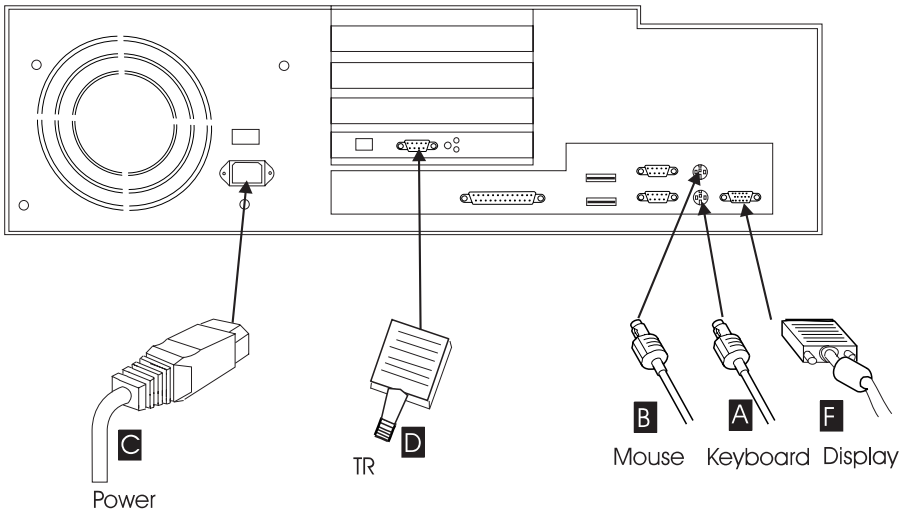
b. In window **4** the following option:

`Keyboardles Operation Mode (enabled)`

3 Leave the configuration/Setup utility using the prompts.

4 Power OFF the network node processor.

5 Disconnect the display, the mouse and the keyboard from the rear of the network node processor.



6 Continue with Step **7** .

7 **Check that:**

a The network node processor is properly installed.

b All the cables previously removed are properly connected (except display, mouse, and keyboard cable).

8 Power ON the network node processor and check that the IML is complete and linked with the service processor.

9 At the beginning of the problem determination, did you modify the "Remote Support Facility" parameters, using the procedure described in the *Maintenance Information Procedure* for 3745 and 3746-900, or in the *Service Guide* for 3746-950?

Yes Go to Step 10.
No Go to Step 11.

10 Modify the **Remote Support Facility** parameters using the following steps:

a On the "MOSS-E VIEW" window, double click on the service processor icon.

b The "Service Processor Menu" window is displayed.

c Click on the "Configuration Management" option.

d Double click on the "Manage Remote Operations" option.

e On the "Remote Operation Management" window, select the "Remote operations authorization" option and click on "OK".

f On the "Remote Support Facility" window, select the two following options:

- "Enable Remote Support Facility"
- "Generate alerts"

and click on "OK".

g Click on "Cancel" to return to "Service Processor Menu", then click on "Function" and "Exit" to return to the "MOSS-E View" window.

h On the "MOSS-E VIEW" window, click on "Program" in the action bar.

i Click on "Log off MOSS-E".

j Continue with Step 11.

11 You should use the following list to ensure that the machine is in suitable condition for customer operation and that call information is recorded.

a If previously, you have worked on 3745 or 3746, be sure to have restore them at a correct status for customer application (MOSS online, 3746 online, FRU active in CDF-E).

b Ask the customer to restart his application.

c If you have a problem, call your support for assistance

Appendix A. Safety Information

The following section contains the safety information that you need to be familiar with before servicing an IBM mobile computer.

General Safety

Follow these rules to ensure general safety:

- Observe good housekeeping in the area of the machines during and after maintenance.
- When lifting any heavy object:
  1. Ensure you can stand safely without slipping.
  2. Distribute the weight of the object equally between your feet.
  3. Use a slow lifting force. Never move suddenly or twist when you attempt to lift.
  4. Lift by standing or by pushing up with your leg muscles; this action removes the strain from the muscles in your back. ***Do not attempt to lift any objects that weigh more than 16 kg (35 lb) or objects that you think are too heavy for you.***
- Do not perform any action that causes hazards to the customer, or that makes the equipment unsafe.
- Before you start the machine, ensure that other service representatives and the customer's personnel are not in a hazardous position.
- Place removed covers and other parts in a safe place, away from all personnel, while you are servicing the machine.
- Keep your tool case away from walk areas so that other people will not trip over it.
- Do not wear loose clothing that can be trapped in the moving parts of a machine. Ensure that your sleeves are fastened or rolled up above your elbows. If your hair is long, fasten it.
- Insert the ends of your necktie or scarf inside clothing or fasten it with a nonconductive clip, approximately 8 centimeters (3 inches) from the end.
- Do not wear jewelry, chains, metal-frame eyeglasses, or metal fasteners for your clothing.

  Remember: Metal objects are good electrical conductors.
- Wear safety glasses when you are: hammering, drilling soldering, cutting wire, attaching springs, using solvents, or working in any other conditions that might be hazardous to your eyes.
- After service, reinstall all safety shields, guards, labels, and ground wires. Replace any safety device that is worn or defective.
- Reinstall all covers correctly before returning the machine to the customer.

Electrical Safety

Observe the following rules when working on electrical equipment.

Important

Use only approved tools and test equipment. Some hand tools have handles covered with a soft material that does not insulate you when working with live electrical currents.

Many customers have, near their equipment, rubber floor mats that contain small conductive fibers to decrease electrostatic discharges. Do not use this type of mat to protect yourself from electrical shock.

- Find the room emergency power-off (EPO) switch, disconnecting switch, or electrical outlet. If an electrical accident occurs, you can then operate the switch or unplug the power cord quickly.
- Do not work alone under hazardous conditions or near equipment that has hazardous voltages.
- Disconnect all power before:
  - Performing a mechanical inspection
  - Working near power supplies
  - Removing or installing main units
- Before you start to work on the machine, unplug the power cord. If you cannot unplug it, ask the customer to power-off the wall box that supplies power to the machine and to lock the wall box in the off position.
- If you need to work on a machine that has *exposed* electrical circuits, observe the following precautions:
  - Ensure that another person, familiar with the power-off controls, is near you.

    Remember: Another person must be there to switch off the power, if necessary.
  - Use only one hand when working with powered-on electrical equipment; keep the other hand in your pocket or behind your back.

    Remember: There must be a complete circuit to cause electrical shock. By observing the above rule, you may prevent a current from passing through your body.
  - When using testers, set the controls correctly and use the approved probe leads and accessories for that tester.
  - Stand on suitable rubber mats (obtained locally, if necessary) to insulate you from grounds such as metal floor strips and machine frames.

  Observe the special safety precautions when you work with very high voltages; these instructions are in the safety sections of maintenance information. Use extreme care when measuring high voltages.
- Regularly inspect and maintain your electrical hand tools for safe operational condition.
- Do not use worn or broken tools and testers.
- *Never assume* that power has been disconnected from a circuit. First, *check* that it has been powered-off.
- Always look carefully for possible hazards in your work area. Examples of these hazards are moist floors, nongrounded power extension cables, power surges, and missing safety grounds.

- Do not touch live electrical circuits with the reflective surface of a plastic dental mirror. The surface is conductive; such touching can cause personal injury and machine damage.
- Do not service the following parts *with the power on* when they are removed from their normal operating places in a machine:
  - Power supply units
  - Pumps
  - Blowers and fans
  - Motor generators

  and similar units. (This practice ensures correct grounding of the units.)
- If an electrical accident occurs:
  - **Use caution; do not become a victim yourself.**
  - **Switch off power.**
  - **Send another person to get medical aid.**
- Asset ID allows the computer to be scanned by various radio frequency emitting devices supplied by independent companies. Asset ID is intended for use only with radio frequency equipment that meets ANSI/IEEE C95.1 1992 RF Radiation Limits.

Safety Inspection Guide

The intent of this inspection guide is to assist you in identifying potentially unsafe conditions on these products. Each machine, as it was designed and built, had required safety items installed to protect users and service personnel from injury. This guide addresses only those items. However, good judgment should be used to identify potential safety hazards due to attachment of non-IBM features or options not covered by this inspection guide.

If any unsafe conditions are present, you must determine how serious the apparent hazard could be and whether you can continue without first correcting the problem.

Consider these conditions and the safety hazards they present:

- Electrical hazards, especially primary power (primary voltage on the frame can cause serious or fatal electrical shock).
- Explosive hazards, such as a damaged CRT face or bulging capacitor
- Mechanical hazards, such as loose or missing hardware

The guide consists of a series of steps presented in a checklist. Begin the checks with the power off, and the power cord disconnected.

Checklist:

1. Check exterior covers for damage (loose, broken, or sharp edges).
2. Power-off the computer. Disconnect the power cord.
3. Check the power cord for:
   a. A third-wire ground connector in good condition. Use a meter to measure third-wire ground continuity for 0.1 ohm or less between the external ground pin and frame ground.
   b. The power cord should be the appropriate type as specified in the parts listings.
   c. Insulation must not be frayed or worn.
4. Remove the cover.
5. Check for any obvious non-IBM alterations. Use good judgment as to the safety of any non-IBM alterations.

6. Check inside the unit for any obvious unsafe conditions, such as metal filings, contamination, water or other liquids, or signs of fire or smoke damage.
7. Check for worn, frayed, or pinched cables.
8. Check that the power-supply cover fasteners (screws or rivets) have not been removed or tampered with.

Handling Electrostatic Discharge-Sensitive Devices

Any computer part containing transistors or integrated circuits (ICs) should be considered sensitive to electrostatic discharge (ESD). ESD damage can occur when there is a difference in charge between objects. Protect against ESD damage by equalizing the charge so that the machine, the part, the work mat, and the person handling the part are all at the same charge.

Notes:

1. Use product-specific ESD procedures when they exceed the requirements noted here.
2. Make sure that the ESD protective devices you use have been certified (ISO 9000) as fully effective.

When handling ESD-sensitive parts:

- Keep the parts in protective packages until they are inserted into the product.
- Avoid contact with other people.
- Wear a grounded wrist strap against your skin to eliminate static on your body.
- Prevent the part from touching your clothing. Most clothing is insulative and retains a charge even when you are wearing a wrist strap.
- Use the black side of a grounded work mat to provide a static-free work surface. The mat is especially useful when handling ESD-sensitive devices.
- Select a grounding system, such as those listed below, to provide protection that meets the specific service requirement.

  Note: The use of a grounding system is desirable but not required to protect against ESD damage.

  – Attach the ESD ground clip to any frame ground, ground braid, or green-wire ground.
  – Use an ESD common ground or reference point when working on a double-insulated or battery-operated system. You can use coax or connector-outside shells on these systems.
  – Use the round ground-prong of the AC plug on AC-operated computers.

Grounding Requirements

Electrical grounding of the computer is required for operator safety and correct system function. Proper grounding of the electrical outlet can be verified by a certified electrician.

Safety Notices (Multi-lingual Translations)

The caution and danger safety notices in this section are provided in the following languages:

- English
- Brazilian/Portuguese
- Chinese
- French
- German
- Italian
- Korean
- Spanish

DANGER

To avoid a shock hazard, do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.

To avoid shock hazard:

- **The power cord must be connected to a properly wired and earthed receptacle.**
- **Any equipment to which this product will be attached must also be connected to properly wired receptacles.**

When possible, use one hand to connect or disconnect signal cables to prevent a possible shock from touching two surfaces with different electrical potentials.

Electrical current from power, telephone, and communications cables is hazardous. To avoid shock hazard, connect and disconnect cables as described following when installing, moving, or opening covers of this product or attached devices.

To Connect	To Disconnect
1. Turn Everything OFF.	1. Turn Everything OFF.
2. First, attach all cables to devices.	2. First, remove power cord(s) from outlet.
3. Attach signal cables to receptacles.	3. Remove signal cables from receptacles.
4. Attach power cord(s) to outlet.	4. Remove all cables from devices.
5. Turn device ON.	

NOTE: In the UK, by law, the telephone cable must be connected after the power cord.	NOTE: In the UK, the power cord must be disconnected after the telephone cable.

Caution:
When replacing the battery, use only IBM Part Number 33F8354 or an equivalent type battery recommended by the manufacturer. If your system has a module containing a lithium battery, replace it only with the same module type made by the same manufacturer. The battery contains lithium and can explode if not properly used, handled, or disposed of.

Do not:

- **Throw or immerse into water**
- **Heat to more than 100°C (212°F)**
- **Repair or disassemble**

Dispose of the battery as required by local ordinances or regulations.

Caution:
When a CD-ROM drive is installed, note the following.

Use of controls or adjustments or performance of procedures other than those specified herein might result in hazardous radiation exposure.

Removing the covers of the CD-ROM drive could result in exposure to hazardous laser radiation. There are no serviceable parts inside the CD-ROM drive. Do not remove the CD-ROM drive covers.

DANGER

Some CD-ROM drives contain an embedded Class 3A or Class 3B laser diode. Note the following.

Laser radiation when open. Do not stare into the beam, do not view directly with optical instruments, and avoid direct exposure to the beam.

≥32 kg (70.5 lbs) **≥55 kg (121.2 lbs)**

Caution:
Use safe lifting practices when lifting your machine.

Caution:
Electrical current from power, telephone, and communication cables can be hazardous. To avoid personal injury or equipment damage, disconnect the attached power cords, telecommunications systems, networks, and modems before you open the server covers, unless instructed otherwise in the installation and configuration procedures.

PERIGO

Para evitar choques elétricos, não conecte ou desconecte nenhum cabo, nem efetue instalação, manutenção ou reconfiguração deste produto durante uma tempestade com raios.

Para evitar choques elétricos:

- **O cabo de alimentação deve ser conectado a um receptáculo corretamente instalado e aterrado.**
- **Todos os equipamentos aos quais este produto será conectado devem também ser conectados a receptáculos corretamente instalados.**

Quando possível, utilize uma das mãos para conectar ou desconectar cabos de sinal, para evitar um possível choque ao tocar duas superfícies com potenciais elétricos diferentes.

A corrente elétrica proveniente de cabos de alimentação, de telefone e de comunicação é perigosa. Para evitar choques elétricos, conecte e desconecte os cabos conforme descrito a seguir, ao instalar, movimentar ou abrir tampas deste produto ou de dispositivos conectados.

Para Conectar	**Para Desconectar**
1. DESLIGUE tudo.	1. DESLIGUE tudo.
2. Conecte primeiro todos os cabos nos dispositivos.	2. Remova primeiro o(s) cabo(s) de alimentação das tomadas.
3. Conecte os cabos de sinal nos receptáculos.	3. Remova os cabos de sinal dos receptáculos.
4. Conecte o(s) cabo(s) de alimentação nas tomadas.	4. Remova todos os cabos dos dispositivos.
5. LIGUE o dispositivo.	

cuidado:
Ao substituir a bateria, utilize apenas o Número de Peça IBM 33F8354 ou um tipo de bateria equivalente recomendado pelo fabricante. Se seu sistema possuir um módulo com uma bateria de lítio, substitua-o apenas pelo mesmo tipo de módulo, produzido pelo mesmo fabricante. A bateria contém lítio e pode explodir se não for utilizada, manuseada e descartada de forma adequada.

Não:

- **Jogue ou coloque na água**
- **Aqueça a mais de 100°C (212°F)**
- **Conserte nem desmonte.**

Descarte a bateria conforme requerido pelas disposições e regulamentações locais.

cuidado:
Quando uma unidade de CD-ROM estiver instalada, observe o seguinte.

A utilização de controles ou ajustes ou a execução de procedimentos diferentes daqueles especificados nesta publicação pode resultar em exposição perigosa à radiação.

A remoção das tampas da unidade de CD-ROM pode resultar em exposição a radiação perigosa de laser. Não existem peças que possam ser consertadas no interior da unidade de CD-ROM. Não remova as tampas da unidade de CD-ROM.

PERIGO

Algumas unidades de CD-ROM contém um diodo de laser da Classe 3A ou da Classe 3B. Observe o seguinte.

Radiação de laser quando aberto. Não olhe diretamente para o feixe de laser, não olhe diretamente com instrumentos óticos, e evite exposição direta ao raio.

≥32 kg (70,5 lbs) **≥55 kg (121,2 lbs)**

cuidado:
Utilize práticas seguras para levantamento de peso ao levantar sua máquina.

cuidado:
A corrente elétrica proveniente de cabos de alimentação, de telefone e de comunicação é perigosa. Para evitar ferimentos pessoais ou danos aos equipamentos, desconecte os cabos de alimentação, sistemas de telecomunicação, redes e modems antes de abrir as tampas do servidor, a menos que receba outras instruções nos procedimentos de instalação e configuração.

声明 1

危险！

为避免电击危险，请不要在暴风雨期间连接或断开任何电缆，或是进行此产品的安装、维护或重新配置操作。

为避免电击危险：

- 电源线必须连接到适当的电线及接地插座。
- 此产品将要连接的所有设备也必须连接到正确接线的插座上。

如果可能，请使用一只手连接或断开连接信号电缆，以避免在接触两个具有不同电势的表面时遭到电击。

电源线、电话线以及通信电缆中的电流非常危险。为避免电击，请在安装、移动或打开本产品或连接设备的外盖时，按照下述步骤连接或断开电缆。

要连接电缆	要断开电缆
1. 关闭所有设备。	1. 关闭所有设备。
2. 首先将所有电缆与设备连接。	2. 首先从电源插座拔下电源线。
3. 将信号线连接到插座。	3. 从插座拔下信号电缆。
4. 将电源线连接到电源插座。	4. 从设备上拔下所有电缆。
5. 打开设备。	

声明 2

注意！

当更换电池时，仅可使用 IBM 部件号为 33F8354 的产品或由制造商推荐的同等电池。如果系统中有包含锂电池的模块，则只能使用由相同制造商制造的相同类型模块更换。该电池含有锂，如果使用、操作或处理不当会发生爆炸。

不要：

- 将其投入或浸于水中
- 加热超过100°C (212°F)
- 修理或拆卸

应按照当地法规和条例对此电池进行处理。

声明 3

注意 ！

在已安装 CD-ROM 驱动器的情况下，请注意下面的内容。

不遵循此处指定的控制、调整、或操作过程的操作将可能导致危险的辐射泄漏。

取下 CD-ROM 驱动器的外盖会导致危险的激光辐射泄漏。CD-ROM 驱动器内没有可以使用的部件。请不要取下 CD-ROM 驱动器的外盖。

声明 4

危险 ！

一些 CD-ROM 驱动器中包含内置的 3A 类或 3B 类激光二极管。请注意下述内容。

打开驱动器会产生激光辐射。请不要凝视激光束，请不要使用光学仪器直接观看激光束，同时也要避免人体直接暴露在激光束下。

声明 5

32 kg (70.5 磅)

55 kg (121.2 磅)

注意！

搬运机器时，请进行安全搬运操作。

声明 10

注意！

电源线、电话线以及通信电缆中的电流非常危险。为避免人身伤害或设备损坏，除非在安装和配置过程中特别指明，请在打开服务器外盖前断开已连接的全部电源线、电信系统、网络及调制解调器。

• 聲明 1

危險

為了避免雷擊，在閃電期間，請勿連接或拔掉本裝置上的任何電纜線，或請勿安裝、維修或重新架構本產品。

為了避免雷擊：

- 電源線必須連接到接線及接地正確的插座。
- 本產品所連接的設備也必須連接到接線正確的插座。

儘可能使用單手來連接或拔掉信號電纜，以避免因接觸兩不同電位的平面，而受到電擊。

電源、電話及通信電纜上均有電流流通。為了避免電擊，在安裝、移動本產品，或開啓本產品的蓋子或與本產品連接之裝置的蓋子時，請依照下列「連接」及「拔掉」電纜線的步驟操作。

連接	拔掉
1. 關掉所有開關。 2. 首先，將所有電纜線連接到裝置。 3. 將信號電纜連接到信號插座。 4. 將電源線連接到電源插座。 5. 開啓裝置電源。	1. 關掉所有開關。 2. 首先，自電源插座拔掉電源線。 3. 拔掉信號插座上的所有信號電纜。 4. 拔掉裝置上的所有電纜線。

• 聲明 2

注意：
更換電池時，只可使用 IBM 零件編號 33F8354 的電池，或廠商建議的相當類型的電池。如您系統中的模組含有鋰電池，更換時，請使用相同廠商製造的相同模組類型。如未正常使用、處理或捨棄含有鋰的電池時，可能會造成爆炸。

嚴禁：.

- 丟入或浸入水中
- 加熱超過攝氏100 度（華氏 212 度）
- 修補或拆解

處理廢棄電池時，請遵照當地法令規章處理。

• 聲明 3

注意：
安裝光碟機時，請注意下列事項：

不依此處所指示的控制、調整或處理步驟，恐有遭致輻射之虞。

移開光碟機蓋子，恐有遭致雷射輻射之虞。光碟機中沒有需要維修的部分。請勿移開光碟機的蓋子。

• 聲明 4

危險

光碟機含有內嵌式 Class 3A 或 Class 3B 雷射二極體時，請注意下列事項：

開啓時會產生雷射輻射。請勿凝視光束，不要使用光學儀器直接觀察，且應避免直接暴露在光束下。

• 聲明 5

>= 32 公斤(70.5 磅)

>= 55 公斤(121.2 磅)

注意：
提昇機器時，請使用安全提昇措施。

• 聲明 10

注意：
電源、電話及通信電纜上均有電流流通。在安裝及架構之時，若非專家指導，為了避免人員受傷、設備受損，在開啓伺服器蓋子之前，請切斷電源線、電信系統、網路及數據機。

DANGER

Pour éviter tout risque de choc électrique, ne manipulez aucun câble et n'effectuez aucune opération d'installation, d'entretien ou de reconfiguration de ce produit au cours d'un orage.

Pour éviter tout risque de choc électrique :

- **Les cordons d'alimentation du présent produit et de tous les appareils qui lui sont connectés doivent être branchés sur des socles de prise de courant correctement câblés et mis à la terre.**

Afin d'éviter tout risque de choc électrique provenant d'une différence de potentiel de terre, n'utilisez qu'une main, lorsque cela est possible, pour connecter ou déconnecter les cordons d'interface.

Le courant électrique passant dans les câbles de communication, ou les cordons téléphoniques et d'alimentation peut être dangereux. Pour éviter tout risque de choc électrique, lorsque vous installez ou que vous déplacez le présent produit ou des périphériques qui lui sont raccordés, reportez-vous aux instructions ci-dessous pour connecter et déconnecter les différents cordons.

Connexion	**Déconnexion**
1. Mettez les unités hors tension. 2. Commencez par brancher tous les cordons sur les unités. 3. Branchez les câbles d'interface sur les prises. 4. Branchez les cordons d'alimentation sur un socle de prise de courant. 5. Mettez les unités sous tension.	1. Mettez les unités hors tension. 2. Commencez pas débrancher les cordons alimentation des socles de prise de courant. 3. Débranchez les câbles d'interface des prises. 4. Débranchez tous les câbles des unités.

attention:
Remplacez la pile usagée par une pile de référence identique exclusivement - voir la référence IBM - ou par une pile équivalente recommandée par le fabricant. Si votre système est doté d'un module contenant une pile au lithium, vous devez le remplacer uniquement par un module identique, produit par le même fabricant. La pile contient du lithium et présente donc un risque d'explosion en cas de mauvaise manipulation ou utilisation.

- **Ne la jetez pas à l'eau.**
- **Ne l'exposez pas à une température supérieure à 100 °C.**
- **Ne cherchez pas à la réparer ou à la démonter.**

Pour la mise au rebut, reportez-vous à la réglementation en vigueur.

attention:
Si une unité de CD-ROM est installée, prenez connaissance des informations suivantes :

Pour éviter tout risque d'exposition au rayon laser, respectez les consignes de réglage et d'utilisation des commandes, ainsi que les procédures décrites dans le présent document.

Pour éviter une exposition directe au rayon laser, n'ouvrez pas l'unité de CD-ROM. Vous ne pouvez effectuer aucune opération de maintenance à l'intérieur.

DANGER

Certaines unités de CD-ROM contiennent une diode laser de classe 3A ou 3B. Prenez connaissance des informations suivantes :

Rayonnement laser lorsque le carter est ouvert. Évitez de regarder fixement le faisceau ou de l'observer à l'aide d'instruments optiques. Évitez une exposition directe au rayon.

≥32 kg ≥55 kg

attention:
Ce produit pèse un poids considérable. Faites-vous aider pour le soulever.

attention:
Le courant électrique circulant dans les câbles de communication et les cordons téléphoniques et d'alimentation peut être dangereux. Pour votre sécurité et celle de l'équipement, avant de retirer les carters du serveur, mettez celui-ci hors tension et déconnectez ses cordons d'alimentation, ainsi que les câbles qui le relient aux réseaux, aux systèmes de télécommunication et aux modems (sauf instruction contraire mentionnée dans les procédures d'installation et de configuration).

VORSICHT

Aus Sicherheitsgründen bei Gewitter an diesem Gerät keine Kabel anschließen oder lösen. Ferner keine Installations-, Wartungs- oder Rekonfigurationsarbeiten durchführen.

Aus Sicherheitsgründen:

- **Gerät nur an eine Schutzkontaktsteckdose mit ordnungsgemäß geerdetem Schutzkontakt anschließen.**
- **Alle angeschlossenen Geräte ebenfalls an Schutzkontaktsteckdosen mit ordnungsgemäß geerdetem Schutzkontakt anschließen.**

Signalkabel möglichst einhändig anschließen oder lösen, um einen Stromschlag durch Berühren von Oberflächen mit unterschiedlichem elektrischem Potential zu vermeiden.

Elektrische Spannungen von Netz-, Telefon- und Datenübertragungsleitungen sind gefährlich. Um einen Stromschlag zu vermeiden, nur nach den Anweisungen arbeiten, die für Installation, Transport oder Öffnen von Gehäusen dieses Produkts oder angeschlossenen Einheiten gelten.

Kabel anschließen

1. Alle Geräte ausschalten und Netzstecker ziehen.
2. Zuerst alle Kabel an Einheiten anschließen.
3. Signalkabel an Anschlußbuchsen anschließen.
4. Netzstecker an Steckdose anschließen.
5. Gerät einschalten.

Kabel lösen

1. Alle Geräte ausschalten.
2. Zuerst Netzstecker von Steckdose lösen.
3. Signalkabel von Anschlußbuchsen lösen.
4. Alle Kabel von Einheiten lösen.

achtung:
Eine verbrauchte Batterie nur durch eine Batterie mit der IBM Teilenummer 33F8354 oder durch eine vom Hersteller empfohlene Batterie ersetzen. Wenn Ihr System ein Modul mit einer Lithium-Batterie enthält, ersetzen Sie es immer mit dem selben Modultyp vom selben Hersteller. Die Batterie enthält Lithium und kann bei unsachgemäßer Verwendung, Handhabung oder Entsorgung explodieren.

Die Batterie nicht

- **mit Wasser in Berührung bringen.**
- **über 100 C erhitzen.**
- **reparieren oder zerlegen.**

Die örtlichen Bestimmungen für die Entsorgung von Sondermüll beachten.

achtung:
Wenn ein CD-ROM-Laufwerk installiert ist, beachten Sie folgendes. Steuer- und Einstellelemente sowie Verfahren nur entsprechend den Anweisungen im vorliegenden Handbuch einsetzen. Andernfalls kann gefährliche Laserstrahlung auftreten.

Das Entfernen der Abdeckungen des CD-ROM-Laufwerks kann zu gefährlicher Laserstrahlung führen. Es befinden sich keine Teile innerhalb des CD-ROM-Laufwerks, die vom Benutzer gewartet werden müssen. Die Verkleidung des CD-ROM-Laufwerks nicht öffnen.

VORSICHT

Manche CD-ROM-Laufwerke enthalten eine eingebaute Laserdiode der Klasse 3A oder 3B. Die nachfolgend aufgeführten Punkte beachten.

Laserstrahlung bei geöffneter Tür. Niemals direkt in den Laserstrahl sehen, nicht direkt mit optischen Instrumenten betrachten und den Strahlungsbereich meiden.

≥32 kg ≥55 kg

achtung:
Beim Anheben der Maschine die vorgeschriebenen Sicherheitsbestimmungen beachten.

achtung:
An Netz-, Telefon- und Datenleitungen können gefährliche elektrische Spannungen anliegen. Um eine Gefährdung des Benutzers oder Beschädigung des Geräts zu vermeiden, ist der Server auszuschalten. Die Verbindung zu den angeschlossenen Netzkabeln, Telekommunikationssystemen, Netzwerken und Modems ist vor dem Öffnen des Servergehäuses zu unterbrechen (sofern in Installations- und Konfigurationsanweisungen nicht anders angegeben).

PERICOLO

Per evitare il pericolo di scosse elettriche durante i temporali, non collegare o scollegare cavi, non effettuare l'installazione, la manutenzione o la riconfigurazione di questo prodotto.

Per evitare il pericolo di scosse elettriche:

- **collegare il cavo di alimentazione ad una presa elettrica correttamente cablata e munita di terra di sicurezza;**
- **collegare qualsiasi apparecchiatura collegata a questo prodotto ad una presa elettrica correttamente cablata e munita di terra di sicurezza.**

Quando possibile, collegare o scollegare i cavi di segnale con una sola mano per evitare il rischio di scosse derivanti dal contatto con due superfici a diverso potenziale elettrico.

La corrente elettrica circolante nei cavi di alimentazione, del telefono e di segnale è pericolosa. Per evitare scosse elettriche, collegare e scollegare i cavi come descritto quando si effettuano l'installazione, la rimozione o l'apertura dei coperchi di questo prodotto o durante il collegamento delle unità.

Per collegare	**Per scollegare**
1. SPEGNERE tutti i dispositivi.	1. SPEGNERE tutti i dispositivi.
2. Collegare prima tutti i cavi alle unità.	2. Rimuovere prima il(i) cavo(i) di alimentazione dalla presa elettrica.
3. Collegare i cavi di segnale alle prese.	3. Rimuovere i cavi di segnale dalle prese.
4. Collegare il(i) cavo(i) di alimentazione alla presa elettrica.	4. Rimuovere tutti i cavi dalle unità.
5. ACCENDERE le unità.	

ATTENZIONE:
Quando si sostituisce la batteria, utilizzare solo una batteria IBM o batterie dello stesso tipo o di tipo equivalente consigliate dal produttore. Se il sistema di cui si dispone è provvisto di un modulo contenente una batteria al litio, sostituire tale batteria solo con un tipo di modulo uguale a quello fornito dal produttore. La batteria contiene litio e può esplodere se utilizzata, maneggiata o smaltita impropriamente.

Evitare di:

- **Gettarla o immergerla in acqua**
- **Riscaldarla ad una temperatura superiore ai 100° C**
- **Cercare di ripararla o smaltirla**

Smaltire secondo la normativa in vigore (D.Lgs 22 del 5/2/97) e successive disposizioni nazionali e locali.

ATTENZIONE:
Quando è installata un'unità CD-ROM, notare quanto segue:

L'utilizzo di controlli, regolazioni o l'esecuzione di procedure non descritti nel presente manuale possono provocare l'esposizione a radiazioni pericolose.

L'apertura di un'unità CD-ROM può determinare l'esposizione a radiazioni laser pericolose. All'interno dell'unità CD-ROM non vi sono parti su cui effettuare l'assistenza tecnica. Non rimuovere i coperchi dell'unità CD-ROM.

PERICOLO

Alcune unità CD-ROM contengono all'interno un diodo laser di Classe 3A o Classe 3B. Prestare attenzione a quanto segue:

Aprendo l'unità vengono emesse radiazioni laser. Non fissare il fascio, non guardarlo direttamente con strumenti ottici ed evitare l'esposizione diretta al fascio.

≥32 kg ≥55 kg

ATTENZIONE:
Durante il sollevamento della macchina seguire delle norme di di sicurezza.

ATTENZIONE:
La corrente circolante nei cavi di alimentazione, del telefono e di segnale è pericolosa. Per evitare situazioni pericolose per le persone o danneggiamenti all'apparecchiatura, scollegare i cavi di alimentazione, i sistemi di telecomunicazioni, le reti e ed i modem prima di aprire i coperchi del servente se non diversamente indicato nelle procedure di installazione e configurazione.

경고문 1

위험

전기 충격을 피하려면 날씨가 나쁠 때(예: 눈 또는 비가 오거나 천둥 번개가 칠 때)는 케이블을 연결하거나 끊지 않도록 하고 이 제품의 설치, 유지보수 또는 재구성 등의 작업을 수행하지 않도록 하십시오.

전기 충격을 피하려면 다음과 같아야 합니다.

– 고압선은 적절한 배선 및 접지 상태의 콘센트로 연결되어야 합니다.

– 이 제품이 접속될 모든 장비도 적절한 배서 상태의 콘센트로 연결되어야 합니다.

다른 전위를 가진 두 표면을 만졌을 때 발생할 수 있는 전기 충격을 피하려면 한 손으로 신호선을 연결하거나 끊으십시오.

전원, 전화 및 통신 케이블로부터 흘러 나오는 전류는 위험합니다. 전기 충격을 피하려면 이 제품이나 접속 장치를 설치, 이동 및 덮개를 열 때 다음 설명에 따라 케이블을 연결하고 끊도록 하십시오.

연결하려면	연결해제하려면
1. 모든 스위치를 켠다.	1. 모든 스위치를 끈다.
2. 먼저 모든 케이블을 장치에 연결한다.	2. 먼저 모든 케이블을 장치에 제거한다.
3. 신호선을 콘센트에 연결한다.	3. 신호선을 콘센트에서 제거한다.
4. 전원을 콘센트에 연결한다.	4. 장치에서 모든 케이블을 제거한다.
5. 장치 스위치를 켠다.	

경고문 2

주의:

배터리를 교체할 때는 IBM 부품 번호 &PN. 또는 제조업체에서 추천하는 동등한 유형의 배터리를 사용하십시오. 시스템에 리튬 배터리를 포함하는 모듈이 있으면 이것은 동일한 제조업체에서 생산된 동일한 모듈 유형으로만 교체하십시오. 배터리에는 리튬이 포함되어 있으므로 제대로 사용, 처리 또는 처분하지 않으면 폭발할 수 있습니다.

다음을 주의하십시오.

– 던지거나 물에 담그지 않도록 하십시오.
– 100°C(212°F) 이상으로 가열하지 않도록 하십시오.
– 수리하거나 분해하지 않도록 하십시오.

지역 법령이나 규정의 요구에 따라 배터리를 처분하십시오.

경고문 3

주의:

CD-ROM 드라이브가 설치되어 있으면 다음 사항을 명심하십시오.

여기에서 지정하지 않은 방식으로 CD-ROM 드라이브를 제어 또는 조절하거나 다른 절차로 사용하면 위험한 방사능 노출이 발생할 수 있습니다.

CD-ROM 드라이브의 덮개를 제거하면 위험한 레이저 방사능이 노출될 수 있습니다. CD-ROM 드라이브 내에는 정비할 수 있는 부품이 없습니다. CD-ROM 드라이브 덮개를 제거하지 않도록 하십시오.

경고문 4

위험

일부 CD-ROM 드라이브에는 클래스 3A 또는 3B 레이저 2극 진공관(다이오드)이 들어 있습니다. 다음 사항을 명심하십시오.

열면 레이저 방사능이 노출됩니다. 광선을 주시하거나 광학 기계를 직접 쳐다보지 않도록 하고 광선에 노출되지 않도록 하십시오.

경고문 5

32kg(70.5 파운드)

55kg(121.2 파운드)

주의:

기계를 들 때는 안전하게 들어 올리십시오.

경고문 10

주의:

전원, 전화 및 통신 케이블로부터 흘러 나오는 전류는 위험합니다. 설치 및 구성 절차에 다른 지시가 없으면, 다치거나 장비 손상이 생기지 않게 하기 위해 서버 덮개를 열기 전에 접속된 전선, 원격 통신 시스템, 네트워크 및 모뎀의 연결을 끊으십시오.

PELIGRO

Para evitar una posible descarga eléctrica, no conecte ni desconecte los cables ni lleve a cabo ninguna operación de instalación, de mantenimiento o de reconfiguración de este producto durante una tormenta eléctrica.

Para evitar una posible descarga:

- **El cable de alimentación debe conectarse a un receptáculo con una instalación eléctrica correcta y con toma de tierra.**
- **Los aparatos a los que se conecte este producto también deben estar conectados a receptáculos con la debida instalación eléctrica.**

Cuando sea posible, utilice una sola mano para conectar o desconectar los cables de señal a fin de evitar una posible descarga al tocar dos superficies con distinto potencial eléctrico.

La corriente eléctrica de los cables de comunicaciones, teléfono y alimentación puede resultar peligrosa. Para evitar una posible descarga, siga las indicaciones de conexión y desconexión de los cables siempre que tenga que instalar, mover o abrir las cubiertas de este producto o de los dispositivos acoplados.

Instrucciones de conexión	**Instrucciones de desconexión**
1. Apague todos los componentes (OFF). 2. En primer lugar, conecte todos los cables a los dispositivos. 3. Conecte los cables de señal a los receptáculos. 4. Conecte los cables de alimentación a las tomas. 5. Encienda el dispositivo (ON).	1. Encienda todos los componentes (ON). 2. En primer lugar, retire los cables de alimentación de las tomas. 3. Retire los cables de señal de los receptáculos. 4. Retire todos los cables de los dispositivos.

percaución:
Al cambiar la batería, utilice únicamente la batería IBM Número de pieza 33F8354 o un tipo de batería equivalente recomendado por el fabricante. Si el sistema tiene un módulo que contiene una batería de litio, sustitúyalo únicamente por el mismo tipo de módulo del mismo fabricante. La batería contiene litio y puede explotar si no se utiliza, manipula o desecha correctamente.

Lo que no debe hacer

- **Tirar o sumergir el producto en agua.**
- **Exponer el producto a una temperatura superior a 100°C.**
- **Reparar o desmontar el producto.**

Cuando quiera desechar la batería, siga las disposiciones y reglamentaciones locales.

percaución:
Cuando instale una unidad de CD-ROM, tenga en cuenta la siguiente información.

Si se llevan a cabo controles o ajustes o se utilizan métodos que no se atengan a lo aquí especificado, se puede producir una exposición peligrosa a las radiaciones.

Si se retiran las cubiertas de la unidad de CD-ROM, se puede producir una peligrosa exposición a radiaciones de láser. Dentro de la unidad de CD-ROM no existen piezas reparables. No retire las cubiertas de la unidad de CD-ROM.

PELIGRO

Algunas unidades de CD-ROM tienen incorporado un diodo de láser de Clase 3A o de Clase 3B Tenga en cuenta la siguiente información.

Cuando la unidad está abierta se generan emisiones de rayos láser. No dirija la mirada al haz, no lo observe directamente con instrumentos ópticos y evite la exposición directa.

≥32 kg ≥55 kg

percaución:
Alce la máquina con cuidado; el sobrepeso podría causar alguna lesión.

percaución:
La corriente eléctrica de los cables de comunicaciones, de teléfono y de alimentación puede resultar peligrosa. Para evitar posibles lesiones o daños del aparato, desconecte los cables de alimentación, los sistemas de telecomunicaciones, las redes y los módems antes de abrir las cubiertas del servidor, salvo que se indique lo contrario en las instrucciones de las operaciones de instalación y configuración.

Appendix B. Specifications 6275

The model specifications was determined in controlled acoustical environments according to procedures specified by the American National Standards Institute (ANSI) S12.10 and ISO 7779, and are reported in accordance with ISO 9296. Actual sound pressure levels in you location might differ from the average values stated because of room reflections and other nearby noise sources. The declared sound power levels indicate an upper limit, below which a large proportion of machines will operate.

Feature	Description
Size	Depth: 450 mm (17.7 in.) Height: 128 mm (5.0 in.) Width: 450 mm (17.7 in.)
Weight	Minimum: 9.9 kg (22.0 lb) Maximum: 11.3 kg (25.0 lb)(Note 1)
Environment	Air temperature: • System on: 10° to 32°C (50° to 90°F) • System off: 10° to 43°C (50° to 110°F) Humidity: • System on: 8% to 80% • System off: 8% to 80% Maximum altitude: 2134 m(7000 ft)
Heat Output	Approximate heat output in BTUs per hour: • Minimum: 245 BTU (70 watts) • Maximum: 700 BTU (204 watts)(Note 2)
Electrical Input	Sine-wave input (50 to 60 Hz) required. Low range input voltage: • Minimum: 90 V ac • Maximum: 137 V ac High range input voltage: • Minimum: 180 V ac • Maximum: 265 V ac Input kVA (approximately): • Minimum: 0.08 kVA • Maximum: 0.52 kVA
Airflow	Approximately 0.56 cubic meters/minute (20 CFM)

Feature	Description
Acoustical Noise Emission Values	Average sound pressure levels: At operator position: • 37 dB operating • 34 dB idle At bystander position (1 meter): • 32 dB operating • 29 dB idle Declared (upper limit) sound power levels: • 4.9 bels operating • 4.5 bels idle

Notes:

1. Maximum configuration weight depends on options installed. Figures above are system fully populated with options.
2. Maximum power and heat specifications are based on the 145-watt maximum capacity of the system power supply.
3. For additional information, see the *ISO Supplier's Declaration* available from IBM.

Appendix C. Parameter Worksheet

The worksheet in this appendix lists the MOSS-E parameters needed during the NNP installation.
When applicable, default parameter values are included (in parentheses) in the tables.

Definition of Service LAN IP Addresses

For details, refer to chapter 'Service LAN IP Addresses (MOSS-E)' in *3745 Communication Controller Models A and 3746 Models 900 and 950: Planning Guide*, GA33-0457.

Table C-1. For the Service Processor	
IP address	(192.9.200.1)
Subnet mask	(255.255.255.240)

Table C-2. For the Network Node Processor-A	
IP address	(192.9.200.2)
Subnet mask	(255.255.255.240)

Table C-3. For the Network Node Processor-B	
IP address	(192.9.200.3)
Subnet mask	(255.255.255.240)

Table C-4. For the 3746 NN	
IP address	(192.9.200.4)
Subnet mask	(255.255.255.240)

Appendix D. Controller Expansion Component Locations

If you want more information about:	Refer to
• Positioning the units in the front side of the controller expansion	• Figure D-1 on page D-2
• Positioning the units in the rear side of the controller expansion	• Figure D-2 on page D-3
• Installing captive nuts and brackets (for 7585 or 6275)	• Figure D-3 on page D-4
• Installing captive nuts for LCBs	• Figure D-4 on page D-5
• Installing captive nuts for 8229s	• Figure D-5 on page D-6
• Installing captive nuts and brackets for MAE	• Figure D-6 on page D-7
• Installing brackets for processor type 7585 or 6275	• Figure D-7 on page D-8
• Example of units installation (SP & NNP type 6275)	• Figure D-8 on page D-9
• Example of units installation (SP & NNP type 6275 + MAE)	• Figure D-9 on page D-9
• Example of units installation (SP type 7585 NNP type 6275)	• Figure D-10 on page D-10
• Example of units installation (SP type 7585 NNP type 6275 + MAE)	• Figure D-11 on page D-10
• Example of units installation (SP Type 3172 NNP type 6275)	• Figure D-12 on page D-11
• Connecting the units to the ac Outlet Distribution Box.	• Figure D-13 on page D-11

Use this drawing to setup the **units** on the **front side** of the controller expansion, for the units that can be installed on the rear, refer to Figure D-2 on page D-3.

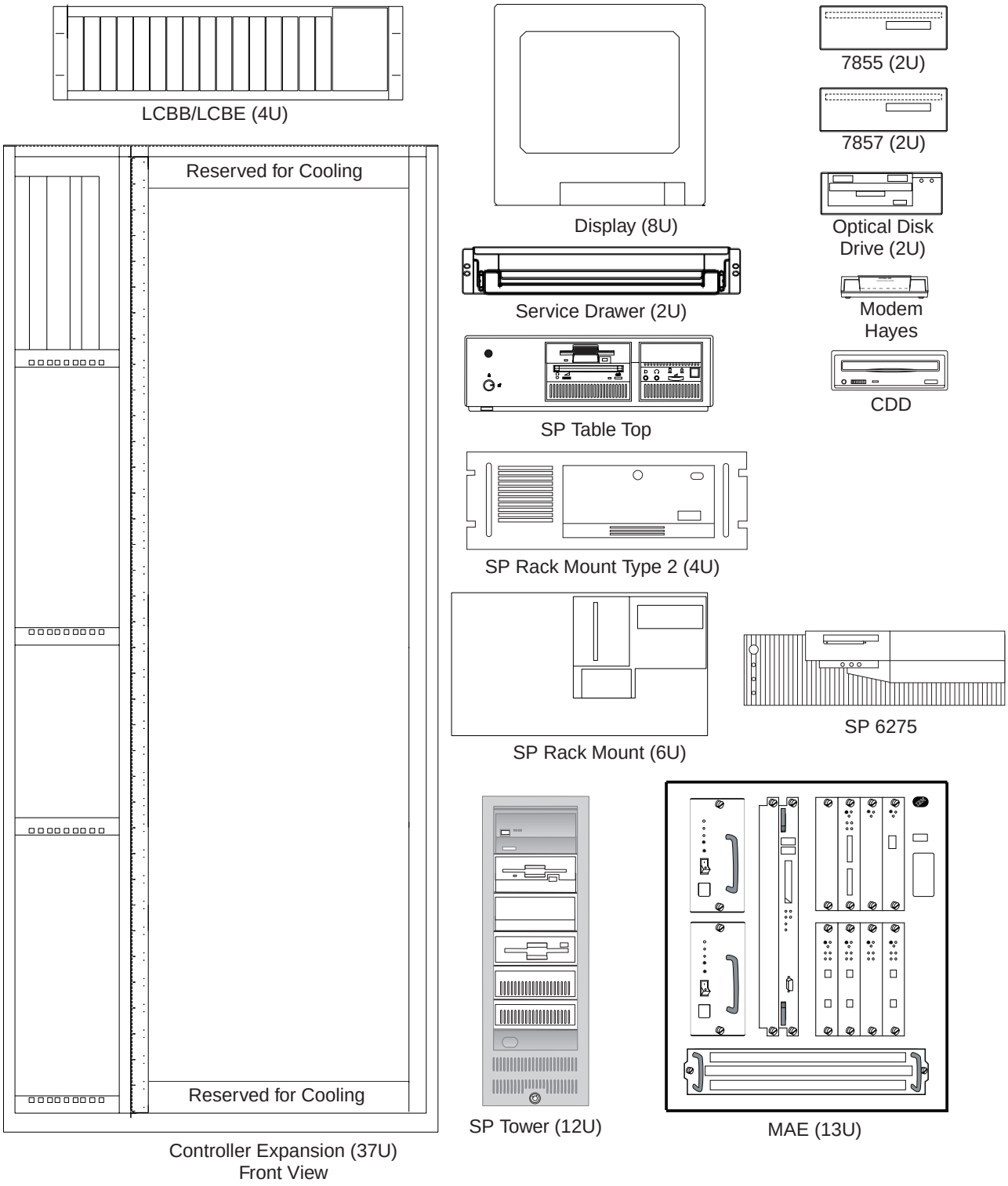


Figure D-1. Controller Expansion Inventory Chart (Front View).

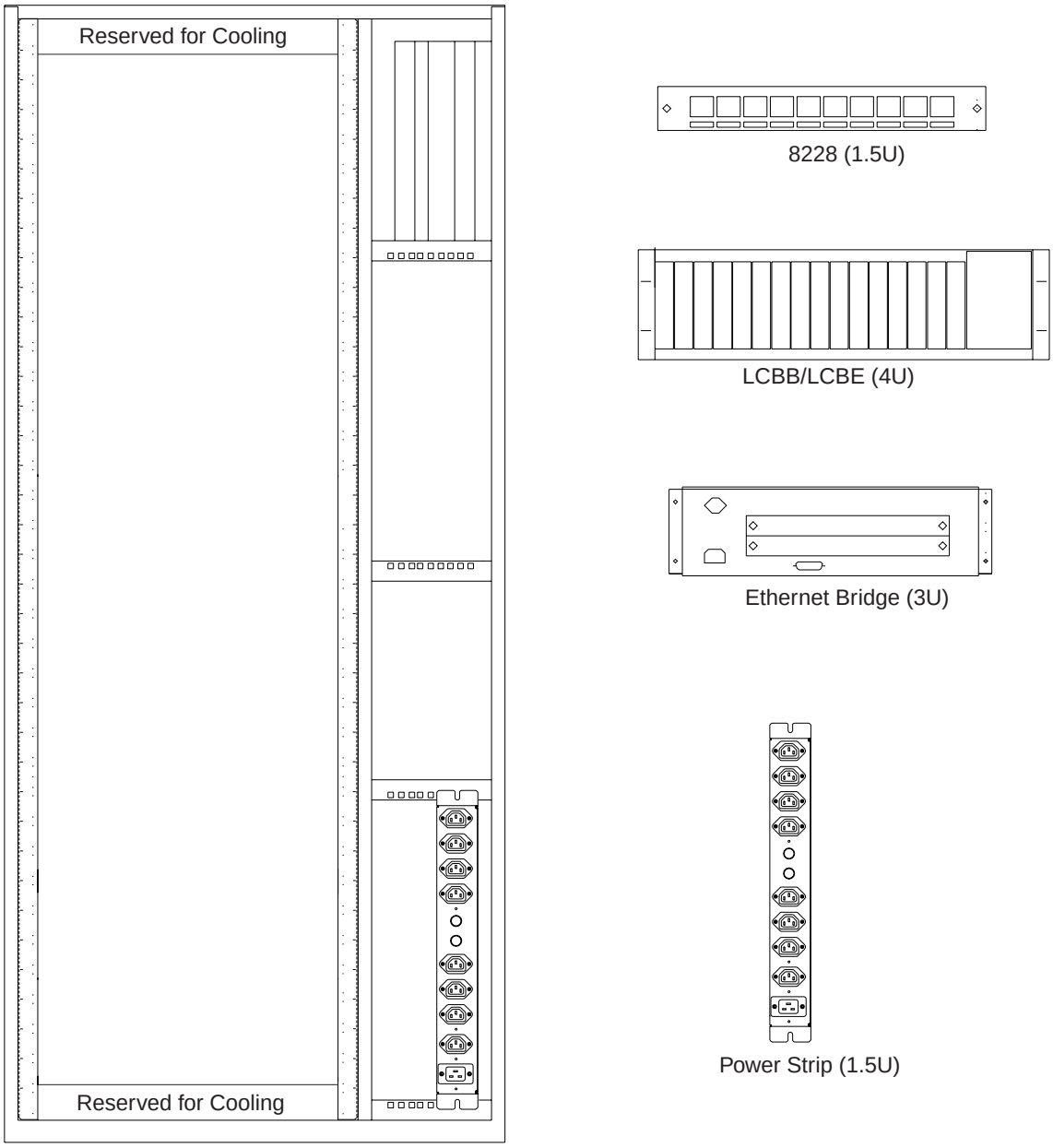


Figure D-2. Controller Expansion Inventory Chart (Rear View).

Notes:

1. The units dimensions are scaled to the size of the controller expansion diagram. The values represent the size used to setup the units in the controller expansion, it is not the size of the units themself.
2. The attachment holes along each side of the controller expansion are divided into units of measure called EIA units. Each EIA unit (U) equals 44.5 millimeters (1.75 inches).
3. The controller expansion is 37 U high but only 35 are usable, one U must be reserved at the top and at the bottom for proper cooling.

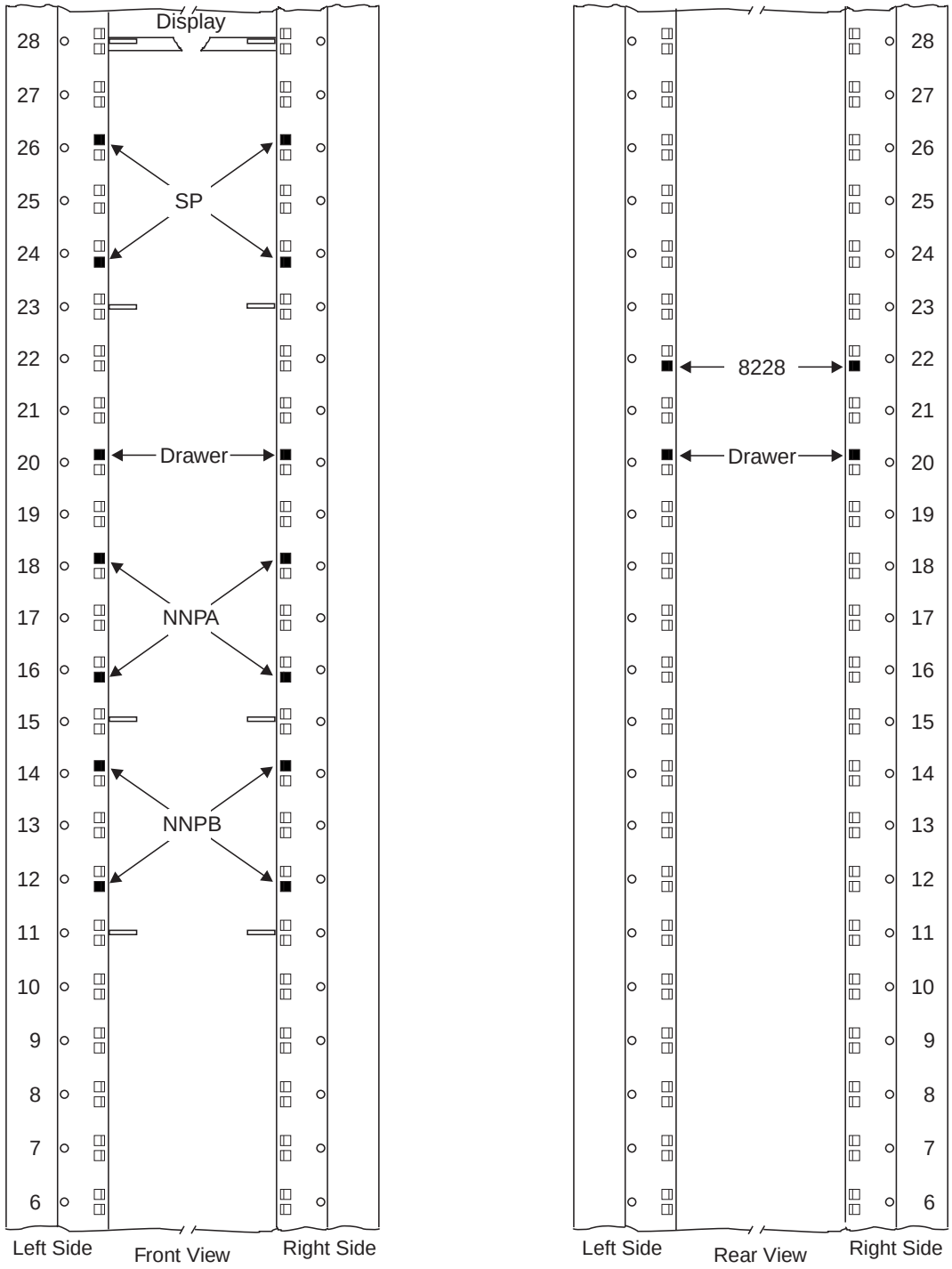


Figure D-3. Installing Captive Nuts and Brackets for the Display, Drawer, SP and NNP Type 7585 or 6275

Note: This symbol '■' identify the locations to install the captive nuts.

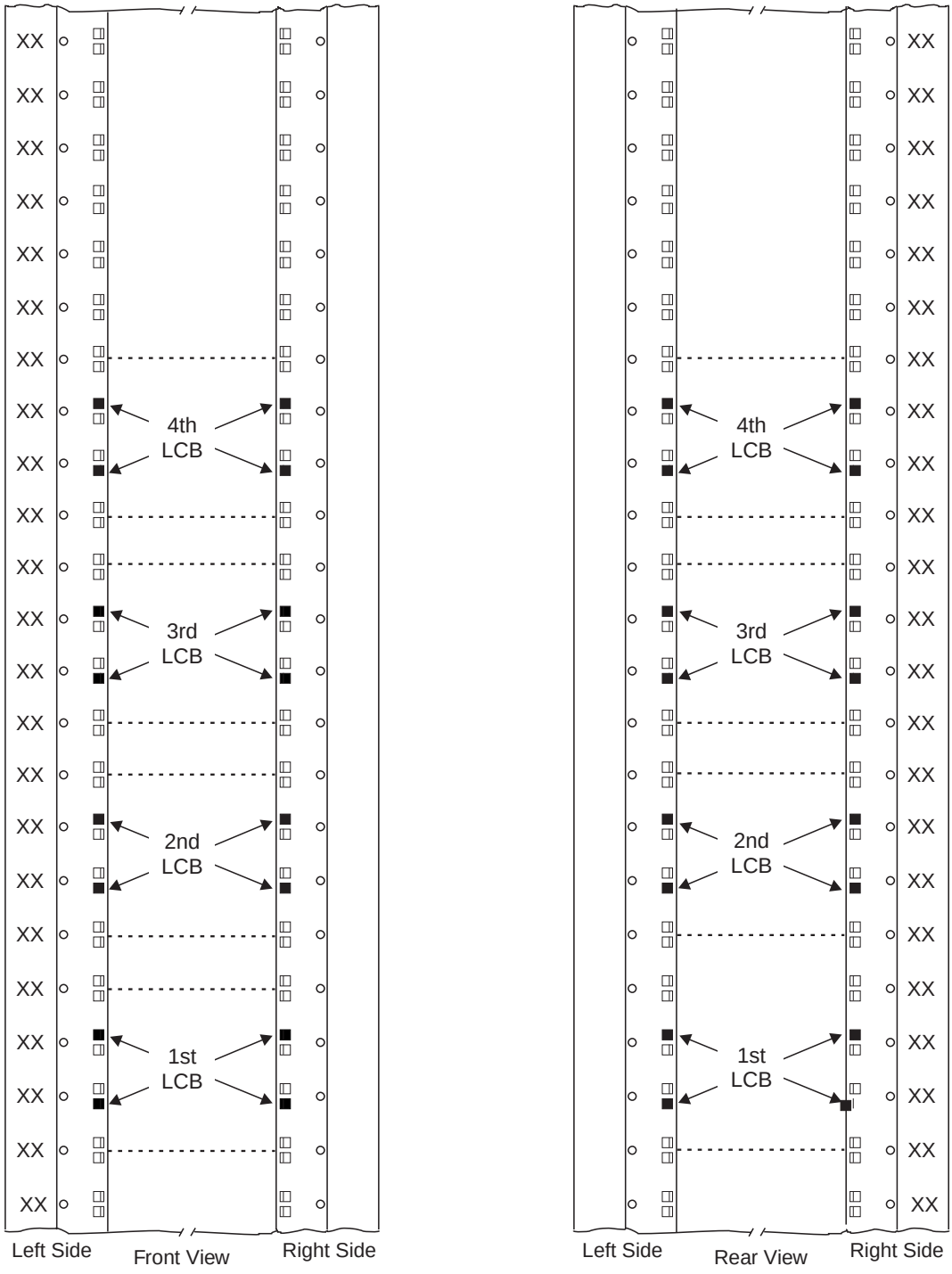


Figure D-4. Installing Captive Nuts for LCBs

Note: This symbol '■' identify the locations to install the captive nuts.

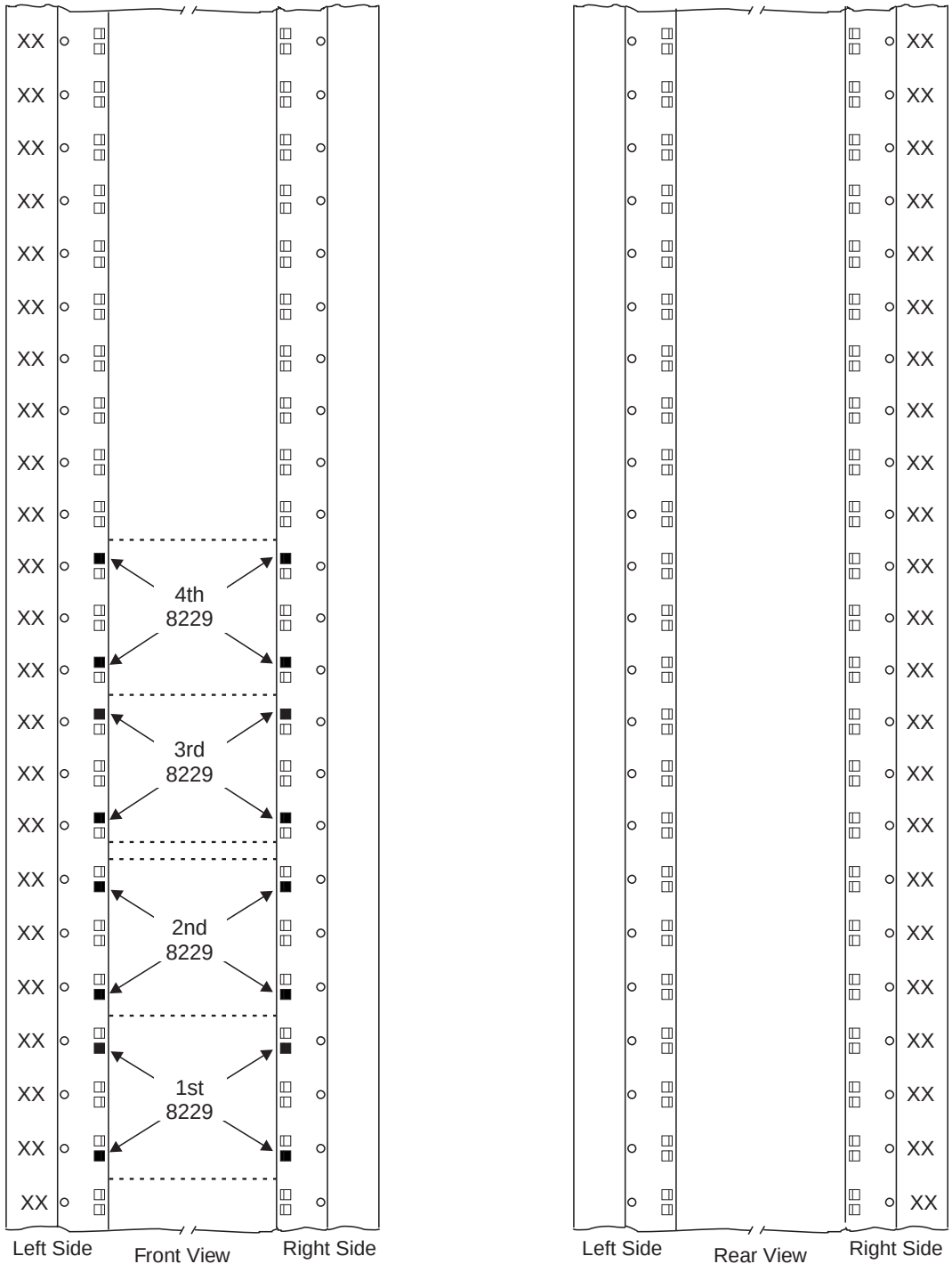


Figure D-5. Installing Captive Nuts for 8229s

Note: This symbol '■' identify the locations to install the captive nuts.

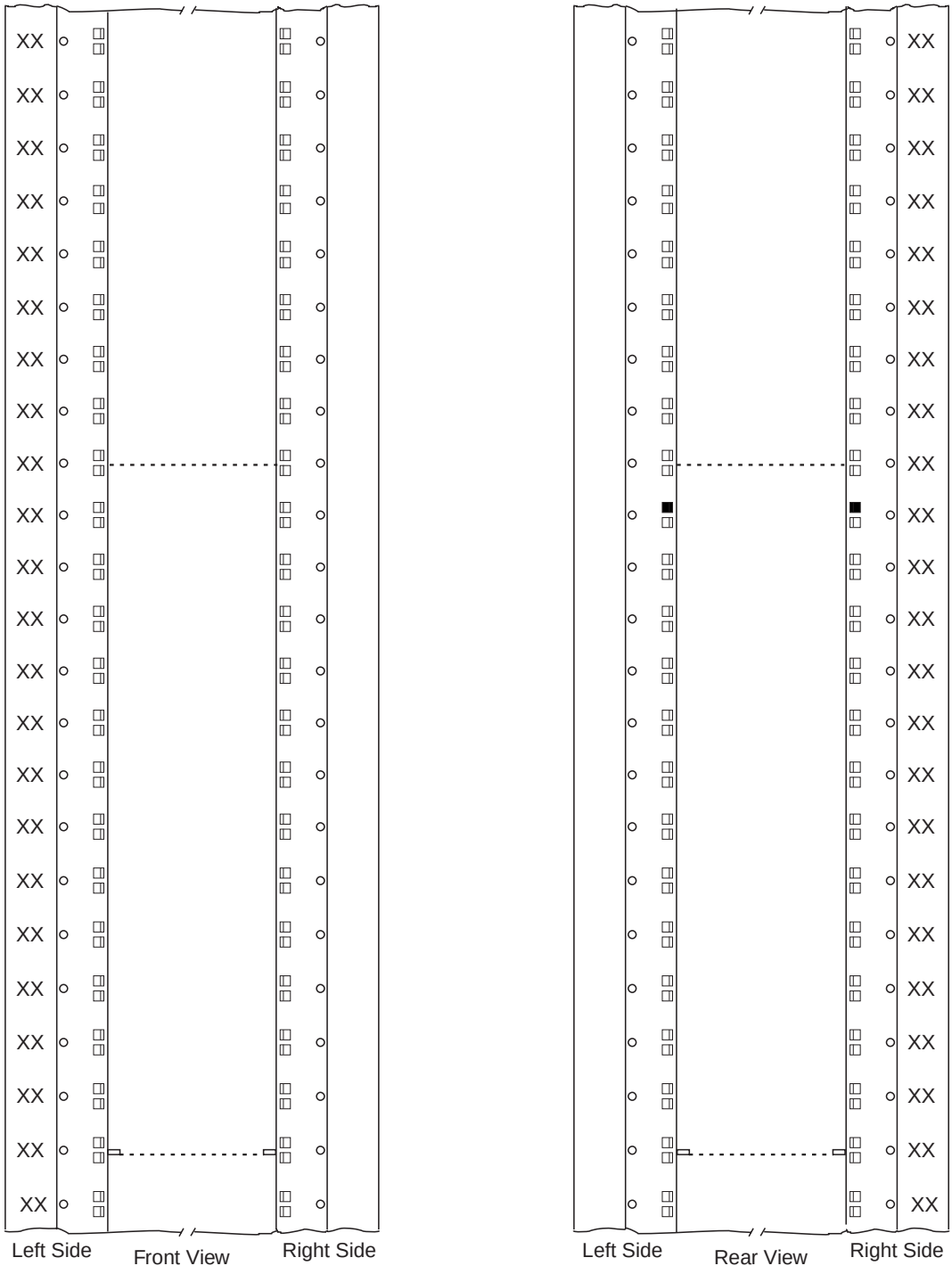


Figure D-6. Installing Captive Nuts and Brackets for MAE

Note: This symbol '■' identify the locations to install the captive nuts.

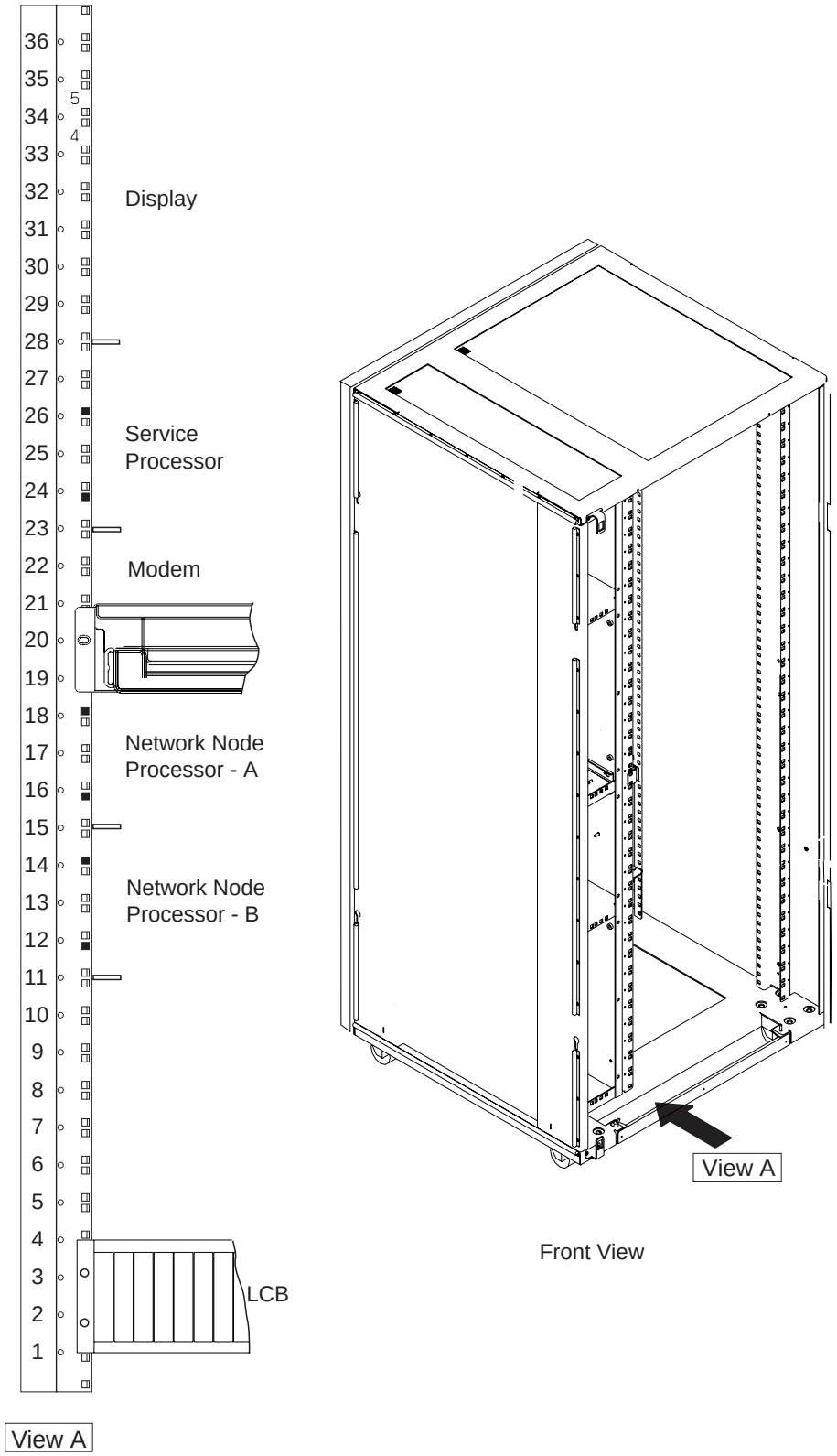


Figure D-7. Installing Brackets (PN 58G5752) for Processor Type 7585 or 6275

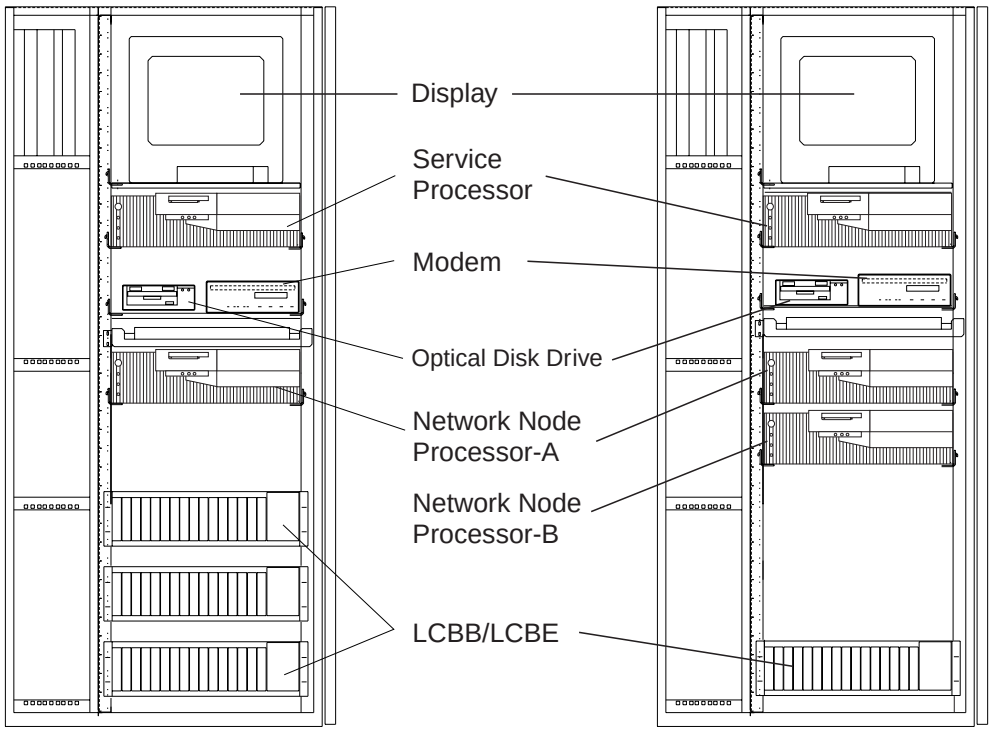


Figure D-8. Units Installation in the Controller Expansion (SP and NNP Type 6275)

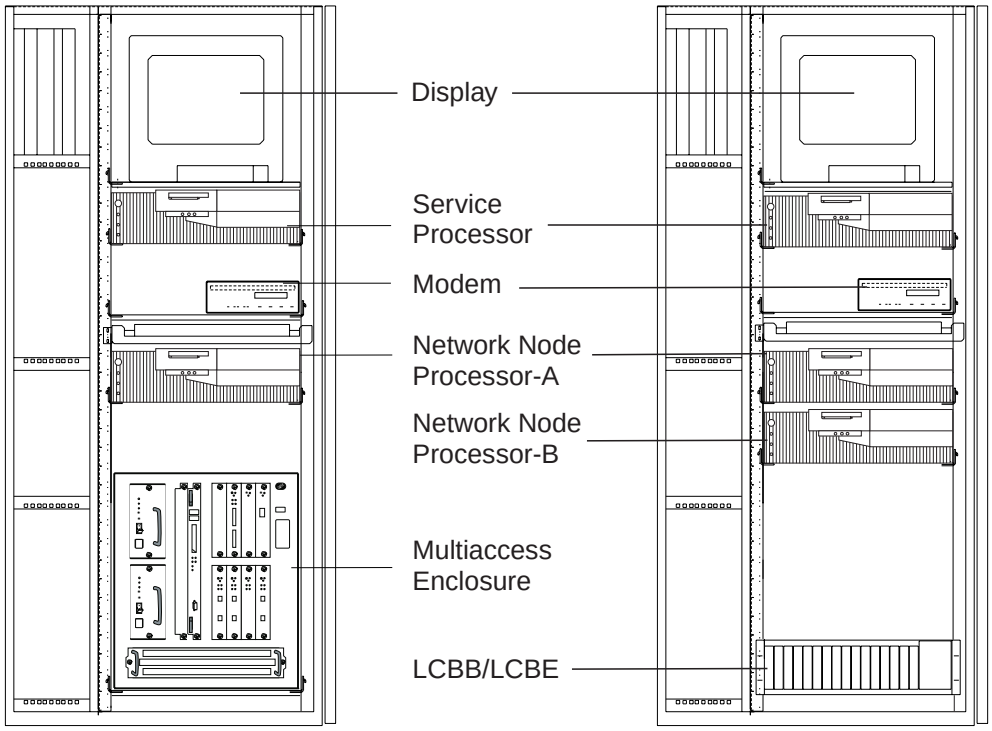


Figure D-9. Units Installation in the Controller Expansion (SP and NNP Type 6275 + MAE)

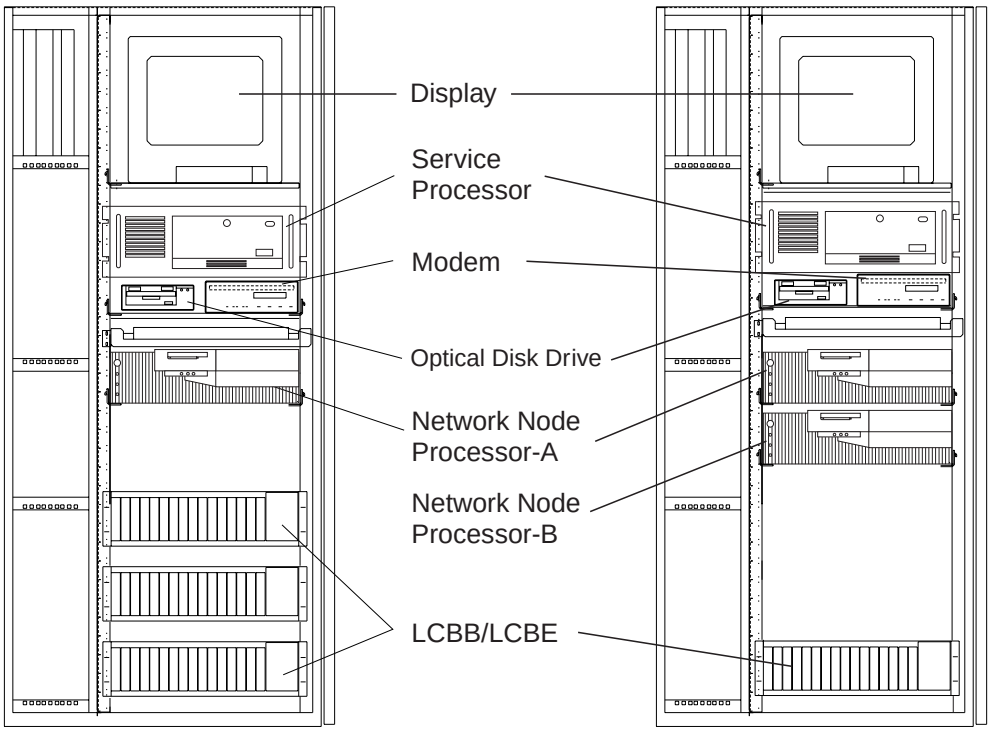


Figure D-10. Units Installation in the Controller Expansion (SP Type 7585 NNP Type 6275)

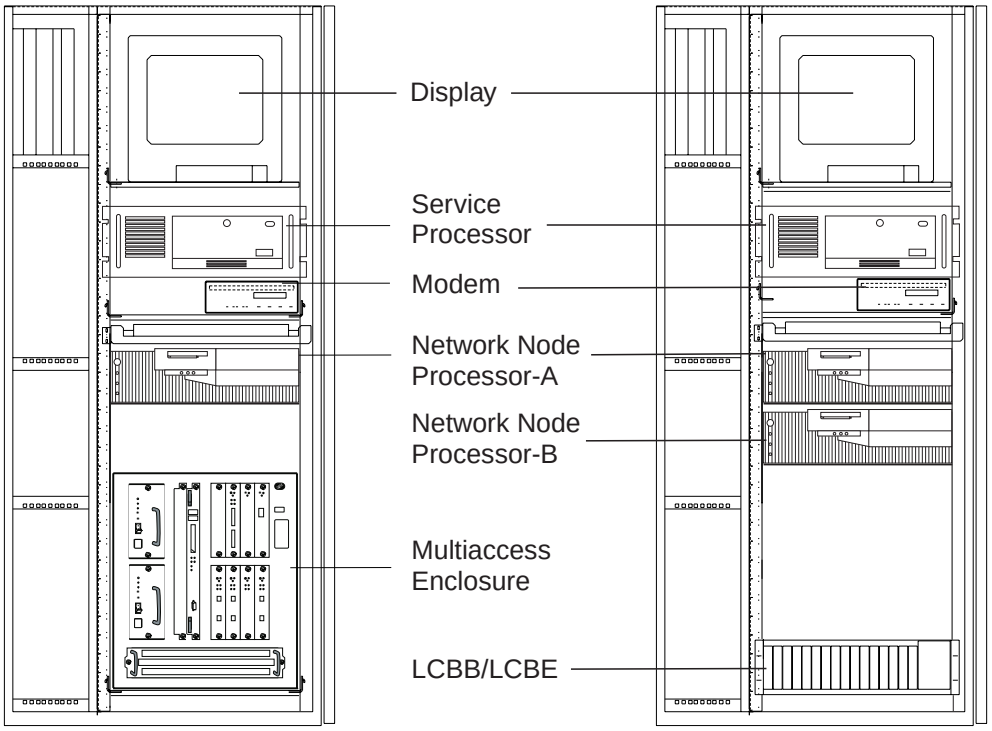


Figure D-11. Units Installation in the Controller Expansion (SP Type 7585 NNP Type 6275 + MAE)

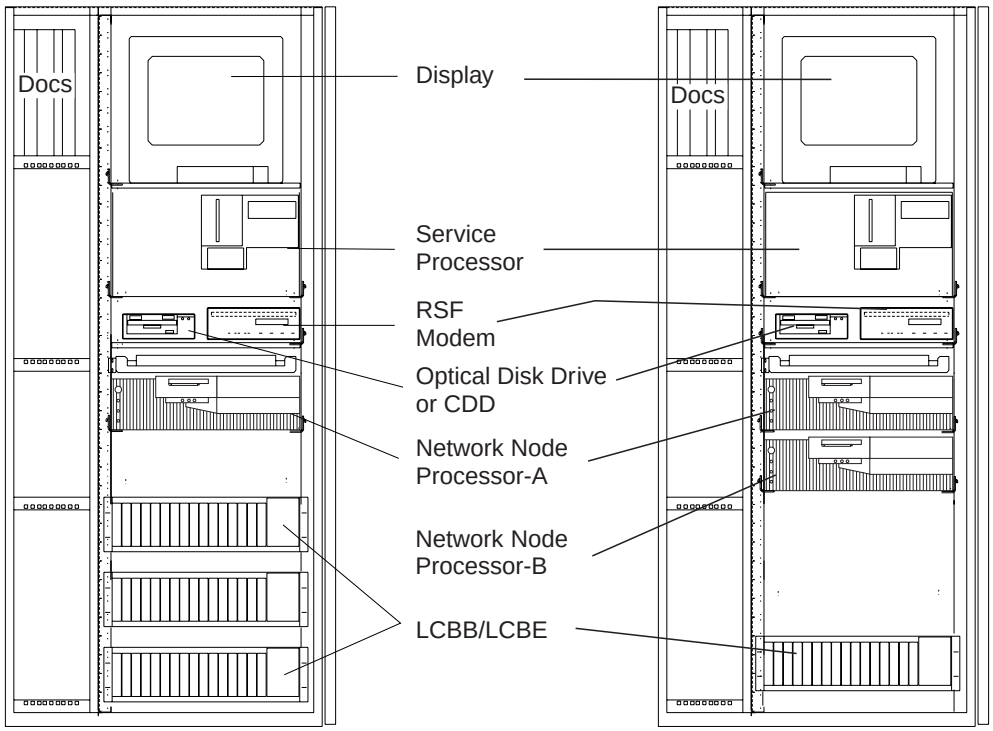


Figure D-12. Units Installation in the Controller Expansion (SP Type 3172 NNP Type 6275)

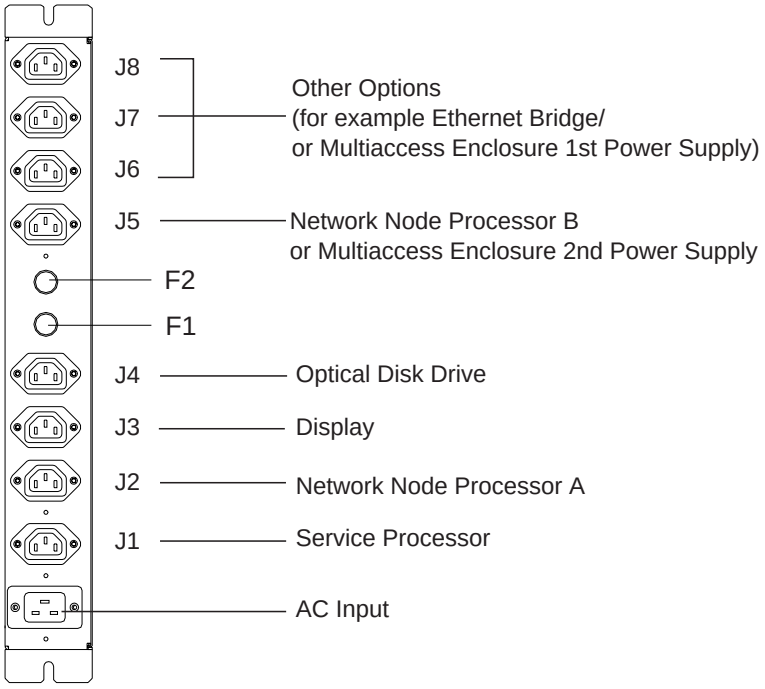
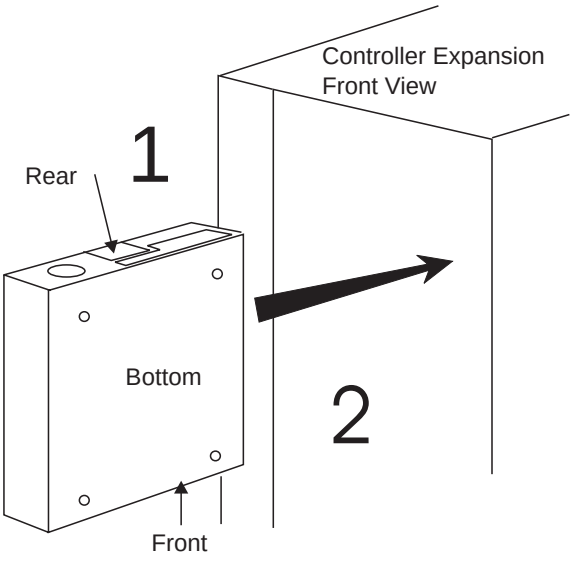


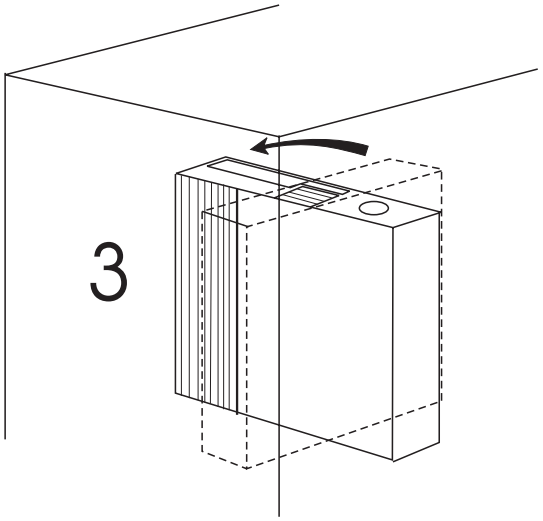
Figure D-13. Connecting the Units to the ac Outlet Distribution Box.

Installing the 6275 into the Controller Expansion

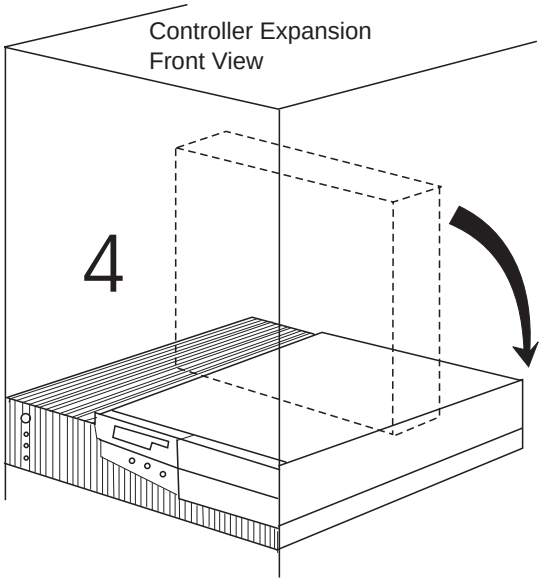
- You need about 50 centimeters (21 inches) free above the brackets where you want to install the 6275. Remove the display, the plate, the service processor, the service drawer, and their associated brackets to satisfy this requirement (if they are already installed).
- Turn the 6275 vertically to have the rear panel on the top (see drawing **1**).
- Insert vertically the 6275 into the controller expansion (**2**).



- When the 6275 is in the middle of the controller expansion, rotate the 6275 90 degrees counterclockwise (see reference **3**).

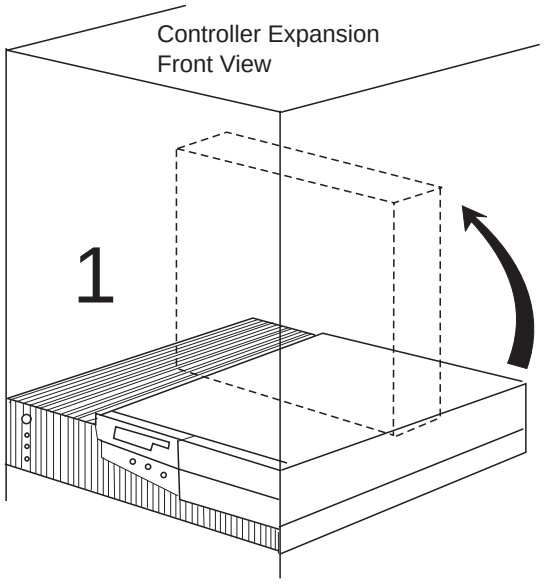


- Rotate the 6275 to have its rear panel near the rear of the controller expansion (**4**).
- Once the 6275 is horizontal in the controller expansion, install it on the brackets.
- Continue the procedure from where you came.

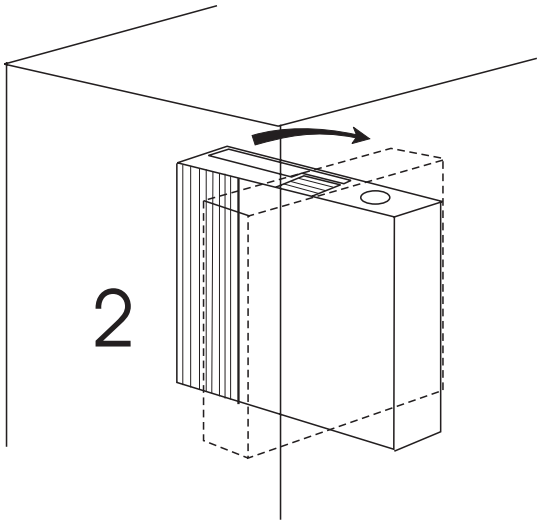


Removing the 6275 From the Controller Expansion

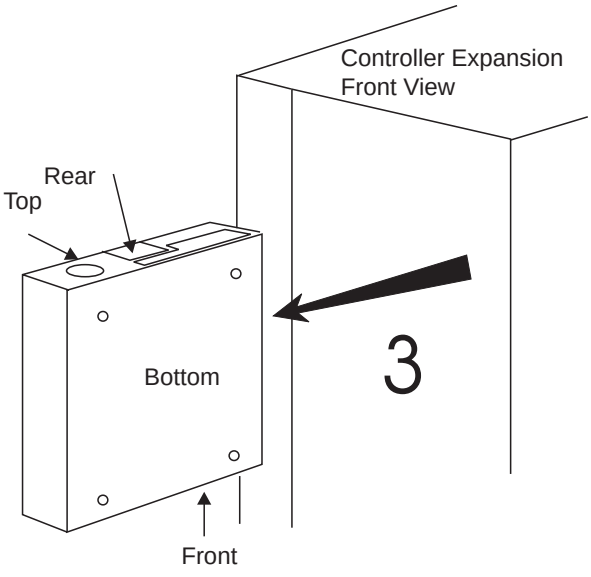
- You need about 50 centimeters (21 inches) free above the brackets where the 6275 is installed. Remove the display, the plate, the service processor, the service drawer, and their associated brackets to satisfy this requirement.
- Inside the controller expansion, rotate the 6275 to have the rear of the 6275 on the top (see reference **1**).
- Once the 6275 is vertical, place it in the middle of the controller expansion.



- Rotate the 6275 90 degrees clockwise (see reference **2**).



- Extract the 6275 from the controller expansion (see reference **3**).
- Continue the procedure from where you came.



Appendix E. Network Node Processor External Cable References

Network Node Processor Cables for the 3746-900

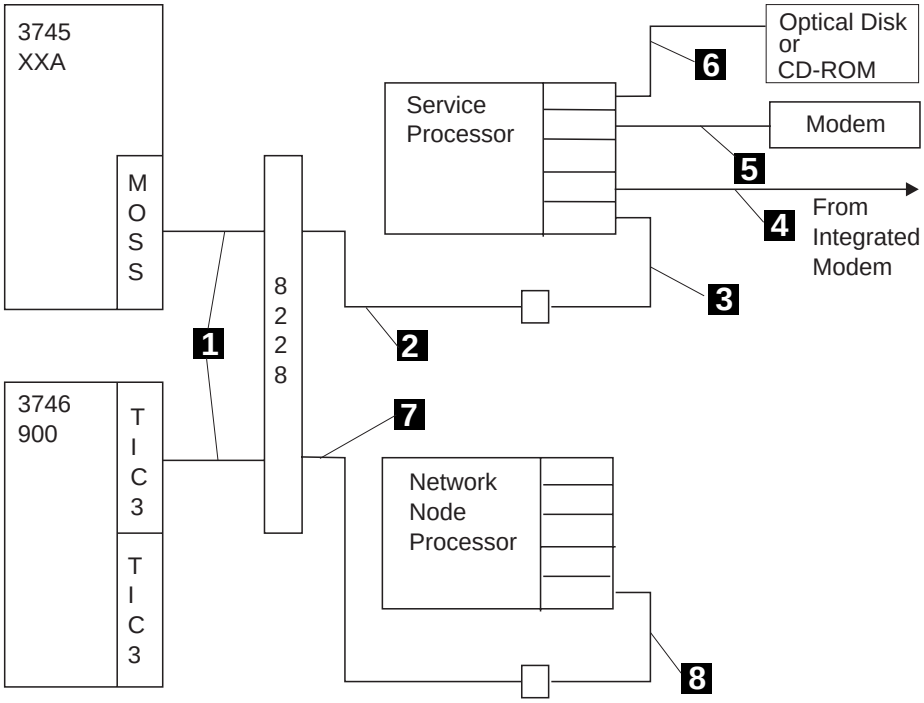


Figure E-1. Network Node Processor Cables for 3746-900

Notes:

1. For cable **1** refer to the appropriate *External Cable References* manual.
2. For cable **2**, **3**, **4**, **5**, and **6** refer to the appropriate *Service Processor Installation and Maintenance* manual.
3. For cable **7** and **8** refer to "Cable from the Network Node Processor Processor to the 8228" on page E-3.

Service Processor and Network Node Processor Cables for the 3746-950

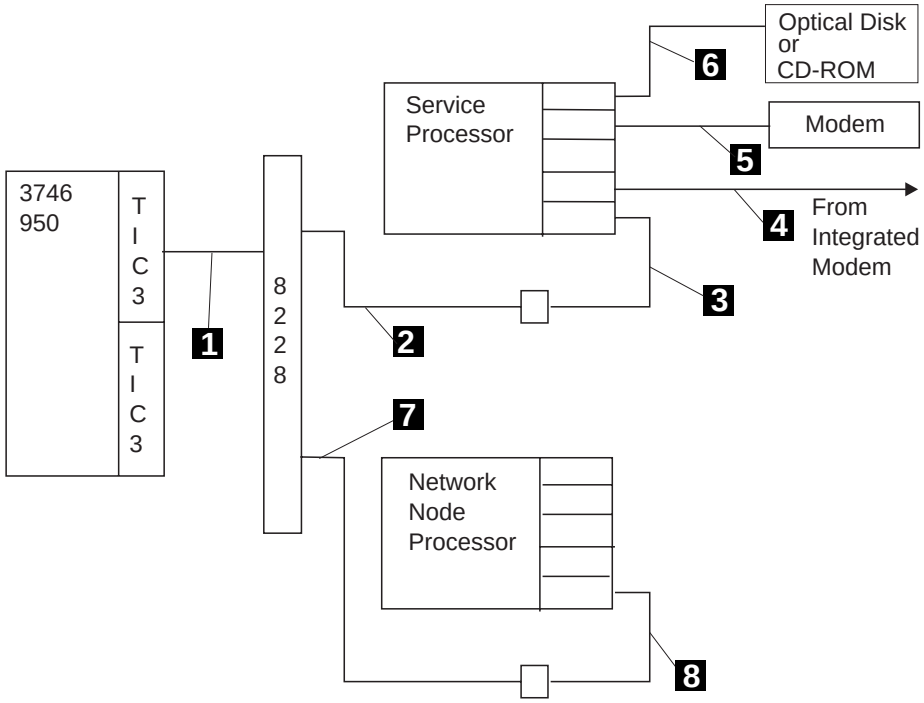


Figure E-2. Service Processor and Network Node Processor Cables for 3746-950

Notes:

1. For cable 1 refer to the appropriate *External Cable References* manual.
2. For cable 2, 3, 4, 5, and 6 refer to the appropriate *Service Processor Installation and Maintenance* manual.
3. For cable 7 and 8 refer to "Cable from the Network Node Processor Processor to the 8228" on page E-3.

Cable from the Network Node Processor Processor to the 8228

Refer to Figure E-1 on page E-1 and Figure E-2 on page E-2 reference **7** for details. This cable is a standard LAN cable.

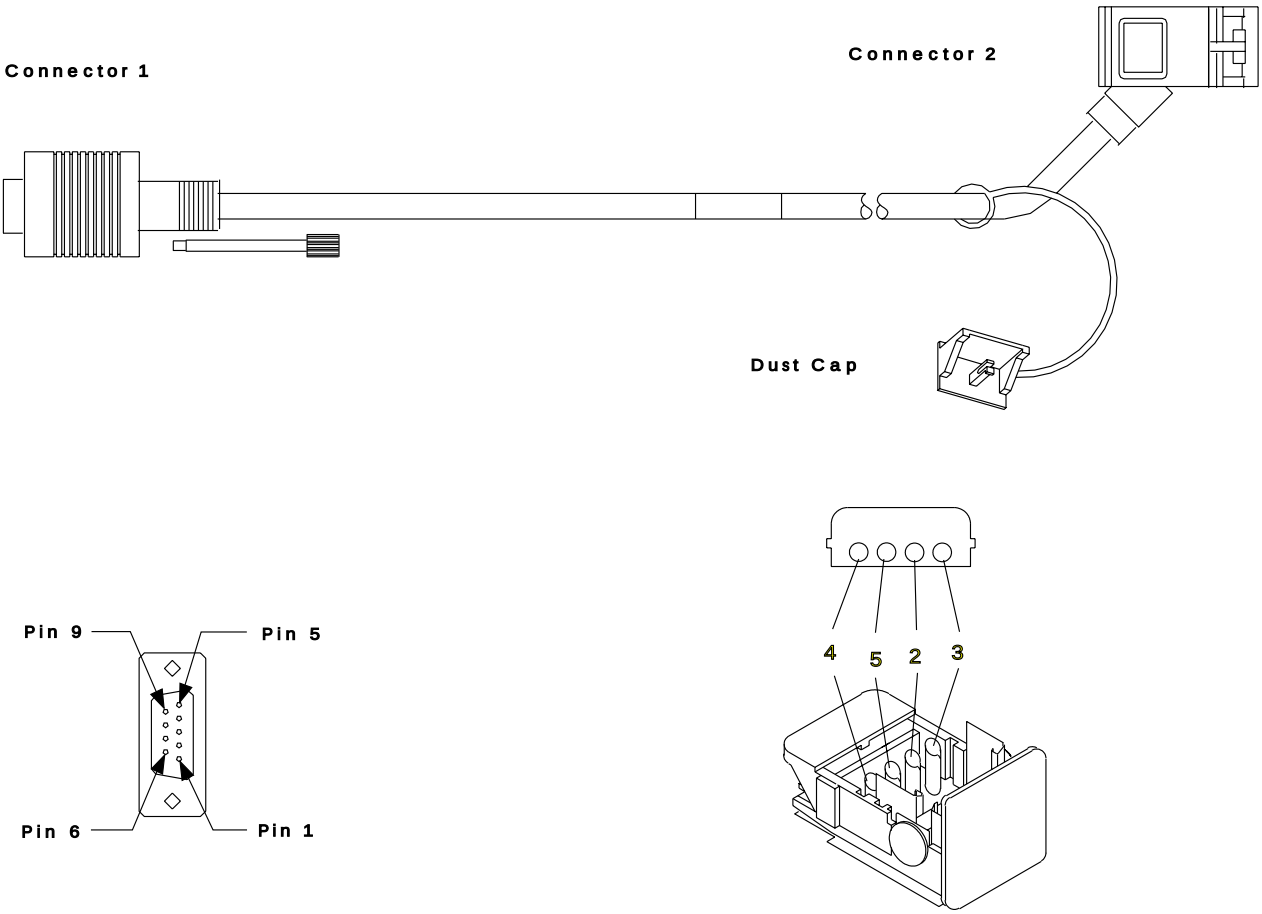


Figure E-3. LAN Cable

Interchange Circuit for Standard LAN Cable

Table E-1. LAN Cable Pin Assignment

Wire Nbr	Wire Color	Connector 1 Position	Connector 2 Position
1	SHIELD	GND	SHIELD
2	ORN	9	ORN
3	BLACK	5	BLACK
4	RED	1	RED
5	GREEN	6	GREEN

Table E-2. Cable from a network node processor to a 8228

Cable Type	Length, m (ft)	Feature Code	Cable PN
Standard Fixed	2.4 m (8)	9088	6339098

Note: Some new network node processor LAN adapter cards (with a RJ45 connector) need an additional adapter cable 8 (PN 60G1066) to connect the standard LAN cable.

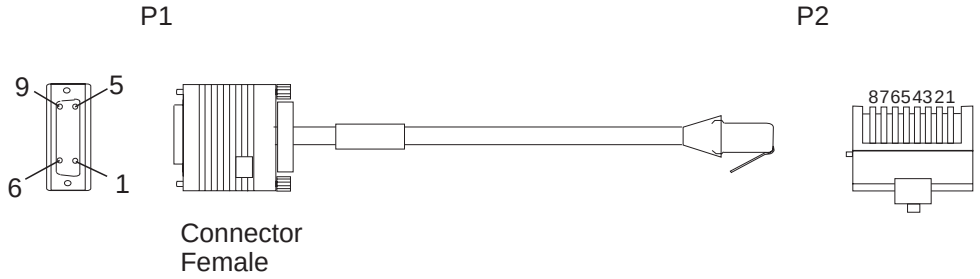


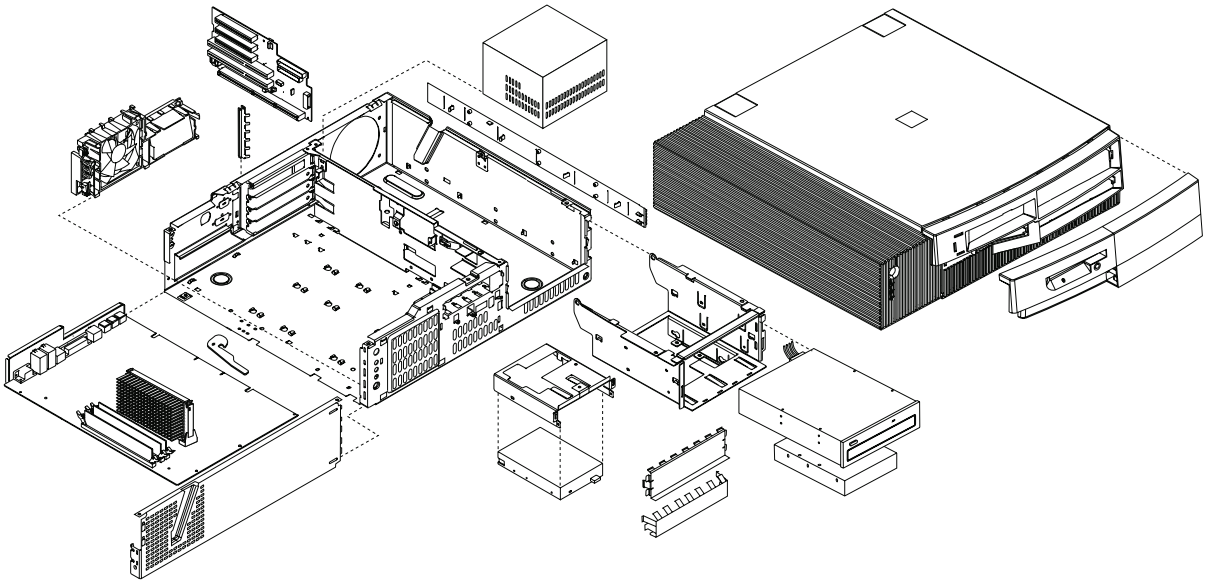
Figure E-4. Adapter Cable (PN 60G1066)

Table E-3. Adapter Cable Pin Assignment

9 Pin D Connector (P1)	**RJ45 Connector (P2)**	**Wire color**
9	6	ORN
5	3	BLK
1	4	RED
6	5	GRN

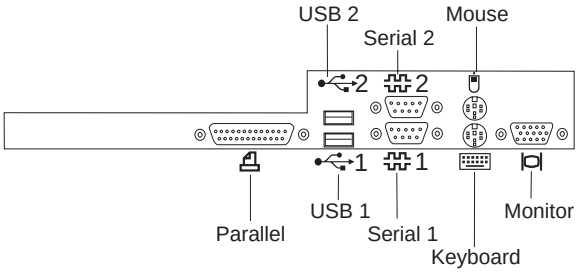
Appendix F. Network Node Processor Aids

Network Node Processor Exploded View

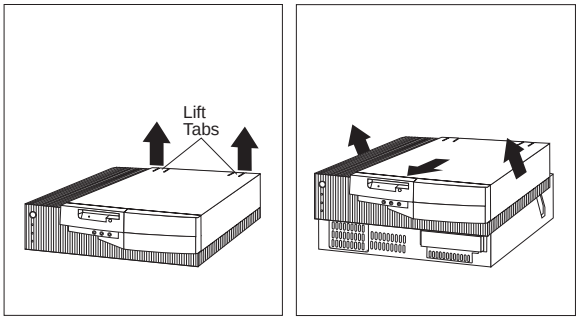


Input/output connectors and removal/service procedures for the cover, system board, and drive cage are on the following pages.

Input/Output Connectors

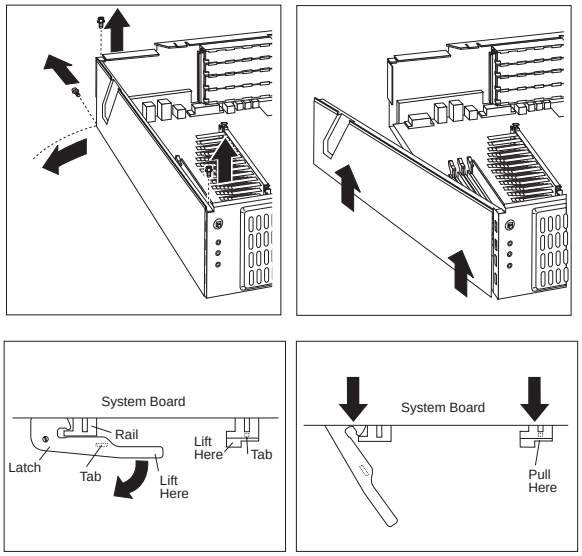


Cover Removal

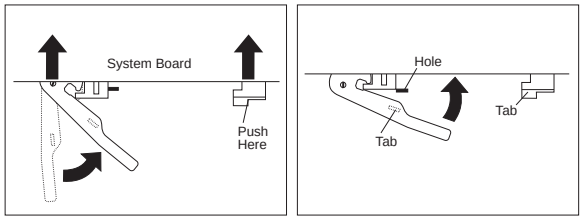


Unlock cover from back of the system unit before removing cover.

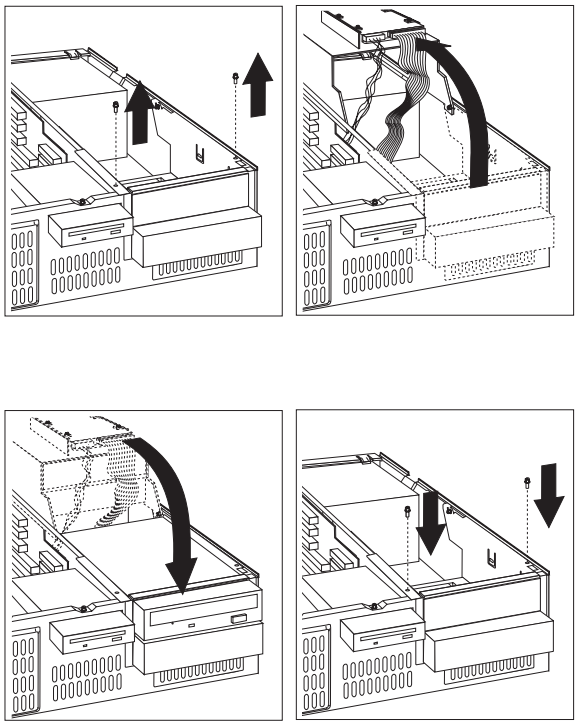
System Board Removal



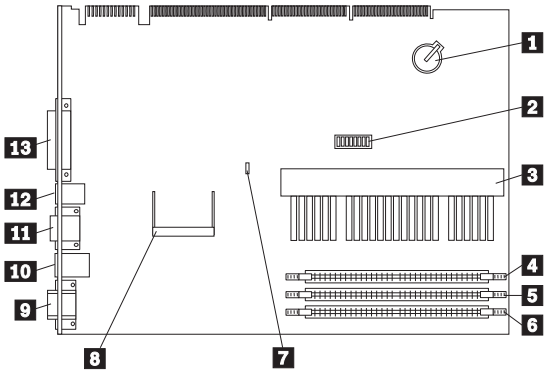
System Board Installation



Drive Cage Service



Network Node Processor (Type 6275) Pentium II, Pentium III System Board



Network Node Processor - Pentium II, Pentium III System Board Locations

1	Battery
2	Switch SW1
3	Microprocessor socket
4	DIMM socket 0
5	DIMM socket 1
6	DIMM socket 2
7	CMOS clear Jumper J9
8	Video Memory connector
9	Display connector
10	Mouse/Keyboard connectors (top=mouse, bottom=keyboard)
11	Serial connectors (top=serial port 2, bottom=serial port 1)
12	USB connectors (top=USB2, bottom=USB1)
13	Parallel connector

Network Node Processor - Pentium II, Pentium III Jumper/Switch Settings

The following table contains the jumper setting information. (D) indicates the default setting.

Jumper	Setting	Description
CMOS Reset J9	2-3 1-2 (D)	CMOS reset. Normal

The following tables contains the switch setting information. (D) indicates the default setting.

Note

Pentium III processsors do not require speed settings. For Pentium III processors, you can ignore the speed setting.

Pentium II Processor Speed Switch Setting (SW1 1-4)

CPU Switch Settings	SW1-1	SW1-2	SW1-3	SW1-4
233/66 MHz	Off	Off	On	On
266/66 MHz	On	On	Off	On
300/66 MHz	Off	On	Off	On
333/66 MHz	On	Off	Off	On
350/100 MHz	Off	Off	On	On
400/100 MHz	On	On	Off	On

ROM Operation Switch (SW1-5)

ROM Operation	SW1-5
ROM Recovery Mode	On
Normal ROM Operation	Off (D)

Reserved Switch (SW1-6)

Reserved	SW1-6
Reserved	Off (D)

Privilege Access Password (PAP) Switch (SW1-7)

PAP	SW1-7
Disable	Off (D)
Enable	On

Diskette Write Access Switch (SW1-8)

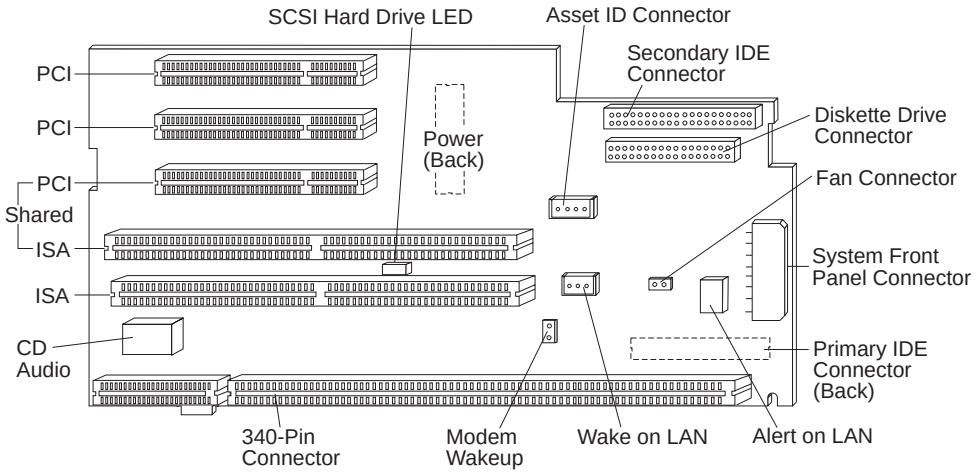
Diskette Access	SW1-8
Write Enabled	Off (D)
Write Protected	On

Riser card Layout

Notes

- PCI adapters plug into the PCI riser slot with the component-side facing the system board.
- ISA adapters plug into the ISA riser slot with the component-side facing upward.

Network Node Processor ISA/PCI



Network Node Processor Configuration / Setup Utility

Important

Before continuing this procedure you **must** have installed a display and a keyboard on your network node processor. Refer to “How to Install a Display and Keyboard on your Network Node Processor” on page 2-10.

1. Power OFF/ON the network node processor
2. Press the **F1** key to invoke the configuration/Setup utility after POST completion, and continue with the:
   - “Network Node Processor Configuration Reference Based on 6275-56U” if your network node processor is based on 6275-56U.
   - “Network Node Processor Configuration Reference Based on 6275-83U” on page F-18 if your network node processor is based on 6275-83U.

Network Node Processor Configuration Reference Based on 6275-56U

The following window is displayed. From the following window using the arrow keys, select the different options and go to the new windows for checking.

```
Configuration/Setup Utility

Select Option:

- System Summary              1
- Product Data                2
- Device and I/O Ports        3
- Start Options               4
- Date and Time               5
- System Security             6
- Advanced Setup              7
- ISA Legacy Resources        8
- Power Management            9

Save Settings
Restore Settings
Load Default Settings

Exit Setup
```

1

```
          System Summary

Processor         Pentium II
Processor Speed   350MHz
L2 Cache Size     512 KB
Cache State       Enabled with NO ECC
System Memory     128 MB                    (Note)
Memory Type       Non-Parity
Video Controller  S3 Incorporated. TRIO3D.
Diskette Drive A  1.44 MB 3.5"
Diskette Drive B  Not Installed
IDE Hard Disk Drive 0 3228 MB
IDE Hard Disk Drive 1 Not Installed
IDE Hard Disk Drive 2 Not Installed
IDE Hard Disk Drive 3 Not Installed
```

Note: The extended memory can also be 160 MB or higher.

2

```
          Product Data

Machine type/ Model          6275560
Flash EEPROM Revision Level  PDKT17AUX
Boot Block Revision Level    PD17A
System Board Identifier      xxxxxxx
System Serial Number         xxxxxxx
System UUID                  xxxxxxx
BIOS Date                    08/17/98
BIOS Mode                    Desktop
```

3

```
         Device and I/O Ports

  Mouse                     (Not Installed)
  Diskette Drive A:         (1.44 MB 3.5")
  Diskette Drive B:         (Not Installed)

- Serial Port Setup...
- USB Setup...
- Parallel Port Setup...
- Video Setup...
- IDE Drives Setup...
```

```
         Serial Port Setup

Serial Port A Address           (3F8h)
Serial Port A IRQ               (IRQ 4)
Serial Port B Address           (2F8h)
Serial Port B IRQ               (IRQ 3)
```

```
         USB Setup

USB Support                     (Enabled)   (Note)
USB Keyboard/Mouse Support      (Autodetect)
```

Note: may be also (Disabled)

```
         Parallel Port Setup

Parallel Port                   (378h)
Parallel Port Mode              (Extended)
Parallel Port Extended Mode     (ECP          )
Parallel Port Extended Mode DMA (DMA 3)
Parallel Port IRQ               (IRQ 7)
```

```
         Video Setup

Video Controller                S3 Incorporated. trio3D
Video Memory                    2048 KB
Palette Spooning                (Disabled)
Video interrupt                 (Enabled)
```

```
          IDE Drives Setup

  - IDE Hard Disk Drive 0
  - IDE Hard Disk Drive 1
  - IDE Hard Disk Drive 2
  - IDE Hard Disk Drive 3
```

```
          IDE Hard Disk Drive 0

  Size                  3228 MB
  IDE Performance       (High Performance)
  IDE Read Prefetch     (Disable)
```

4

```
          Start Options

  Startup Sequence

  Keyboard Numlock State     (ON)
  Keyboard Speed             (Fast)
  Disketteless Operation     (Disabled)
  Keyboardless Operation Mode(Enabled)


  Power On Self-Test         (Quick)   (Note)
  Power On Logos             (Enabled )
  Power On F1/Esc Options    (Enabled )
  Power On Status            (Disabled)
  Virus detection            (Disabled)
```

Note: If you want a complete testing of the network node station at power ON set this parameter to: Enhanced.

5

```
          Date and Time

    Time                HH/MM/SS
    Date                DD/MM/YY
```

6

```
          System Security

  - Secure IDE Devices and Diskettes Drives
  - Remote Administration
  - Power-On Password
  - Administrator Password
    Adapter ROM Security        (No)
```

```
    Secure IDE Devices and Diskette Drives

  IDE Controller             (Enable )
  Diskette Drive Access      (Enable )
```

```
    Remote Administration
  Information:
  If the password Prompt is set to "ON" it will be reset
  when Remote Administration is set to ENABLE

- Remote Administration
```

```
    Remote Administration

  Remote Administration   (Enabled)
```

```
          Power-On Password

  Enter your new Power-on password twice.

  Enter Power-on Password        (       )
  Enter Power-on Password Again  (       )

  Change Power-on Password
  Delete Power-on Password

  Password Prompt                (Dual)
```

```
         Administrator Password

Enter your new Administrator password twice.

Enter Administrtor Password          (       )
Enter Administrator Password Again   (       )

Change Administrator Password
Delete Administrator Password

Power-on Password changeable by user (NO)
```

7

```
         Advanced Setup

Warning:

Items on the following menus control advanced Hardware features
if they are configured incorrectly, the system might
malfunction.

- Cache Control
- ROM Shadowing
- PCI Control
- Plug and Play Control
- Processor Control
```

```
         Cache Control

  Cache State          (Enabled with no NO ECC)
  L2 Cache Size         512 KB
```

```
         ROM Shadowing

E0000h-FFFFFh (System BIOS)         (Enabled)
DC000h-DFFFFh                       (Disabled)
D8000h-DBFFFh                       (Disabled)
D4000h-D7FFFh                       (Disabled)
D0000h-D3FFFh                       (Disabled)
CC000h-CFFFFh                       (Disabled)
C8000h-CBFFFh                       (Disabled)
C4000h-C7FFFh                       (Enabled)
C0000h-C3FFFh                       (Enabled)
```

```
              PCI Control

   PCI Adapter Reset     (Enabled    )
   PCI Parity            (Enabled    )

   PCI Bus Master...
   Network Adapters       Disabled
   Mass Storage Adapters  Enabled
   Display Adapters      (Enabled    )
   Multimedia Devices     Enabled
   Communication Adapters Enabled
   Serial Adapters        Enabled
```

```
           Plug and Play Control

   Set Device Mode                (Enabled)
   Address Decode                 (16-Bit)
   Plug and Play Operating System (No)
```

```
          Processor Control

   Processor 0 ID       0651
   Processor Updating  (Enabled)
```

8

```
          ISA Legacy Resources

 Information: ISA legacy Resources (DMA, Interrupts, Memory,
              and I/O Ports) are resources that are used by
              ISA adapters which are not Plug-and-Play adapters.
              Use these menus to indicate which resources are
              used by ISA Legacy adapters. Resources used by
              the system are already indicated.

 - Memory Resources
 - I/O Ports Resources
 - DMA Resources
 - Interrupt Resources
```

```
        Memory Resources

  A0000h-A3FFFh              Video
  A4000h-A7FFFh              Video
  A8000h-ABFFFh              Video
  AC000h-AFFFFh              Video
  B0000h-B3FFFh              Video
  B4000h-B7FFFh              Video
  B8000h-BBFFFh              Video
  BC000h-BFFFFh              Video
  C0000h-C1FFFh              Video BIOS
  C2000h-C3FFFh              Video BIOS
  C4000h-C5FFFh              Video BIOS
  C6000h-C7FFFh              Video BIOS
  C8000h-C9FFFh              (Available      )
  CA000h-CBFFFh              (Available      )
  CC000h-CDFFFh              (Available      )
  CE000h-CFFFFh              (Available      )
  D0000h-D1FFFh              (Available      )
  D2000h-D3FFFh              (Available      )
  D4000h-D5FFFh              (Available      )
  D6000h-D7FFFh              (Available      )
  D8000h-D9FFFh              (Available      )
  DA000h-DBFFFh              (Available      )
  DC000h-DDFFFh              (Available      )
  DE000h-DFFFFh              (Available      )
  E0000h-FFFFFh               System BIOS
F00000h-FFFFFFh               (Available      )
```

```
      I/O Port Resources


    100h-103h    (Available      )
      -   -           -
    1ECh-1EFh    (Available      )
    1F0h-1F3h    IDE Drives
    1F4h-1F7h    IDE Drives
    1F8h-1FBh    (Available      )
      -   -           -
    2F4h-2F7h    (Available      )
    2F8h-2FBh    Serial Port B
    2FCh-2FFh    Serial Port B
    300h-303h    (Available      )
      -   -           -
    374h-377h    (Available      )
    378h-37Bh    Parallel Port
    37Ch-37Fh    Parallel Port
    380h-383h    (Available      )
      -   -           -
    3B0h-3B3h    (Available      )
    3B4h-3B7h    Video
    3B8h-3BBh    Video
    3BCh-3BFh    (Available      )
    3C0h-3C3h     Video
      -   -           -
    3DCh-3DFh     Video
    3E0h-3E3h    (Available      )
      -   -           -
    3ECh-3EFh    (Available      )
    3F0h-3F3h     System Board
    3F4h-3F7h     System Board
    3F8h-3FBh     Serial Port A
    3FCh-3FFh     Serial Port A
```

```
      DMA Resources

  Channel 0      (Available      )
  Channel 1      (Available      )
  Channel 2      Diskette
  Channel 3      Parallel Port
  Channel 4      System Resource
  Channel 5      (Available      )
  Channel 6      (Available      )
  Channel 7      (Available      )
```

```
      Interrupt Resources

      0          Timer
      1          Keyboard
      2          Interrupt Controller
      3          Serial Port B
      4          Serial Port A
      5          (Available      )
      6          Diskette
      7          Parallel Port
      8          Real Time Clock
      9          ACPI
     10          (Available      )
     11          (Available      )
     12          (Available      )
     13          Coprocessor
     14          IDE Devices
     15          (Available      )
```

9

```
       Power Management

  ACPI BIOS Mode              (Enabled        )

  - APM
  - Automatic Power On
```

```
                APM
APM BIOS Mode                         (Enabled)

  Automatic Hardware Power Management  (Enabled)
    Time to Low Power                  (30 min)
         System Power                  (ON)
         Display                       (Suspend)
           Time to Display 'OFF'       ( 1 hr)
    IDE Drives                         (Enabled)

 Activity Monitor
```

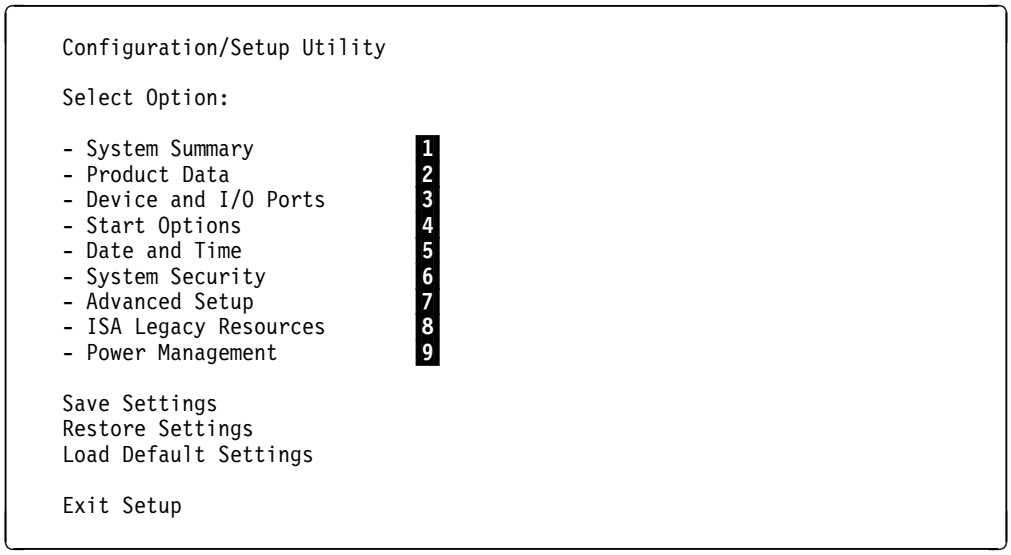
```
          Activity Monitor

    PS/2 Keyboard (Enabled)
    PS/2 Mouse    (Enabled)
    Diskette      (Enabled)
    Serial Port A (Enabled)
    Serial Port B (Enabled)
    Parallel Port (Enabled)
    IDE Hard Disks(Enabled)
    IDE CD ROM    (Disabled)
```

```
          Automatic Power On
Wake on LAN

  Serial Port A Ring Detect     (Disabled)
   Startup Sequence              Primary

  Modem Ring Detect             (Disabled)
   Startup Sequence              Primary

  Wake Up on Alarm              (Disabled)
    Alarm day of month           01
    Alarm Time                   01:00
    Alarm day of week            Monday
    Startup Sequence             Primary

  PCI Wake Up                   (Disabled)
    Startup Sequence             Primary
```

```
          Wake on LAN

  Warning

  The following item controls LAN wake up
  requests only if a network adapter is
  installed in your system, the network
  adapter supports wake up requests,
  and the network adapter is configured
  properly

  Wake on LAN              (Enabled)
    Startup Sequence       (Automatic)
```

Network Node Processor Configuration Reference Based on 6275-83U

The following window is displayed. From the following window select the different options. Go to the new windows for checking and follow the prompts for modifying.



1

```
          System Summary

Processor         Pentium III
Processor Speed   450MHz
L2 Cache Size     512 KB
Cache State       Enabled with NO ECC
System Memory     128 MB
Memory Type       Non-Parity
Video Controller  S3 Incorporated. TRIO3D.
Diskette Drive A  1.44 MB 3.5"
Diskette Drive B  Not Installed
IDE Hard Disk Drive 0 4224 MB
IDE Hard Disk Drive 1 Not Installed
IDE CD-ROM Drive 2  Installed
IDE Hard Disk Drive 3 Not Installed
```

Note: The extended memory can also be 160 MB or higher.

2

```
          Product Data

Machine type/ Model          627583U
Flash EEPROM Revision Level  PDKT21AUS
Boot Block Revision Level    PD21A
System Board Identifier      xxxxxxx
System Serial Number         xxxxxxx
System UUID                  xxxxxxx
BIOS Date                    02/08/99
BIOS Mode                    Desktop
```

3

```
         Device and I/O Ports

  Mouse                     (Installed)
  Diskette Drive A:         (1.44 MB 3.5")
  Diskette Drive B:         (Not Installed)

- Serial Port Setup...
- USB Setup...
- Parallel Port Setup...
- Video Setup...
- IDE Drives Setup...
```

```
         Serial Port Setup

Serial Port A Address           (3F8h)
Serial Port A IRQ               (IRQ 4)
Serial Port B Address           (2F8h)
Serial Port B IRQ               (IRQ 3)
```

```
         USB Setup

USB Support                     (Enabled)
USB Keyboard/Mouse Support      (Autodetect)
```

```
         Parallel Port Setup

Parallel Port                   (Disabled)
Parallel Port Mode               Standard
Parallel Port Extended Mode      Bidirectionnal
Parallel Port Extended Mode DMA  No DMA
Parallel Port IRQ                IRQ 7
```

```
         Video Setup

Video Controller                S3 Incorporated. Trio3D
Video Memory                    4096 KB
Primary Display                 (PCI)
Palette Spooning                (Disabled)
Video interrupt                 (Enabled)
```

```
          IDE Drives Setup

  - IDE Hard Disk Drive 0
  - IDE Hard Disk Drive 1
  - IDE CD-ROM Drive 2
  - IDE Hard Disk Drive 3
```

```
          IDE Hard Disk Drive 0

  Size                  4224 MB
  IDE Performance       (High Performance)
  IDE Read Prefetch     (Disable)
```

```
          IDE CD-ROM    Drive 2

  IDE Performance       (High Performance)
```

4

```
          Start Options

  Startup Sequence

  Keyboard Numlock State     (ON)
  Keyboard Speed             (Fast)
  Keyboard Reset Delay       (Disabled)
  Disketteless Operation     (Disabled)
  Keyboardless Operation Mode(Enabled)
  Power On Self-Test         (Quick)   (Note)
  Power On Logos             (Enabled )
  Power On F1/Esc Options    (Enabled )
  Power On Status            (Disabled)
  Virus detection            (Disabled)
```

Note: If you want a complete testing of the network node station at power ON set this parameter to: Enhanced.

5

```
          Date and Time

    Time                HH/MM/SS
    Date                MM/DD/YYYY
```

6

```
          System Security

  - Secure IDE Devices and Diskettes Drives
  - Remote Administration
  - Power-On Password
  - Administrator Password
    Adapter ROM Security        (No)
```

```
    Secure IDE Devices and Diskette Drives

  IDE Controller             (Enable )
  Diskette Drive Access      (Enable )
```

```
    Remote Administration
  Information:
  If the password Prompt is set to "ON" it will be reset
  when Remote Administration is set to ENABLE

- Remote Administration
```

```
    Remote Administration

  Remote Administration   (Enabled)
```

```
          Power-On Password

  Enter your new Power-on password twice.

  Enter Power-on Password        (       )
  Enter Power-on Password Again  (       )

  Change Power-on Password
  Delete Power-on Password

  Password Prompt                (Dual)
```

```
         Administrator Password

Enter your new Administrator password twice.

Enter Administrtor Password          (       )
Enter Administrator Password Again   (       )

Change Administrator Password
Delete Administrator Password

Power-on Password changeable by user (NO)
```

7

```
         Advanced Setup

Warning:

Items on the following menus control advanced Hardware features
if they are configured incorrectly, the system might
malfunction.

- Cache Control
- ROM Shadowing
- PCI Control
- Plug and Play Control
- Processor Control
```

```
         Cache Control

  Cache State          (Enabled with no NO ECC)
  L2 Cache Size         512 KB
```

```
         ROM Shadowing

E0000h-FFFFFh (BIOS)         (Enabled)
DC000h-DFFFFh                (Disabled)
D8000h-DBFFFh                (Disabled)
D4000h-D7FFFh                (Disabled)
D0000h-D3FFFh                (Disabled)
CC000h-CFFFFh                (Disabled)
C8000h-CBFFFh                (Disabled)
C4000h-C7FFFh                (Enabled)
C0000h-C3FFFh                (Enabled)
```

```
              PCI Control

   PCI Adapter Reset     (Enabled    )
   PCI Parity            (Enabled    )

   PCI Bus Master...
   Network Adapters       Disabled
   Mass Storage Adapters  Enabled
   Display Adapters      (Enabled    )
   Multimedia Devices     Enabled
   Communication Adapters Enabled
   Serial Adapters        Enabled
```

```
          Plug and Play Control

   Set Device Mode                (Enabled)
   Address Decode                 (16-Bit)
   Plug and Play Operating System (No)
```

```
         Processor Control

   Processor 0 ID                 0672
   Processor Updating             (Enabled)
   Processor Serial Number Access (Disabled)
```

8

```
         ISA Legacy Resources

Information: ISA legacy Resources (DMA, Interrupts, Memory,
             and I/O Ports) are resources that are used by
             ISA adapters which are not Plug-and-Play adapters.
             Use these menus to indicate which resources are
             used by ISA Legacy adapters. Resources used by
             the system are already indicated.

- Memory Resources
- I/O Ports Resources
- DMA Resources
- Interrupt Resources
```

```
        Memory Resources

  A0000h-A3FFFh              Video
  A4000h-A7FFFh              Video
  A8000h-ABFFFh              Video
  AC000h-AFFFFh              Video
  B0000h-B3FFFh              Video
  B4000h-B7FFFh              Video
  B8000h-BBFFFh              Video
  BC000h-BFFFFh              Video
  C0000h-C1FFFh              Video BIOS
  C2000h-C3FFFh              Video BIOS
  C4000h-C5FFFh              Video BIOS
  C6000h-C7FFFh              Video BIOS
  C8000h-C9FFFh              (Available      )
  CA000h-CBFFFh              (Available      )
  CC000h-CDFFFh              (Available      )
  CE000h-CFFFFh              (Available      )
  D0000h-D1FFFh              (Available      )
  D2000h-D3FFFh              (Available      )
  D4000h-D5FFFh              (Available      )
  D6000h-D7FFFh              (Available      )
  D8000h-D9FFFh              (Available      )
  DA000h-DBFFFh              (Available      )
  DC000h-DDFFFh              (Available      )
  DE000h-DFFFFh              (Available      )
  E0000h-FFFFFh               System BIOS
F00000h-FFFFFFh               (Available      )
```

```
      I/O Port Resources


   100h-103h    (Available      )
     -   -           -
   16Ch-16Fh    (Available      )
   170h-173h    IDE Drives
   174h-177h    IDE Drives
   178h-17Bh    (Available      )
     -   -           -
   1ECh-1EFh    (Available      )
   1F0h-1F3h    IDE Drives
   1F4h-1F7h    IDE Drives
   1F8h-1FBh    (Available      )
     -   -           -
   2F4h-2F7h    (Available      )
   2F8h-2FBh    Serial Port B
   2FCh-2FFh    Serial Port B
   300h-303h    (Available      )
     -   -           -
   370h-373h    (Available      )
   374h-377h     System Board
   378H-37Bh    (Available      )
     -   -           -
   3B0h-3B3h    (Available      )
   3B4h-3B7h    Video
   3B8h-3BBh    Video
   3BCh-3BFh    (Available      )
   3C0h-3C3h     Video
     -   -           -
   3DCh-3DFh     Video
   3E0h-3E3h    (Available      )
     -   -           -
   3ECh-3EFh    (Available      )
   3F0h-3F3h     System Board
   3F4h-3F7h     System Board
   3F8h-3FBh     Serial Port A
   3FCh-3FFh     Serial Port A
```

```
      DMA Resources

  Channel 0      (Available      )
  Channel 1      (Available      )
  Channel 2      Diskette
  Channel 3      (Available      )
  Channel 4      System Resource
  Channel 5      (Available      )
  Channel 6      (Available      )
  Channel 7      (Available      )
```

```
       Interrupt Resources

      0          Timer
      1          Keyboard
      2          Interrupt Controller
      3          Serial Port B
      4          Serial Port A
      5          (Available      )
      6          Diskette
      7          (Available      )
      8          Real Time Clock
      9          ACPI
     10          (Available      )
     11          (Available      )
     12          Mouse
     13          Coprocessor
     14          IDE Drives
     15          IDE Drives
```

9

```
        Power Management

  ACPI BIOS Mode               (Enabled        )

  - APM
  - Automatic Power On
```

```
                APM
APM BIOS Mode                          (Enabled)

  Automatic Hardware Power Management  (Enabled)
    Time to Low Power                  (30 min)
         System Power                  (ON)
         Display                       (Suspend)
           Time to Display 'OFF'       ( 1 hr)
    IDE Drives                         (Enabled)

 Activity Monitor
```

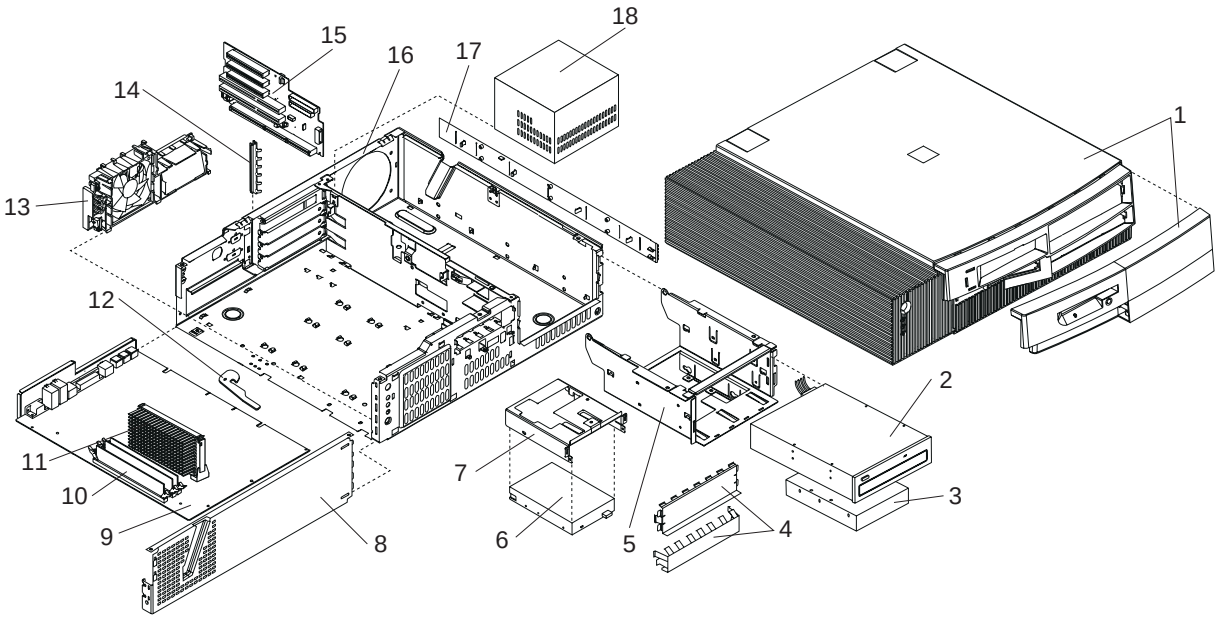
```
          Activity Monitor

    PS/2 Keyboard (Enabled)
    PS/2 Mouse    (Enabled)
    Diskette      (Enabled)
    Serial Port A (Enabled)
    Serial Port B (Enabled)
    Parallel Port (Enabled)
    IDE Hard Disks(Enabled)
    IDE CD ROM    (Disabled)
```

```
         Automatic Power On
Wake on LAN

  Serial Port A Ring Detect     (Disabled)
   Startup Sequence              Primary

  Modem Ring Detect             (Disabled)
   Startup Sequence              Primary

  Wake Up on Alarm              (Disabled)
    Alarm day of month           01
    Alarm Time                   00:30
    Alarm day of week            Monday
    Startup Sequence             Primary

  PCI Wake Up                   (Disabled)
    Startup Sequence             Primary
```

```
         Wake on LAN

  Warning

  The following item controls LAN wake up
  requests only if a network adapter is
  installed in your system, the network
  adapter supports wake up requests,
  and the network adapter is configured
  properly

  Wake on LAN              (Enabled)
    Startup Sequence       (Automatic)
```

Appendix G. Network Node Processor Part Numbers (Based on 6275)

Network Node Processor Parts (based on 6275)



Parts Listing

Index	System (Type 6275)	FRU No.
1	Cover Assembly	01K1607
	Name Plate	03K9645
	(Order either of the below 32X Max CD-ROM drives)	
2	CD-ROM Drive (32X Max)	02K1115
2	CD-ROM Drive (32X Max)	02K3412
2	CD-ROM Drive (40X Max)	36L8747
	IDE Cable, CD-ROM (1-drop)	03K9724
3	3.2 GB EIDE Hard Disk Drive	10L6006
3	4.2 GB EIDE Hard Disk Drive	36L8675
3	6.4 GB EIDE Hard Disk Drive	10L6012
3	8.4 GB EIDE Hard Disk Drive	36L8679
	Hard Disk Cable, EIDE	12J4518
4	EMC Shields	76H7338
5	Hard Disk/CD-ROM Cage	03K9641
6	1.44 MB 3.5-Inch Diskette Drive	75H9550
6	1.44 MB 3.5-Inch Diskette Drive-Japan	75H9552
	Diskette Drive Cable	76H7340
7	3.5-Inch Diskette Bracket	76H7330
8	Side Bracket	76H7329
9	System Board (no processor, memory, rails)	61H1037
9	System Board (no processor, memory, rails) (for Pentium III processor)	61H2347
	System Board Guide Rails, center and front	03K9626
10	Memory - 32 MB DIMM, Non-Parity	01K1146
10	Memory - 64 MB DIMM, Non-Parity	01K1147
11	Processor Pentium II 300 MHz	01K4291
	Air Duct for 300 MHz. Processor only	03K9648
11	Processor Pentium II 333 MHz ECC	01K4390
11	Processor Pentium II 350 MHz	01K2175
11	Processor Pentium II 400 MHz	01K4334
11	Processor Pentium II 450 MHz	01K1578
11	Processor Pentium III 450 MHz	33L1614
11	Processor Pentium III 500 MHz	33L1615
12	Latch and Screw	01K1612
13	Fan/Power Switch Assembly	03K9647
14	I/O Bracket	03K9622
15	Riser Card	11L1566
	Riser Clips, front and rear	02K2766
16	Chassis Assembly	03K9646
17	Side Panel	76H7333
18	145 Watt Power Supply	01K9846
18	145 Watt Power Supply - Japan	01K9848
	Bezel Kit	76H7339
	Audio Adapter, GVC	01K2154
	Cable, Audio/CDROM	75H9219
	Cable, Wake On Ring	76H7345
	Foot (4)	93F2386
	Jumper Kit	93F0067
	Keylock Assembly	76H7336
	Lithium Battery	33F8354
	Misc. Screw Kit	93F0041
	Processor Mounting Bracket Kit (for all above processors)	33L4332
	Retention Module (RM) adapter (for Pentium II processors only)	33L4320
	Video Ram 2 MB	01K1185

Appendix H. Bibliography

Customer Documentation for the 3746 Model 950

Table H-1 (Page 1 of 4). Customer Documentation for the 3746 Model 950

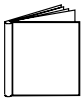
This customer documentation has the following formats:

Finding Information

3745 Models A and 3746 Books

Starting with engineering change (EC) F12380, all of the books in the 3745 Models A and 3746 library are available on the CD-ROM that contains the Licensed Internal Code (LIC) for this EC.

Preparing for Operation



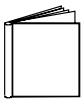
GA33-0400

IBM 3745 Communication Controller All Models[1]
IBM 3746 Expansion Unit Model 900
IBM 3746 Nways Multiprotocol Controller Model 950

Safety Information[2]

Provides general safety guidelines

Evaluating and Configuring

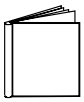


GA33-0180

IBM 3745 Communication Controller Models A[3]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Overview

Gives an overview of connectivity capabilities within SNA, APPN, and IP networking.



GA27-4234

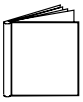
IBM 3745 Communication Controller Models A[2]
IBM 3746 Expansion Unit Model 900
Models 900 and 950

Planning Series:
Overview, Installation, and Integration

Provides information for:

- Overall 3746 planning
- Installation and upgrade scenarios
- Controller and service processor network integration
- Related MOSS-E and CCM worksheets for these tasks.

Table H-1 (Page 2 of 4). Customer Documentation for the 3746 Model 950



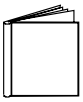
GA27-4235

IBM 3745 Communication Controller Models A[2]
IBM 3746 Expansion Unit Model 900
Models 900 and 950

Planning Series:
Serial Line Adapters

Provides information for:

- Serial line adapter descriptions
- Serial line adapter line weights and connectivity
- Types of SDLC support
- Configuring X.25 lines
- Performance tuning for frame relay, PPP, X,25, and NCP lines.
- CCM worksheets for serial line definitions.



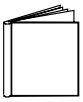
GA27-4236

IBM 3745 Communication Controller Models A[2]
IBM 3746 Expansion Unit Model 900
Models 900 and 950

Planning Series:
Token Ring, Ethernet, and ISDN

Provides information for:

- Token-ring, Ethernet, and ISDN adapter descriptions
- Token-ring, Ethernet, and ISDN configuration information
- CCM worksheets for token-ring definitions.



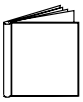
GA27-4237

IBM 3745 Communication Controller Models A[2]
IBM 3746 Expansion Unit Model 900
Models 900 and 950

Planning Series:
ESCON Channels
Except for Multiaccess Enclosure

Provides information for:

- ESCON adapter descriptions
- ESCON configuration and tuning information
- ESCON configuration examples
- CCM worksheets for ESCON definitions.



GA27-4238

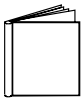
IBM 3745 Communication Controller Models A[2]
IBM 3746 Expansion Unit Model 900
Models 900 and 950

Planning Series:
Physical Planning
Except for Multiaccess Enclosure

Provides information for:

- 3746 physical planning details
- Explanation of installation sheets
- 3746 plugging sheets.

Table H-1 (Page 3 of 4). Customer Documentation for the 3746 Model 950



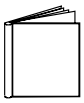
GA27-4239

IBM 3745 Communication Controller Models A²
IBM 3746 Expansion Unit Model 900
Models 900 and 950

Planning Series:
Management Planning
Except for Multiaccess Enclosure

Provides information for:

- Overview for 3746
- 3746 APPN/HPR, IP router, and X.25
- NetView Performance Monitor, remote consoles, and RSF.



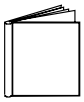
GA27-4240

IBM 3745 Communication Controller Models A²
IBM 3746 Expansion Unit Model 900
Models 900 and 950

Planning Series:
Multiaccess Enclosure Planning

Provides information for:

- MAE adapters and physical planning details
- MAE ESCON planning and configuration
- MAE APPN/HPR and IP management
- ATM and ISDN support
- MAE worksheets.



GA27-4241

IBM 3745 Communication Controller Models A²
IBM 3746 Expansion Unit Model 900
Models 900 and 950

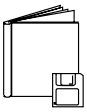
Planning Series:
Protocol Introductions

Provides information for:

- Introduction and overview of APPN/HPR, IP, token-ring, Ethernet, frame-relay, PPP, X.25, and ESCON channels.

Table H-1 (Page 4 of 4). Customer Documentation for the 3746 Model 950

Operating and Testing



SA33-0356

IBM 3746 Nways Multiprotocol Controller Model 950

User's Guide[2]

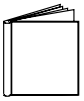
Explains how to:

- Carry out daily routine operations on Nways controller
- Install, test, and customize the Nways controller after installation
- Configure user's workstations to remotely control the service processor using:
  - DCAF program
  - Telnet client program
  - Java Console support.

On-line information

Controller Configuration and Management Application

Provides a graphical user interface for configuring and managing a 3746 APPN/HPR network node and IP Router, and its resources.
Is also available as a stand-alone application, using an OS/2 workstation.
Defines and explains all the 3746 Network Node and IP Router configuration parameters through its on-line help.



SH11-3081

IBM 3746 Nways Multiprotocol Controller Models 900 and 950

Controller Configuration and Management: User's Guide[2]

Explains how to use CCM and gives examples of the configuration process.

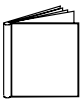
Managing Problems

On-line information

Problem Analysis Guide

An on-line guide to analyze alarms, events, and control panel codes on:

- IBM 3745 Communication Controller Models A[3]
- IBM 3746 Nways Multiprotocol Controller Models 900 and 950.



SA33-0175

IBM 3745 Communication Controller Models A[3]
IBM 3746 Expansion Unit Model 900
IBM 3746 Nways Multiprotocol Controller Model 950

Alert Reference Guide

Provides information about events or errors reported by alerts for:

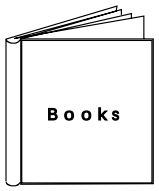
- IBM 3745 Communication Controller Models A[3]
- IBM 3746 Nways Multiprotocol Controller Models 900 and 950.

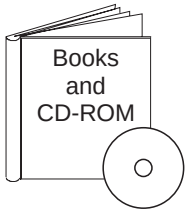
[1] Models 130 to 61A.
[2] Documentation shipped with the 3746-950
[3] 3745 Models 17A to 61A.

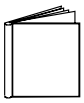
Service Documentation for the IBM 3746 Model 950

Table H-2 (Page 1 of 3). Service Documentation for the 3746 Model 950

This service documentation has the following formats:





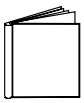


SY33-2107

IBM 3746 Nways Multiprotocol Controller Model 950

Installation Guide[1]

Provides instructions for installing or relocating the Nways Controller.

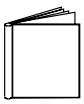


SY33-2108

IBM 3746 Nways Multiprotocol Controller Model 950

Service Guide[1]

Provides procedures for isolating and fixing the IBM 3746-950 problems.

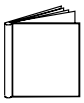


SY33-2115

IBM 3745 Communication Controller Models A[2]
IBM 3746 Expansion Unit Model 900
IBM 3746 Nways Multiprotocol Controller Model 950

Service Processor Installation and Maintenance[3]
(Based on the 7585, 3172, 9585, or 9577)

Provides information on installing and maintaining the service processor based on PS/2 Types 7585, 3172, 9585, or 9577. Can be for systems with microcode that has up to and including EC D46130 (any level) installed.

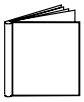


SY33-2120

IBM 3745 Communication Controller Models A[3]
IBM 3746 Expansion Unit Model 900
IBM 3746 Nways Multiprotocol Controller Model 950

Service Processor Installation and Maintenance[4]
(Based on the 7585, 3172, or 9585)

Provides information on installing and maintaining the service processor based on PS/2 Types 7585, 3172, or 9585. Can be for systems with microcode EC F12380 or higher installed.



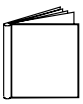
SY33-2125

IBM 3745 Communication Controller Models A[3]
IBM 3746 Expansion Unit Model 900
IBM 3746 Nways Multiprotocol Controller Model 950

Service Processor Installation and Maintenance[4]
(Based on 6275)

Provides information on installing and maintaining the service processor based on PS/2 Type 6275. Can be for systems with microcode EC F12380 or higher installed.

Table H-2 (Page 2 of 3). Service Documentation for the 3746 Model 950

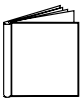


SY33-2118

IBM 3746 Nways Multiprotocol Controller Models 900 and 950

***Multiaccess Enclosure Installation and Maintenance*[4]**

Provides information on installing and maintaining the Multiaccess Enclosure (MAE).

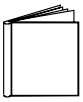


SY33-2124

IBM 3746 Nways Multiprotocol Controller Models 900 and 950

***Multiaccess Enclosure Installation and Maintenance*[4]**
(Starting from EC F12430 and Above)

Provides information on installing and maintaining the Multiaccess Enclosure (MAE). For systems with microcode EC F12430 or higher installed.

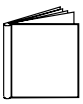


SY33-2112

IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

***Network Node Processor Installation and Maintenance*[3]**
(Based on the 7585 or 3172)

Provides information on installing and maintaining the network node processor based on the PS/2 Type 7585 or 3172.

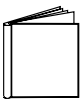


SY33-2126

IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

***Network Node Processor Installation and Maintenance*[3]**
(Based on 6275)

Provides information on installing and maintaining the network node processor based on the PS/2 Type 6275.

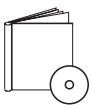


SY33-2127

***IBM 3745 Communication Controller Models A*[3]**
IBM 3746 Expansion Unit Model 900
IBM 3746 Nways Multiprotocol Controller Model 950

***Service Processor and Network Node Processor*[4]**
Service User's Guide

Provides information on installing and maintaining the operational code on service processor, or network node processor.
Can be for systems with microcode EC F12380 or higher installed.

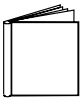


SY33-2117

IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

***External Cable Reference*[4]**

Provides references to console and line cables used for connecting the IBM 3746 Models 900 and 950.



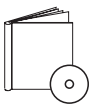
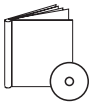
S135-2015

IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

***Parts Catalog*[4]**

Provides reference information for ordering parts for the IBM 3746 Models 900 and 950.

Table H-2 (Page 3 of 3). Service Documentation for the 3746 Model 950

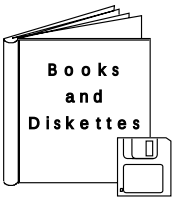
	S135-2014	***IBM Controller Expansion*** ***Parts Catalog*** Provides reference information for ordering parts for the controller expansion attached to the IBM 3745 Models A[2], and 3746 Models 900 and 950.
CD-ROM Bibliography		
	ZK2T-8214	***IBM Networking*** ***Softcopy Collection Kit*** Allows service manuals consulting via CD-ROM viewer. EMEA version.
	ZK2T-8187	***IBM Networking*** ***Softcopy Collection Kit*** Allows service manuals consulting via CD-ROM viewer. US version.

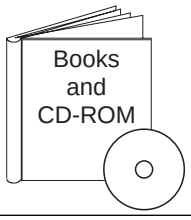
[1] Documentation shipped with the 3746 Model 950
[2] 3745 Models 17A to 61A
[3] Documentation shipped with the processor
[4] Documentation shipped with the 3746 Models 900 and 950

Customer Documentation for the 3745 (All Models), and 3746 (Model 900)

Table H-3 (Page 1 of 6). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

This customer documentation has the following formats:

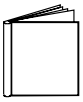




Finding Information

3745 Models A and 3746 Books

Starting with engineering change (EC) F12380, all of the books in the 3745 Models A and 3746 library are available on the CD-ROM that contains the Licensed Internal Code (LIC) for this EC.



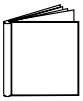
SA33-0172

IBM 3745 Communication Controller
Models 210 to 61A
IBM 3746 Expansion Unit Model 900

Customer Master Index[1]

Provides references for finding information in the customer documentation library.

Evaluating and Configuring



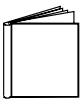
GA33-0092

IBM 3745 Communication Controller
Models 210, 310, 410, and 610

Introduction

Gives an introduction of the IBM Models 210 to 610 capabilities.

For Models A refer to the *Overview*, GA33-0180.



GA33-0180

IBM 3745 Communication Controller Models A[2]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Overview

Gives an overview of connectivity capabilities within SNA, APPN, and IP networking.

Table H-3 (Page 2 of 6). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

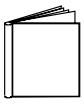
GA27-4234

IBM 3745 Communication Controller Models A²
IBM 3746 Expansion Unit Model 900
Models 900 and 950

Planning Series:
Overview, Installation, and Integration

Provides information for:

- Overall 3746 planning
- Installation and upgrade scenarios
- Controller and service processor network integration
- Related MOSS-E and CCM worksheets for these tasks.



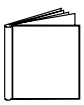
GA27-4235

IBM 3745 Communication Controller Models A²
IBM 3746 Expansion Unit Model 900
Models 900 and 950

Planning Series:
Serial Line Adapters

Provides information for:

- Serial line adapter descriptions
- Serial line adapter line weights and connectivity
- Types of SDLC support
- Configuring X.25 lines
- Performance tuning for frame relay, PPP, X,25, and NCP lines.
- CCM worksheets for serial line definitions.



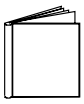
GA27-4236

IBM 3745 Communication Controller Models A²
IBM 3746 Expansion Unit Model 900
Models 900 and 950

Planning Series:
Token Ring, Ethernet, and ISDN

Provides information for:

- Token-ring, Ethernet, and ISDN adapter descriptions
- Token-ring, Ethernet, and ISDN configuration information
- CCM worksheets for token-ring definitions.



GA27-4237

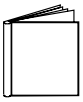
IBM 3745 Communication Controller Models A²
IBM 3746 Expansion Unit Model 900
Models 900 and 950

Planning Series:
ESCON Channels
Except for Multiaccess Enclosure

Provides information for:

- ESCON adapter descriptions
- ESCON configuration and tuning information
- ESCON configuration examples
- CCM worksheets for ESCON definitions.

Table H-3 (Page 3 of 6). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900



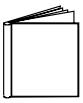
GA27-4238

IBM 3745 Communication Controller Models A[2]
IBM 3746 Expansion Unit Model 900
Models 900 and 950

Planning Series:
Physical Planning
Except for Multiaccess Enclosure

Provides information for:

- 3746 physical planning details
- Explanation of installation sheets
- 3746 plugging sheets.



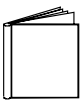
GA27-4239

IBM 3745 Communication Controller Models A[2]
IBM 3746 Expansion Unit Model 900
Models 900 and 950

Planning Series:
Management Planning
Except for Multiaccess Enclosure

Provides information for:

- Overview for 3746
- 3746 APPN/HPR, IP router, and X.25
- NetView Performance Monitor, remote consoles, and RSF.



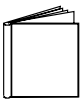
GA27-4240

IBM 3745 Communication Controller Models A[2]
IBM 3746 Expansion Unit Model 900
Models 900 and 950

Planning Series:
Multiaccess Enclosure Planning

Provides information for:

- MAE adapters and physical planning details
- MAE ESCON planning and configuration
- MAE APPN/HPR and IP management
- ATM and ISDN support
- MAE worksheets.



GA27-4241

IBM 3745 Communication Controller Models A[2]
IBM 3746 Expansion Unit Model 900
Models 900 and 950

Planning Series:
Protocol Introductions

Provides information for:

- Introduction and overview of APPN/HPR, IP, token-ring, Ethernet, frame-relay, PPP, X.25, and ESCON channels.

Preparing Your Site

Table H-3 (Page 4 of 6). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

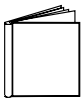
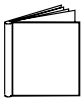
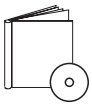
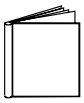
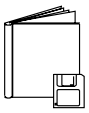
	GC22-7064	***IBM System/360, System/370, 4300 Processor*** ***Input/Output Equipment Installation Manual-Physical Planning*** (Including Technical News Letter GN22-5490) Provides information for physical installation for the 3745 Models 130 to 610. For 3745 Models A and 3746 Model 900, refer to the *Planning Guide*, GA33-0457.
	GA33-0127	***IBM 3745 Communication Controller Models 210, 310, 410, and 610*** ***Preparing for Connection*** Helps for preparing the 3745 Models 210 to 610 cable installation. For 3745 Models A refer to the *Connection and Integration Guide*, SA33-0129.
Preparing for Operation		
	GA33-0400	***IBM 3745 Communication Controller All Models***[3] ***IBM 3746 Nways Multiprotocol Controller Models 900 and 950*** ***Safety Information***[1] Provides general safety guidelines.
	SA33-0129	***IBM 3745 Communication Controller All Models***[3] ***IBM 3746 Nways Multiprotocol Controller Model 900*** ***Connection and Integration Guide***[1] Contains information for connecting hardware and integrating network of the 3745 and 3746-900 after installation.
	SA33-0416	***Line Interface Coupler Type 5 and Type 6 Portable Keypad Display*** ***Migration and Integration Guide*** Contains information for moving and testing LIC types 5 and 6.
	SA33-0158	***IBM 3745 Communication Controller All Models***[3] ***IBM 3746 Nways Multiprotocol Controller Model 900*** ***Console Setup Guide***[1] Provides information for: • Installing local, alternate, or remote consoles for 3745 Models 130 to 610 • Configuring user workstations to remotely control the service processor for 3745 Models A and 3746 Model 900 using: – DCAF program – Telnet Client program – Java Console support.
Customizing Your Control Program		

Table H-3 (Page 5 of 6). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

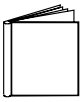
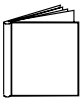
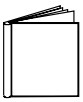
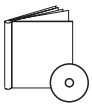
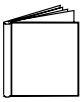
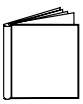
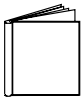
	SA33-0178	***Guide to Timed IPL and Rename Load Module*** Provides VTAM procedures for: • Scheduling an automatic reload of the 3745 • Getting 3745 load module changes transparent to the operations staff.
Operating and Testing		
	SA33-0098	***IBM 3745 Communication Controller All Models***[4] ***Basic Operations Guide***[1] Provides instructions for daily routine operations on the 3745 Models 130 to 610.
	SA33-0177	***IBM 3745 Communication Controller Models A***[2] ***IBM 3746 Nways Multiprotocol Controller Model 900*** ***Basic Operations Guide***[1] Provides instructions for daily routine operations on the 3745 Models 17A to 61A, and 3746 Model 900 operating as an SNA node (using NCP), APPN/HPR Network Node, and IP Router.
	SA33-0097	***IBM 3745 Communication Controller All Models***[3] ***Advanced Operations Guide***[1] Provides instructions for advanced operations and testing, using the 3745 MOSS console.
	On-line Information	***Controller Configuration and Management Application*** Provides a graphical user interface for configuring and managing a 3746 APPN/HPR Network Node and IP Router, and its resources. Is also available as a stand-alone application, using an OS/2 workstation. Defines and explains all the 3746 Network Node and IP Router configuration parameters through its online help.
	SH11-3081	***IBM 3746 Nways Multiprotocol Controller Models 900 and 950*** ***Controller Configuration and Management: User's Guide***[5] Explains how to use CCM and gives examples of the configuration process.
Managing Problems		
	SA33-0096	***IBM 3745 Communication Controller All Models***[3] ***Problem Determination Guide***[1] A guide to perform problem determination on the 3745 Models 130 to 61A.

Table H-3 (Page 6 of 6). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

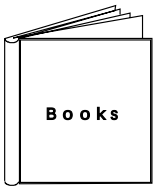
	On-line Information	***Problem Analysis Guide*** An online guide to analyze alarms, events, and control panel codes on: • IBM 3745 Communication Controller Models A[2] • IBM 3746 Nways Multiprotocol Controller Models 900 and 950.
	SA33-0175	***IBM 3745 Communication Controller Models A[2]*** ***IBM 3746 Expansion Unit Model 900*** ***IBM 3746 Nways Multiprotocol Controller Model 950*** ***Alert Reference Guide*** Provides information about events or errors reported by alerts for: • IBM 3745 Communication Controller Models A[2] • IBM 3746 Nways Multiprotocol Controller Models 900 and 950.

[1] Documentation shipped with the 3745.
[2] 3745 Models 17A to 61A.
[3] 3745 Models 130 to 61A.
[4] Except 3745 Models A.
[5] Documentation shipped with the 3746-900.

Additional Customer Documentation for the 3745 Models 130, 150, 160, 170, and 17A

Table H-4. Additional Customer Documentation for the 3745 Models 130 to 17A

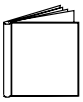
This customer documentation has the following format:



Finding Information

3745 Models A and 3746 Books

Starting with engineering change (EC) F12380, all of the books in the 3745 Models A and 3746 library are available on the CD-ROM that contains the Licensed Internal Code (LIC) for this EC.



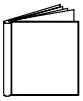
SA33-0142

IBM 3745 Communication Controller
Models 130, 150, 160, 170, and 17A
IBM 3746 Nways Multiprotocol Controller Model 900

Customer Master Index[1]

Provides references for finding information in the customer documentation library.

Evaluating and Configuring



GA33-0138

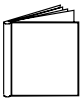
IBM 3745 Communication Controller
Models 130, 150, 160, and 170

Introduction

Gives an introduction about the IBM Models 130 to 170 capabilities, including Model 160.

For Model 17A refer to the *Overview*, GA33-0180.

Preparing Your Site



GA33-0140

IBM 3745 Communication Controller
Models 130, 150, 160, and 170

Preparing for Connection

Helps for preparing the 3745 Models 130 to 170 cable installation.

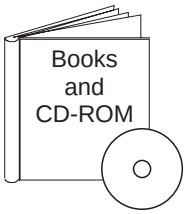
For 3745 Model 17A refer to the *Connection and Integration Guide*, SA33-0129.

[1] Documentation shipped with the 3745.

Service Documentation for the IBM 3745 (Models 210, 21A, 310, 31A, 410, 41A, 610, and 61A) and 3746 (Model 900)

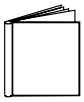
Table H-5 (Page 1 of 4). Service Documentation for the 3745 Models x10 and x1A, and 3746 Model 900

This service documentation has the following formats:



3745 Models A and 3746 Books

Starting with engineering change (EC) F12380, all of the books in the 3745 Models A and 3746 library are available on the CD-ROM that contains the Licensed Internal Code (LIC) for this EC.

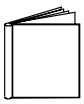


SY33-2080

IBM 3745 Communication Controller
Models 210 to 61A

Service Master Index[1]

Provides references for finding information in the IBM 3745 Models X10 and X1A shipping group documentation.

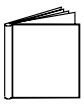


SY33-2057

IBM 3745 Communication Controller
Models 210 to 61A

Installation Guide[1]

Provides instructions for installing or relocating the IBM 3745 Models X10 and X1A.

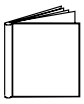


SY33-2114

IBM 3746 Nways Multiprotocol Controller
Model 900

Installation Guide[2]

Provides instructions for installing or relocating a 3746-900.

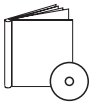


SY33-2116

IBM 3746 Nways Multiprotocol Controller
Model 900

Service Guide[2]

Provides procedures for isolating and fixing the IBM 3746-900 problems.



SY33-2055

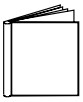
IBM 3745 Communication Controller
Models 210, 310, 410, and 610

IBM 3746 Expansion Units
Models A11, A12, L13, L14, and L15

Service Functions[1]

Describes MOSS functions using the IBM 3745 Models X10 and X1A consoles.

Table H-5 (Page 2 of 4). Service Documentation for the 3745 Models x10 and x1A, and 3746 Model 900

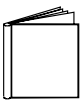


SY33-2054

IBM 3745 Communication Controller
Models 210 to 61A

Maintenance Information Procedures[1]

Provides procedures for isolating and fixing the IBM 3745 Models X10 and X1A problems.

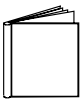


SY33-2115

IBM 3745 Communication Controller Models A[3]
IBM 3746 Expansion Unit Model 900
IBM 3746 Nways Multiprotocol Controller Model 950

Service Processor Installation and Maintenance[4]
(Based on the 7585, 3172, 9585, or 9577)

Provides information on installing and maintaining the service processor based on PS/2 Types 7585, 3172, 9585, or 9577.
Can be for systems with microcode that has up to and including EC D46130 (any level) installed.

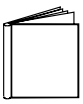


SY33-2120

IBM 3745 Communication Controller Models A[3]
IBM 3746 Expansion Unit Model 900
IBM 3746 Nways Multiprotocol Controller Model 950

Service Processor Installation and Maintenance[4]
(Based on the 7585, 3172, or 9585)

Provides information on installing and maintaining the service processor based on PS/2 Types 7585, 3172, or 9585.
Can be for systems with microcode EC F12380 or higher installed.

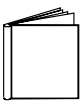


SY33-2125

IBM 3745 Communication Controller Models A[3]
IBM 3746 Expansion Unit Model 900
IBM 3746 Nways Multiprotocol Controller Model 950

Service Processor Installation and Maintenance[4]
(Based on the 6275)

Provides information on installing and maintaining the service processor based on PS/2 Type 6275.
Can be for systems with microcode EC F12380 or higher installed.



SY33-2127

IBM 3745 Communication Controller Models A[3]
IBM 3746 Expansion Unit Model 900
IBM 3746 Nways Multiprotocol Controller Model 950

Service Processor and Network Node Processor[4]
Service User's Guide

Provides information on installing and maintaining the operational code on service processor, or network node processor.
Can be for systems with microcode EC F12380 or higher installed.

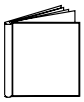
Table H-5 (Page 3 of 4). Service Documentation for the 3745 Models x10 and x1A, and 3746 Model 900

SY33-2118

IBM 3746 Nways Multiprotocol Controller Models 900 and 950

***Multiaccess Enclosure Installation and Maintenance*[4]**

Provides information on installing and maintaining the Multiaccess Enclosure (MAE).

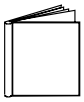


SY33-2124

IBM 3746 Nways Multiprotocol Controller Models 900 and 950

***Multiaccess Enclosure Installation and Maintenance*[4]**
(Starting from EC F12430 and Above)

Provides information on installing and maintaining the Multiaccess Enclosure (MAE). For systems with microcode EC F12430 or higher installed.

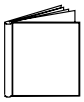


SY33-2112

IBM 3746 Nways Multiprotocol Controller Models 900 and 950

Network Node Processor Installation and Maintenance*[4] *(Based on the 7585 or 3172)

Provides information on installing and maintaining the network node processor based on the PS/2 Type 7585 or 3172.

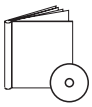


SY33-2126

IBM 3746 Nways Multiprotocol Controller Models 900 and 950

Network Node Processor Installation and Maintenance*[4] *(Based on 6275)

Provides information on installing and maintaining the network node processor based on the PS/2 Type 6275.

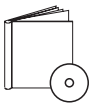


SY33-2056

IBM 3745 Communication Controller Models 210 to 61A

***Maintenance Information Reference*[1]**

Provides in-depth hardware reference information on the IBM 3745 Models X10 and X1A.

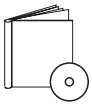


SY33-2075

***IBM 3745 Communication Controller All Models*[5]**

***External Cable References*[1]**

Provides references to console and line cables used for connecting the IBM 3745 Models 130 to 61A.



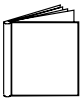
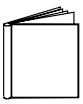
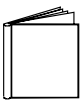
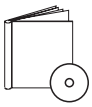
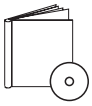
SY33-2117

IBM 3746 Nways Multiprotocol Controller Models 900 and 950

***External Cable Reference*[6]**

Provides references to console and line cables used for connecting the IBM 3746 Models 900 and 950.

Table H-5 (Page 4 of 4). Service Documentation for the 3745 Models x10 and x1A, and 3746 Model 900

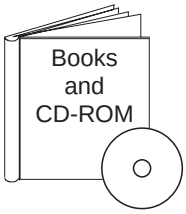
	S135-2015	***IBM 3746 Nways Multiprotocol Controller Models 900 and 950*** ***Parts Catalog***[6] Provides reference information for ordering parts for the IBM 3746 Models 900 and 950.
	S135-2010	***IBM 3745 Communication Controller Models 210 to 61A*** ***Parts Catalog***[1] Provides reference information for ordering IBM 3745 Models X10 and X1A parts.
	S135-2014	***IBM Controller Expansion*** ***Parts Catalog*** Provides reference information for ordering parts for the controller expansion attached to the IBM 3745 Models A[3], and 3746 Models 900 and 950.
CD-ROM Bibliography		
	ZK2T-8214	***IBM Networking Softcopy Collection Kit*** Allows service manuals consulting via CD-ROM viewer. EMEA version.
	ZK2T-8187	***IBM Networking Softcopy Collection Kit*** Allows service manuals consulting via CD-ROM viewer. US version.

[1] Documentation shipped with the 3745.
[2] Documentation shipped with the 3746-900.
[3] 3745 Models 17A to 61A.
[4] Documentation shipped with the processor.
[5] 3745 Models 130 to 61A.
[6] Documentation shipped with the 3746 Models 900 and 950.

Additional Service Documentation for the IBM 3745 Models 130, 150, 160, 170, and 17A

Table H-6 (Page 1 of 2). Additional Service Documentation for the 3745 Models 1x0 and 17A

This service documentation has the following formats:



SY33-2079	***IBM 3745 Communication Controller Models 130, 150, 160, 170, and 17A*** ***Service Master Index***[1] Provides references for finding information in the IBM 3745 Models 1X0 and 17A shipping group documentation.
SY33-2067	***IBM 3745 Communication Controller Models 130, 150, 160, 170, and 17A*** ***Installation Guide***[1] Provides instructions for installing or relocating the IBM 3745 Models 1X0 and 17A.
SY33-2069	***IBM 3745 Communication Controller Models 130, 150, 160, and 170*** ***Service Functions***[1] Describes MOSS functions using the IBM 3745 Models 1x0 and 17A consoles.
SY33-2070	***IBM 3745 Communication Controller Models 130 to 17A*** ***Maintenance Information Procedures***[1] Provides procedures for isolating and fixing the IBM 3745 Models 1X0 and 17A problems.
S135-2012	***IBM 3745 Communication Controller Models 130 to 17A*** ***Parts Catalog***[1] Provides reference information for ordering IBM 3745 Models 1X0 and 17A parts.
SY33-2066	***IBM 3745 Communication Controller Models 130, 150, 160, and 170*** ***Hardware Maintenance Reference***[1] Provides in-depth hardware reference information on the IBM 3745 Models 1X0 and 17A.

Table H-6 (Page 2 of 2). Additional Service Documentation for the 3745 Models 1x0 and 17A

[1] Documentation shipped with the 3745.

Glossary

ac. alternating current

ACPW. AC power (box)

AFD. airflow detector

alarm. A message sent to the MOSS console. In case of an error a reference code identifies the nature of the error.

alert. A message sent to the host console. In case of an error a reference code identifies the nature of the error.

AMD. air moving device

APPN. advanced peer-to-peer networking

ARC. active remote connector

ARC1A1. ARC V.24 DCE attachment with 5 meter tethered cable

ARC1A2. ARC V.24 DCE attachment with 15 meter tethered cable

ARC1B. ARC V.24 DTE attachment with 15 meter tethered cable

ARC1C. ARC V.24 DCE 3745 interface with 5 meter tethered cable

ARC1D. ARC V.24 DTE 3745 interface with 5 meter tethered cable

ARC1E. ARC V.24 3174 AEA interface (1)

ARC1F. ARC V.24 3174 PCA EIA interface (1)

ARC2A. ARC V.25 autocall interface with 5 meter tethered cable

ARC2C. ARC V.25 autocall interface 3745 with 5 meter tethered cable

ARC3A1. ARC V.35 DCE attachment with 5 meter tethered cable

ARC3A2. ARC V.35 DCE attachment with 15 meter tethered cable

ARC3B. ARC V.35 DTE attachment with 15 meter tethered cable

ARC3C. ARC V.35 DCE 3745 interface with 5 meter tethered cable

ARC3D. ARC V.35 DTE 3745 interface with 5 meter tethered cable

ARC4A1. ARC X.21 DCE attachment with 5 meter tethered cable

ARC4A2. ARC X.21 DCE attachment with 15 meter tethered cable

ARC4B. ARC X.21 DTE attachment with 15 meter tethered cable

ARC4C. ARC V.21 DCE 3745 interface with 5 meter tethered cable

ARC4D. ARC V.21 DTE 3745 interface with 5 meter tethered cable

ARC5A. Reserved

ARC5B. Reserved

ARC5C. ARC RS-422 3708 interface (or RJ-11 connection) (1)

ARC5D. ARC RS-422 IBM Cabling System interface (1)

ARC6A. ARC V.25 autocall interface with 15 meter tethered cable

ARC6C. ARC V.25 autocall 3745 interface with 15 meter tethered cable

BA. basic access

BAS. basic board

BATS. basic assurance tests

BER. box event record

BLPU. basic level packaging unit

BMI. bit multiplex interface

box event record (BER). Information about an event detected by the controller. It is recorded on the disk/diskette and can be displayed on the operator console for event analysis.

bps. bits per second

BSC. binary synchronous communication

BSI. bus synchronism interface

C. Celsius

C&SM. customer and service information

CA. channel adapter

cache. A high-speed buffer storage that contains frequently accessed instructions and data; it is used to reduce access time.

CB. circuit breaker

CBA. controller bus adapter

CBC. controller bus coupler

CBR. circuit burst request

CBSA. controller bus and service adapter (CBSP+CBC+TIC3)

CBSP. controller bus and service processor

CBTRA. controller bus and token-ring adapter (TRP+CBC+TIC3)

CBTRM. cable terminator (IOC and DMA buses)

CCITT. Comite Consultatif International Telephonique et telegraphique

CCU. central control unit

CDF. configuration data file (3745)

CDF-E. configuration data file extended (37CS)

CE. customer engineer

CEPT. Comite Europeen des Postes et Telecommunications

CLA. communication line adapter (CLP+LICnn)

CLDP. controller load/dump program

clear channel. Mode of data transmission where the data passes through the DCE and network, and arrives at the receiving communication controller (for example, the IBM 3745) unchanged from the data transmitted. The DCE or network can modify the data during transmission because of certain network restrictions, but must ensure the received data stream is the same as the transmitted data stream.

CLP. communication line processor

CMIP. common management interface protocol

CNM. communication network management

CP. 1.communication processor 2.control program 3.circuit protector 4.control point

CPLR. coupler

CPN. customer problem number

CPx. FRU name of circuit protector

CRC. cyclic redundancy check character

CS. connectivity switch

CSA. common subassembly

CSB. connectivity switch bus

CSC. connectivity switch cable

CSCE. connectivity switch cable extension

CSM. centralized support module

CSP. central service point

CSS. control subsystem (3745)

CTDA. configuration target device (processor) address

dc. direct current

DCAF. Distributed Console Access Facility (licensed program)

DCCS. DC to connectivity subsystem

DCE. data circuit-terminating equipment

DCDP. DC distribution and protection (box)

DCM. diagnostic control monitor

DCPW. DC power box

DICO. DMA IOC connection card

DM. distribution manager

DMA. direct memory access

DS. data storage

DSB. data storage bus

DSI. data storage interface

DSM. data storage manager

DSS. data storage interface for SBA

DSU. data service unit (DCE-like for high-speed communication lines)

DTE. data terminal equipment

EC. engineering change

EE. extended edition

EIA. Electronic Industries Association

EPO. emergency power-off

EPROM. eraseable PROM

ESCA. ESCON adapter

ESCC. ESCON coupler

ESCON*. Enterprise Systems Connection

ESCP. ESCON processor

ESD. electrostatic discharge

EXP. expansion enclosure

EXP1. first expansion enclosure

EXP2. second expansion enclosure

FCS. frame check sequence

FRU. field-replaceable unit

HCS. Hardware Central Service

HDLC. high-level data link control

hex. hexadecimal

host processor. (1) A processor that controls all or part of a user application network. (2) In a network, the processing unit in which the access method for the network resides. (3) In an SNA network, the processing unit that contains a system services control point (SSCP). (4) A processing unit that executes the access method for attached communication controllers. Also called *host.*

HPPB. high-performance parallel bus

HSC. hardware support center

HSF. hardware service facility

Hz. Hertz

IBM service representative. An individual in IBM who performs maintenance services for IBM products or systems.

IEEE. Institute of Electrical and Electronics Engineers

IML. initial microcode load

initial microcode load (IML). The process of loading the microcode into a scanner or into MOSS.

initial program load (IPL). The initialization procedure that causes the 3745 control program to commence operation.

IO. input/output

IOC. input/output control

IOCB. input/output control bus

IPL. initial program load

IRAM. instruction random access memory

ISO. International Organization for Standardization

kbps. kilobits per second

LA. line adapter

LAN. local area network

LCB. line connection box

LED. light-emitting diode

LIC. line interface coupler

LICx. FRU name of line interface coupler type x (3745)

LLC. logical link control

LS. local storage

LSA. link service architecture

LSCT. LIM software configuration table

LSM. local storage manager

LSSD. level-sensitive scan design (total hardware latches chain collection)

LU. logical unit

MAC. medium access control

MAE. Multiaccess enclosure

MAP. maintenance analysis-procedure

MAU. multistation access unit

MB. megabyte; 1 048 576 bytes

MCF. microcode fix

MCL. microcode change level

MES. miscellaneous equipment specification

MG. motor generator

MI. maskable interrupt

microcode. A program, that is loaded in a processor (for example, the MOSS processor)

MLA. MOSS LAN adapter

MMIO. memory mapped input/output

maintenance and operator subsystem (MOSS). The part of the controller that provides operating and servicing facilities to the customer's operator and the IBM service representative.

MOSS. maintenance and operator subsystem (3745)

MOSS-E. maintenance and operator subsystem extended (37CS)

NA. network addressable

NCP. Network Control Program

NDM. netview distribution manager

NetView. An IBM licensed program used to monitor a network, manage it, and diagnose its problems.

Network Control Program (NCP). An IBM licensed program that provides communication controller support for single-domain, multiple-domain, and interconnected network capability.

NMI. non-maskable interrupt

NMVT. network management vector transport

NNP. network node processor

NODA. next origin device (processor) address

NPM. NetView performance monitor

NTDA. next target device (processor) address

OEMI. original equipment manufacturer's interface

OLT. online test

online tests. Testing of a remote data station concurrently with the execution of the user's programs (that is, with only minimal effect on the user's normal operation).

OSI. open system interconnect

PA. primary access

PBC. packet burst control

PBG. packet burst grant

PCR. 1.pico-processor command register 2.power check reset

PICA. process and intertask communication architecture

PMH. problem management hardware

PN. part number

PNL. control panel

POR. power-ON reset

PP. pico-processor

PPB. primary power box

PPC. PowerPC (system card of MAE)

PRC. processor

PRDA. packet request device (processor) address

PROM. programable read-only memory

PS. power supply

PSI. packet switch interface

PSN. public switched network

PTCE. product-trained CE

PTF. program temporary fix

PTT. Post, Telephone and Telegraph (agency)

PU. physical unit

RETAIN. Remote Technical Assistance Information Network

RNR. receiver not ready

RPL. remote program load

RPO. remote power-off

RSC. remote service center

RSF. remote support facility

RVX. stands for RS232, RS422, V.24-35, X.21-2x connections

SAC. switch adapter card

SATS. specific assurance tests

SBA. switch bus adapter

SBI. switch bus interface

SC. switch control

SDLC. synchronous data link control

SIE. switch interface extender

SL. service logic

SNA. Systems Network Architecture

SNMP. Simple network management protocol

SPD1. signal and power distribution type 1

SPD2. signal and power distribution type 2

SPDL. signal and power distribution card in LCB

SPS. service and power support

SQL. structured query language

SRC. system reference code

SSA. system service architecture

SSCP. system services control point

STCn. signal transfer card n

SSS. subsystem support service

Systems Network Architecture (SNA). The description of the logical structure, formats, protocols, and operational sequences for transmitting information through a user application network. The structure of SNA allows the users to be independent of specific telecommunication facilities.

TB. terminator block

TDM. time division multiplexing

TDR. technical data record

TERC. terminator card

TIC1. token-ring interface coupler type 1 (3745) running at speed of 4 Mbits

TIC2. token-ring interface coupler type 2 (3745) running at speed of 4 or 16 Mbits

TIC3. token-ring interface coupler type 3 (37CS) running at speed of 4 or 16 Mbits

time out. The time interval allotted for certain operations to occur.

TPS. two-processor switch

TR. token-ring

TRA. token-ring adapter (TRP+TIC3)

TRFM. transformer

TRP. token-ring processor

TRS. transmitter/receiver subassembly

UEPO. unit emergency power-off

URSF. universal remote support facility

UTP. Unshielded twisted pair cable

V. volt

V.24. CCITT V.24 recommendation

V.25. CCITT V.25 recommendation

V.28. CCITT V.28 recommendation

V.35. CCITT V.35 recommendation

VPD. vital product data

VTAM*. Virtual Telecommunications Access Method

VTL. vendor technology logic

W. watt

X.21. CCITT X.21 recommendation

X.25. CCITT X.25 recommendation

YZxxx. wiring diagram

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Models 900 and 950
Network Node Processor
Installation and Maintenance
(based on 6275)

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