3745 Communication Controller Models A
3746 Expansion Unit Model 900
3746 Nways Multiprotocol Controller Model 950

Service Processor Installation and Maintenance (Based on 6578)

GY27-0406-01

3745 Communication Controller Models A
3746 Expansion Unit Model 900
3746 Nways Multiprotocol Controller Model 950

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GY27-0406-01

Note

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

First Edition (October 2001)

This edition applies to the Service Processor based on 6578 Model RAU.

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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 Service Processor, see the Service Inspection Procedures in “Safety Inspection Guide” on page A-3.

About This Guide

This guide provides installation and maintenance information for the Service Processor.

Who Should Use This Guide

The IBM personnel using this guide should be:

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

How to Use This Guide

This guide provides procedures for installing and maintaining a Service 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 Guide Is Organized

Chapter 1 Presents the procedures for installing and connecting the Service Processor, the 8228, and the RSF modem. It also gives procedures to customize the MOSS-E parameters.

Chapter 2 Introduces to the Service Processor problem determination.

Chapter 3 Provides maintenance analysis procedures (MAPs) and troubleshooting information for the Service Processor.

Chapter 4 Describes the diagnostics and tests available on the Service Processor and how to invoke them.

Chapter 5 Describes the procedures for Service Processor FRU exchange.

Chapter 6 Describes the service representative leaving procedure.

Appendix A Provides safety notices for the Service Processor.

Appendix B Provides 6578 machine model specifications.

Appendix C Provides parameter worksheets for the Service Processor.

Appendix D Provides the supported connections between the Service Processor and a remote workstation.

Appendix E Explains how to use the 7855 modem buttons.

Appendix F Gives the component locations in the controller expansion

Appendix G Gives the external cable references.

Appendix H	Provides Service Processor aids for FRU location and removal, and for configuration and setup.
Appendix I	Provides Service Processor part numbers.
Appendix J	Gives the customer and service documentation bibliography.
Glossary X	Gives a list of abbreviations.

Where to Find More Information

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

3746-950 Installation Guide, SY33-2107

3746-900 Installation Guide, SY33-2114

3746-950 IG: 3746-950 Installation Guide, SY33-2107

3745/130-17A Installation Guide, SY33-2067

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

Service Processor and Network Node Processor Service User, SY33-2127

3745 Communication Controller Models A and 3746 Models 900 and 950: Overview, Installation, and Integration, GA27-4234

3745 Communication Controller Models A and 3746 Models 900 and 950: Serial Line Adapters, GA27-4235

3745 Communication Controller Models A and 3746 Models 900 and 950: Token Ring and Ethernet, GA27-4236

3745 Communication Controller Models A and 3746 Models 900 and 950: ESCON Channels, GA27-4237

3745 Communication Controller Models A and 3746 Models 900 and 950: Physical Planning, GA27-4238

3745 Communication Controller Models A and 3746 Models 900 and 950: Management Planning, GA27-4239

3745 Communication Controller Models A and 3746 Models 900 and 950: Multiaccess Enclosure Planning, GA27-4240

3745 Communication Controller Models A and 3746 Models 900 and 950: Protocol Introductions, GA27-4241

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You can access the latest news and information about IBM network products, customer service and support, and microcode upgrades at:
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Online Documentation from CD-ROM

Starting at EC H10000A and EC H10010A (and above), the Service Processor is shipped with a CD-ROM that contains the licensed internal code and a copy of the 3746 Web site. You will find marketing, product engineering, and other information about CCP products on this Web page.

To access this page:

1. Insert the CD-ROM into the CD-ROM disk drive of the Service Processor.
2. From the MOSS-E primary menu, click **Information**
3. Double-click **CD-ROM documentation**
4. If you want to display the CCP documentation, click **Go to Documentation**

Note: To see the latest version of the Web site, go to:
w3.lagaude.ibm.com/ccp/3746.htm

Service Personnel Definitions

See one of the following manuals:

- *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

Chapter 1. Installing and Setting Up Your Service Processor

This chapter describes a number of installation scenarios and the tasks involved in each scenario, and provides detailed installation steps.

Prerequisite Documentation

Note: The following list gives the references to all the documents that can be used during the installation, but depending on your installation scenario not all of the documents will be needed.

Documents used during the installation:

1. 3746-900 IG: *3746-900 Installation Guide*, SY33-2114 (see note 1)
2. 3745 IG: *3745/210-61A Installation Guide*, SY33-2057 (see note 2)
3. 3746-950 IG: *3746-950 Installation Guide*, SY33-2107 (see note 4)
4. *3745/130-17A Installation Guide*, SY33-2067 (see note 3)
5. Output from the standalone Controller Configuration and Management.
6. SPIM:
   - *Service Processor Installation and Maintenance (Based on 7585, 3172, and 9585)*, SY33-2120
   - *Service Processor Installation and Maintenance (Based on 6275)*, SY33-2125
   - *Service Processor Installation and Maintenance (Based on 6563)*, SY27-0393
   - *Service Processor Installation and Maintenance (Based on 6578)*, GY27-0406
7. NNPIM:
   - *Network Node Processor Installation and Maintenance (Based on 7585 or 3172)*, SY33-2112
   - *Network Node Processor Installation and Maintenance (Based on 6275)*, SY33-2126
   - *Network Node Processor Installation and Maintenance (Based on 6563)*, SY27-0394
   - *Network Node Processor Installation and Maintenance (Based on 6578)*, GY27-0407
8. *Service Processor and Network Node Processor Service User*, SY33-2127
9. MES: 3745 MES and Field BMs for model conversion
10. *3745 Bypass Card Plugging Guide*, SY33-2097 (on line document see note 1)
11. *7855 Modem Model 10 Guide to Operation*, GA33-0160 or *7857 Guide to Operation*, GA13-1839
12. Parameter sheets from the *3745 Communication Controller Models A and 3746 Models 900 and 950: Overview, Installation, and Integration*, GA27-4234.

Notes:

This document is used when:

1. Installing a 3746-900.
2. Installing a 3745 Model X1A.
3. Installing a 3745 Model 17A.
4. Installing a 3746-950.
5. Installing the MES 3745 models conversion to models A
6. Installing the MES 3746-900 model conversion to 3746-950

Installation Scenarios

Depending on the machine and the MES received, determine which installation scenario you are going to perform (from Scenario 1 to Scenario 16). See Table 1-1 on page 1-4 and Table 1-1 on page 1-4 to see how the installation tasks can be distributed between two service representatives and define which document must be used to start the installation and have an overview of the installation sequence.

Note: See Table 1-2 on page 1-4 for more details about each scenario. If you are installing a 3745 Model 17A, the statements concerning the installation of an expansion frame and the procedures "CDF verify" and "locate bypass cards positions" are not applicable.

Note: You can install the 3746-900 first and then connect the Service Processor and run all diagnostics. Afterward the 3745 can be modified to model A (if necessary) and connected to the 3746-900

Table 1-1. Installation Scenarios	
Machine and/or MES Received	**Scenario**
3745 Model 170 or Model 210 to 610	1
Service Processor	2
3745 MES model conversion and 3746-900	3
3745 MES model conversion and 3746-900 and Service Processor	4
3745 Model 17A or Model 21A to 61A	5
3745 Model 17A or Model 21A to 61A and Service Processor	6
3746-900	7
3746-900 and 3745 MES model conversion	8
3746-900 and 3745 MES and Service Processor	9
3746-900 and 3745 Model 17A or 21A to 61A	10
3746-900 and 3745 Model 17A or 21A to 61A and Service Processor	11
3746-950 and network node processor	12
3746-950, Service Processor, and Network Node Processor	13
3746-900 MES conversion to Model 3746-950 and network node processor	14
3746-900 MES conversion to Model 3746-950, Service Processor and Network Node Processor	15
3746-900 MES installation of APPN® and network node processor	16

Note: The installation sequence given in Table 1-2 can be modified as you are able to install the 3746-900 first and then connect to the 3745 model A. It is no more mandatory to start with the 3745 MES (to migrate to model A) or with the *3745 Installation Guide*.

Table 1-2 (Page 1 of 3). Installation Scenario Tasks and Documentation				
Scenario	**CE**	**Tasks**	**Documentation**	**Installation Sequence**
Scenario 1	1st 2nd	Install the 3745-XX0 base frame. Install expansion frame (if any).	*3745 Installation Guide* *3745 Installation Guide*	Start with the 3745 IG and install the 3745-XX0.
Scenario 2	1st	Install the Service Processor.	*Service Processor Installation and Maintenance*	Start with the SPIM and install the SP..
Scenario 3	1st	Install the MES model conversion.	*MES model conversion XX0 to XXA*	Start with the MES and connect the 3745 XXA to the existing SP.
Scenario 4	1st 2nd	Install the MES model conversion. Install the Service Processor.	*MES model conversion XX0 to XXA* *Service Processor Installation and Maintenance*	Start with the MES and using the SPIM install the SP.
Scenario 5	1st 2nd	Install the 3745-XXA base frame. Install expansion frame (if any).	*3745 Installation Guide* *3745 Installation Guide*	Start with the 3745 IG and connect the 3745-XXA to the existing SP.

Table 1-2 (Page 2 of 3). Installation Scenario Tasks and Documentation

Scenario	CE	Tasks	Documentation	Installation Sequence
Scenario 6	1st	Install the 3745-XXA base frame.	*3745 Installation Guide*	Start with the 3745 IG and using the SPIM install and connect the SP..
	2nd	Install the Service Processor.	*Service Processor Installation and Maintenance*	
Scenario 7	1st	Install the 3746-900 (off line).	*3746-900 Installation Guide*	Start with the 3746 IG and install and connect the 3746-900 to the 3745-XXA.
	2nd	Prepare the 3745-XXA: CDF verify, Bypass Cards	*3746-900 Installation Guide*	
	2 CEs	Connect the 3746-900 to the 3745.	*3746-900 Installation Guide*	
Scenario 8	1st	Install the MES model conversion and prepare the 3745-XXA. • CDF verify - Bypass Cards	*MES model conversion XX0 to XXA 3746-900 Installation Guide*	Start with the MES to convert the 3745 to model XXA, then using the 3746 IG install and connect the 3746-900.
	2nd	Install the 3746-900 (offline.	*3746-900 Installation Guide*	
	2 CEs	Connect the 3746-900 to the 3745.	*3746-900 Installation Guide*	
Scenario 9	1st	Install the MES model conversion and prepare the 3745-XXA. • CDF verify - Bypass Cards	*MES model conversion XX0 to XXA 3746-900 Installation Guide*	Start with the 3745 MES convert the 3745 to XXA using the SPIM install the SP, then using the 3746 IG install and connect the 3746-900.
	2nd	Install the Service Processor.	*Service Processor Installation and Maintenance*	
		Install the 3746-900 (offline).	*3746-900 Installation Guide*	
	2 CEs	Connect the 3746-900 to the 3745.	*3746-900 Installation Guide*	
Scenario 10	1st	Install the 3745-XXA base frame.	*3745 Installation Guide*	Start with the 3745 IG and install the 3745 XXA. Then, using the 3746 IG, install the 3746-900. The machines are connected to an existing SP.
	2nd	Install expansion frame (if any) and the 3746-900.	*3745 Installation Guide* *3746-900 Installation Guide*	
	2 CEs	Connect the 3746-900 to the 3745.	*3746-900 Installation Guide*	
Scenario 11	1st	Install the 3745-XXA base frame and the Service Processor.	*3745 Installation Guide* *Service Processor Installation*	Start with the 3745 IG and install the 3745 XXA. Then, using the SPIM, install the SP. Using the 3746 IG, install the 3746-900.
	2nd	Install expansion frame (if any) and the 3746-900.	*3745 Installation Guide* *3746-900 Installation Guide*	
	2 CEs	Connect the 3746-900 to the 3745.	*3746-900 Installation Guide*	
Scenario 12	1st	Install the 3746-950..	*3746-950 Installation Guide*	Start with the 3746 IG and connect the 3746 950 to the existing SP. Then using the network node processor installation and maintenance, install the NNP.
	2nd	Install the Network Node Processor.	*Network Node Processor Installation and Maintenance*	

Table 1-2 (Page 3 of 3). Installation Scenario Tasks and Documentation

Scenario	CE	Tasks	Documentation	Installation Sequence
Scenario 13	1st	Install the 3746-950.	*3746-950 Installation Guide*	Start with the 3746 IG to install the 3746-950, the SPIM to install the SP, and the network node processor installation and maintenance to install the NNP.
	2nd	Install Service Processor.	*Service processor Installation and Maintenance*	
	2nd	Install the Network Node Processor.	*Network Node Processor Installation and Maintenance*	
Scenario 14	1st	Install the MES model conversion from 3746-900 to 3746-950.	*3746-900 to 3746-950 MES model conversion and the 3746-950 Installation Guide*	Start with the MES, then use the 3746 IG to connect the 3746-950 to an existing SP, and the network node processor installation and maintenance to install the NNP.
Scenario 15	1st	Install the MES model conversion from 3746-900 to 3746-950	3746-900 to 3746-950 MES model conversion, 3746-950 IG and the	Start with the MES and the 3746-950 IG then use the SPIM to install the SP and the network node processor installation and maintenance to install the NNP.
	2nd	Install the Service Processor.	*Service Processor Installation and Maintenance*	
	2nd	Install the Network Node Processor.	*Network Node Processor Installation and Maintenance*	
Scenario 16	1st	Install APPN on the 374-900 MES.	*MES APPN on 3746-900*	Start with the MES to install APPN on the 3746-900, then use the NNPIM to install the network node processor.
	2nd	Install the Network Node Processor.	*Network Node Processor Installation and Maintenance*	

Installing Your Service Processor (Based on 6578 Model RAU)

Service Processor Overview

The Service Processor is based on an IBM 6578 Model RAU, see “Service Processor Configuration / Setup Utility” on page H-8 for details of the features installed.

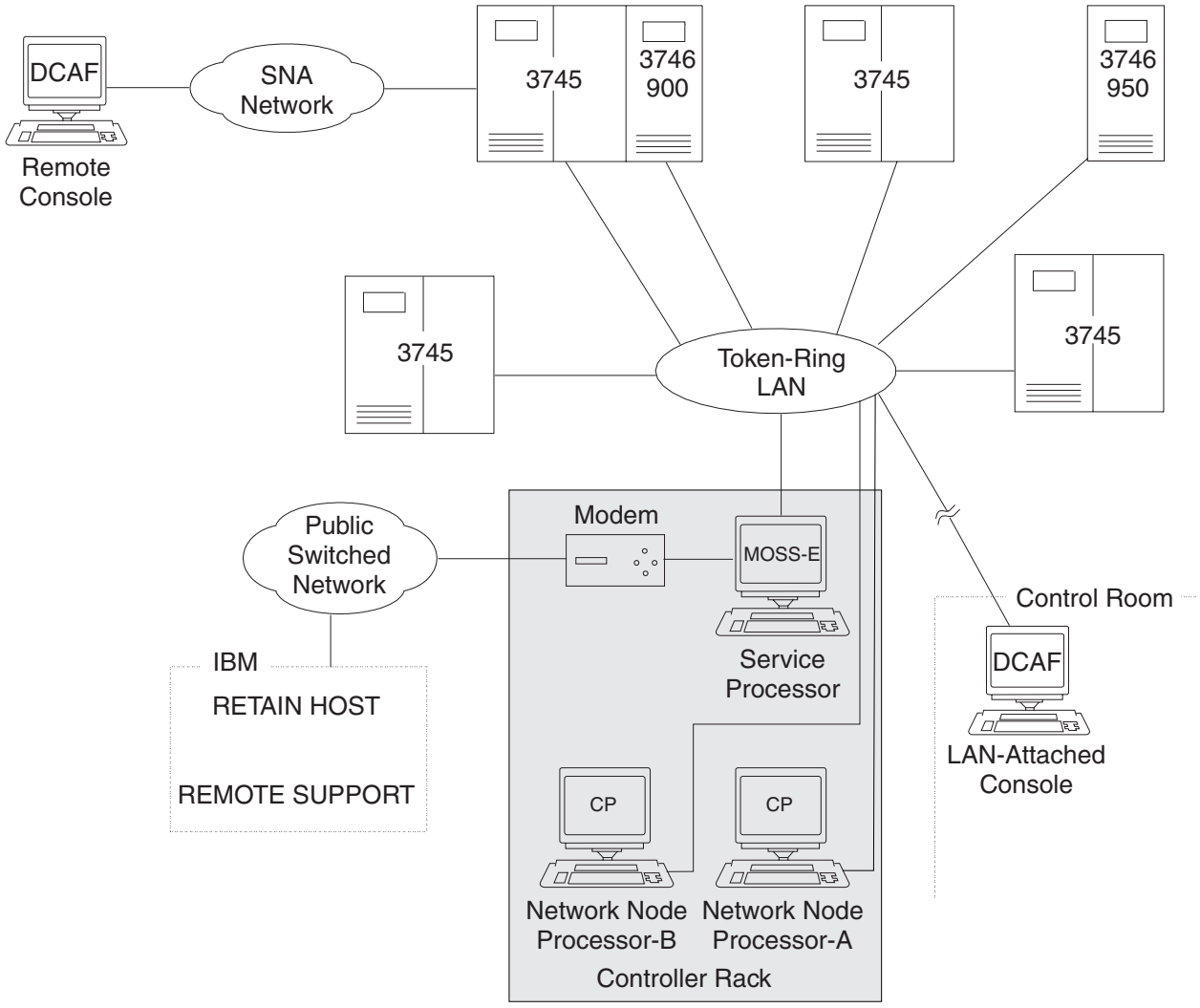


Figure 1-1. Service Processor Environment

Service Processor Installation Tasks

Note: If you are **not** familiar with the Service Processor operations, refer to *Service Processor and Network Node Processor Service User*, SY33-2127, and then return here.

TASK	DESCRIPTION	GO TO
1	Installation preparation	**"Step 1: Preparing Your Installation"**.
2	Install the System Unit, Display, and Keyboard	**"Step 2: Installing the System Unit, Display, and Keyboard" on page 1-9**.
3	Install the 8228 and connect to the Service Processor	**"Step 3: Installing the Service Processor Access Unit (8228)" on page 1-18**.
4	Install and connect the RSF modem to the Service Processor	**"Step 4: Installing and Connecting the RSF Modem to the Service Processor" on page 1-21** .
5	Customize your &SO. according to the customer's options	**"Step 7: Customizing Your Service Processor" on page 1-33**.

Step 1: Preparing Your Installation

Obtain from the customer the following parameter worksheets:

1. "Parameter definitions for RSF"
2. "NetView path parameters"
3. "Service Processor integration"
4. "Service Processor parameters for DCAF"
5. "NCP dump transfer" (not applicable for 3746-950)

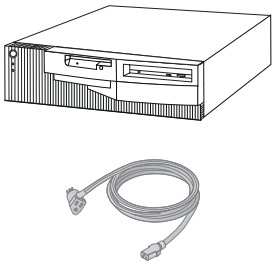
These parameter worksheets are part of the *3745 Communication Controller Models A and 3746 Models 900 and 950: Planning Guide*, GA33-0457 Appendix A and must be filled in by the customer. A copy of these parameter worksheets is given at the end of this manual see Appendix C, "Parameter Worksheets."

Step 2: Installing the System Unit, Display, and Keyboard

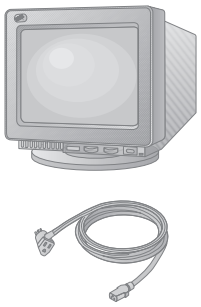
1. Unpack Your Service Processor

   You need the following items to complete this installation:

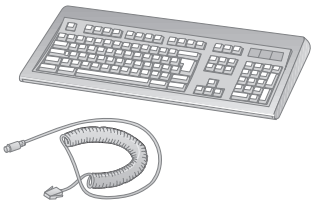
   - ☐ Service Processor and Power Cord

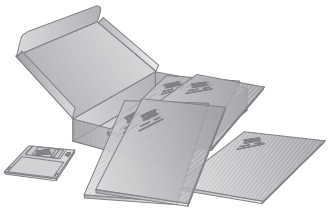
   - ☐ Display and Display Power Cord

   - ☐ Keyboard, Mouse, and Keyboard Cable

   - ☐ Publications and diskettes

2. Check that you have received the following parts:
   a. Four brackets (PN 58G5752)
   b. Two plates (PN 58G5755)
   c. One service drawer assembly (PN 58G5763)
   d. One label (PN 0782966)
   e. Ten nuts (PN 58G5766)
   f. Twelve screws (PN 1621230), eight screws (PN 2665527) and two screws (PN 1621232)
3. Using label (PN 0782966), identify your Service Processor-A or Service Processor-B by sticking the appropriate label **A** on the front side of the unit (see Figure 1-2 on page 1-10).

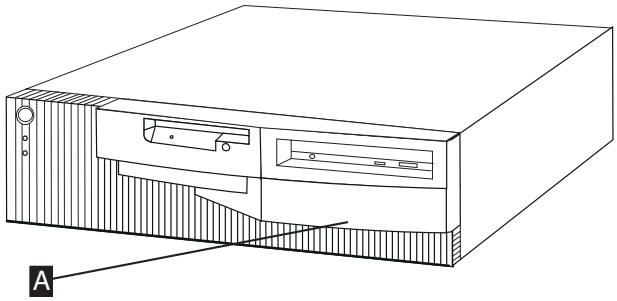


Figure 1-2. Installing Label on the Front Side of the Service Processor

4. If you have a controller expansion, install the Service Processor kit PN 58G5698 (service drawer, brackets, and plates), and go to **step 5.** Otherwise, go to **step 16 on page 1-14.**
5. Open the front and rear doors of the controller expansion. See Figure F-3 on page F-4 and locate the positions to install the brackets for the display and the Service Processor. Also, locate the position to install the service drawer.
6. For the display and the Service Processor, install four brackets **1** (PN 58G5752) and secure using eight screws **2** (PN 2665527).

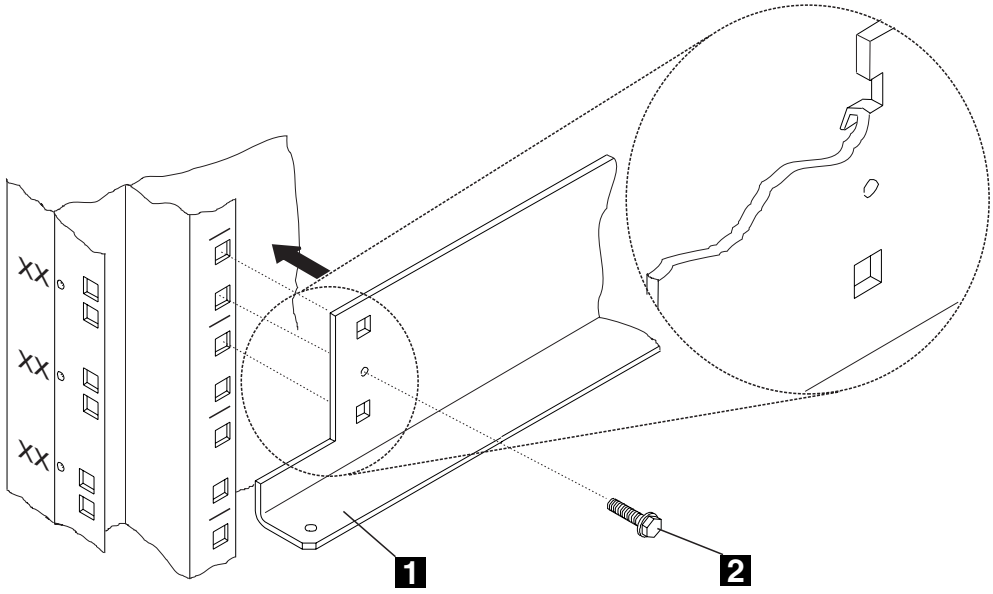


Figure 1-3. Installing Brackets PN 58G5752

7. On the brackets installed for the display and the service processor, install plate **4** (PN 58G5755) using four screws **3** (PN 1621230).

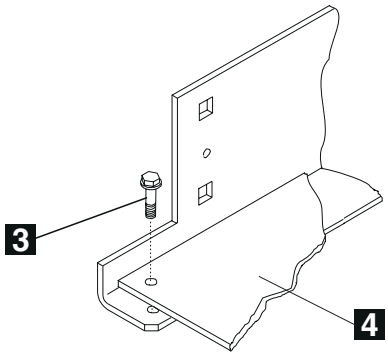


Figure 1-4. Installing Plate PN 58G5755

8. See Figure 1-5, and if needed, install four captive nuts **A** (PN 58G5766) on the front and on the rear side of the controller expansion, to install the service drawer.

.

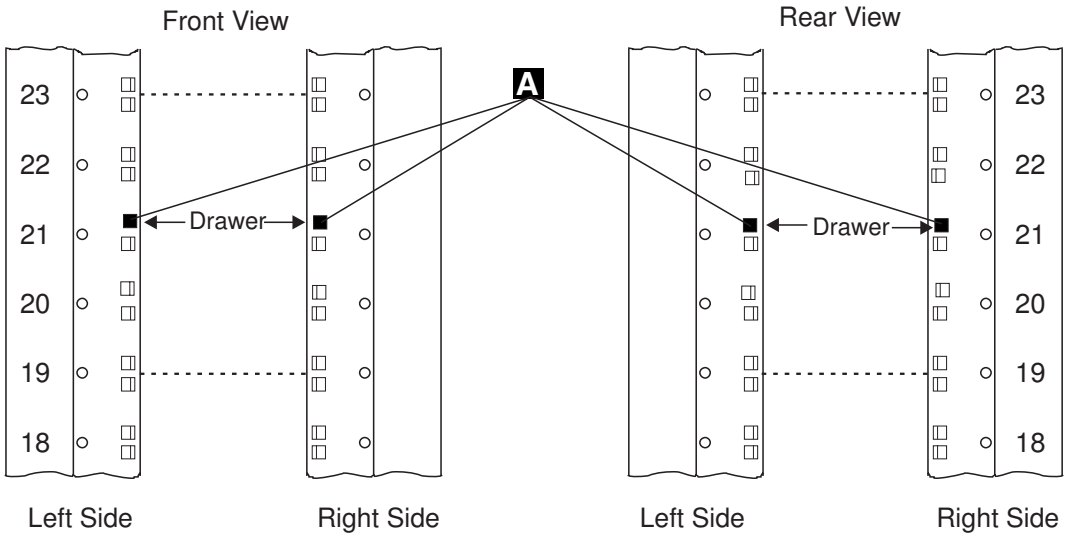


Figure 1-5. Installing Captive Nuts for the Service Drawer

9. See Figure 1-6, on the rear side of the controller expansion, install bracket **A** using two screws **C** (PN 1621230).
10. On the front side of the controller expansion, slide the drawer **B** on the bracket **A** and secure using two screws **C** (PN 1621230).

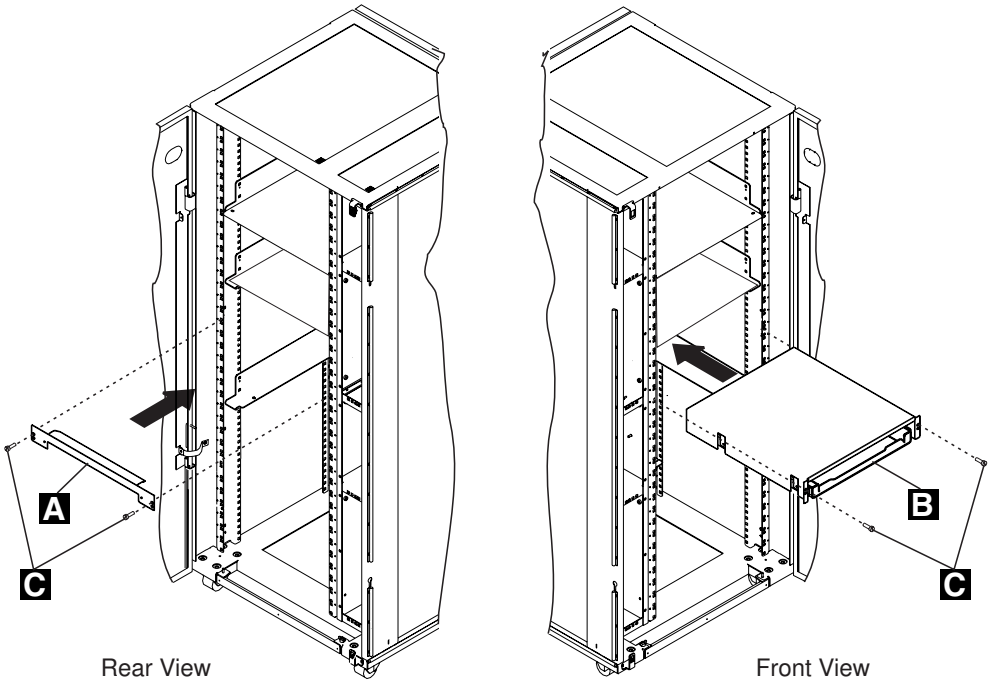


Figure 1-6. Installing the Service Drawer

11. If the Service Processor is installed in the controller expansion, go to **step 12.** Otherwise, go to **step 16 on page 1-14.**
12. Slide the &SO. unit on the brackets as shown in Figure 1-7 on page 1-13.

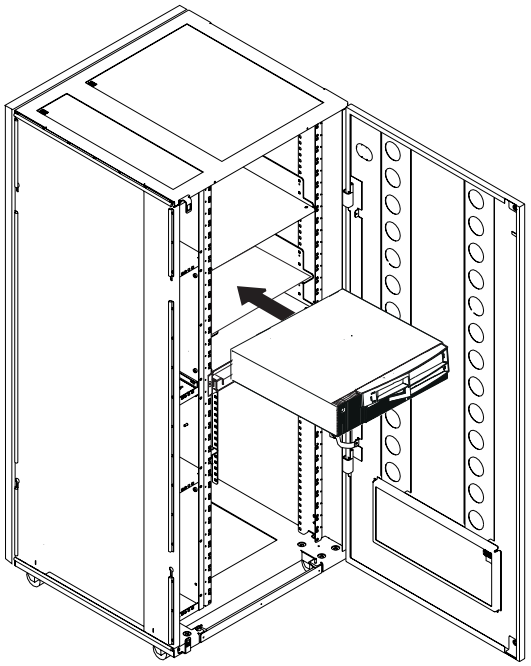


Figure 1-7. Installing the Service Processor Unit in the Controller Expansion (Front Side)

13. Now you have the choice to install the display and keyboard either in the rack or on a table. If the display is installed in the rack, go to **step 14.** Otherwise, go to **step 16 on page 1-14.**
14. Slide the display panel on the top of the controller expansion (see Figure 1-8).

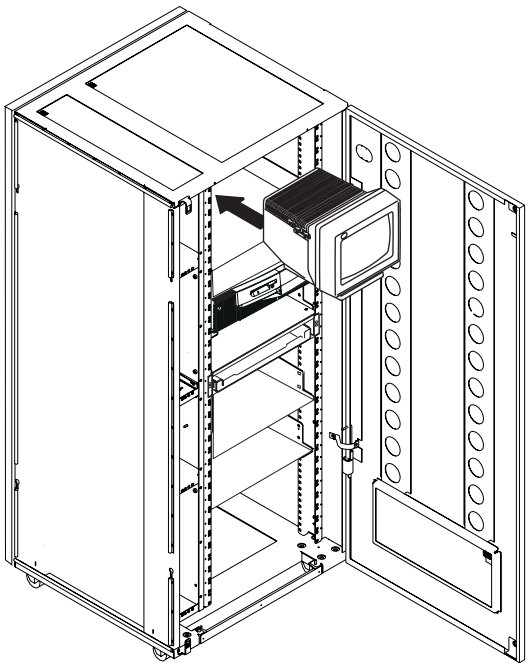


Figure 1-8. Installing the Display in the Controller Expansion (Front Side)

15. Open the drawer and install the keyboard as shown in Figure 1-9 on page 1-14. Then go to **step 17 on page 1-14.**

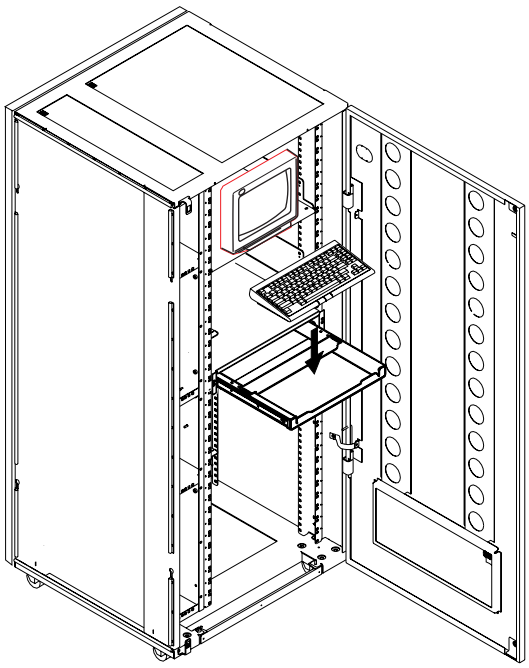


Figure 1-9. Installing the Keyboard

16. Obtain a table or a desk large enough to receive the Service Processor, the display, the keyboard, and the modem, and go to **step 17.**

17. Connect the cables to the 6578 as follows (see Figure 1-10 on page 1-15):

    a. Connect the keyboard cable **A** to the connector at the rear of the Service Processor.

    b. Connect the mouse cable **B** to the connector at the rear of the Service Processor.

       Note: If you are installing the keyboard and the mouse outside of the controller expansion, use the keyboard extender cable PN 10K8632 **G** and the mouse extender cable PN 10K8633 **H** (see Figure 1-11 on page 1-15).

    c. Connect the Service Processor power cord **C** .

    d. Connect the token-ring cable **D** (PN 6339098) to the Service Processor connector.

    e. Connect the display signal cable **F** to the Service Processor connector.

       Note: If you are installing the display outside of the controller expansion, use the extender cable PN 59G1270 (see Figure 1-11 on page 1-15, reference **J**).

    f. ***After you secure all these connections,*** plug the power cords into properly grounded electrical outlets.

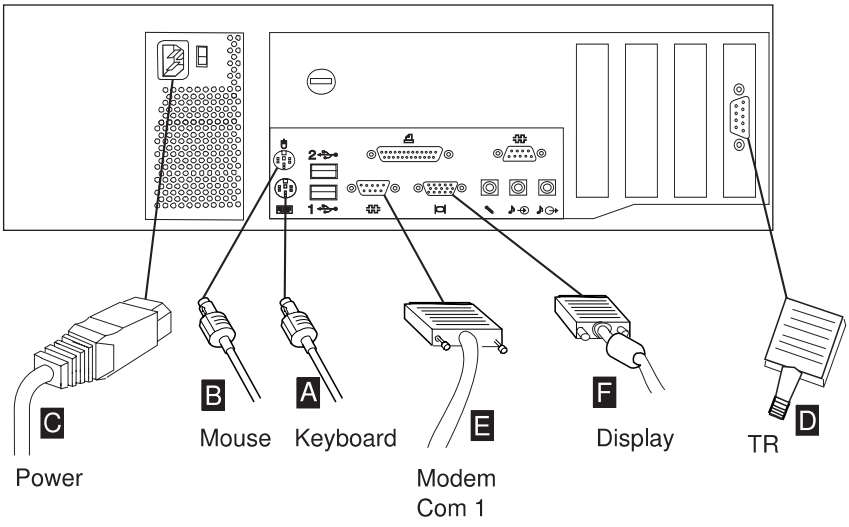


Figure 1-10. Cable Locations

Note: Cable **E** is the cable coming from the modem and it will be connected ***later***, see "Step 4: Installing and Connecting the RSF Modem to the Service Processor" on page 1-21.

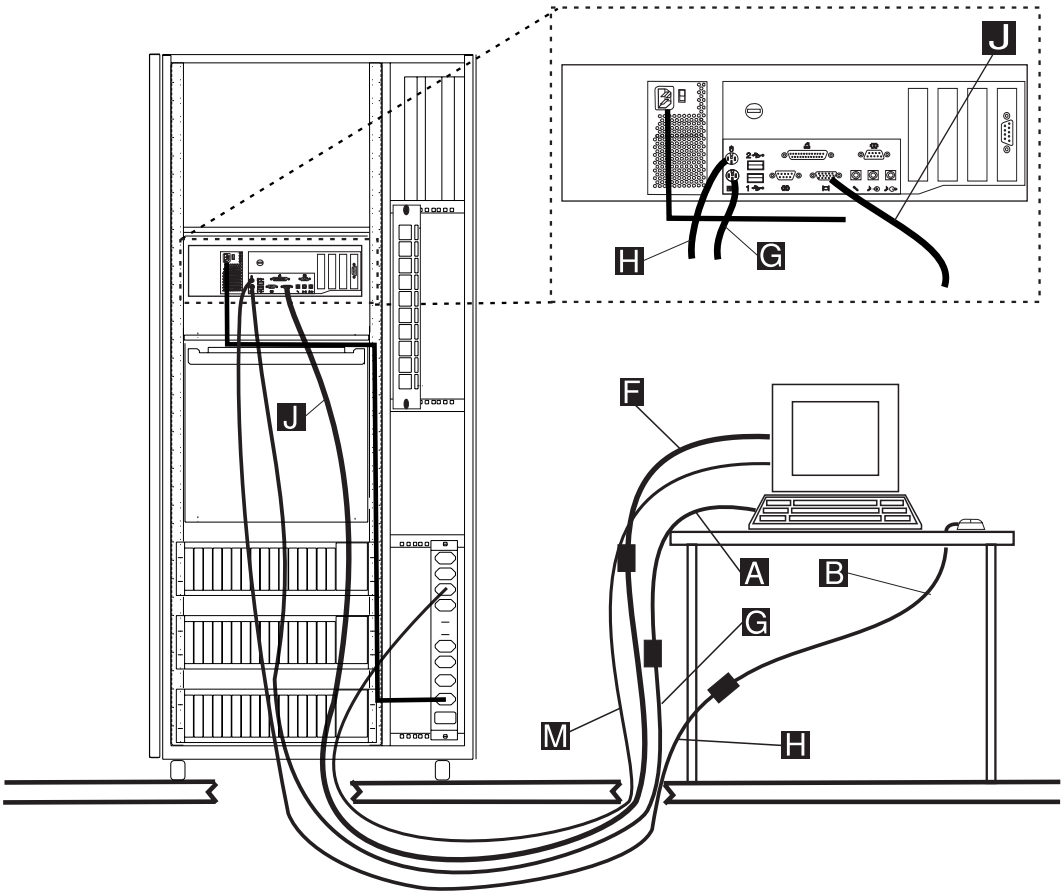


Figure 1-11. Installing the Display and Keyboard on a Table

Go To

If you have installed:

- **All the units** in the controller expansion, go to **step 18 on page 1-16**
- The **keyboard** and **display** are installed **on a table**, go to **step 19 on page 1-16**.
- **All the units** on a table, go to **step 21 on page 1-17** .

Attention

The ac outlet distribution box is connected to a ***220-V*** power source; therefore, all the units must be set to support this voltage.

18. Route and connect the power cords (PN 58G5783) from the display and Service Processor unit to the ac outlet distribution box as shown in Figure 1-12. Secure these cables using tie clamps along the frame, then go to **step 20.**

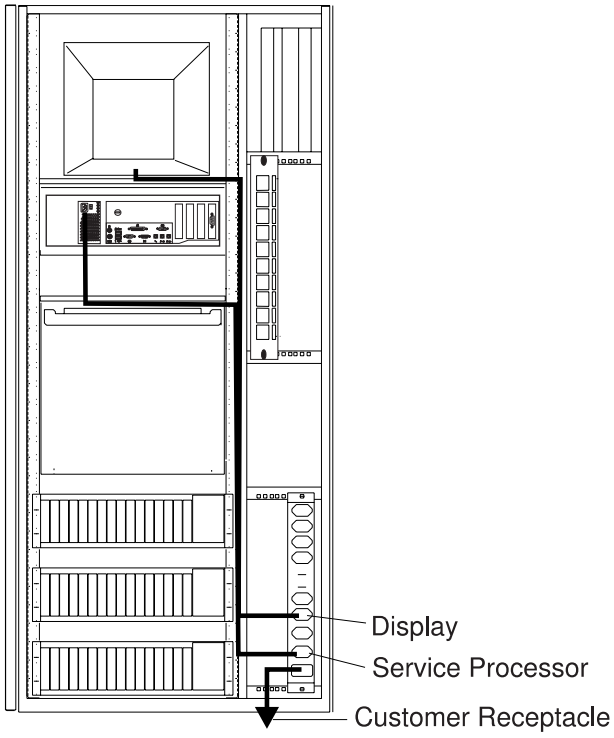


Figure 1-12. Power Cords Connection

19. Connect the display power cable **M** to the ac outlet distribution box (see Figure 1-11 on page 1-15). Secure all the cables using tie clamps along the frame.
20. If it is not already plugged, connect the main power cord **P** coming from the ac outlet distribution box to the customer receptacle (see Figure 1-13 on page 1-17).

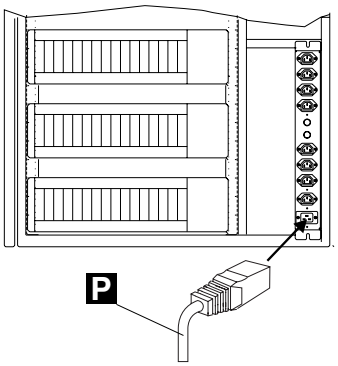


Figure 1-13. Power Cord for Power Strip

21. If the customer ordered a *backup* Service Processor, resume **step 1 on page 1-9** to **step 16 on page 1-14** to install this machine near the *active* Service Processor. Install the system unit, display, and keyboard, but ***never*** connect this machine to the LAN. This Service Processor is used to replace the *active* Service Processor if it fails.

Step 3: Installing the Service Processor Access Unit (8228)

1. Unpack the 8228, and then reset the 8228 ports as explained in the following steps:

   Note: Use the IBM 8228 Setup Aid after you have installed the 8228 and before you connect any cables to it. Save one Setup Aid to be used later if you relocate an 8228.

2. Before you begin, make sure no cables are connected to the 8228. If a cable bracket has been installed on the 8228, remove it.

3. Insert the aid into receptacle 1 of the 8228. The yellow stripe should be aligned with the edge of the receptacle to ensure that the aid is firmly seated.

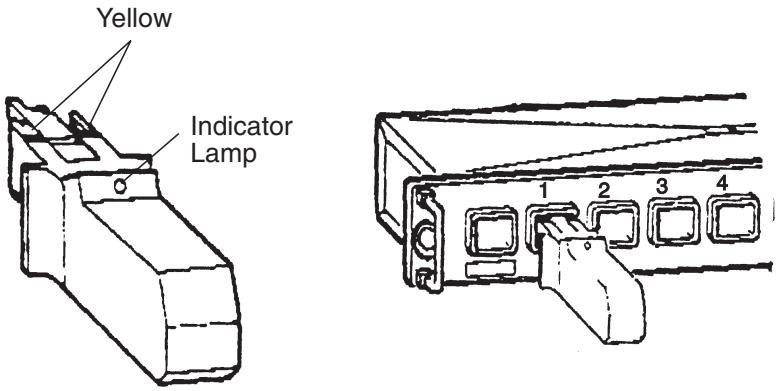


Figure 1-14. Use of the 8228 Setup Aid

   The light will glow brightly when the aid is initially inserted and will gradually dim when the aid is firmly seated in the receptacle.

   If the light does not glow brightly when you insert the Setup Aid, remove the screw from the aid and replace the battery. If the light still does not glow brightly after you have replaced the battery, try another Setup Aid.

4. Leave the aid in the receptacle for 4 seconds after the light has gone out. Remove the aid from the receptacle and insert it into the next receptacle. The yellow stripe should be aligned with the edge of the receptacle to ensure that the aid is firmly seated.

   Go to the next receptacle and repeat this step until you have set each receptacle, 1 through 8.

5. When you have set receptacle 8, insert the aid into the RI receptacle for 4 seconds.

   The light should glow brightly while the aid is in the receptacle. If the light does not come on or goes out while the aid is connected to the receptacle, the 8228 must be replaced. Notify your network planner or supervisor.

   Note: The 8228 Setup Aid is to be used only in setting up the 8228 either initially or after relocating the 8228. It should never be used when the network is operating.

6. Install the 8228 in a safe place near the Service Processor. If you received a controller expansion, the 8228 is installed on the rear side of the controller expansion using two screws (PN 1621232) and two captive nuts (PN 58G5766) see Figure 1-15 on page 1-19. Using label **A** (PN 0782966), identify the 8228 as Service Processor Access Unit.

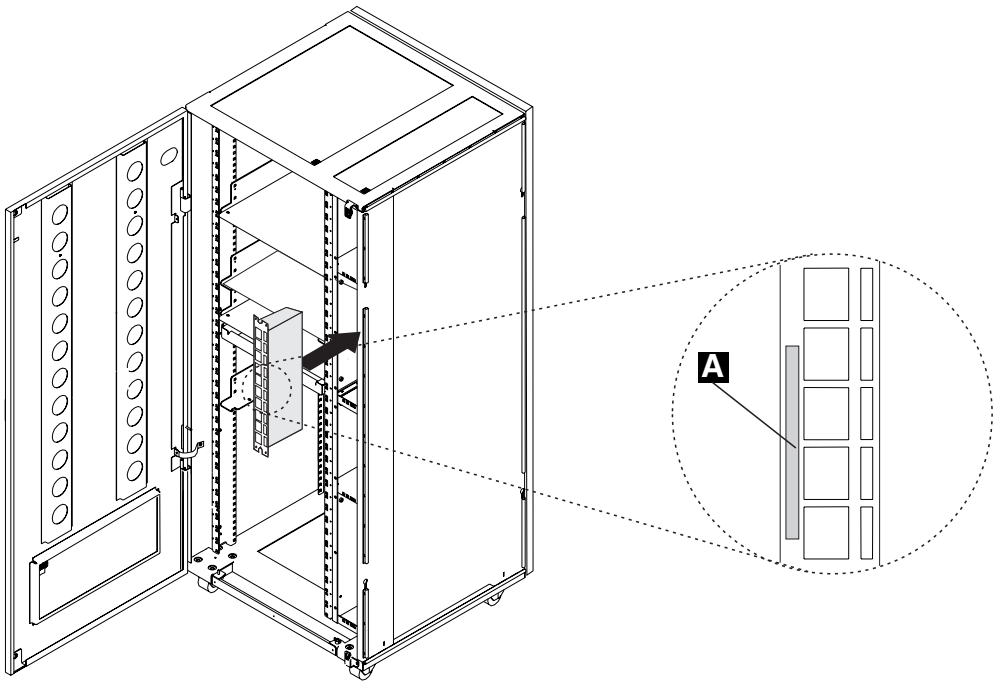


Figure 1-15. Installing the 8228 (Controller Expansion Rear Side)

7. Connect the 8228 to the Service Processor as follows:

   Note: If you have a controller expansion, see Figure 1-17 on page 1-20, if not, see Figure 1-16 on page 1-20.

   a. Plug connector **1** of cable **A** to the Service Processor.

   b. Using a sticker, identify the connector **2** as the "Service Processor cable."

   c. Plug connector **2** to any plug of the 8228 from 1 to 8.

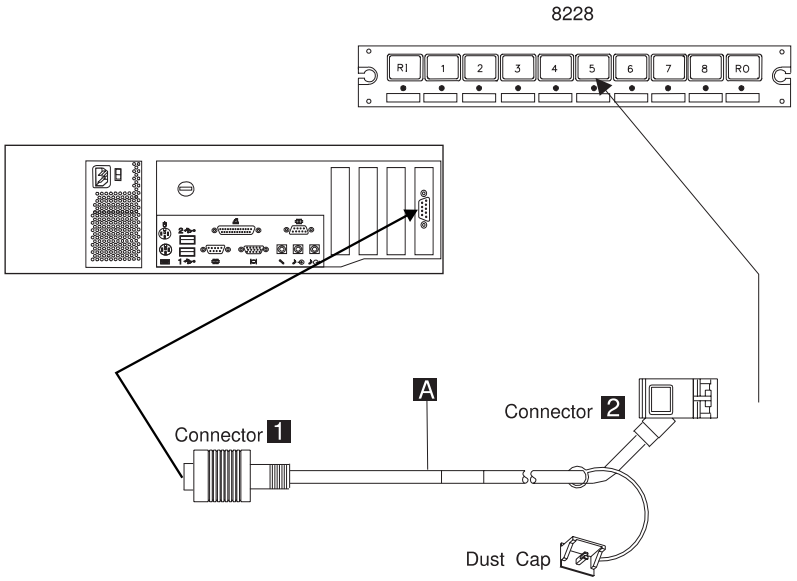


Figure 1-16. Connecting the 8228 to the Service Processor

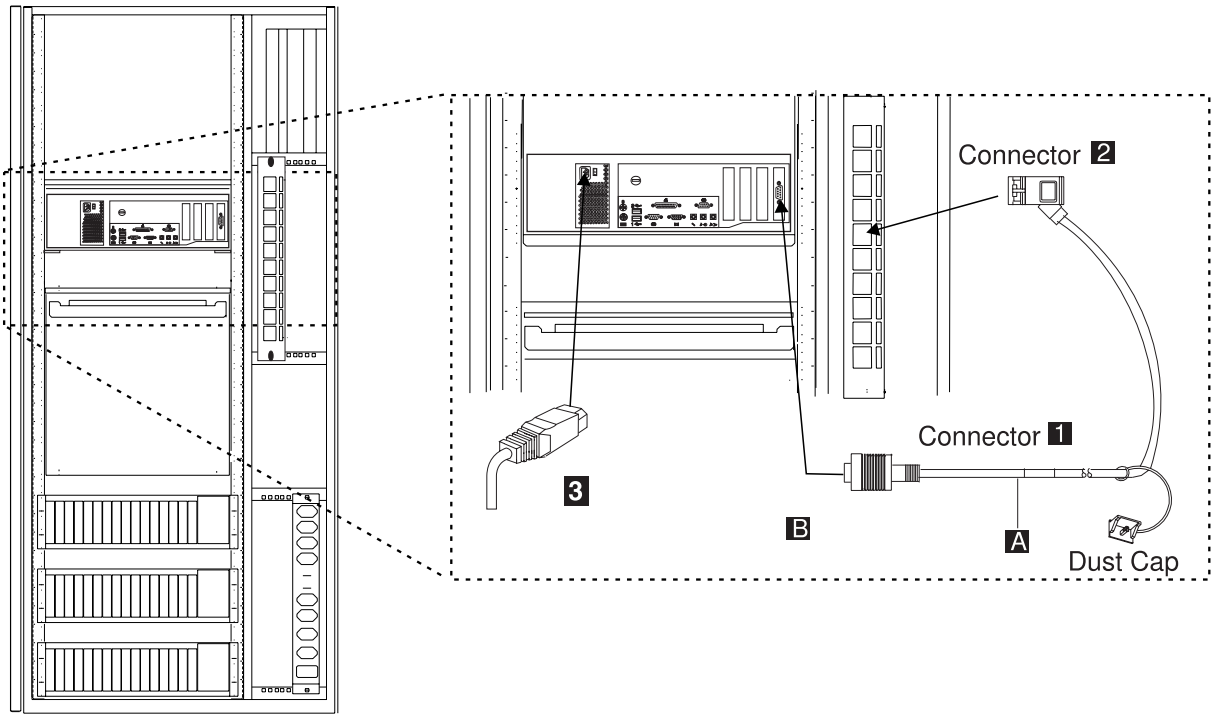


Figure 1-17. Connecting the 8228 to the Service Processor Installed in the Controller Expansion

Go to "Step 4: Installing and Connecting the RSF Modem to the Service Processor" on page 1-21

Step 4: Installing and Connecting the RSF Modem to the Service Processor

See Appendix D, “Supported Connections between the Service Processor and a Remote Workstation” to see if the connection between your Service Processor modem and remote workstation modem is supported.

Go To

If you are installing:

- A **7858**, go to “Step 5: Installing and Connecting the 7858 to the Service Processor” on page 1-22.
- A **7857**, go to “Step 6: Installing and Connecting the 7857 to the Service Processor” on page 1-27.

Note: For the other types of RSF Modems, use the installation instructions shipped with the modem (set the modem speed to 9600 bps).

Step 5: Installing and Connecting the 7858 to the Service Processor

Notes:

1. If you are not familiar with the 7858, refer to the *7858 Professional Modem Guide to Operation*, GA13-1981.
2. Power requirements:
   - Low-voltage range: 90 to 137 V ac.
   - High-voltage range: 180 to 265 V ac.
3. The document *Power Supply and Telecommunication Connections for IBM Modems* GA33-0054, contains useful information about the different telecommunication connectors and power supply plugs.
4. Read the *IBM Telecommunication Products Safety Handbook*, SD21-0030.

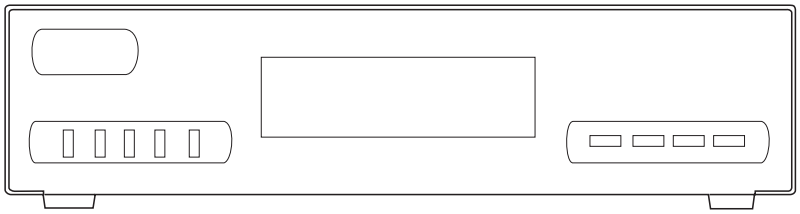


Figure 1-18. 7858 Front Side

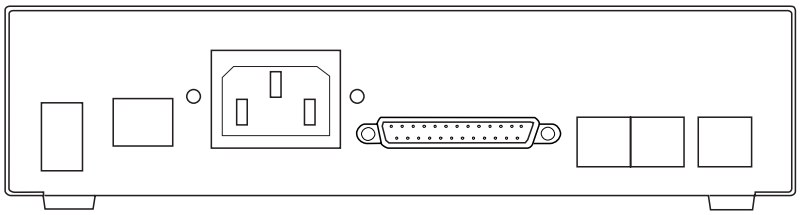


Figure 1-19. 7858 Rear Panel

7858 Modem Installation

This chapter describes how the modem can be easily installed and how to configure it in order to have it immediately operational.

Besides the modem and this manual, the carton should contain:

- The power attachment cord.
- Two telecommunication cables:
  - Black cable for the switched line, with label SW, which fits into the PSTN socket in the modem rear panel.
  - Gray cable for the leased line, with label LL, which fits into the LL socket in the modem rear panel.
- The *IBM Telecommunication Products Safety Handbook*.

If any of these items is missing or damaged, contact the place of purchase for instructions on how to exchange your modem or obtain the missing items.

Installing the Modem

Attention

In order to avoid damages to the unit, before starting the installation, verify the modem input ac voltage setting against the power voltage source available at your wall socket.

If needed, the selector switch can easily be moved to the correct position, using a screwdriver or a pen:

- Switch set to 115 V for low-voltage range: 90 - 137 V ac.
- Switch set to 230 V for high-voltage range: 180 - 265 V ac.

Step 1. Be sure that the power switch located on the modem rear panel is off (switch in position "O")

Step 2. If you are going to use a switched line telecommunication cable, plug it into the PSTN socket located on the modem rear panel. If this modem is ***not*** being installed in the United Kingdom, connect the other end of the cable to the telecommunication line.

Step 3. If you plan to use a leased line telecommunication cable, plug it into the LL socket located on the modem rear panel. If this modem is ***not*** being installed in the United Kingdom, connect the other end of the cable to the telecommunication line.

Step 4. Connect the power attachment cord to the ac power socket located on the modem rear panel and the power plug to a standard 3-pin grounded ac outlet. If this modem ***is*** being install the United Kingdom, connect the telecommunication cables you have attached to the modem, to the telecommunication lines.

Step 5. Observe the modem power-on sequence.

This is the normal power-on sequence:

- PWR light is turned on.
- `SELFTEST RUNNING` message is displayed for about 15 seconds.

Set the modem power switch to ON (switch in position "I").

If the PWR light is not on and the voltage selector switch is correctly set and you are sure the power voltage is present at the wall socket, the modem is defective and should be replaced.

If the message `SELFTEST RUNNING` is not appearing on the operator panel within 10 seconds, the modem is defective and should be replaced. This message remains on the display for about 15 seconds, then it is changed by the power-on sequence.

If the modem is set to the factory defaults, the operator panel shows:

```
AT CMD    ec▮ aa▮
td_  rd_  dsr_  ll_
```

Figure 1-20. 7858 Operator Panel Display

This operational message shows that the modem is set in AT command mode for switched-line operation with error control enabled and will auto-answer an incoming call.

In the next steps, you are instructed to manipulate the front panel buttons of the modem. Unless the step suggests otherwise, do not press them in for longer than 1 second.

The **next step** reset the modem options to the factory default configuration 0. Jump ahead to **step 7** if the modem has never been used.

Step 6. Set the modem power switch to OFF, then hold the ↑ key pressed and set the power switch to ON. When the message `SELFTEST RUNNING` is shown, release the ↑ key.

After about 15 seconds the message is changed to:

```
AT CMD   ec▮ aa▮
td_  rd_  dsr_  ll_
```

Figure 1-21. 7858 Operator Panel Display

If this sequence does not occur, the modem is defective and should be replaced.

Step 7. The next steps can only be done if you have attached the modem to the public switched network. Go to **step 11** if you do not want to test the modem's public switched network interface.

Step 8. On the modem operator panel:

a. Press the ↑ until the `DTR (C108)` message is displayed on the top row.
b. Press the → key until the `Forced On` message is displayed on the bottom row.
c. Press Enter twice to select the option and to return to the modem operational mode message.

Step 9. Dial the modem phone number from another telephone. You should hear the ringing tones and then the 2100-Hz answer tone from the called modem in the handset of the dialing telephone. If you hear the answer tone, go to **step 11**. Otherwise, continue with **step 10**.

Step 10. If you do not hear the modem answer tone, verify that the telephone line is operating properly. In most countries, you can do this by replacing the modem with a handset and then attempting a second time to dial the modem phone number from another telephone to verify that the handset rings properly.

Connect again the modem to the public switched network and try dialing the modem phone number again. Observe the front panel OH light. This light turns off when the modem answers. If this attempt to call the modem fails, the modem is defective and should be replaced.

Step 11. Set the modem power switch to OFF.

Note: The following steps assume that your DTE is already installed and operational.

Step 12. Connect the 25-pin V.24 cable from the DTE to the 25-pin connector on the modem rear panel. Fasten the connector retaining screws.

Step 13. Set the modem power switch to ON. Wait until the modem operational message is displayed on the operator panel (about 15 seconds).

If the modem is connected to an asynchronous DTE that can send AT commands to the modem, you can use the DTE to configure the modem to match your communication system requirements. Otherwise, the modem can be configured through the operator panel, see "Setting the 7858 Connected to the COM1 Connector (ASYN)"

Note: Ten factory-redefined modem configurations are available. You could retrieve the factory configuration that better matches your system requirements, make any further configuration adjustment you should require, and save your modem configuration in one of the ten user configuration slots.

Step 14. Now the modem is ready for operation. You can try it with your system. If you observe a basic system problem, such as the DTE not being able to send commands to the modem successfully, verify again that your individual modem configuration parameters are matching your system requirements.

If you have a problem because the dialing tone is not provided by your PBX or exchange set the modem as follow:

- Power OFF the modem.
- Power ON the modem while you are pushing Enter at the same time. Release Enter key when the message `DATAPUMP TEST` is displayed.

After this, the modem performs the dial through the switchboard without looking for dial tone (Blind dial ATX1). This setting is maintained even if the modem is powered OFF and ON again.

Step 15. If you have a problem while using the modem, refer to the "Problem Determination" chapter in the *7858 Professional Modem Guide to Operation*, GA13-1981.

Setting the 7858 Connected to the COM1 Connector (ASYN)

1. Power OFF the modem.
2. Press and hold the ↑ key while you power ON the modem.
3. The modem is set to Factory 0 in AT command mode.

Saving the Configuration of the 7858

If you want to save the configuration just defined, in order to have it loaded again at the next modem reset, perform the following steps:

1. Press the ↓ key until the `CONFIGURATIONS` message displayed the top row.
2. Press the → key until the `Store User Conf.` message is displayed in the bottom row.
3. Press **Enter** to select the option.

4. Pressing the ↑ key, select the User Configuration Location where the current modem configuration must be saved (0 to 9).
5. Press **Enter** to save the current modem configuration.
6. The defined configuration is now active and saved.

Every time the modem is reset (powered on), the last user configuration that was saved is loaded as the current modem configuration.

Connecting the 7858

1. Plug the cable (PN 782984) into slot **1** of the Service Processor.
2. On the modem's rear panel, plug the other cable lead into the 25-pin connector **2** .

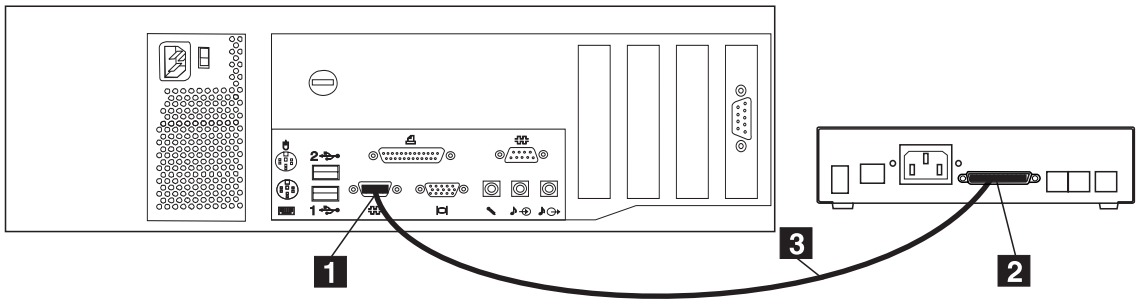


Figure 1-22. Connecting the Service Processor (6578) from COM1 to the 7858

If you received a controller expansion, go to **step 3** , otherwise, go to "Step 7: Customizing Your Service Processor" on page 1-33.

3. Slide the 7858 in the controller expansion as shown in Figure 1-23.

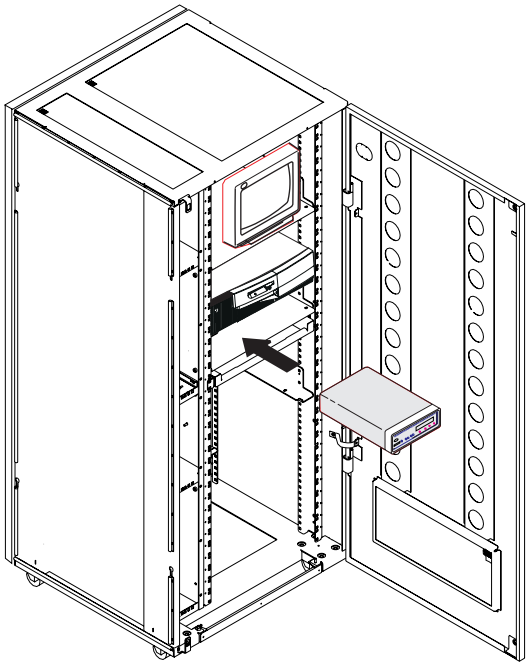


Figure 1-23. Installing the 7858 in the Controller Expansion

Go to "Step 7: Customizing Your Service Processor" on page 1-33 .

Step 6: Installing and Connecting the 7857 to the Service Processor

Notes:

1. If you are not familiar with the 7857, refer to the *7857 Guide to Operation*, GA13-1839.
2. Power and frequency requirements: 90 to 259 V ac, and 49.5 to 60.5 Hz (no adjustment).
3. The document *Power Supply and Telecommunication Connections for IBM Modems* GA33-0054, contains useful information about the different telecommunication connectors and power supply plugs.
4. Read the *IBM Telecommunication Products Safety Handbook*, SD21-0030

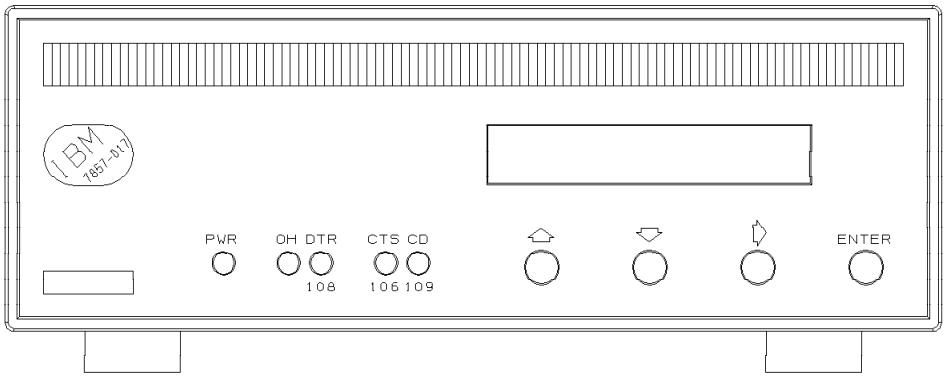


Figure 1-24. 7857 Front Panel

Besides the modem and this manual, the carton should contain:

- Telecommunication cables as needed for your country:
  - Black cable:
    - Switched line cable, with label **SW**, which fits into the PSTN socket in the modem rear panel.
  - Gray cables:
    - 2-wire leased line cable, with label **LL 2W**, which fits into the LL socket in the modem rear panel.
    - 4-wire leased line cable, with label **LL 4W**, which fits into the LL socket in the modem rear panel.
- DTE interface / 4-wire leased line wrap plugs.
- Telecommunication Products Safety Handbook.

If any of these items is missing or damaged, contact the place of purchase for instructions on how to exchange your modem or obtain the missing items.
The user is recommended to use the telecommunication cables supplied with the modem (see “Telecommunication Cables Part Numbers”).

Telecommunication Cables Part Numbers

Table 1-3. Telecom. cables

Country	PN
Albania	89G2554

Table 1-3. Telecom. cables

Country	PN
Argentina	89G2554

Table 1-3. Telecom. cables

Country	PN
Australia	89G2564

Table 1-3. Telecom. cables	
Country	**PN**
Austria	89G2544
Belgium	89G2545
Bolivia	89G2554
Brazil	89G2554
Bulgaria	89G2554
Canada	89G2562
China	89G2554
Colombia	89G2554
Costa Rica	89G2554
Croatia	89G2554
Cyprus	89G2577
Czech Republic	89G2554
Denmark	89G2546
Egypt	89G2554
El Salvador	89G2554
Ecuador	89G2554
Finland	89G2547
France	89G2548

Table 1-3. Telecom. cables	
Country	**PN**
Germany	89G2549
Greece	89G2554
Guatemala	89G2554
Honduras	89G2554
Hong Kong	89G2565
Hungary	89G2554
Iceland	89G3145
Ireland	89G2554
Israel	89G3131
Italy	89G2551
Japan	89G2562
Korea	89G2554
Kuwait	89G2554
Luxembourg	89G3134
Macedonia	89G2554
Mexico	89G2554
Netherlands	89G2552
New Zealand	89G2577
Norway	89G2553
Pakistan	89G2554
Panama	89G2554

Table 1-3. Telecom. cables	
Country	**PN**
Paraguay	89G2554
Peru	89G2554
Poland	89G2554
Portugal	89G2554
Romania	89G2554
Russia	89G2554
Saudi Arabia	89G2554
Slovakia	89G2554
Slovenia	89G2554
South Africa	89G3135
Spain	89G2554
Sweden	89G2555
Switzerland	89G2556
Taiwan	89G2554
Thailand	89G2554
Turkey	89G2554
U.K.	89G2577
Ukraine	89G2554
Uruguay	89G2554
U.S.	89G2562
Venezuela	89G2554

Installation procedure: Figure 1-25 shows the modem rear panel with the connectors where the DTE and line cables must be connected:

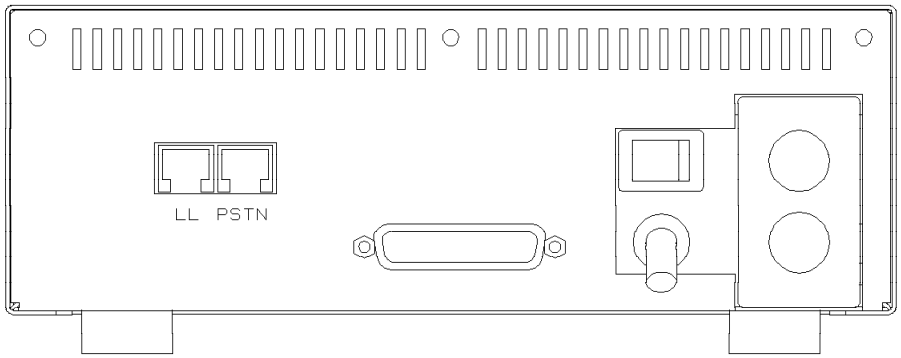


Figure 1-25. 7857 Rear Panel

Step 1. Be sure that the power switch located on the modem rear panel is ***off***.

Step 2. If you are going to use a switched line telecommunication cable, plug it into the PSTN socket located on the modem rear panel, with the ferrite cylinder at the modem side. If this modem is ***not*** being installed in the United Kingdom, connect the other end of the cable to the telecommunication line.

Step 3. If you plan to use a leased line telecommunication cable, plug it into the LL jack located on the modem rear panel, with the ferrite cylinder at the

modem side. If this modem is ***not*** being installed in the United Kingdom, connect the other end of the cable to the telecommunication line.

Step 4. Connect the modem power plug to a standard 3-pin ***grounded*** ac outlet. If this modem ***is*** being installed in the United Kingdom, connect the telecommunication cables you have attached to the modem, to the telecommunication lines.

Step 5. Observe the modem power-on sequence.

This is the normal power-on sequence:

- PWR light is turned on.
- The `HW SELFTEST RUNNING` message is displayed for about 15 seconds.
- The `DSP SELFTEST RUNNING` message is displayed for about 15 seconds.

Set the modem power switch to ON. If the PWR light is not on, or the message `HW SELFTEST RUNNING` is not appearing on the operator panel within 10 seconds, the modem is defective and should be replaced. This message remains on the display for about 15 seconds, then it is changed by the power-on sequence.

If the modem is set to the factory defaults, after about 30 seconds, the operator panel shows:

```
IBM 7857 AT CMD  aa
td_ rd_ dsr ec_ ll_
```

This operational message shows that the modem is set in AT command mode for switched line operation and will auto-answer an incoming call.

The next steps reset the modem options to the factory default configuration 0. Jump ahead to **step 7** if the modem has never been used.

In the next steps, you are instructed to manipulate the front panel buttons of the modem. Unless the step suggests otherwise, do not press them in for longer than 1 second.

Step 6. Set the modem power switch to OFF, then hold the ↑ key pressed and set the power switch to ON. When the message `HW SELFTEST RUNNING` is shown, release the ↑ key.

After about 15 seconds the message is changed to `DSP SELFTEST RUNNING` and then after another 15 seconds to:

```
IBM 7857 AT CMD  aa
td_ rd_ dsr ec_ ll_
```

If this sequence does not occur, the modem is defective. Replace it.

Step 7. The next steps can only be done if you have attached the modem to the public switched network. Go to **step 11** if you do not want to test the modem's public switched network interface.

Step 8. On the modem operator panel:

- Press the ↑ key until the `C108 (DTR)` message is displayed on the top row.
- Press the → key until the `Forced On` message is displayed on the bottom row.
- Press **Enter** twice to select the option and to return to the modem operational mode message.

Step 9. Dial the modem phone number from another telephone. You should hear the ringing tones and then the 2100-Hz answer tone from the called modem in the handset of the dialing telephone. If you hear the answer tone, go to **step 11**. Otherwise, continue with **step 10**.

Step 10. If you do not hear the modem answer tone, verify that the telephone line is operating properly. In most countries, you can do this by replacing the modem with a handset and then attempting a second time to dial the modem phone number from another telephone to verify that the handset rings properly.

Connect again the modem to the public switched network and try dialing the modem phone number again. Observe the front panel OH light. This light turns ***off*** when the modem answers. If this attempt to call the modem fails, the modem is defective. Replace it.

Step 11. Set the modem power switch to OFF.

Note: The following steps assume that your DTE is already installed and operational.

Step 12. Connect the 25-pin V.24 cable from the DTE to the 25-pin connector on the modem rear panel. Fasten the connector retaining screws.

Step 13. Set the modem power switch to ON. Wait until the modem operational message is displayed on the operator panel (about 30 seconds).

Step 14. Now the modem is ready for operation; you can try it with your system. If you observe a basic system problem, such as the DTE not being able to send commands to the modem successfully, verify again that your individual modem configuration parameters are matching your system requirements. If you have a problem while using the modem, refer to *7857 Guide to Operation*, GA13-1839, chapter "Problem Determination."

If the 7857 operator panel does not show the following message (see Figure 1-26), the modem needs to be configured through the operator panel, go to “Setting the 7857 Connected to the COM1 Connector (ASYN)” on page 1-31.

```
IBM 7857 V25BIS  aa
td_ rd_ dsr ec_ ll_

with: OH LED OFF
DTR(108) LED ON
CTS(106) LED OFF
CD(109) LED OFF
```

Figure 1-26. 7857 Operator Panel Display

Setting the 7857 Connected to the COM1 Connector (ASYN)

1. Power OFF the modem.
2. Press and hold the ↑ key while you power ON the modem.
3. The modem is set to Factory 0 in AT command mode.

Saving the Configuration of the 7857

If you want to save the configuration just defined, in order to have it loaded again at the next modem reset, perform the following steps:

1. Press the ↓ key until the `CONFIGURATIONS` message displayed the top row.
2. Press the → key until the `Store User Conf.` message displayed the bottom row.
3. Press **Enter** to select the option.
4. Pressing the ↑ key, select the User Configuration Location where the current modem configuration must be saved (0 to 9).
5. Press **Enter** to save the current modem configuration.
6. The defined configuration is now active and saved.

Every time the modem is reset (powered on), the last user configuration that was saved is loaded as the current modem configuration.

Connecting the 7857 to COM1

1. Plug the cable (PN 782984) into the rear of the Service Processor **1** .
2. On the modem's rear panel, plug the other cable lead into the 25-pin connector **2** .

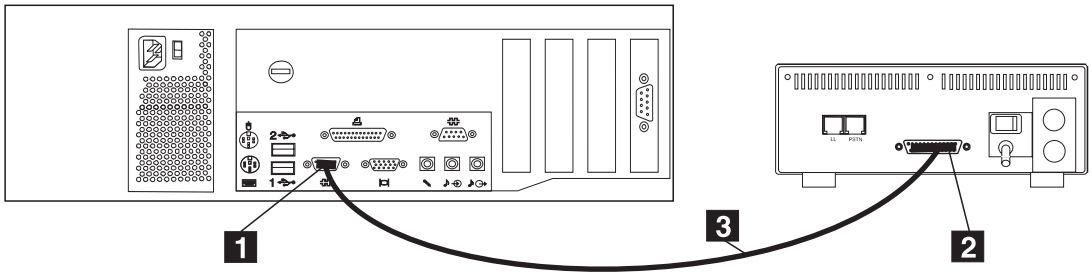


Figure 1-27. Connecting the Service Processor (6578) from COM1 to the 7857

If you received a controller expansion, go to **step 3** , otherwise go to "Step 7: Customizing Your Service Processor" on page 1-33.

3. Slide the 7857 in the controller expansion as shown in Figure 1-28 on page 1-32.

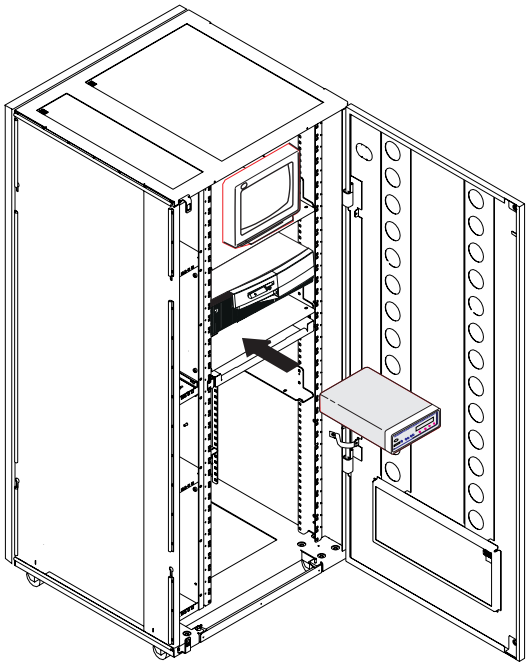


Figure 1-28. Installing the 7857 in the Controller Expansion

Go to "Step 7: Customizing Your Service Processor" on page 1-33.

Step 7: Customizing Your Service Processor

Notes:

1. For any unexpected message or error concerning the Service 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**.
   - The **START** page of the *3746-900 Service Guide*, SY33-2116, if you are working on a **3746-900**.
   - Or go to the **START** page of the *3746-950 Service Guide*, SY33-2108, if you are working on a **3746-950**.
2. The purpose and explanation for the different parameters is given in the *3745 Communication Controller Models A and 3746 Models 900 and 950: Planning Guide*, GA33-0457.
3. Ensure that the machine type and model are registered in RETAIN® (CCPF).

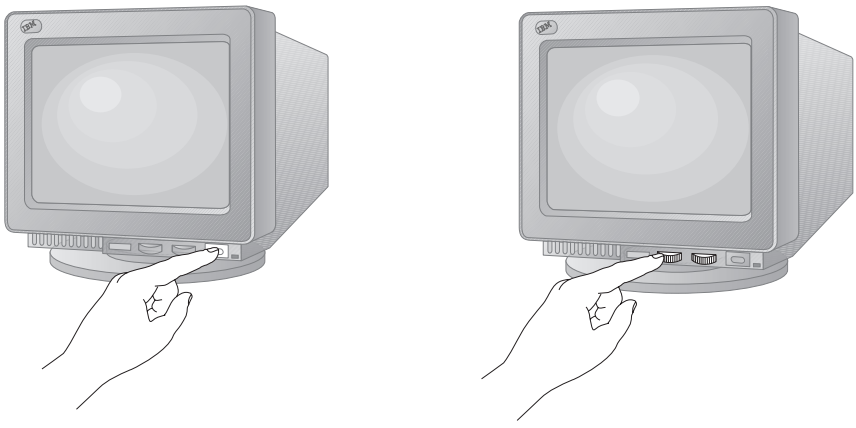
   For **U.S.A.** machines, please call the Raleigh Multiplexor Support Center and verify your machine’s registration in CCPF. Make sure that:

   a. The seven-digit **serial number** of the 3745/3746 is correct.
   b. The three-digit **model** designation for the 3745/3746 is correct.

1. Power ON the display.

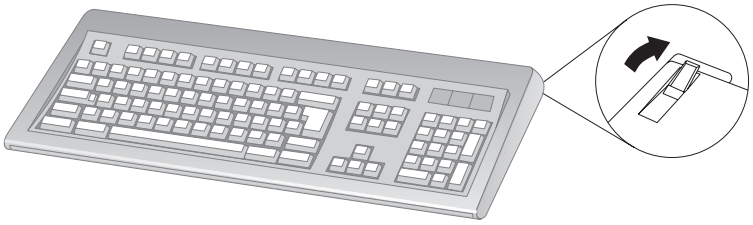
   a. Turn on your display, and adjust the Brightness and Contrast controls to the approximate midpoint.

      You can readjust these controls for personal viewing comfort after you turn on your Service Processor.



      Note: The locations of the power switch and the Brightness and Contrast controls on your display might be different from those shown above.

   b. Adjust the keyboard feet for personal typing comfort.



2. Power ON the Service Processor.
3. Check your display. The IBM logo appears, and the power-on self-test (POST) begins. F1 and Esc prompts appear and then disappear.
4. **Wait** while the message `MOSS-E is being loaded, please wait` is displayed.
5. When the following panel appears, enter the Service Processor maintenance password (default is **IBM3745**).
6. Press **Enter** or click **OK**, then go to **step 10 on page 1-35** if nothing has been customized on your Service Processor, or go to **step 7 on page 1-35** to select the Service Processor customization function.

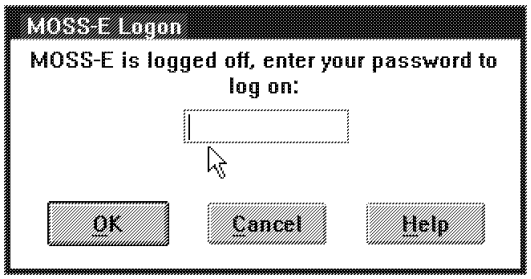


Figure 1-29. MOSS-E View Primary Panel

7. On the MOSS-E view primary panel, double-click the Service Processor object icon.
8. Click **Configuration Management**.
9. Double-click **SP customization**.
10. If it is the first time that you invoke "SP Customization," all the items are selected. If you are not ready to customize one or more items, click the corresponding check box to deselect the items.

    The following options are available:

    a. A link definition for a Console for Java.

       This link is exclusive with the DCAF link/operation. According to your customer choice, select the option to define a DCAF or Java™ link.
    b. Screen resolution option (800x600 or 640x480)

       This option is only enabled for the panels that support this option. It is mandatory to select 800x600 when an MAE is installed.

    Click Modem type drop down list, then select (click) the modem and connection type of the modem used (see notes below).

    a. The list of the modems depends on the bus type of the Service Processor installed (ISA bus or MCA bus).
    b. For **7858** and **7857** for which multiple choices are prompted, you must select the option that matches the modem setting, see “Setting the 7858 Connected to the COM1 Connector (ASYN)” on page 1-25 or “Setting the 7857 Connected to the COM1 Connector (ASYN)” on page 1-31.
    c. If you want to get more details about the different modems, press **Help**.

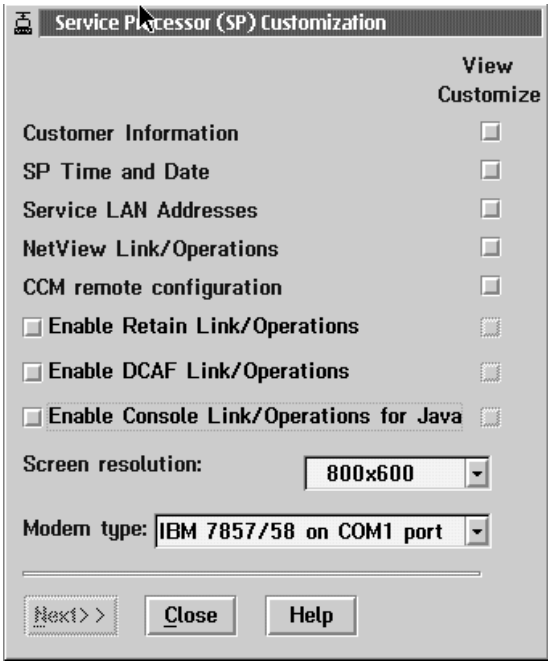


Figure 1-30. Service Processor Customization

11. Click **Next>>** and go to **step 12 on page 1-36**

    Note: The next step depends on the items list selected in the Service Processor Customization panel (see Figure 1-30).

12. Fill in the following input fields according to the values written by the customer on the parameter worksheet “Parameter Definitions for RSF” on page C-5 and click **Next>>** then go to **step 13** (if you selected to customize the time and date in **step 10 on page 1-35)**.

    Note: Use **F1** to get details about the input fields.

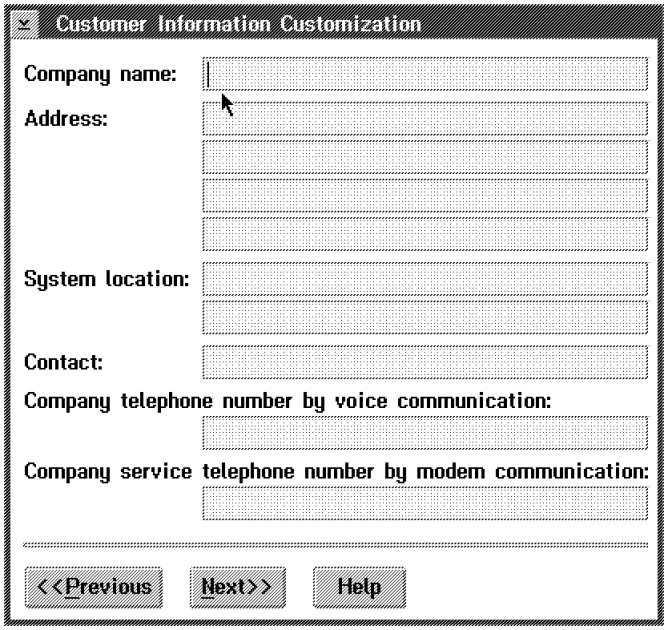


Figure 1-31. Customer Information Customization

13. Modify the time, date, and time-zone offset. Click **Apply**, click **Next>>**, then go to **step 14 on page 1-37** (if you selected in **step 10 on page 1-35** to customize the service LAN addresses).

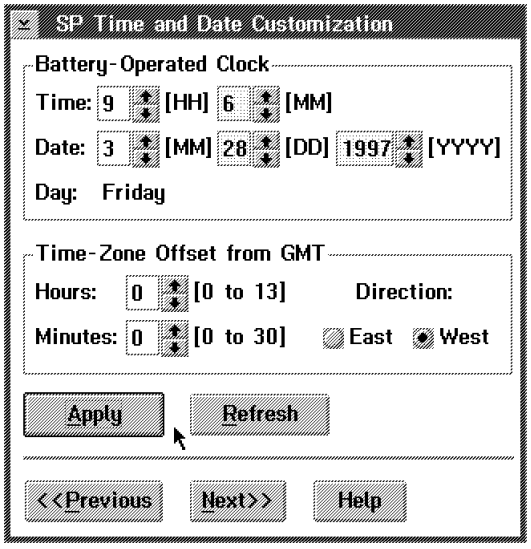


Figure 1-32. SP Time and Date Customization

14. Modify the **service LAN addresses** as follows:

    Note: Press **F1** to get details about the input fields.

    a. If needed, enter the **IP address** for the Service Processor, and TIC3 2080 according to the values recorded by the customer on the worksheet **"Definition of Service LAN IP Addresses" on page C-2,** otherwise keep the default values.

       Note: The **Subnet mask** can also be modified for the Service Processor but it will be automatically updated for the NNPs and TIC3 2080.

    b. Enter the **UAA/LAA** address

    c. If a router is connected on the service LAN, enter its IP address.

    d. If the customer has defined a LAN manager, change the C&SM LAN ID according to the LAN NAME specified in the parameter worksheet "Service Processor LAN Management Definition" on page C-2.

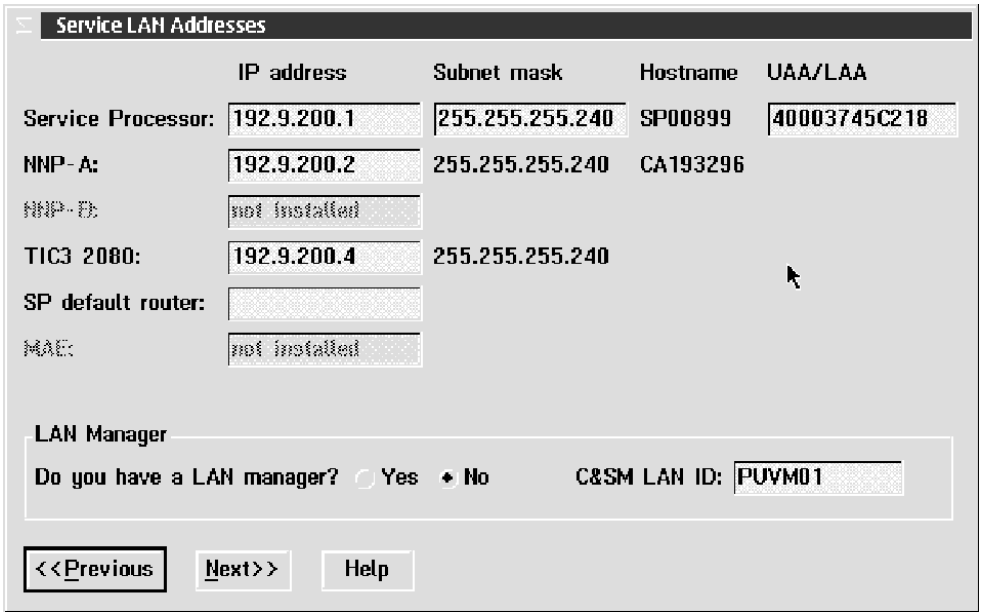


Figure 1-33. Service LAN Addresses

15. Click **Next>>**, then go to **step 16 on page 1-38** (if you selected in **step 10 on page 1-35** to customize the NetView® parameters).

16. The link(s) to **NetView**. Two paths can be defined:

    a. A *Main Stream*, which can be a LAN or SDLC link.

    b. An *Alternate Stream* path, which is always an SDLC link.

    Define the MOSS-E as a **PU 2.1** in your network. This PU will report alerts to NetView to the active **SSCP-PU** session (where PU name = CP name). This session can be established on one of the two possible links to the MOSS-E:

    - The **LAN** link through the TIC2 or TIC3 adapter.
    - Or, through an SDLC link through a 3745 SDLC port.

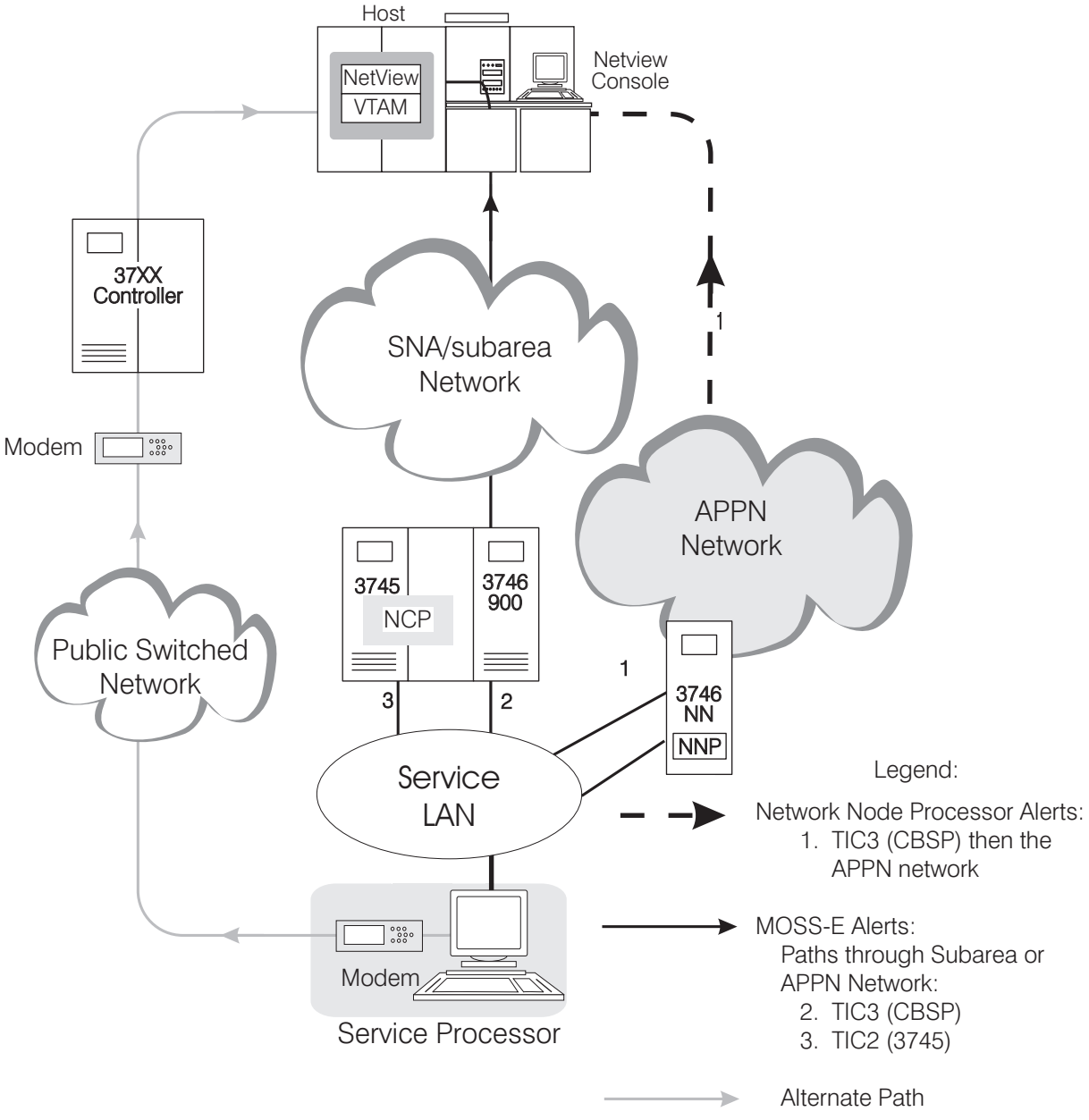


Figure 1-34. NetView Links

17. See Figure 1-35, then enter the following information:

    a. Generate (or not) the alerts to NetView (see the parameter worksheet **"Generate MOSS-E Alerts" on page C-4)**.

    b. Specify the NetView link through a SNA or APPN network.

    c. Select the number of links (1 or 2).

    d. If it is one link, specify the type (LAN or SDLC).

    e. Enter the machine type, model, and serial number.

    f. Enter the Network ID, and local node name.

       Note: The Network ID and the Local node name parameters must match the values recorded in the Switched Major node definition:

       Network ID: NETID

       Local node name: CPNAME <===> Local PU Name

       (See Figure 1-36 on page 1-40 to see one example of switched major node definition)

    g. If you are defining a 3270 session, enter the locally administrated address (LAA).

       Note: The LAN destination address is the TIC2 (3745) or TIC3 (3746-900) address through which you will access NetView. The TIC3 address can also be used for a DCAF link (SNA-attached console only).

    h. Enter the TIC3 RSAP value.

    i. If one SDLC link or two links (the alternate path is necessarily SDLC), specify the SDLC link telephone number.

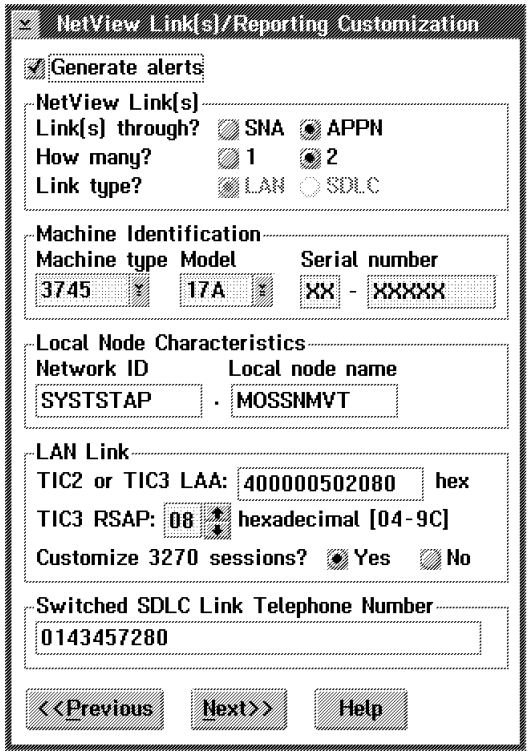


Figure 1-35. NetView Link/Reporting Customization

18. Then click **Next>>**, then go to **step 19 on page 1-42** (if you selected in **step 10 on page 1-35** to customize a 3270 session).

    When defining an SDLC link to NetView through an Advanced Peer-to-Peer Networking® (APPN®) network, the CCM parameters must be set as follows:

    a. DLC Parameters 1/3:

       - Transmit Receive Capability: Full-duplex
       - Interface: V.25bis
       - Prot Type: Switched
       - Clocking: External
       - Link Station Role: Negotiable

    b. DLC Parameters 2/3:

       - Transmit NRZI: Yes
       - Echo Defeat: No
       - Monitor Ring: Yes
       - Answer Tone: Yes I
       - Interface Gap: No

    c. DLC Parameters 3/3: keep the default values

    d. APPN Station:

       - PU Type: 2.1
       - Destination Address: 1C
       - For DLC and APPN parameters: keep the default values

    When defining a link to NetView through an *SNA network*, for examples of the NCP generation, see:

    - Figure 1-38 on page 1-41 for a LAN link, the LAN destination address must be equal to the **LOCADD** (recorded in NCP gen).
    - Figure 1-37 on page 1-41 for an SDLC link, the SDLC link is defined for the alternate stream path to NetView.

```
*=====================================================================*
*                                                                     *
*     MAJNODE FOR CONNECTION :  MOSS-E  <==> NETVIEW V2R3             *
*                                                                     *
*                                                                     *
*=====================================================================*
NTVMOSSE VBUILD TYPE=SWNET,MAXGRP=1,MAXNO=1
*---------------------------------------------------------------------*
MOSSE    PU    ADDR=04,PUTYPE=2, NETID=SYSTST , CPNAME=MOSSNMVT       X
               MAXPATH=8,MAXDATA=265,MAXOUT=1,                        X
               DISCNT=NO,
```

Figure 1-36. Example of Switched Major Node Definition

```
*********************************************************************
G23SIDES GROUP DIAL=YES,LNCTL=SDLC,TYPE=NCP,REPLYTO=3,XID=YES
*
K23C0004 LINE ADDRESS=(0004,FULL),DUPLEX=FULL,RING=YES,NEWSYNC=NO,     X
               V25BIS=(YES,DLSDLC),AUTO=YES,PAUSE=0.5,TRANSFR=71,      X
               NRZI=YES,CLOCKNG=EXT,RETRIES=(3,3,3),CALL=IN
P23C0004 PU PUTYPE=2,ISTATUS=ACTIVE
*********************************************************************
```

Figure 1-37. Example of NCP Generation for an SDLC Link to NetView

- Define a Group, Line and PU for the **Physical line.**

```
   .
   .
*--------------------------------------------------------------------* FFA30320
* TIC3 BNN/INN:  PORT 2080 - PHYSICAL                                 * FFA30330
*--------------------------------------------------------------------* FFA30340
G502080 GROUP ECLTYPE=(PHYSICAL,ANY),                                  X
              ADAPTER=TIC3

K50C2080 LINE ADDRESS=(2080,FULL),PORTADD=0, LOCADD=400000502080       X
               MAXTSL=16732,LSPRI=PU,PUTYPE=1,ANS=CONTINUE,            X
               TRSPEED=16,TRANSFR=254
S50C2080 PU ADDR=01,                                                   X
               INNPORT=YES
   .
   .
```

- Define a Group, Line and PU for the **Logical line.**

```
   .
   .
********************************************************************** FFA33180
*                                                                    * FFA33190
*   TIC3 BNN  : PORT 2080 - LOGICAL Connection to Service Processor  * FFA33200
*                                                                    * FFA33210
********************************************************************** FFA33230
L50G2080 GROUP DIAL=YES,LNCTL=SDLC,TYPE=NCP,ECLTYPE=(LOGICAL,PER),     X
               CALL=INOUT,PHYSRSC=S50C2080,                            X
               LINEAUT=YES,                                            X
               MAXPU=1,                                                X
               NPACOLL=NO,                                             X
               PUTYPE=2,                                               X
               RETRIES=(6,0,0,6)
R50A0001 LINE
Z50A0001 PU
   .
   .
```

Figure 1-38. Example of NCP Generation for a LAN Link to NetView

19. To define a **3270 session**:

    a. From the host code page pulldown menu, select your code page according to the country.

    b. Select the LU local/NAU address according to the value recorded on the parameter worksheet NCP Dump Transfer (see “NCP Dump Transfer” on page C-1).

    c. The Long session/LU name according to the value recorded on the parameter worksheet NCP Dump Transfer (see “NCP Dump Transfer” on page C-1).

    Note: The number of sessions can me modified only in PE mode. In CE mode, only one session can be defined.

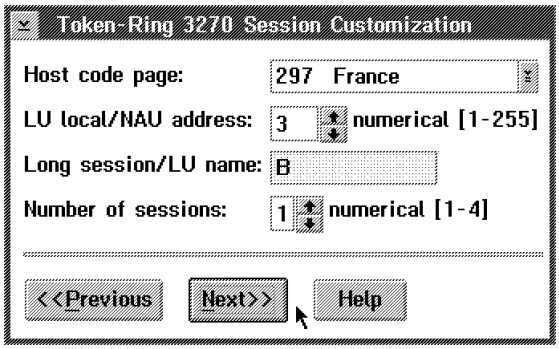


Figure 1-39. Token-Ring 3270 Session Customization

Although the **CCM remote configuration** panel appears, you do not have to change either the login or the password. Any login or password customization is the responsibility of the customer.

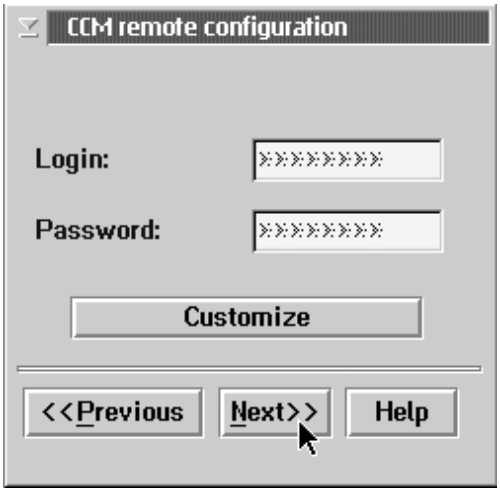


Figure 1-40. CCM Remote Configuration Panel

20. Click **Next>>**, then go to **step 21 on page 1-43** (if you selected in **step 10 on page 1-35** to customize a RETAIN link).

Notes:

a. In the 3270 Session Customization panel, you have entered the:

   1) LU local/NAU address

   2) Long session/LU name

   These parameters must be the same as the values recorded in the switched major definition (see Figure 1-41 on page 1-43 for an example of a switched major node definition).

   In this example:

   1) LU local/NAU address <===> **03**

   2) Long session/LU name <===> **MOSSEEMU**

   3) For the MOSSEEMU LU, you must use the logon mode table entry **SNX32702** to allow the file transfer.

b. Use the LU name to identify the session.

c. The LU local address must be equal to 03 or above (values 01 and 02 are used and reserved by the Service Processor product).

In the switched major node, add one LU statement for the 3270 session:

```
MOSSE     PU   ADDR=04,PUTYPE=2,NETID=SYSTST,CPNAME=MOSSNMVT,        X
               MAXPATH=8,MAXDATA=265,MAXOUT=1,X
               DISCNT=NO
MOSSEEMU  LU    LOCADDR=03 ,DLOGMOD= SNX32702
```

Figure 1-41. Example of a Switched Major Node Definition

21. For RETAIN and RSF access, modify the options and enter the telephone numbers according to the customer choice:

    a. Disable or enable (set by default) the RSF facility to generate the alerts to NetView (see the parameter worksheet “Parameter Definitions for RSF” on page C-5).

    b. Enable or disable (set by default) the automatic microcode download option (see the parameter worksheet “Set Automatic Microcode Download Option” on page C-5).

    c. Enter the telephone numbers according to the local IBM service support information.

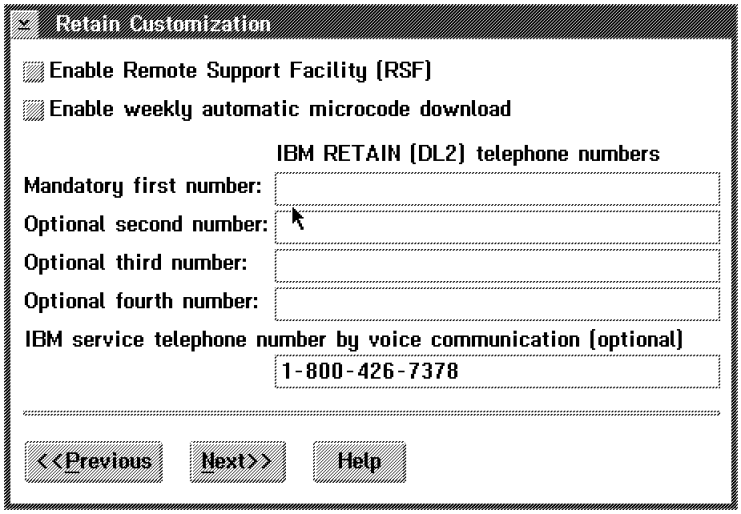


Figure 1-42. Retain Customization

22. Click **Next>>**, then go to:

    - **Step 23 on page 1-45** (if you selected in **step 10 on page 1-35** to customize a *DCAF* link).
    - **Step 26 on page 1-47** (if you selected in **step 10 on page 1-35** to customize a *Java* link).

23. For DCAF access, four different types of console can be linked to the Service Processor:
    a. SNA-attached console
    b. LAN-attached console
    c. SDLC-attached console.
    d. APPN-attached console.

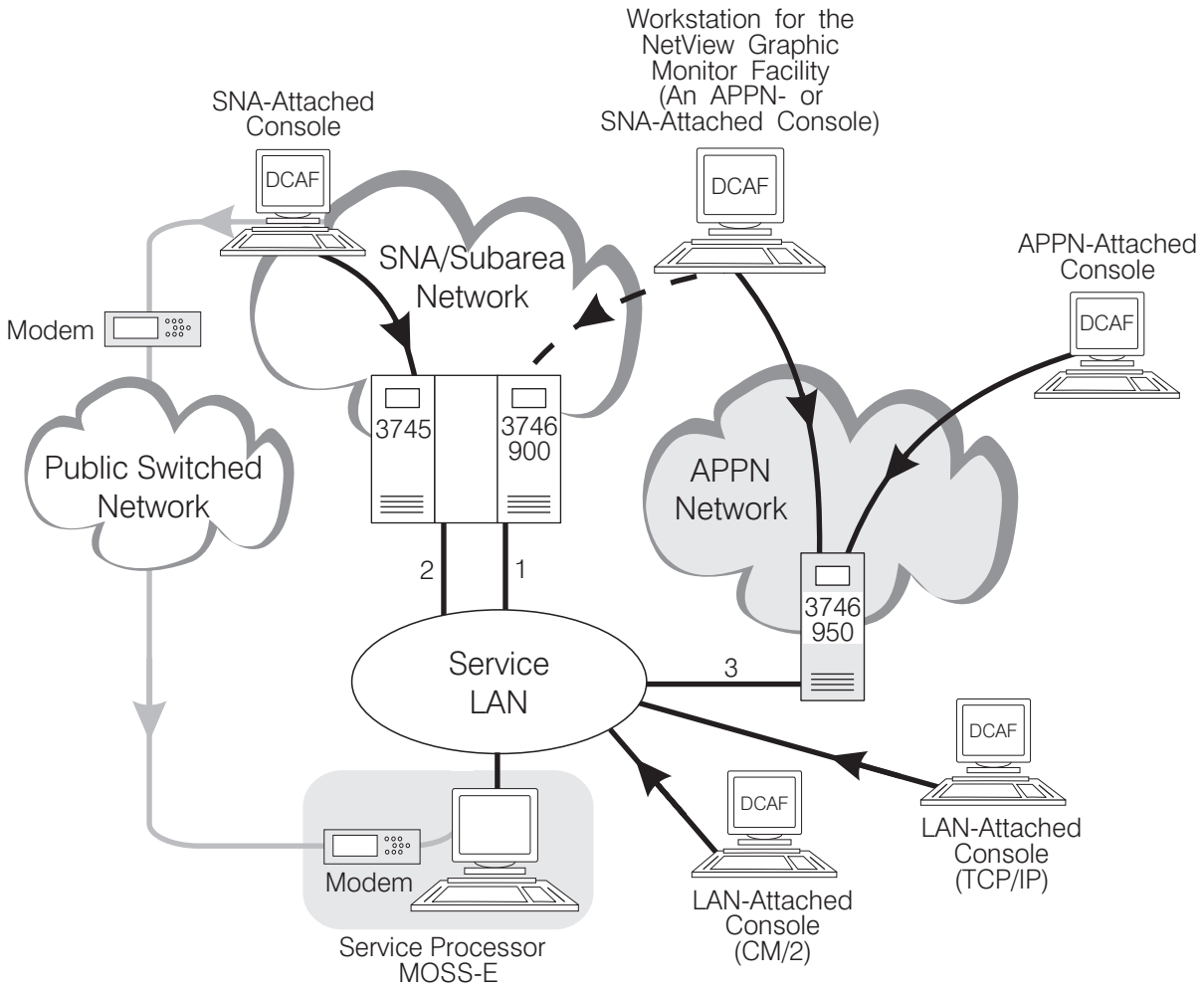


Figure 1-43. DCAF Links

24. Select the type of DCAF links that you are going to define and modify the LU name according to the customer specifications.

    Notes:

    a. We recommend using four letters to identify the MOSS-E machine to DCAF connections. These names should be unique in your network; see the following worksheets:

       - "For SNA-Attached Consoles" on page C-4
       - "For APPN/HPR-Attached Consoles" on page C-4
       - "For LAN-Attached Consoles" on page C-4
       - "For Modem-Attached Consoles" on page C-4

    b. To specify the destination address, see Figure 1-43 on page 1-45 and according to the NetView path definition, set this address as follows:

       - If the alert path to NetView ***not defined*** or through ***SNA***:
         – The DCAF SNA can be set for path: 1, 2, or 3
         – The DCAF APPN can be set for path: 3
       - If the alert path to NetView ***is defined*** through APPN:
         – The DCAF SNA can be set for path 1, 2, or 3 with a RSAP different than the TIC3 RSAP (see Figure 1-35 on page 1-39)
         – The DCAF APPN can be set for path 3 with the same RSAP define for the NetView link (see Figure 1-35 on page 1-39).

25. Then click **Next>>**, and go to **step 28 on page 1-48.**

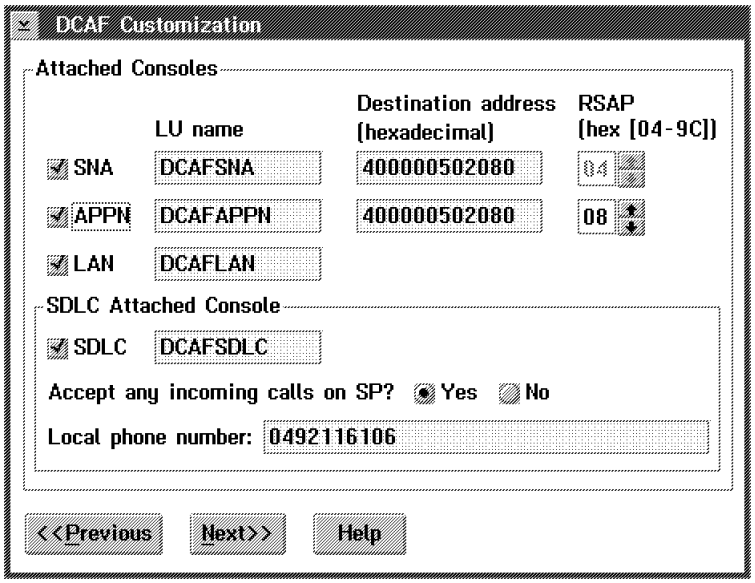


Figure 1-44. DCAF Customization

26. On the Java Customization panel, enter or select the following options:

    a. Click **No** to reject any incoming call.

    b. Enter the local phone number, which is the phone number of the modem connected to the SP.

    c. The **IP addresses** of:

        1) The **PPP-server**. This is PPP address of the **Service Processor**.
        2) The **PPP-client**. This is PPP address of the **remote station**.

        Note: These IP addresses must be in the same subnet than the IP addresses of the units connected to the service LAN, see the worksheet "Parameter Definitions for Point-to-Point Link Definition" on page C-5.

    d. The **DTE speed**, which must be set according to the type of the modem installed (click **Help** for more details).

    Then, click **Next>>**. The Console Configuration for Java panel appears.

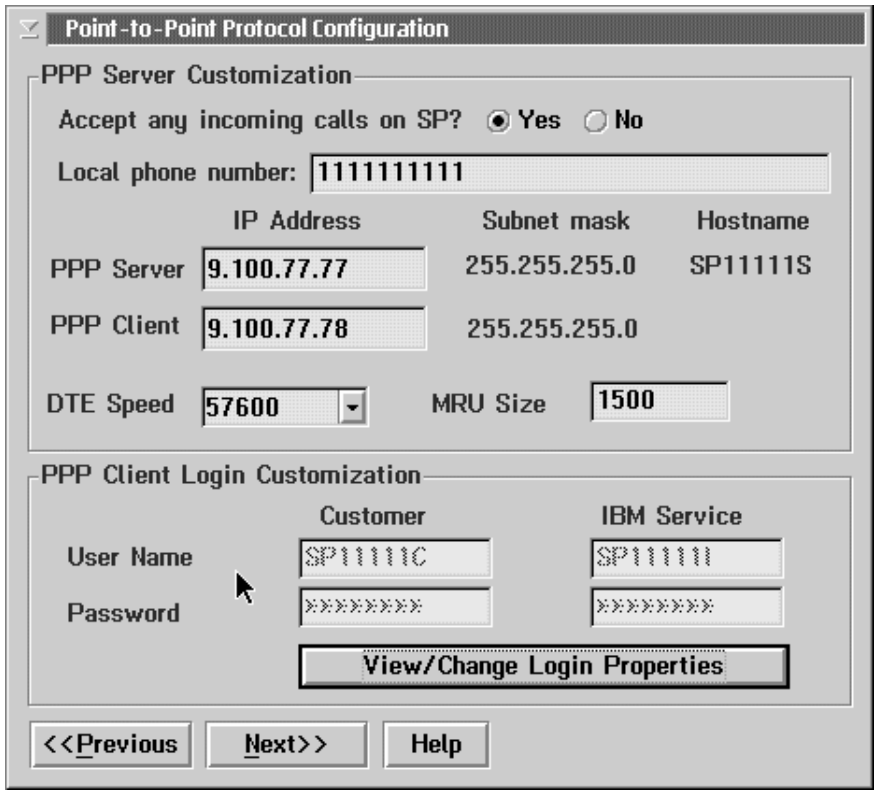


Figure 1-45. Point-to-Point Protocol Configuration

27. On the Console Configuration for Java panel, do not modify the configuration; this the responsibility of your customer.

    Note: If customers want to change the configuration, they must click **View/Change Login Properties** and enter the requested management password.

    Click **Next>>** button.

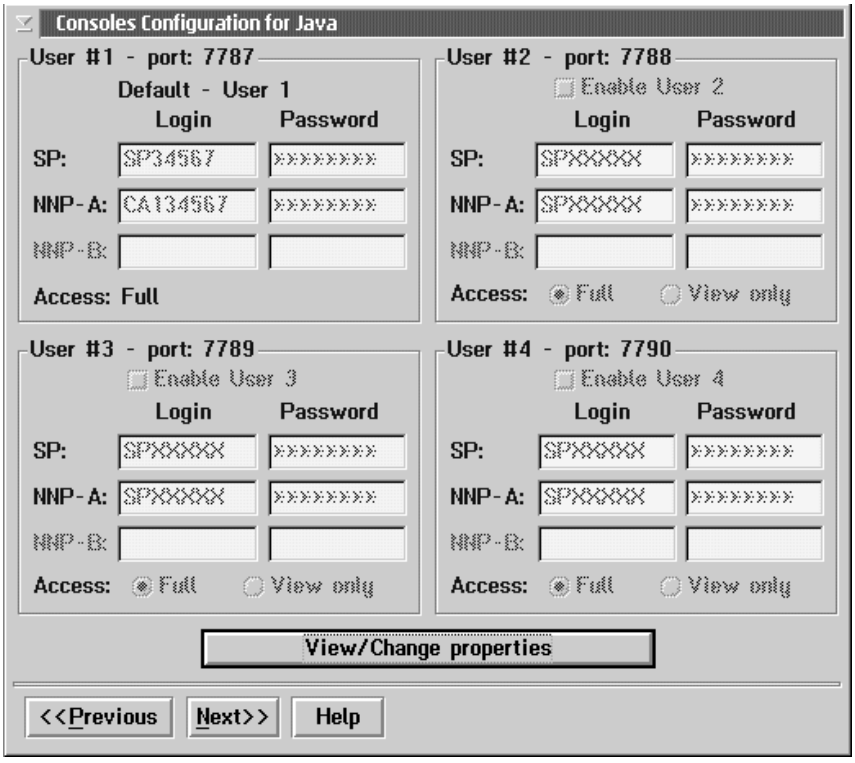


Figure 1-46. Java Console Configuration

28. Click **Yes** to record your parameters.

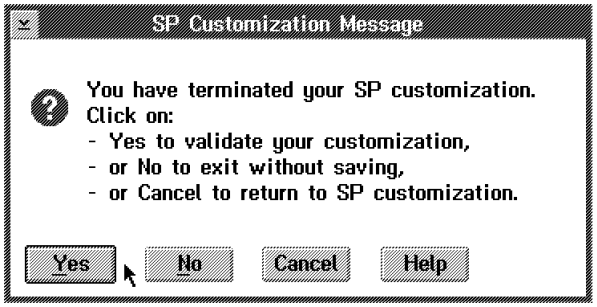


Figure 1-47. SP Customization Message

29. The customization is in progress.

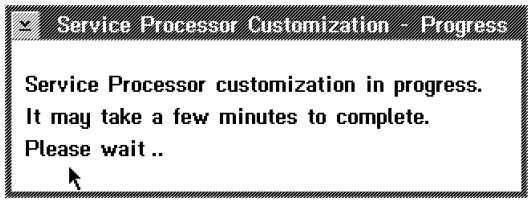


Figure 1-48. SP Customization In Progress

30. The customization is completed, click **OK**.

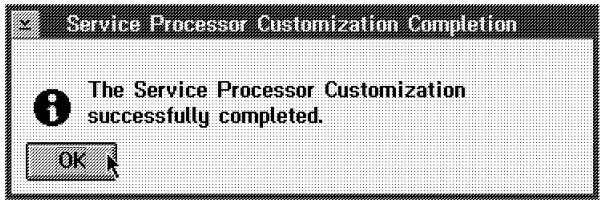


Figure 1-49. SP Customization Completed

31. The Service Processor is going to reboot, click **OK**.

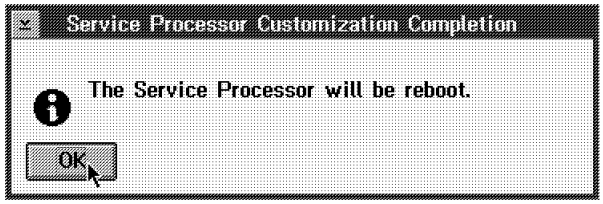


Figure 1-50. SP Reboot

Completing Your Installation

At the end of Service Processor installation, return to:

- The *3745/210-61A Installation Guide*, SY33-2057, Chapter "Making Ready to Install", step 2, if you are installing a **3745 Model X1A**.
- The *3745/130-17A Installation Guide*, SY33-2067, Chapter "Preparing to Install the 3745", step 2, if you are installing a **3745 Model 17A**.
- The *3746-950 Installation Guide*, SY33-2107, Chapter "Connecting the 3746-950 to the LAN", if you are installing a **3746-950**.
- Or if you are installing a 3745 model conversion from XX0 to XXA, or a 3746-900 to 3746-950 model conversion, return to your **MES installation instructions**.

Chapter 2. Service Processor Problem Determination

MAP: Entry Point for Problem Isolation

You are here because you have a problem on the Service Processor, the display, the keyboard, the mouse, or the modem.

001

Are you here for a unit power-on problem?
Yes No

002

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

Unit Type	Action
Service Processor	Go to "MAP: Service Processor / Display / Keyboard Problem Isolation" on page 2-7.
Display Keyboard Mouse	Go to "MAP: Service Processor / Display / Keyboard Problem Isolation" on page 2-7.
Modem	Refer to the 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 *7857 Guide to Operation*, GA13-1839. • For the IBM 7858, refer to the *7858 Professional Modem Guide to Operation*, GA13-1981. • For other modems, refer to the corresponding manual.

003

- Check that the suspected unit is powered-on.
- If not, switch the power-on button to the ON position.

Is the suspected unit powered ON?
Yes No

004

Go to **Step 006 on page 2-2.**

005

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

006

Is the suspected unit connected to the ac outlet distribution box of the controller rack?

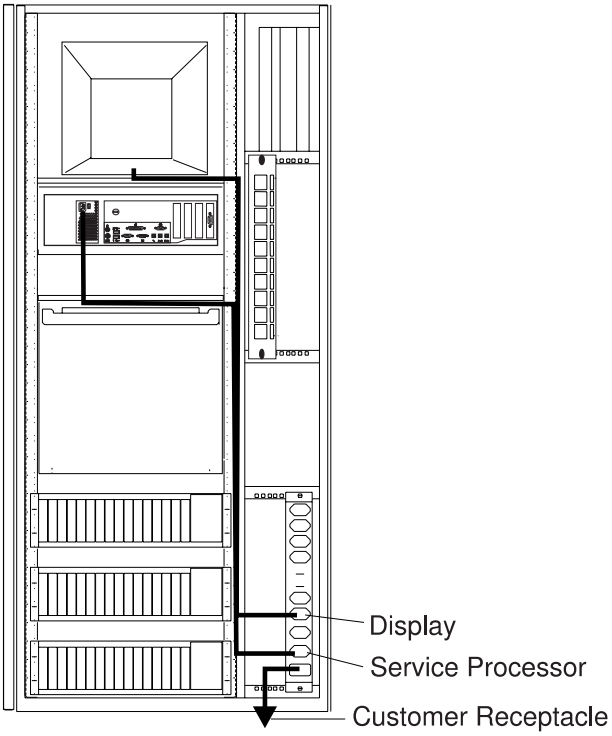


Figure 2-1. AC Outlet Distribution Box Connections in Controller Rack

Yes **No**

007

Go to **Step 011 on page 2-3.**

008

Check that the ac power cable of the suspected unit is well-attached at:

- The rear of the unit
- On the ac outlet distribution box.

Is the problem solved?

Yes **No**

009

Continue with **Step 016 on page 2-3.**

010

(Step **010** continues)

010 (continued)

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

011

Check that the ac power cable of the suspected unit is well-connected at:

- The rear of the unit.
- On the ac wall socket.

Is the problem solved?

Yes **No**

012

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

Does the device work OK?

Yes **No**

013

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

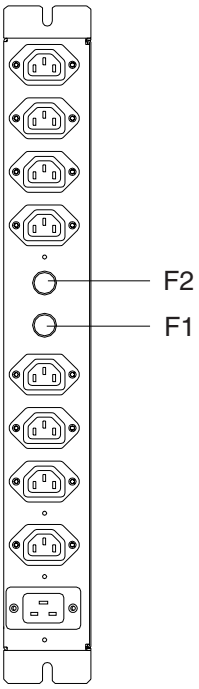
014

Go to **Step 032 on page 2-6.**

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 as the suspected unit.

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

Yes **No**

017

Go to **Step 026 on page 2-5.**

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 032 on page 2-6.**

021

Check the corresponding fuse.

Is the fuse OK?

Yes **No**

022

(Step **022** continues)

022 (continued)

- Switch all the units to OFF 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 all the units that are controlled by this fuse to OFF.
- Exchange the fuse.
- Switch on the units that are controlled by this fuse one by one to identify the unit that has a problem.
- Once you have identified the faulty unit continue with**Step 032 on page 2-6** .

025

Suspect the ac wall socket.

026

Check the corresponding fuse.

Is the fuse OK?

Yes **No**

027

- Switch OFF the defective unit controlled by this fuse.
- Exchange the defective fuse.
- Switch ON the unit controlled by this fuse.

Is the fuse blown again?

Yes **No**

028

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

029

.Go to **Step 032 on page 2-6** .

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

Unit Type	Action
Service Processor	• Go to "MAP: Service Processor Troubleshooting" on page 3-1. Then if you have to exchange an FRU: • Go to Chapter 5, "Service Processor FRUs / Display Exchange" on page 5-1.
Display	Exchange it. Go to Chapter 5, "Service Processor FRUs / Display Exchange" on page 5-1.
Modem	Refer to the 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 *7857 Guide to Operation*, GA13-1839. • For the IBM 7858, refer to the *7858 Professional Modem Guide to Operation*, GA13-1981. • For other modems, refer to the corresponding manual.

MAP: Service Processor / Display / Keyboard Problem Isolation

You are here because you suspected:

- **A Service Processor problem**
- **A display or keyboard problem**
- **A connection problem between the Service Processor and a 3745 or a 3746-9xx.**

The Service Processor and the display are powered on.

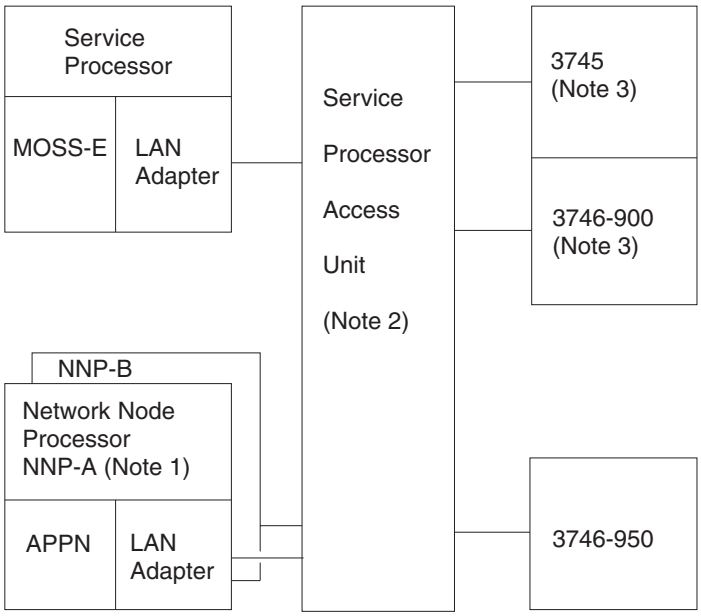


Figure 2-2. LAN attached to the Service Processor

Notes:

1. The network node processor is an optional feature that is present only when APPN is installed.
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.

001

Is there something displayed on the service processor-attached display?
Yes No

002

Go to **Step 015 on page 2-9** .

003

(Step **003** continues)

003 (continued)

Is the screen scrambled?

Yes **No**

004

Go to **Step 006.**

005

This symptom can appear after a screen resolution change. Perform the following actions:

1. Power OFF then power ON the Service Processor.
2. As soon a square block appears in the top left-hand corner of the display, press **Alt** and **F1** simultaneously.
3. Press **F3** to recover the VGA mode.

If that does not solve your problem go to "MAP: Service Processor Troubleshooting" on page 3-1.

006

Is the Service Processor IML complete with MOSS-E View panel displayed?

Yes **No**

007

Is there a message SYS*xx-xxxxx* (OS/2® message) displayed on screen?

Yes **No**

008

Go to "MAP: Service Processor Troubleshooting" on page 3-1.

009

Call support for assistance.

010

Is the keyboard or the mouse, or both, locked?

Yes **No**

011

Go to **Step 019 on page 2-9.**

012

- Check that the mouse cable is properly plugged into the rear of the Service Processor.

(Step **012** continues)

012 (continued)

- 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**

013

Use a mouse from another machine. Continue with **Step 016.**

014

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

015

If you cannot use the display, exchange it. Go to Chapter 5, "Service Processor FRUs / Display Exchange" on page 5-1.

016

If you tried another mouse on the Service Processor, did it work properly?

Yes **No**

017

Replace the system board. Go to Chapter 5, "Service Processor FRUs / Display Exchange" on page 5-1.

018

Replace the Service Processor mouse.

019

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

Did you find the problem?

Yes **No**

020

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

021

(Step **021** continues)

021 (continued)

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

Chapter 3. Service Processor Troubleshooting

MAP: Service Processor Troubleshooting

Note about POST error code

The zeros before and after the error code might be not present for some PS/2® models. Messages might appears on your panel as three-, four-, or five-character 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

How to proceed

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 3-20.)
5. Check the hard-disk drive jumper settings before you replace a hard disk drive. (See “Hard-Disk Drive Jumper Settings” on page 3-30.)

Notes:

1. Some errors are indicated with a series of beep codes. See “Beep Symptoms” on page 3-15 for an explanation of the beep codes.
2. The Service Processor based on 6578 computer is defaulted to come up quietly (no beep, no memory count, and checkpoint code display) when no errors are detected by POST. To enable the beep and memory count, and checkpoint code display when a successful POST occurs, enable **Power on Status** in Setup. See “Service Processor Configuration / Setup Utility” on page H-8.
3. The processor is a separate FRU from the system board; the processor is not included with the system board FRU. See “Before Replacing a System Board” on page 3-22 before replacing the system board.

001

(Step **001** continues)

001 (continued)

1. Power-off the system.
2. Check all cables and power cords.
3. Make sure there are no diskettes in the drives.
4. Set all display controls to the middle position.
5. Power-on the system.

Note: If you get a POST error code, press **Pause** (while the error code is on the panel). 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 3-13.**

003

Check your FIRST POST ERROR with Table 3-1.

Table 3-1 (Page 1 of 12). POST Errors

Symptom / Error	FRU to replace / Action to take
000 SCSI Adapter not enabled.	**Verify adapter device and bus master fields are enabled in PCI configuration program. Refer to the documentation shipped with computer.**
02X	**SCSI Adapter**
08X Check SCSI terminator installation.	1. **SCSI Cable** 2. SCSI Terminator 3. SCSI Device 4. SCSI Adapter
101 System board Interrupt failure.	**System Board**
102 System board timer error.	**System Board**
106	**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.	**System Board**

Table 3-1 (Page 2 of 12). POST Errors	
Symptom / Error	**FRU to replace / Action to take**
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
162 Configuration mismatch.	1. **Run Setup and verify Configuration.** 2. Had a device been added, removed, changed location? If not, suspect that device. 3. Power-on external devices first, then power-on computer. 4. CMOS Backup Battery (See Appendix A, “Safety Information” on page A-1.) 5. 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 “Service Processor Configuration / Setup Utility” on page H-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” 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
17X, 18X	**C2 Security**
175	1. **Run Configuration (see “Service Processor Configuration / Setup Utility” on page H-8).** 2. System Board
176	**Covers were removed from the computer**
177 Corrupted Administrator Password.	**System Board**
178	**System Board**

Table 3-1 (Page 3 of 12). POST Errors	
Symptom / Error	**FRU to replace / Action to take**
183	**Enter the administrator password.**
184 Password removed due to check-sum error.	**Enter new password.**
185 Corrupted boot sequence.	**Set configuration and reinstall the boot sequence.**
186	**System Board**
187	1. **Clear administrator 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**
1*XX* Not listed previously.	1. **System Board**
201, 20*X* Memory data error.	1. **Run Enhanced Diagnostic Memory Test.** 2. Memory Module 3. System Board
225	**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 "Service Processor Configuration / Setup Utility" on page H-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
3*XX* Not listed previously.	1. **Keyboard** 2. Keyboard Cable 3. System Board
5*XX*	1. **Video Adapter** (if installed) 2. System Board

Table 3-1 (Page 4 of 12). POST Errors	
Symptom / Error	**FRU to replace / Action to take**
601	1. **Diskette Drive A:** 2. Diskette Drive Cable 3. System Board
602	1. **Bad Diskette?** 2. Verify Diskette and retry.
604 And able to run diagnostics.	1. **Run Setup and verify diskette configuration settings.** 2. Diskette Drive A/B: 3. Diskette Drive Cable 4. 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, run Setup Configuration.**
6*XX* Not listed previously	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
7*XX* Not listed previously	1. **Processor** 2. System Board
962 Parallel port configuration error.	1. **Run Configuration.** 2. Parallel Adapter (if installed) 3. System Board
9*XX*	1. **Printer** 2. System Board
1047	1. **16-Bit AT Fast SCSI Adapter**
107*X* 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.	**Run Enhanced 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.	**Run Enhanced Diagnostics.**
1103 Port fails register check.	1. **Run Enhanced Diagnostics.** 2. System Board

Table 3-1 (Page 5 of 12). POST Errors	
Symptom / Error	**FRU to replace / Action to take**
1106 Serial option cannot be turned off.	1. **Run Enhanced Diagnostics.** 2. System Board
1107	1. **Serial Device Cable** 2. System Board
1110 Register test failed.	1. **Run Enhanced Diagnostics.** 2. System Board
1116 Interrupt error.	**Run Enhanced Diagnostics.**
1117 Failed baud rate test.	**Run Enhanced Diagnostics.**
1162 Serial port configuration error.	1. **Run Configuration.** 2. Serial Adapter (if installed) 3. System Board
11*XX* Not listed previously	**System Board**
1201	1. **System Board** 2. Any Serial Device
1202, **1206**, **1208**, **1209**, **12*XX***	1. **Dual Async Adapter/A** 2. System Board 3. Any Serial Device
1207	1. **Communications Cable** 2. Dual Async Adapter/A
13*XX*	**Game Adapter**
1402 Printer not ready.	Information only
1403 No-paper error, or interrupt failure.	Information only
1404 System board timeout failure.	**Run Enhanced Diagnostics.**
1405 Parallel adapter error.	**Run Enhanced Diagnostics.**
1406 Presence test error.	**Run Enhanced Diagnostics.**
14*XX* Not listed above. Check printer before replacing system board.	1. **See "Printer" on page 3-19.** 2. System Board
15*XX*	**SDLC Adapter**
1692 Boot sequence error.	**Run FDISK to ensure at least one active partition is set active.**
16*XX*	**36/38 Workstation Adapter**
1762 Hard disk drive configuration error.	**Run Configuration/Setup Utility (see "Service Processor Configuration / Setup Utility" on page H-8).**

Table 3-1 (Page 6 of 12). POST Errors	
Symptom / Error	**FRU to replace / Action to take**
1780 (Disk Drive 0) **1781** (Disk Drive 1) **1782** (Disk Drive 2) **1783** (Disk Drive 3)	1. **See "Power Supply" on page 3-20.** 2. Hard Disk Drive 3. System Board 4. Hard Disk Cable 5. Power Supply
180*X*, 185*X* 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
1962 Boot sequence error.	**Possible hard disk drive problem, see "Hard Disk Drive Boot Error" on page 3-24.**
209X	1. **Diskette Drive** 2. Diskette Cable 3. 16-bit AT Fast SCSI Adapter
20*XX* Not listed previously.	**BSC Adapter**
21*XX*	1. **SCSI Device** 2. 16-bit AT Fast SCSI Adapter 3. Alternate BSC Adapter
2401, 2402 If panel colors change.	**Display**
2401, 2402 If panel 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
30*XX*	1. **PC Network Adapter** 2. LF Translator 3. Cable Problem?
3115, 3140	1. **Network Attached?** 2. LF Translator 3. Alternate PC Network-Adapter 4. Cable Problem

Table 3-1 (Page 7 of 12). POST Errors	
Symptom / Error	**FRU to replace / Action to take**
31*XX*	1. **Alternate PC Network Adapter** 2. LF Translator 3. Cable problem?
36*XX*	**GPIB Adapter**
38*XX*	**DAC Adapter**
4611, **4630**	1. **Multiport/2 Interface Board** 2. Multiport/2 Adapter
4612, **4613 4640**, **4641**	1. **Memory Module Package** 2. Multiport/2 Adapter
4650	**Multiport Interface Cable**
46*XX* Not listed previously.	1. **Multiport/2 Adapter** 2. Multiport/2 Interface Board 3. Memory Module
5600	1. **Financial System Controller Adapter**
5962 An IDE device (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
62*XX*	1. **1st Store Loop Adapter** 2. Adapter Cable
63*XX*	1. **2nd Store Loop Adapter** 2. Adapter Cable
64*XX*	**Network Adapter**
71*XX*	1. **Voice Adapter**
74*XX*	**Video Adapter** (if installed)
76*XX*	**Page Printer Adapter**
78*XX*	**High Speed Adapter**
79XX	**3117 Adapter**
80*XX*	**PCMCIA Adapter**
84*XX*	1. **Speech Adapter** 2. Speech Control Assembly
8601, **8602**	1. **Pointing Device** (Mouse) 2. System Board
8603, **8604**	1. **System Board** 2. Pointing Device (Mouse)
86*XX* Not listed previously.	1. **Mouse** 2. System Board
89*XX*	1. **PC Music Adapter** 2. MIDI Adapter Unit
91*XX*	1. **Optical Drive** 2. Adapter
96*XX*	1. **SCSI Adapter** 2. Any SCSI Device 3. System Board

Table 3-1 (Page 8 of 12). POST Errors	
Symptom / Error	**FRU to replace / Action to take**
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 previously.	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**	**Modem**
10153	1. **Data/Fax Modem** 2. System Board
101*XX* Not listed previously.	1. **Modem Adapter/A** 2. Data/Fax Modem 3. System Board
10450, **10451**, **10490** **10491**, **10492**, **10499** Read/write error.	1. **Run Enhanced Diagnostics.** 2. Hard Disk Drive 3. System Board
10452 Seek test error.	**Run Enhanced Diagnostics.**
10453 Wrong drive type?	Information only
10454 Sector buffer test error.	**Run Enhanced Diagnostics.**
10455, **10456** Controller error.	**Run Enhanced Diagnostics.**
10459 Drive diagnostic command error.	Information only
10461 Drive format error.	**Run Enhanced Diagnostics.**

Table 3-1 (Page 9 of 12). POST Errors	
Symptom / Error	**FRU to replace / Action to take**
10462 Controller seek error.	**Run Enhanced Diagnostics.**
10464 Hard Drive read error.	**Run Enhanced Diagnostics.**
10467 Drive non-unrecoverable seek error.	**Run Enhanced Diagnostics.**
10468 Drive unrecoverable seek error.	**Run Enhanced Diagnostics.**
10469 Drive soft error count exceeded.	**Run Enhanced Diagnostics.**
10470, **10471**, **10472** Controller wrap error.	**Run Enhanced 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.	**Run Enhanced Diagnostics.**
10482 Drive select acknowledgement bad.	**Run Enhanced Diagnostics.**
106*X*1	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
106*XX* Not listed previously.	**Ethernet Adapter**
107*XX*	1. **5 1/4-inch External Diskette Drive** 2. 5 1/4-inch Diskette Drive Adapter/A
109*XX* Check the adapter cables.	1. **ActionMedia Adapter/A** 2. System Board
112*XX* This adapter does not have cache.	1. **SCSI Adapter** 2. Any SCSI Device 3. System Board
119*XX*	1. **3119 Adapter**
121*XX*	1. **Modem Adapter** 2. Any Serial Device 3. System Board
136*XX*	1. **ISDN Primary Rate Adapter** 2. System Board
137*XX*	**System Board**

Table 3-1 (Page 10 of 12). POST Errors	
Symptom / Error	**FRU to replace / Action to take**
141*XX*	**Real-time 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
148*XX*	**Video Adapter**
14901, **14902** **1491*X***, **14922**	1. **Video Adapter** (if installed) 2. System Board 3. Display (any type)
14932	1. **External Display** 2. Video Adapter
161*XX*	**FaxConcentrator Adapter**
164*XX*	1. **120-MB 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
166*XX*, **167*XX***	1. **Token-Ring Adapter** 2. System Board
18001 to **18029**	1. **Wizard Adapter** 2. Wizard Adapter Memory
18031 to **18039**	**Wizard Adapter Cable**
185*XX**XX*	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
200*XX* Not listed previously.	1. **Image Adapter/A** **Image-I Adapter/A** 2. Memory Module DRAM, VRAM 3. System Board
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

Table 3-1 (Page 11 of 12). POST Errors	
Symptom / Error	**FRU to replace / Action to take**
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).**
206*XX*	1. **SCSI-2 Adapter** 2. Any SCSI Device 3. System Board
208*XX* Verify there are no duplicate SCSI ID settings on the same bus.	**Any SCSI Device**
210*XX**XX* Internal bus, size unknown. **210*XX****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)
212*XX*	1. **SCSI Printer** 2. Printer Cable
213*XX*	**SCSI Processor**
214*XX*	**WORM Drive**
215*XX**XC* **215*XX****XD* **215*XX****XE* **215*XX****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
216*XX*	1. **Scanner**
217*XX* 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
218*XX* Check for multi-CD tray or juke box.	**Changer**
219*XX*	**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
273*XX*	**1-Mbps Micro Channel® Infrared LAN Adapter**
27501, **27503** **27506**, **27507**	1. **ServerGuard Adapter** 2. System Board
27502, **27504**, **27510** **27511**, **27533**, **27534** **27536**, **27537**	**ServerGuard Adapter**
27509	**Remove redundant adapters, run Auto Configuration program, then retest.**
27512	1. **WMSELF.DGS diagnostics file missing** 2. WMSELF.DGS diagnostics file incorrect

Table 3-1 (Page 12 of 12). POST Errors	
Symptom / Error	**FRU to replace / Action to take**
27535	1. **3-V 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. **7.2-V 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
275*XX*	**Update Diagnostic Software**
27801 to **27879**	1. **Personal Dictation System Adapter** 2. System Board
27880 to **27889**	**External FRU** (Speaker, Microphone)
I999030*X* Hard disk reset failure.	**Possible hard disk drive problem** (See "Hard Disk Drive Boot Error" on page 3-24.)

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 might 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, "Service Processor FRUs / Display Exchange" on page 5-1.
  - **OR perform the specified action.**

006

Check your Service Processor symptom with the following list.

Miscellaneous error messages

Message/Symptom	FRU to replace/actions to take
Changing colors.	**Display**
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 3-20.	**1. Power Switch** 2. System Board
Computer will ***not*** RPL from server.	1. **Ensure that network is in startup sequence as first device or first device after diskette.** 2. Ensure that network adapter is enabled for RPL. 3. Network adapter (advise network administrator of a new MAC address)
Computer **cannot** Wake On LAN.	1. **Check power supply and signal cable connections to network adapter.** 2. Ensure that the Wake On LAN™ feature is enabled in Setup/Configuration. See "Service Processor Configuration / Setup Utility" on page H-8. 3. Ensure that the network administrator is using correct the MAC address. 4. Ensure that there are no interrupt or I/O address conflicts. 5. Network adapter (Advise network administrator of new MAC address).
Dead computer. See "Power Supply" on page 3-20.	1. **Power Switch** 2. Power Supply 3. 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 1/2 -in. 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.	**See "Power Supply" on page 3-20.**
Non-system 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 3-18.** 2. System Board 3. Display

Message/Symptom	FRU to replace/actions to take
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.	**See "Printer" on page 3-19.**
Program loads from the hard disk drive with a known-good diagnostics diskette in the first 3 1/2-in. 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 own hard disk.	1. **If network administrator is using LCCM Hybrid RPL, check startup sequence: First device: network; Second device: hard disk drive.** 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 3-25.
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
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 Table 3-2.

Table 3-2. Beep Symptoms

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	**System Board**

Beep Symptom	FRU/Action
1-2-*X* DMA error	**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 64 KB of RAM.	1. **Memory Module** 2. System Board
2-1-1, 2-1-2	1. **Run Setup.** 2. System Board
2-1-*X* First 64 KB of RAM failed.	1. **Memory Module** 2. System Board
2-2-2	1. **Video Card** (if installed) 2. System Board
2-2-*X* First 64 KB 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.	**System Board**
3-2-4 Keyboard controller failed.	1. **System Board** 2. Keyboard
3-3-4 Panel initialization failed.	1. **Video Adapter** (if installed) 2. System Board 3. Display
3-4-1 Panel 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.	**System Board**
One long and one short beep during POST. Base 640 KB 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 3-37.** 2. System Board
Continuous beep.	**System Board**

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

No Beep Symptoms

Symptom/Error	FRU/Action
No beep during POST but computer works correctly.	**System Board**
No beep during POST.	1. **See "Undetermined Problems" on page 3-22.** 2. System Board 3. Memory Module 4. Any Adapter or Device 5. Power Cord 6. Power Supply

Did you find your symptom in the list?

Yes **No**

007

Run the IBM PC Enhanced Diagnostics. See "Starting the IBM PC Enhanced Diagnostics Program" on page 4-4 to start the diagnostics.

Did the Enhanced Diagnostics error free?

Yes **No**

008

See "IBM PC Enhanced Diagnostic Error Codes" on page 4-9 for error code and action. Go to Step 010.

009

Go to "Undetermined Problems" on page 3-22.

010

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

Display

If the panel 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 panel 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 panel should be white or light gray, with a black margin (test margin) on the panel.
   - You should be able to vary the panel 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 panel replace the display. If there is a test margin on the panel, 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 3-22.

Keyboard

Note: If the keyboard operation mode BIOS parameter is set to disabled, to remove the keyboard or mouse as recommended can generate POST errors 301 and 8603 on the 6578.

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

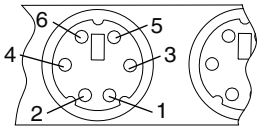


Figure 3-1. Keyboard Connector Voltages

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) does 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, check for the following conditions.

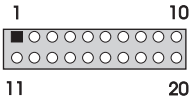
Check/Verify	FRU/Action
1. Verify that the voltage-selector switch is set for the correct voltage.	**Correct the voltage-selector switch setting.**
2. Check the following items for proper installation: • Power cord • On/Off switch connector • On/Off switch power supply connector • System board power supply connectors • Microprocessrs connection	**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 “20-Pin Main Power Supply Connection”).

20-Pin Main Power Supply Connection

See “System Board Layout” on page H-5 for connector location.

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



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	5 V SB	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

Pin	Signal	Function
14	PS-ON	DC Remote Enable
15	COM	Ground
16	COM	Ground
17	COM	Ground
18	not used	not used
19	5 V	+5 V dc
20	5 V	+5 V dc

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

Undetermined Problems

If an undetermined problem exists, check the power supply voltages (see “Power Supply” on page 3-20). If the voltages are correct, return here and continue with the following steps.

1. Power OFF the computer.
2. Remove or disconnect the following devices, if installed, one at a time:
   a. Non-IBM devices
   b. External devices (modem, printer, or mouse)
   c. Any adapters
   d. Memory modules

      Note: Before removing or replacing memory modules, see “System Board Memory” on page 3-37.
   e. Extended video memory
   f. External Cache
   g. External Cache RAM
   h. Hard disk drive
   i. Diskette drive
3. Power-on the computer to retest 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”).

Before Replacing a System Board

The BIOS and Vital Product Data (VPD) for the Service Processor must be installed on the new system board after it is installed in the Service Processor. To do this, ***you must run the Flash Update Diskette.*** See “Flash (BIOS/VPD) Update Procedure” on page 3-33.

Always ensure that the latest level of BIOS is installed on the computer. A down-level BIOS might cause false error messages and unnecessary replacement of the system board.

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, perform the following steps:

1. Remove the processor from the old system board and install it on the new system board.
2. Remove the memory modules on the old system board, and install them on the new system board.
3. Ensure that the new system board jumper settings match the old system board jumper settings.
4. 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 panel 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 “Service Processor Configuration / Setup Utility” on page H-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, perform the following steps:

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, perform the following steps:

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 3-20).
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.

Hard Disk Drive Boot Error

A hard disk drive boot error (error codes 1962 and I999030*X*) can have the following causes listed in Table 3-3.

Table 3-3. Hard Disk Drive Boot Error Codes

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; perform the following steps: 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 Drive for Use."
The drive is defective.	Replace the hard disk drive.

When to Use the Low-Level Format Program

Notes:

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

Use the Low-Level Format program:

- When you are installing software that requires a low-level format
- When you get recurring messages from the test programs directing you to run the Low-Level Format program on the hard disk
- As a last resort before replacing a hard disk drive

Preparing the Hard Disk Drive for Use

When the Low-Level Format program is finished, restore to the hard disk all the files that you previously backed up.

1. Partition the remainder of the hard disk for your operating system. (The commands vary with the operating system. Refer to your operating system manual for instructions.)
2. Format the hard disk using your operating system. (The commands vary with the operating system. Refer to your operating system manual for instructions.)
3. Install the operating system.

You are now ready to restore the files.

Token-Ring Adapter Card LED Status

Use Table 3-4 below to determine the status of the token-ring adapter card for diagnosing network problems.

Table 3-4. Token Ring Adapter Card Status

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 • 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 a hard error. If the network is known good, check cable between computer and network receptacle. Replace: • Adapter • System board
On	On	The adapter has failed before running the self-diagnostic tests. Replace: • Adapter • System board

Note: See “Token-Ring Table Terms and Definitions” on page 3-26 for the definitions 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 successful, 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 or not 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.

Initialization 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.

Additional Service Information

The following additional service information supports the PC 300 type 6578.

Security Features

Security features in this section include:

- Passwords
- Vital Product Data
- Management Information Format (MIF)
- Alert on LAN

Passwords

The following list provides information about computer hardware and software-related passwords:

- Power-on password
- Administrator password
- Operating system password

Power-on and administrator passwords are set in the Setup Utility program. See "Service Processor Configuration / Setup Utility" on page H-8 for information about running the Setup Utility.

Power-On Password: A power-on password denies access to the computer by an unauthorized user when the computer is powered on. When a power-on password is active, the password prompt appears on the screen each time the computer is powered on. The computer starts after the proper password is entered.

Removing a Power-On Password

To service a computer with an active and unknown power-on password, power OFF the computer and perform the following steps:

Attention: This procedure removes the administrator password. Also, this procedure clears all setup parameters, privilege access, and boot sequence settings. Make sure these setting are recorded before performing this procedure.

1. Unplug the power cord and remove the top cover.

2. See “System Board Layout” on page H-5 to find the password jumper.
3. Move the password jumper to connect the center pin and the pin on the opposite end of the connector.
4. Power-on the computer. The system senses the change in the position and erases the password.

   Note: It is necessary to move the jumper back to the previous position.
5. Remind the user to enter a new password when service is complete.

Administrator Password: The administrator password is used to restrict access to the Configuration/Setup Utility program. If the administrator password is activated, and you do not enter the administrator password, the configuration can be viewed but not changed.

Note: Type 6578 has the Enhanced Security mode feature. If the Enhanced Security mode is enabled and there is no password given, the computer acts as if Enhanced Security were disabled.

If Enhanced Security is enabled and an administrator password is given, the administrator password must be entered to use the computer. If the administrator password is lost or forgotten, the system board in the computer must be replaced in order to regain access to the Configuration/Setup Utility program.

Administrator Password Control The administrator password is set in the Setup Configuration. See “Service Processor Configuration / Setup Utility” on page H-8.

Operating System Password: An operating system password is very similar to a power-on password and denies access to the computer by an unauthorized user when the password is activated. The computer is unusable until the password is entered and recognized by the computer.

Vital Product Data

Each computer has a unique vital product data (VPD) code stored in the nonvolatile memory on the system board. After you replace the system board, the VPD must be updated. To update the VPD, see “Flash (BIOS/VPD) Update Procedure” on page 3-33.

Management Information Format (MIF)

Management Information Format (MIF) is a file used to maintain a list of the system unit serial number along with all serialized components; for example: system board, memory, and processor.

At the time of computer manufacture, the EPROM is loaded with the serial numbers of the system and all major components. The customer will have access to the MIF file through the DMI MIF Browser that is installed with the preload and is also available on the SSCD provided with the system.

Example Scenario: As an example, a company called Retain-a-Group is a central data warehouse offering serial number data management. Retain-a-Group acts as a focal point to law enforcement. The customer has the option to purchase serial number information and services from Retain-a-Group. It is the customer’s responsibility to maintain the MIF file and to inform Retain-a-Group of any changes to the file.

Some customers might request their servicers to assist them in maintaining the MIF file when serialized components are replaced during hardware service. This assistance is between the customer and the servicer. The servicer can use the DMI MIF Browser to update the MIF information in the EPROM. It is anticipated that some servicers might charge for this service.

To update the EPROM using the DMI MIF Browser:

1. Click **Start** from the desktop, then **Programs**.
2. Select **IBM SystemView Agent**.
3. Select **Serial Number Information** icon.
4. Click the plus sign to expand.
5. Select the component you want to view or edit.
6. Double-click the component you want to change.
7. Enter new data in the **Value** field, then click **Apply**.

Alert on LAN

The Alert on LAN feature provides notification of changes in the computer, even when the computer power is turned off. Working with DMI and Wake on LAN technologies, the Alert on LAN feature helps to manage and monitor the hardware and software features of the computer. It generates notifications to the server of these occurrences:

- Computer disconnected from the network
- Computer unplugged from the power outlet
- All POST errors
- Operating system or POST hang condition

Alert on LAN events are configured to be Enabled or Disabled from the LAN server only, and not from the computer. See the LAN administrator for configuration status information.

Hard-Disk Drive Jumper Settings

IDE hard-disk drives for the 6578 use jumpers to set the drives as primary (master) or secondary (subordinate).

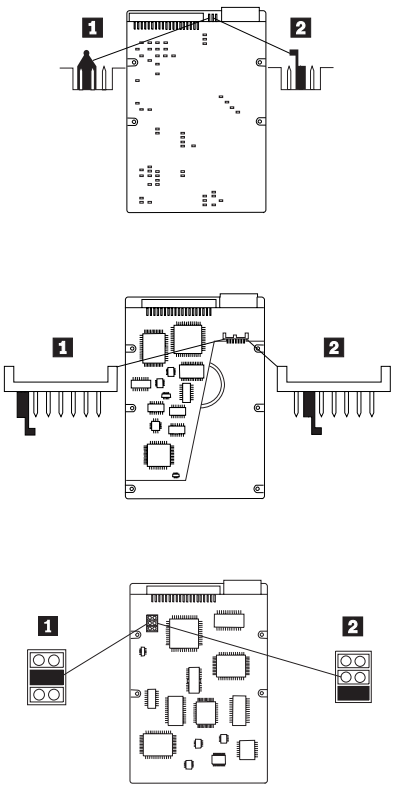
Attention: For drives not listed below, refer to the label on the hard-disk drive for the hard-disk drive settings.

IDE Hard-Disk Drive Settings

1 Primary (Master) Hard-Disk Drive

2 Secondary (Subordinate) 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 (subordinate). Refer to the drive connector labels or Figure 3-2 and Table 3-5 for the drive settings.

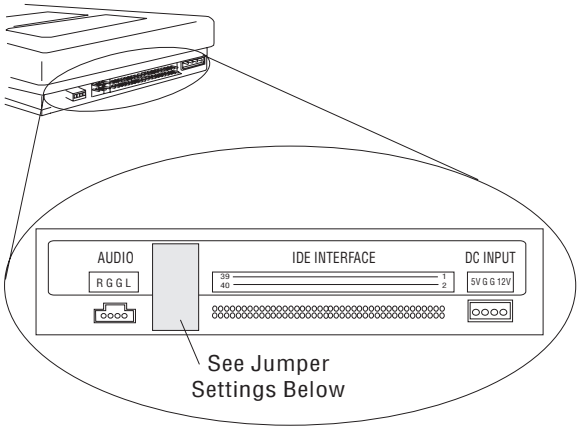


Figure 3-2. Drive Connector Labels

Table 3-5. Jumper Settings

CD-ROM, PD/CD-ROM Type	Primary (Master)	Secondary (Subordinate)
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	: : ▮	: ▮ :
48X Max CD-ROM	: : ▮	: ▮ :

BIOS Levels

An incorrect level of BIOS can cause false error messages and unnecessary 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 Utility to determine the level of BIOS installed.
- Sources for determining the latest level of BIOS available.
  1. IBM PC Company Home Page at http://www.ibm.com/pc/us/
  2. PC PartnerInfo-Technical Database (CTSTIPS.NSF)
  3. HelpCenter®
  4. Levels 1 and 2 Support
  5. RETAIN
- Sources for obtaining the latest level of BIOS available.
  1. IBM PC Company Home Page at http://www.ibm.com/pc/us/
  2. PC PartnerInfo-Technical Database (CTSTIPS.NSF)
  3. HelpCenter
  4. Levels 1 and 2 Support

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

Flash (BIOS/VPD) Update Procedure

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

1. Power OFF the computer.
2. Insert the flash update diskette into drive A:.
3. Power ON the computer.
4. When the Update Utility appears; select your country/keyboard, then press **Enter**.
5. 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.
6. Type the 7-digit serial number of the computer you are servicing; then, press **Enter**.
7. Follow the instructions on the screen to complete the flash (BIOS/VPD) update procedure.

Flash Recovery Boot Block

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

To perform a Flash/BIOS recovery using the CMOS switch:

1. Power OFF the computer and remove the cover.
2. Move the system board CMOS switch to the **on** position. See “System Board Layout” on page H-5 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 CMOS switch to the **OFF** position. Then, replace the cover and power ON the computer.

Power Management

Power management reduces the power consumption of certain components of the computer such as the system power supply, processor, hard disk drives, and some monitors. Advanced Power Management and Rapid Resume Manager are features of some personal computers.

Automatic Configuration and Power Interface (ACPI) BIOS

Being an ACPI BIOS system, the operating system is allowed to control the power management features of the computer and the setting for Advanced Power Management (APM) BIOS mode are ignored. Not all operating systems support ACPI BIOS mode.

Advanced Power Management

Energy-saving settings can be viewed and changed by using the Advanced Power Management menu in the Configuration/Setup Utility program.

Attention: If a device, such as a monitor, does not have power-management capabilities, it can be damaged when exposed to a reduced-power state. Before making energy-saving selections for the monitor, check the documentation supplied with the monitor to see if it supports Display Power Management Signaling (DPMS).

Automatic Hardware Power Management features

Automatic Hardware Power Management can reduce the power states of the computer, processor, and monitor (if monitor supports DPMS) if they are inactive for a predetermined length of time.

There are three levels of specified time that the computer must be inactive before the power management options that are selected take effect. Select the amount of time that is offered within each level:

Level 1 Set time from 5 minutes to 4 hours.

Level 2 Set time from 10 minutes to 5 hours.

Level 3 Set time from 15 minutes to 6 hours.

At each level, you can define the amount of energy savings by specifying values for the following options:

- **System Power**:
  - Select **On** for the computer to remain on.
  - Select **Off** for the computer to shut down.
- **Processor Speed**:

  Set the microprocessor to be disabled, or to run at 1, 10, 25, or 50 percent of its internal clock speed.
- **Display**:

  Set display to be disabled or to be reduced at these power states:
  - **Standby**: Screen is blank, but can be restored immediately when any activity is detected.
  - **Suspend**: Monitor uses less power than in Standby mode. Screen image is restored after a few seconds when any activity is detected.
  - **Off**: Monitor power is off. Press Monitor power button to restore power. On some monitors, you might have to press the power button twice.

Setting Automatic Hardware Power Management Features

1. Start the Configuration/Setup Utility program (see “Service Processor Configuration / Setup Utility” on page H-8).
2. Select **Advanced Power Management** from the Configuration/Setup Utility program menu.
3. Be sure that APM BIOS Mode is set to Enabled. If it is not, press Left Arrow (←) or Right Arrow (→) to change the setting.
4. Select **Automatic Hardware Power Management**.
5. Set Automatic Hardware Power Management to **Enabled**.
6. Select values for the three levels of power management (system power, processor speed, and display), as necessary.
7. Set Hard Disk to **Enabled** or **Disabled**.

   Note: This does not apply to SCSI drives.
8. Press **Esc** twice to return to the Configuration/Setup Utility program menu.
9. Before you exit from the program, select **Save Settings** from the Configuration/Setup Utility program menu.
10. To exit from the Configuration/Setup Utility program, press **Esc** and follow the instructions on the screen.

Automatic Power-On Features

The Automatic Power-On features within the Advanced Power Management menu allow you to enable and disable features that turn the computer on automatically.

- **Serial Port Ring Detect:** With this feature set to Enabled and an *external* modem connected to serial port (COM1), the computer will turn on automatically when a ring is detected on the modem.
- **Modem Ring Detect:** With this feature set to Enabled, the computer will turn on automatically when a ring is detected on the internal modem.
- **Wake Up on Alarm:** You can specify a date and time at which the computer will be turned on automatically. This can be either a single event or a daily event.
- **Wake on LAN:** If the computer has a properly configured token-ring or Ethernet LAN adapter card that is Wake on LAN feature-enabled and there is remote network management software, you can use the IBM-developed Wake on LAN feature. When you set Wake on LAN to **Enabled**, the computer will turn on when it receives a specific signal from another computer on the local area network (LAN). For further information, see “Wake on LAN” on page 3-36.

Network Settings

This section applies only to computers linked to a network.

The Configuration/Setup Utility program includes settings that can be enabled and disabled to configure the network interface in the computer. These settings are:

- Flash over LAN (Update POST/BIOS over Network)
- Wake on LAN

Flash Over LAN (Update POST/BIOS Over Network)

Note: For local Flash (BIOS/VPD) update, see “Flash (BIOS/VPD) Update Procedure” on page 3-33.

This setting is used to enable or disable the Flash over LAN feature. When the feature is enabled, the system programs, in the computer, can be updated remotely from a network server. If the administrator password is set in the computer, it does not have to be entered by the server.

To access the Flash over LAN setting:

1. Start the Configuration/Setup Utility program. See “Service Processor Configuration / Setup Utility” on page H-8.
2. Select **System Security**.
3. Select **POST/BIOS Update** from the Configuration/Setup Utility program menu.
4. To enable Flash over LAN, select **Enabled**. To disable Flash over LAN, select **Disabled**.
5. Press **Esc** twice to return to the Configuration/Setup Utility program menu.
6. Before you exit from the program, select **Save Settings** from the Configuration/Setup Utility program menu.
7. To exit from the Configuration/Setup Utility program, press **Esc** and follow the instructions on the screen.

Wake on LAN

This setting is used to enable or disable the IBM-developed Wake on LAN feature. This feature makes it possible for the computer to be turned on remotely by a network server. Remote network management software must be used in conjunction with this feature.

To access the Wake on LAN setting:

1. Start the Configuration/Setup Utility program. See “Service Processor Configuration / Setup Utility” on page H-8.
2. Select **Advanced Power Management**.
3. Select **Automatic Power On** from the program menu.
4. Select **Wake on LAN** from the Automatic Power On menu.
5. To enable Wake on LAN, select **Enabled**. To disable the Wake on LAN feature, select **Disabled**.
6. Press **Esc** until you return to the Configuration/Setup Utility program menu.
7. Before you exit from the program, select **Save Settings** from the Configuration/Setup Utility program menu.
8. To exit from the Configuration/Setup Utility program, press **Esc** and follow the instructions on the screen.

System Board Memory

The Service Processor based on 6578 supports the following memory modules.

DIMM sizes of 64 MB, 128 MB, and 256 MB are acceptable. Starting filling DIMM socket 0, then 1. Uses 3.3-V unbuffered 133-MHz SDRAM non-registered DIMMMs only.

Computer Name	Module		
	Size	Speed	Type
PC 300 Type 6578	64 MB 128 MB 256 MB 512 MB Maximum	133 MHz	SDRAM ECC/Non-ECC Industry Standard

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

Chapter 4. Service 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

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* (*POST*). POST performs the following operations:

- 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 panel of your operating system or application program appears.

Note: The Service Processor based on the 6578 computer is defaulted to come up quietly (no beep, no memory count, and checkpoint code display) when no errors are detected by POST.

To enable the beep, memory count and checkpoint code display when a successful POST occurs, enable **Power on Status** in setup. See “Service Processor Configuration / Setup Utility” on page H-8.

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

POST Beep Codes

The POST generates a beeping sound to indicate its successful completion 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 Service Processor based on the 6578 computer is defaulted to come up quietly (no beep, no memory count and checkpoint code display) when no errors are detected by POST.

To enable the beep, memory count and checkpoint code display when a successful POST occurs, enable **Power on Status** in setup. See “Service Processor Configuration / Setup Utility” on page H-8.

Error Code Format

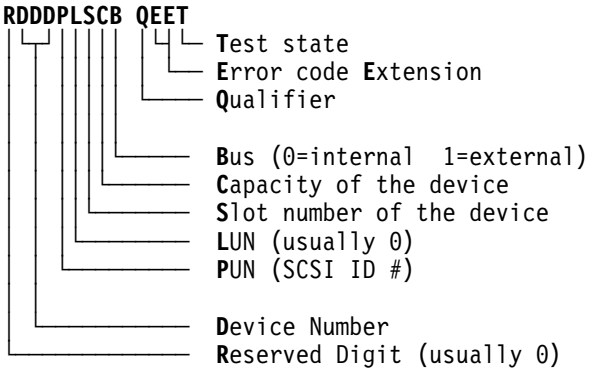
This section provides an explanation of the encoded non-SCSI and SCSI POST error codes.

Error messages are displayed on the panel 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:

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



Diagnostics Test Programs

This section describes the diagnostics tools that can be used.

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 PC Enhanced Memory Diagnostics and the suite of diagnostic tests provided by PC-Doctor (diagnostic diskette PN 10K8791).

Updates for the IBM PC Enhanced Diagnostics are available online 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 PC Enhanced Memory Diagnostics and the suite of diagnostic tests provided by PC-Doctor.
- IBM PC Enhanced 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 "IBM PC Enhanced 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.
- **Enter** is used to select a menu item.
- **Esc** 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 predefined 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 the Space bar.

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

IBM PC Enhanced Memory Diagnostics

The IBM PC Enhanced Memory Diagnostics provide the capability to identify a particular memory module (SIMM/DIMM) which fails during testing. See “System Board Layout” on page H-5 to locate the memory sockets.

Follow the steps below to locate the IBM PC Enhanced 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:

1. Either level of memory testing can be performed on all memory or a single SIMM/DIMM socket.
2. Only sockets containing a SIMM or DIMM can be selected for testing. Unpopulated sockets are noted by an elipsis (.....) beside the test description.

Alert on LAN Test

The Alert on Lan test performs the following tasks:

- 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 performs the following tasks:

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

Test Results

IBM PC Enhanced Diagnostic test results produces 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 hard 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 "IBM PC Enhanced Diagnostic Error Codes" on page 4-9 for the IBM PC Enhanced Diagnostics error codes.

Hard File Smart Test

Use the Hard File Smart Test when the system management tool has detected a hard file SMART alert.

The Smart test performs the following tasks:

- Interrogates IDE devices for support of the SMART instruction set.
- Issues an `ENABLE SMART` command to make sure that SMART functionality is active.
- Checks the `SMART RETURN STATUS` command to determine if any thresholds have been exceeded.

If thresholds have been exceeded, an error message is shown, and the test fails. If no SMART is supported by the drive, the test returns with N/A.

IBM Fixed Disk Optimized Test

The IBM Fixed Disk Optimized Test provide the capability to identify particular areas of a hard file which fails during testing. This test also provide a method of correcting certain types of errors.

To select the Fixed Disk Optimized Test:

1. Select the diagnostic option on the toolbar and press **Enter**.
2. Select **Fixed Disk Optimized Test.**
3. Select **Hard Drives - NORMAL TEST** to run a complete hard file test.
4. Select **Hard Drives - PRESENCE TEST** to run a test to check the drive controller and report any SMART information that the drive has detected.

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 tasks:

- Deletes the Master Boot Record (MBR) on the hard drive.
- Deletes all copy of the FAT Table on all partitions (both the master and backup).
- Deletes 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 tasks:

- 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 that the 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 **Utility** on the toolbar and press **Enter.**
2. Select either **Quick Erase** or **Full Erase Hard Disk** 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 the instructions on panel.

Viewing the Test Log

Errors reported by the diagnostic test are 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 panel:

- 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
2*xx*-1*y*	A memory error was detected in SIMM socket *y.*	Replace the SIMM in the socket identified by the last digit of the error code. Rerun the test. If the same error code occurs again, replace the system board.
2*xx*-2*y*	A memory error was detected in DIMM socket *y.*	Replace the DIMM in the socket identified by the last digit of the error code. Rerun 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: In the code *y* is the SIMM/DIMM socket number. See “System Board Layout” on page H-5 to locate memory socket.		

IBM PC Enhanced 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 to replace/action to take
000-000-*XXX* BIOS Test Passed	**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. Restart the test, if you need to.
000-196-*XXX* BIOS test halt, error threshold exceeded	1. **Press F3 to review the log file. See “Viewing the Test Log” on page 4-8.** 2. Restart the test to reset the log file.

Diagnostic Error Code	FRU to replace/action to take
000-197-*XXX* BIOS test warning	1. **Make sure that the component that is called out is enabled or connected.** 2. Rerun the test. 3. Component that is called out in warning statement 4. Component under test
000-198-*XXX* BIOS test aborted	1. **If a component is called out, make sure that it is enabled or connected.** 2. Flash the system and retest. 3. Go to “Undetermined Problems” on page 3-22.
000-199-*XXX* BIOS test failed, cause unknown	1. **Go to “Undetermined Problems” on page 3-22.** 2. Flash the system and retest. 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	**No action**
001-00*X*-*XXX* System Error	**System board**
001-01X-*XXX* System Error	**System board**
001-024-*XXX* System Addressing test failure	**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	**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	**System board**
001-036-*XXX* System Register error	**System board**
001-038-*XXX* System Extension failure	1. **Adapter card** 2. System board

Diagnostic Error Code	FRU to replace/action to take
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 retest.** 2. System board
001-041-*XXX* System DMA failure	1. **Power-off/on system and retest.** 2. System board
001-195-*XXX* System Test aborted by user	1. **Information** 2. Restart the test, if you need to.
001-196-*XXX* System test halt, error threshold exceeded	1. **Press F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Restart the test to reset the log file.
001-197-*XXX* System test warning	1. **Make sure that the component that is called out is enabled or connected.** 2. Rerun the 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 that it is enabled or connected.** 2. Flash the system and retest. 3. Go to "Undetermined Problems" on page 3-22.
001-199-*XXX* System test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-22.** 2. Flash the system and retest. 3. Replace component under function test.
001-250-*XXX* System ECC error	**System board**
001-254-*XXX* **001-255-*XXX*** **001-256-*XXX*** **001-257-*XXX*** System DMA error	**System board**
001-260-*XXX* 001-264- ***XXX*** System IRQ error	**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

Diagnostic Error Code	FRU to replace/action to take
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
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	**System board**
001-292-*XXX* System CMOS RAM error	1. **Run Setup and retest.** 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	**System board**
001-300-*XXX* System RTC Alarm failure	**System board**
001-301-*XXX* System RTC Century byte error	1. **Flash the system.** 2. System board
005-000-*XXX* Video Test Passed	**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

Diagnostic Error Code	FRU to replace/action to take
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
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. Restart the test, if you need to.
005-196-*XXX* Video test halt, error threshold exceeded	1. **Press F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Restart the test to reset the log file.
005-197-*XXX* Video test warning	1. **Make sure that the component that is called out is enabled or connected.** 2. Rerun the 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 that it is enabled or connected.** 2. Flash the system and retest. 3. Go to "Undetermined Problems" on page 3-22.
005-199-*XXX* Video test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-22.** 2. Flash the system and retest. 3. Replace component under function test.
005-2*XX*-ehp2.*XXX* **005-3*XX*-*XXX*** **Video subsystem error**	1. **Video card, if installed** 2. System board

Diagnostic Error Code	FRU to replace/action to take
006-000-*XXX* Diskette interface Test Passed	**No action**
006-0*XX*-*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. Restart the test, if you need to.
006-196-*XXX* Diskette interface test halt, error threshold exceeded	1. **Press F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Restart the test to reset the log file.
006-197-*XXX* Diskette interface test warning	1. **Make sure that the component that is called out is enabled or connected.** 2. Rerun the 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 that it is enabled or connected.** 2. Flash the system and retest. 3. Go to "Undetermined Problems" on page 3-22.
006-199-*XXX* Diskette interface test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-22.** 2. Flash the system and retest. 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	**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	**System board**
011-013-*XXX* **011-014-*XXX*** Serial port Control Signal/Loopback test failure	**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

Diagnostic Error Code	FRU to replace/action to take
011-03*X*-*XXX* **011-04X-*XXX*** Serial port failure	**System board**
011-195-*XXX* Serial port Test aborted by user	1. **Information** 2. Restart the test, if you need to.
011-196-*XXX* Serial port test halt, error threshold exceeded	1. **Press F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Restart the test to reset the log file.
011-197-*XXX* Serial port test warning	1. **Make sure that the component that is called out is enabled or connected.** 2. Rerun the 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 that it is enabled or connected.** 2. Flash the system and retest. 3. Go to "Undetermined Problems" on page 3-22.
011-199-*XXX* Serial port test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-22.** 2. Flash the system and retest. 3. Replace component under function test.
011-2*XX*-*XXX* Serial port signal failure	1. **External serial device** 2. System board
014-000-*XXX* Parallel port Interface Test Passed	**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	**System board**
014-013-*XXX* **014-014-*XXX*** Parallel port Control Signal/Loopback test failure	**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	**System board**

Diagnostic Error Code	FRU to replace/action to take
014-195-*XXX* Parallel port Test aborted by user	1. **Information** 2. Restart the test, if you need to.
014-196-*XXX* Parallel port test halt, error threshold exceeded	1. **Press F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Restart the test to reset the log file.
014-197-*XXX* Parallel port test warning	1. **Make sure that the component that is called out is enabled or connected.** 2. Rerun the 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 that it is enabled or connected.** 2. Flash the system and retest. 3. Go to "Undetermined Problems" on page 3-22.
014-199-*XXX* Parallel port test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-22.** 2. Flash the system and retest. 3. Replace component under function test.
014-2*XX*-*XXX* **014-3*XX*-*XXX*** Parallel port failure	1. **External parallel device** 2. System board
015-000-*XXX* USB port Interface Test Passed	**No action**
015-001-*XXX* USB port Presence	1. **Remove USB Devices and retest.** 2. System board
015-002-*XXX* USB port Timeout	1. **Remove USB Devices and retest.** 2. System board
015-015-*XXX* USB port External Loopback failure	1. **Remove USB Devices and retest.** 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	**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 Devices and retest.** 2. System board
015-036-*XXX* USB port Register error	**System board**
015-040-*XXX* USB port IRQ failure	1. **Run setup and check for conflicts.** 2. Flash the system. 3. System board

Diagnostic Error Code	FRU to replace/action to take
015-195-*XXX* USB port Test aborted by user	1. **Information** 2. Restart the test, if you need to.
015-196-*XXX* USB port test halt, error threshold exceeded	1. **Press F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Restart the test to reset the log file.
015-197-*XXX* USB port test warning	1. **Make sure that the component that is called out is enabled or connected.** 2. Rerun the 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 that it is enabled or connected.** 2. Flash the system and retest. 3. Go to "Undetermined Problems" on page 3-22.
015-199-*XXX* USB port test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-22.** 2. Flash the system and retest. 3. Replace component under function test.
018-000-*XXX* PCI Card Test Passed	**No action**
018-0*XX-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. Restart the test, if you need to.
018-196-*XXX* PCI Card test halt, error threshold exceeded	1. **Press F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Restart the test to reset the log file.
018-197-*XXX* PCI Card test warning	1. **Make sure that the component that is called out is enabled or connected.** 2. Rerun the 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 that it is enabled or connected.** 2. Flash the system and retest. 3. Go to "Undetermined Problems" on page 3-22.

Diagnostic Error Code	FRU to replace/action to take
018-199-*XXX* PCI Card test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-22.** 2. Flash the system and retest. 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	**No action**
020-0*XX*-*XXX* PCI Interface error	1. **PCI card** 2. Riser card, if installed 3. System board
020-195-*XXX* PCI Test aborted by user	1. **Information** 2. Restart the test, if you need to.
020-196-*XXX* PCI test halt, error threshold exceeded	1. **Press F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Restart the test to reset the log file.
020-197-*XXX* PCI test warning	1. **Make sure that the component that is called out is enabled or connected.** 2. Rerun the 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 that it is enabled or connected.** 2. Flash the system and retest. 3. Go to "Undetermined Problems" on page 3-22.
020-199-*XXX* PCI test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-22.** 2. Flash the system and retest. 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	**No action**
025-00*X*-*XXX* **025-01*X*-*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

Diagnostic Error Code	FRU to replace/action to take
025-02*X*-*XXX* **025-03*X*-*XXX*** **025-04*X*-*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. Restart the test, if you need to.
025-196-*XXX* IDE interface test halt, error threshold exceeded	1. **Press F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Restart the test to reset the log file.
025-197-*XXX* IDE interface test warning	1. **Make sure that the component that is called out is enabled or connected.** 2. Rerun the 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 that it is enabled or connected.** 2. Flash the system and retest. 3. Go to "Undetermined Problems" on page 3-22.
025-199-*XXX* IDE interface test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-22.** 2. Flash the system and retest. 3. Replace component under function test.
030-000-*XXX* SCSI interface Test Passed	**No action**
030-00*X*-*XXX* **030-01*X*-*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
030-03*X*-*XXX* **030-04*X*-*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. Restart the test, if you need to.
030-196-*XXX* SCSI interface test halt, error threshold exceeded	1. **Press F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Restart the test to reset the log file.

Diagnostic Error Code	FRU to replace/action to take
030-197-*XXX* SCSI interface test warning	1. **Make sure that the component that is called out is enabled or connected.** 2. Rerun the 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 that it is enabled or connected.** 2. Flash the system and retest. 3. Go to “Undetermined Problems” on page 3-22.
030-199-*XXX* SCSI interface test failed, cause unknown	1. **Go to “Undetermined Problems” on page 3-22.** 2. Flash the system and retest. 3. Replace component under function test.
035-000-*XXX* RAID interface Test Passed	1. **No action**
035-0*XX*-*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. Restart the test, if you need to.
035-196-*XXX* RAID interface test halt, error threshold exceeded	1. **Press F3 to review the log file. See “Viewing the Test Log” on page 4-8.** 2. Restart the test to reset the log file.
035-197-*XXX* RAID interface test warning	1. **Make sure that the component that is called out is enabled or connected.** 2. Rerun the 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 that it is enabled or connected.** 2. Flash the system and retest. 3. Go to “Undetermined Problems” on page 3-22.
035-199-*XXX* RAID interface test failed, cause unknown	1. **Go to “Undetermined Problems” on page 3-22.** 2. Flash the system and retest. 3. Replace component under function test.
071-000-*XXX* Audio port Interface Test Passed	**No action**

Diagnostic Error Code	FRU to replace/action to take
071-00*X-XXX* **071-01*X-XXX*** **071-02*X-XXX*** Audio port error	1. **Run Setup.** 2. Flash the system. 3. System board
071-03*X-XXX* Audio port failure	1. **Speakers** 2. Microphone 3. Audio card, if installed 4. System board
071-04*X-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. Restart the test, if you need to.
071-196-*XXX* Audio port test halt, error threshold exceeded	1. **Press F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Restart the test to reset the log file.
071-197-*XXX* Audio port test warning	1. **Make sure that the component that is called out is enabled or connected.** 2. Rerun the 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 that it is enabled or connected.** 2. Flash the system and retest. 3. Go to "Undetermined Problems" on page 3-22.
071-199-*XXX* Audio port test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-22.** 2. Flash the system and retest. 3. Replace component under function test.
071-25*X-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	**Remove the game port device and retest the system.**
080-195-*XXX* Game Port interface Test aborted by user	1. **Information** 2. Restart the test, if you need to.
080-196-*XXX* Game Port interface test halt, error threshold exceeded	1. **Press F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Restart the test to reset the log file.

Diagnostic Error Code	FRU to replace/action to take
080-197-*XXX* Game Port interface test warning	1. **Make sure that the component that is called out is enabled or connected.** 2. Rerun the 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 that it is enabled or connected.** 2. Flash the system and retest. 3. Go to “Undetermined Problems” on page 3-22.
080-199-*XXX* Game Port interface test failed, cause unknown	1. **Go to “Undetermined Problems” on page 3-22.** 2. Flash the system and retest. 3. Replace component under function test.
086-000-*XXX* Mouse Port interface Test Passed	**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. Restart the test, if you need to.
086-196-*XXX* Mouse Port interface test halt, error threshold exceeded	1. **Press F3 to review the log file. See “Viewing the Test Log” on page 4-8.** 2. Restart the test to reset the log file.
086-197-*XXX* Mouse Port interface test warning	1. **Make sure that the component that is called out is enabled or connected.** 2. Rerun the 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 that it is enabled or connected.** 2. Flash the system and retest. 3. Go to “Undetermined Problems” on page 3-22.

Diagnostic Error Code	FRU to replace/action to take
086-199-*XXX* Mouse Port interface test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-22.** 2. Flash the system and retest. 3. Replace component under function test.
089-000-*XXX* Microprocessor Test Passed	**No action**
089-*XXX-XXX* Microprocessor failure	1. **Microprocessors** 2. System board
089-195-*XXX* Microprocessor Test aborted by user	1. **Information** 2. Restart the test, if you need to.
089-196-*XXX* Microprocessor test halt, error threshold exceeded	1. **Press F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Restart the test to reset the log file.
089-197-*XXX* Microprocessor test warning	1. **Make sure that the component that is called out is enabled or connected.** 2. Rerun the 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 that it is enabled or connected.** 2. Flash the system and retest. 3. Go to "Undetermined Problems" on page 3-22.
089-199-*XXX* Microprocessor test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-22.** 2. Flash the system and retest. 3. Replace component under function test.
170-000-*XXX* Voltage Sensors Test Passed	**No action**
170-0*XX-XXX* Voltage Sensors failure	1. **Flash system** 2. System board
170-195-*XXX* Voltage Sensors Test aborted by user	1. **Information** 2. Restart the test, if you need to.
170-196-*XXX* Voltage Sensors test halt, error threshold exceeded	1. **Press F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Restart the test to reset the log file.
170-197-*XXX* Voltage Sensors test warning	1. **Make sure that the component that is called out is enabled or connected.** 2. Rerun the test. 3. Component that is called out in warning statement 4. Component under test

Diagnostic Error Code	FRU to replace/action to take
170-198-*XXX* Voltage Sensors test aborted	1. **If a component is called out, make sure that it is enabled or connected.** 2. Flash the system and retest. 3. Go to "Undetermined Problems" on page 3-22.
170-199-*XXX* Voltage Sensors test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-22.** 2. Flash the system and retest. 3. Replace component under function test.
170-250-*XXX* **170-251-*XXX*** Voltage Sensors Voltage limit error	1. **Power supply** 2. System board
170-254-*XXX* Voltage Sensors Voltage Regulator Module error	1. **Voltage Regulator Module (VRM)** 2. Microprocessor 3. System board
175-000-*XXX* Thermal Sensors Test Passed	**No action**
175-0*XX*-*XXX* Thermal Sensors failure	1. **Flash system** 2. System board
175-195-*XXX* Thermal Sensors Test aborted by user	1. **Information** 2. Restart the test, if you need to.
175-196-*XXX* Thermal Sensors test halt, error threshold exceeded	1. **Press F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Restart the test to reset the log file.
175-197-*XXX* Thermal Sensors test warning	1. **Make sure that the component that is called out is enabled or connected.** 2. Rerun the test. 3. Component that is called out in warning statement 4. Component under test
175-198-*XXX* Thermal Sensors test aborted	1. **If a component is called out, make sure that it is enabled or connected.** 2. Flash the system and retest. 3. Go to "Undetermined Problems" on page 3-22.
175-199-*XXX* Thermal Sensors test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-22.** 2. Flash the system and retest. 3. Replace component under function test.
175-250-*XXX* **175-251-*XXX*** Thermal Sensors limit error	1. **Check fans.** 2. Check power supply. 3. Microprocessor 4. System board
185-000-*XXX* Asset Security Test Passed	**No action**

Diagnostic Error Code	FRU to replace/action to take
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	**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	**No action**
202-*XXX-XXX* System Cache error	1. **Cache, if removable** 2. System board 3. Microprocessor
206-000-*XXX* Diskette Drive Test Passed	**No 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	**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	**No action**
217-25*X-XXX* **217-26*X-XXX*** Hard Disk Drive (IDE) error	1. **Hard Disk Drive Cable** 2. Check power supply voltages. 3. Hard Disk drive (IDE) 4. System board
217-28*X-XXX* **217-29*X-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	**No action**
220-*XXX-XXX* Hi-Capacity Cartridge Drive error	**Remove the Hi-Capacity Cartridge Drive and retest the system.**
301-000-*XXX* Keyboard Test Passed	**No action**
301-*XXX-XXX* Keyboard error	1. **Keyboard** 2. Check and test mouse. 3. System board
302-000-*XXX* Mouse Test Passed	**No action**

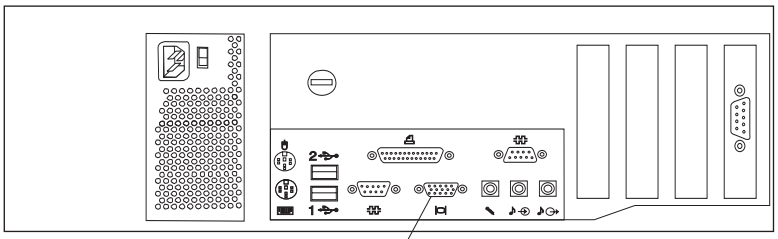
Diagnostic Error Code	FRU to replace/action to take
302-*XXX-XXX* Mouse error	1. **Mouse** 2. Check and test keyboard. 3. System board
303-000-*XXX* Joystick Test Passed	**No action**
303-*XXX-XXX* Joystick error	**Remove the joystick and retest the system.**
305-000-*XXX* Monitor DDC Test Passed	**No 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	**No action**
415-*XXX-XXX* Modem error	**Remove the modem and retest the system.**

Chapter 5. Service Processor FRUs / Display Exchange

This chapter shows you how to exchange a display and various FRUs.

Display Removal/Display Install

1. Switch OFF the display and the Service Processor using their respective power on/off switches located on the front panels.
2. Disconnect the power plug of the display from the ac power source.
3. Disconnect the display cable at the rear of the Service Processor.



4. If your display is installed in the controller rack, slide out the display from the rack and install it on a table.

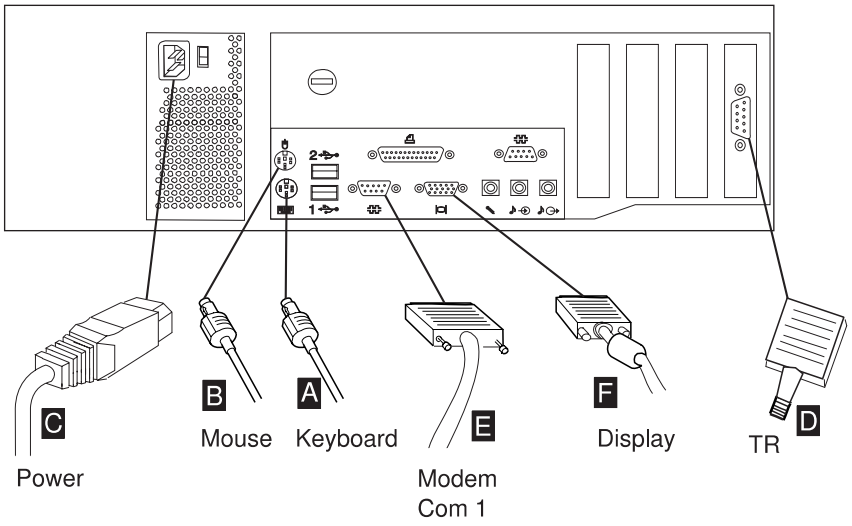
Attention

Be careful: the weight of the display is about 15 kg (33 lb).

5. Unpack the new display.
6. To reinstall the display follow this procedure in reverse order.
7. Go to Chapter 6, “CE Leaving Procedure” on page 6-1.

Removing and Installing Service Processor FRU

1. Switch OFF the display and the Service Processor using their respective power on/off switches located on the front panels.
2. Disconnect all the cables on the rear of the Service Processor.

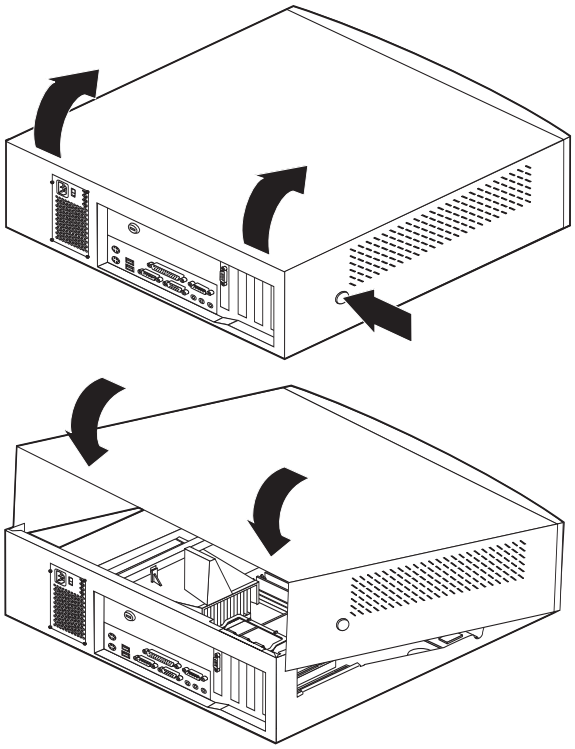


3. If your Service Processor is installed in the controller rack, go to **step 4.** Otherwise, go to **step 5.**
4. Slide out the Service Processor from the controller expansion and install it on a table to continue the FRU removal.

| **Attention**
| Be careful: the weight of the processor is about 9.4 kg (20 lb).

5. Open the Service Processor using the following steps:
   a. Firmly press the cover latch buttons on both sides.

      Note: The front panel is integrated with the top cover.



b. Pull up the back end of the cover, and swing the cover toward the front of the computer.

6. Some FRUs need a special procedure or attention. Use Table 5-1 to select the appropriate procedure.

   Note: 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.

Table 5-1. FRU Exchange Procedures

Service Processor FRU to Exchange	Action
Battery	Go to “Battery Exchange” on page 5-4.
Board	Go to “Board Exchange” on page 5-4.
Processor	Go to “Processor Exchange” on page 5-5.
Hard Disk Drive	Go to “Hard Disk Drive Exchange” on page 5-6.
CD-ROM	Go to “CD-ROM Drive Exchange” on page 5-7.
Diskette Drive	Go to “Diskette Drive Exchange” on page 5-7.
Display or Token-Ring Adapter Card	Go to “Token-Ring Adapter Card Exchange” on page 5-8.
Other FRUs	Go to “Other FRUs Exchange” on page 5-9.

Battery Exchange

Safety

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

1. Locate the battery on the board (see “System Board Layout” on page H-5 for details).
2. Note the orientation of the battery on the system board and remove it.
3. Install the new battery.
4. Reinstall Service Processor cover.
5. Go to “After FRU Exchange” on page 5-9.

Board Exchange

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

Note: Be sure to have read “Before Replacing a System Board” on page 3-22 and “Asset EEPROM Backup” on page 4-7.

Remove the system board using the following steps:

1. Remove the Service Processor top cover (see “Cover Removal” on page H-2 for details).
2. Remove the token-ring adapter card (Slot 4).
3. Remove the plastic cover of the processor.
4. Remove the diskette and hard disk drive (see “Diskette / Hard Drive Removal” on page H-3 for details).
5. Remove the cable connectors coming from diskette, disk, CD-ROM, fan, and panel.
6. Remove the seven screws that secure the board (see Figure 5-1 on page 5-5).

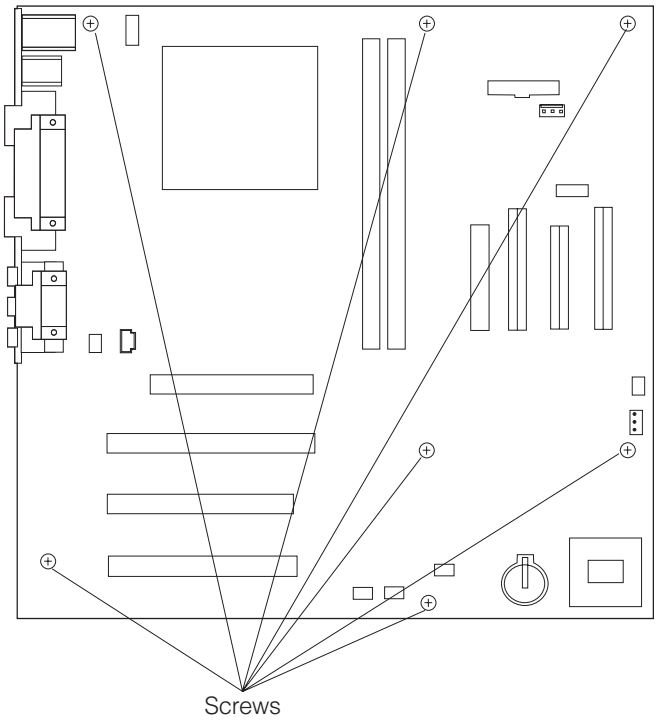


Figure 5-1. Screw Locations

7. Remove the board from the Service Processor box.
8. Unpack the new system board.
9. Remove the processor from the old system board and install it on the new system board.
10. Remove the memory from the old system board, install them on the new system board.
11. Ensure that the new system board jumper/switch settings match the old system board jumper/switch settings.
12. Reinstall the system board using **steps 1** to **7** in reverse order.
13. Reinstall the Service Processor cover.
14. Go to “After FRU Exchange” on page 5-9.

Processor Exchange

1. Locate the processor on the board (for details see “System Board Layout” on page H-5).
2. Remove the plastic air baffle from the top of the processor.
3. Note the orientation of the processor on the system board and remove it.
4. Unpack and install the new processor on the system board.

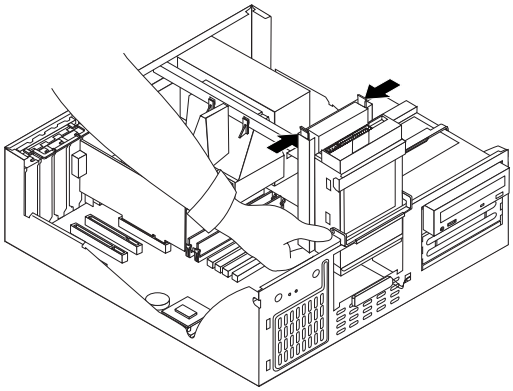
Attention

If the processor or the plastic air baffle are not installed correctly, the system board and the processor can be damaged.

5. Install the plastic air baffle on the top of the processor to prevent processor overheating.
6. Reinstall the Service Processor cover.
7. Go to “After FRU Exchange” on page 5-9.

Hard Disk Drive Exchange

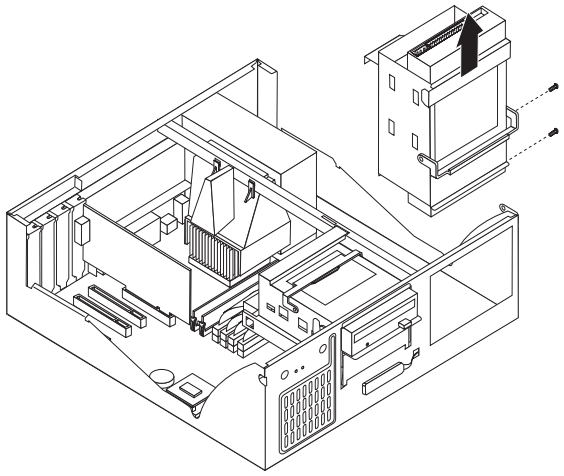
1. Swing the 3 1/2-in. drive cage up, and latch it to the vertical position.
2. Press the two side rail tabs and push the hard drive from the bottom. Pull the hard disk drive out.



3. Unpack the new hard disk drive.
4. 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 3-30.
5. Replace the drive cage into its horizontal position, being careful to place the cage latch back to its regular horizontal position. This is necessary so that the machine cover will fit correctly.
6. Reinstall the Service Processor cover.
7. Go to “After FRU Exchange” on page 5-9.

CD-ROM Drive Exchange

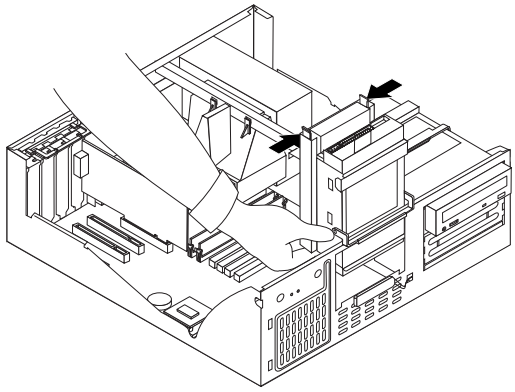
1. Swing the 5 1/4-in. drive cage up and out.



2. Remove the two screws that hold the CD-ROM drive in place. Lift the CD-ROM drive out of the cage.
3. Unpack the new CD-ROM drive.
4. 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 3-31.
5. Install and secure the new CD-ROM drive into the chassis using the two screws previously removed.
6. Replace the drive cage into its horizontal position, being careful to place the cage latch back to its regular horizontal position. This is necessary so that the machine cover will fit correctly.
7. Replug the cables previously removed.
8. Reinstall the Service Processor cover.
9. Go to “After FRU Exchange” on page 5-9.

Diskette Drive Exchange

1. Swing the 3 1/2-in. drive cage up, and latch it to the vertical position.
2. Press the two side rail tabs and push the diskette drive from the bottom. Pull the diskette drive out.

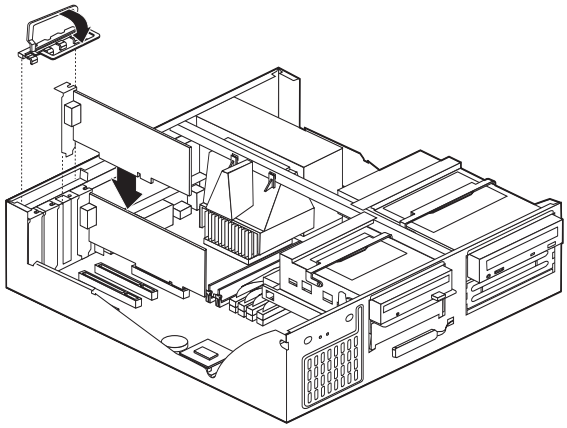


3. Unpack the new diskette drive.
4. Replace the drive cage into its horizontal position, being careful to place the cage latch back to its regular horizontal position. This is necessary so that the machine cover will fit correctly.
5. Reinstall the Service Processor cover.
6. Go to “After FRU Exchange” on page 5-9.

Token-Ring Adapter Card Exchange

The Service Processor has four expansion slots used to connect adapters to the peripheral component interconnect (PCI) bus.

1. Locate the token-ring adapter card that must be exchanged.
2. Unplug the cable from the rear of the adapter card.
3. Remove the screw that maintains the retainer on the rear of the computer.
4. Unplug the adapter card from the system board.
5. Remove the new adapter card from its static-protective package.
6. Remove the metal I/O bracket from the adapter slot.
7. Install the adapter in the appropriate slot on the system board.



8. Install the adapter slot cover latch. Pivot the latch back to a horizontal position.

Note: If you are installing a Wake on LAN-supported network adapter, attach the Wake on LAN cable that came with the adapter to the Wake on LAN connector on the system board. If you also want to take advantage of the Alert on LAN feature of the computer, you must install the network adapter in PCI slot 1.

9. Install the retainer and secure it with the screw previously removed.
10. Plug the cable previously removed to the rear of the adapter card.
11. Reinstall the Service Processor top cover.
12. Go to “After FRU Exchange.”

Other FRUs Exchange

1. Locate the FRU to exchange.
2. With the help of figures given in “Computer Exploded View” on page H-1 remove the FRU.
3. Unpack and install the new FRU.
4. Reinstall the Service Processor top cover.
5. Go to “After FRU Exchange.”

After FRU Exchange

1. For setting up the Service Processor after FRU exchange use the following steps:
   a. If the Service Processor was installed in a controller expansion, continue with **step 1b.** Otherwise, go to **step 1c.**
   b. Slide the Service Processor into the controller expansion.
   c. At the rear of the Service Processor reconnect all the cable previously removed.
2. Use Table 5-2 to find the procedure you need to follow after exchanging an FRU.

Table 5-2. FRU Exchange Procedures

Service Processor FRU to Exchange	Action
Battery **Board**	Go to “After Battery or Board Exchange” on page 5-10.
Hard Disk Drive	Go to “After Hard Disk Drive Exchange” on page 5-12.
Token-Ring Adapter	Go to “After Token-Ring Adapter Card Exchange” on page 5-10.
Other FRUs	Go to “After Other FRU Exchanges” on page 5-15.

After Battery or Board Exchange

Go through the following steps after a battery or board exchange.

1. Power on the Service Processor and its attached display.
2. Press the **F1** key to invoke the Configuration/Setup utility after POST completion.
3. Use “Service Processor Configuration Reference Based on 6578-RAU” on page H-8 to check this configuration and to correct it, if necessary.
4. At the end of configuration, if you performed some modifications, a message asks you if you want to save your changes. Select **Yes** and press **Enter**.
5. If you have changed the board, go to **step 6.** Otherwise, if you have changed the battery, go to Chapter 6, “CE Leaving Procedure” on page 6-1.
6. Run diagnostics on the Service Processor see “Starting the IBM PC Enhanced Diagnostics Program” on page 4-4.
7. Is the diagnostic error-free?

   No Restart the problem determination.
   Yes Return the Service Processor to the customer, then go to Chapter 6, “CE Leaving Procedure” on page 6-1.

After Token-Ring Adapter Card Exchange

Go through the following steps after token-ring adapter card exchange.

1. Insert the Token-Ring Adapter Card Configuration diskette (PN 10K8634) in the Service Processor.
2. Power on the Service Processor and the attached display.
3. Wait until the following panel appears:

```
PC DOS 7.0 Startup Menu

   1- IBM Token-Ring PCI Adapter Configuration using LANAIDC
   2- IBM Token-Ring Adapter Extended Diagnostics for 4/16 Mbps
   3- IBM Token-Ring Adapter Extended Diagnostics for 100 Mbps

Enter a choice: 1  Time remaining: xx

Hit any key to continue with LANAIDC from diskette or remove diskette
and reboot system normally
```

4. Press any key on the keyboard. The following lines are added to the previous panel.

```
Enter LANAID parameters - reboot your machine when done

  Examples: /View
            /Help

LANAIDC >
```

5. Enter **/VIEW**
6. A panel indicating the current setting appears:

```
            Current Adapter Setting

 Adapter Number:      1
 Adapter MAC Address: xx x xx xx x xx
 Microcode Level      yyyyyy zzzzzz
 I/O Address:         7400
 Interrupt:           10
 Latency Timer:       48
 Remote IPL:          Disabled*
 Expansion ROM:       Enabled*


LANAIDC>
```

* Changes to RIPL and EXPROM will not be reflected until reboot.

Note: If the ***Remote IPL*** parameter and the ***Expansion ROM*** parameter are not set as described above, use the following commands to correct them:

/RIPL=N to disable the ***Remote IPL*** feature.

/EXPROM=Y to enable the ***Expansion ROM*** feature.

7. Remove the diskette.
8. Power OFF the Service Processor
9. Power ON the Service Processor
10. Press the **F1** key to invoke the Configuration/Setup utility after POST completion.
11. Use “Service Processor Configuration Reference Based on 6578-RAU” on page H-8 to check this configuration and to correct it if necessary.
12. At the end of the configuration, if you performed some modifications, a message asks if you want to save your changes. Select **Yes** and press **Enter**.
13. Go to Chapter 6, “CE Leaving Procedure” on page 6-1.

After Hard Disk Drive Exchange

Go through the following steps after a 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 panel is displayed.

```
Diagnostics - Interactive Tests - Hardware Infos - Utility - quit - F1=Help

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 Diagnostic tests that check the functionality of your PC.
 Use the Cursor keys and ESC to move in menus. Press ENTER to select.
```

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

```
Diagnostics - Interactive Tests - Hardware Infos - Utility - quit - F1=Help

  Run Normal Test
  Run Quick Test
  CPU/Coprocessor
  System Board
  Video Adapter
  Serial Ports
  Parallels Ports
  Fixed Disks
  Diskette Drives
  Other Devices
  Interactive tests
  ZIP Drive
  CD-ROM/DVD Drive
  Memory Tests - Full
  Memory Tests - Quick
  Fixed Disk Optimized Test

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 Use the Cursor keys and ESC to move in menus. Press ENTER to select.
```

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

```
            FIXED DISK TEST CATEGORY (6/15)

                        Disk 0     Disk1    Disk2    Disk3
                        13579 MB
 Controller            >>
 Hi-Low                >>
 Funnel Seek           >>
 Track to Track Seek   >>
 Random Seek           >>
 Linear Verify         >>
 Random Verify         >>
 SMART                 >>

               Start Track    0
               End Track9999

           Default   ProPf  PC: 1      lagleft:6936
Clear All - Run Screen - Run All - Options - Next Cat - Prev Cat
```

9. Select **Clear All** 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 **Run Screen** at the bottom of the panel to start all the tests previously selected.

    When the hard disk drive has been successfully tested, the **Fixed Disk Test Category** panel 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 Service Processor hard disk after its replacement. Continue with **step 13.**
13. Press **Esc** for exit from the test panel.
14. Select **Quit** in the title bar, then press **Enter**.
15. Select **Exit Diags**, then press **Enter**.
16. Remove the diagnostic diskette.
17. Install the Service Processor Installation Diskette 1 in the diskette drive (verify that write is enabled).
18. Install the CD-ROM that contains the latest version of the LIC in the drive.
19. Simultaneously, press the **Ctrl-Alt-Del** keys on the keyboard.
20. When the IBM logo is displayed press **Enter**.
21. The following panel is displayed:

```
    You are going to restore the SP hard disk from the CD-ROM.
    During this procedure, you will be prompted to insert the
    configuration parameter diskette.
    Before proceeding:
    - Ensure that this diskette contains the latest customer
      configuration parameters.
    - Press enter to proceed or escape to exit.
```

    Press **Enter**.

22. Follow the prompts until the following panel is displayed:

```
Please insert configuration parameters diskette 1
Press Enter to continue.
```

    Insert the configuration parameters diskette then press **Enter**.

23. Follow the prompts to reinsert the Service Processor installation diskette, then press **Enter**.

24. Wait (time duration is about 25 minutes) until the following panel is displayed:

```
LIC RESTORATION HAS SUCCESSFULLY COMPLETED
Press Enter to continue.
```

    Press **Enter**, then follow the prompts.

25. The following panels appear successively:

```
Please wait for the MOSS-E database building (10 min)
```

```
Please wait for the MOSS-E LSCT restoration (8 min)
```

26. The MOSS-E View panel is displayed followed by:

```
Service Processor customization in progress.
It may take a few minutes to complete.
Please wait..
```

```
Service Processor customization is terminated.
The Service Processor will reboot.
Please wait..
```

27. The MOSS-E View panel is displayed followed by a panel asking the password. Enter the password.

28. The Installation Chaining Process panel is displayed:

```
You can now customize your Service Processor.

OK    Cancel
```

    Click **OK**.

29. Check and modify parameters setting if necessary (see “Step 7: Customizing Your Service Processor” on page 1-33 for details). Click **Next>>** to go to the next panels.

30. When the panel shown in Figure 5-2 on page 5-15 is displayed, click **Yes.**

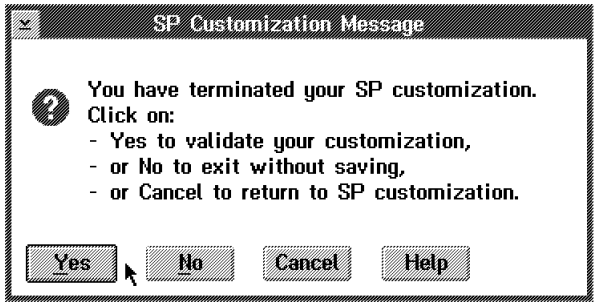


Figure 5-2. Customization Panel

31. Follow the prompts until the following panel is displayed:

    ```
    Customization ended
    ```

    Click **OK**.

    Note: If the code level that you have just installed is different from the code installed on NNP, you must also change it (refer to the appropriate *Network Node Processor Installation and Maintenance*).

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

After Other FRU Exchanges

1. Run diagnostics on the Service 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 Service Processor to the customer, then go to Chapter 6, “CE Leaving Procedure” on page 6-1.

Chapter 6. CE Leaving Procedure

Use this checklist to ensure that the 374x are working properly when you leave the customer.

1. **Check that:**
   a. The Service Processor is properly installed.
   b. All the cables previously removed are properly connected.
   c. The Service Processor IML is complete with MOSS-E View panel displayed.
   d. The 374x units are connected to the Service Processor.
      - For the 3745, check the control panel code.
      - For the 3746-9xx, check that the Service Processor not accessible digit is OFF on the 3746-9xx control panel.
2. 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 3.**
   No Go to **step 12.**
3. On the MOSS-E VIEW panel, double-click the Service Processor icon.
4. The Service Processor Menu panel is displayed.
5. Click **Configuration Management.**
6. Double-click **Manage Remote Operations.**
7. On the Remote Operation Management panel, select **Remote operations authorization** and click **OK.**
8. On the Remote Support Facility panel, select **Enable Remote Support Facility** and **Generate alerts** and click **OK**
9. Click **Cancel** to return to Service Processor Menu, then click **Function** and **Exit** to return to the MOSS-E View panel.
10. On the MOSS-E VIEW panel, click **Program** in the action bar.
11. Click **Log off MOSS-E.**
12. 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 a 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 appendix 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.

Caution

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 insulating 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.
- Use the ESD ground cord, FRU 25F9727, to protect the computer against ESD.
- 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 (Multilingual 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 6578

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: 425 mm (16.7 in.) Height: 140 mm (5.5 in.) Width: 425 mm (16.7 in.)
Weight	Minimum configuration as shipped: 9.45 kg (20 lb) Maximum configuration as shipped: 11.3 kg (25 lb)
Environment	Air temperature: • System on: 10° to 35°C (50° to 95°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 (7,000 ft)
Heat Output	Approximate heat output in BTUs per hour: • Minimum: 240 BTU (75 watts) • Maximum: 705 BTU (207 watts)
Electrical Input	Sine-wave input (47 to 63 Hz) required. Input voltage range: • Minimum: 90 V ac • Maximum: 265 V ac Input kVA (approximately): • Minimum: 0.08 kVA • Maximum (as shipped): 0.30 kVA
Airflow	Approximately 0.5 cubic meters/minute (18 CFM)
Acoustical Noise Emission Values	Average sound pressure levels: At operator position: • 43 dB operating • 38 dB idle At bystander position (1 meter): • 37 dB operating • 33 dB idle Declared (upper limit) sound power levels: • 5.1 bels operating • 4.8 bels idle

Appendix C. Parameter Worksheets

The worksheets in this appendix are for the MOSS-E parameters that are needed during controller installation.

When applicable, default parameter values are included (in parentheses) in the tables. Complete these sheets and give them to the IBM service representative.

Controller Integration

Controller Names

Controller	Name

Set Power ON Schedule

Sunday	
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	
Saturday	
Scheduling active	

MOSS-E Database Optimization

Optimize database	
If Weekly: Day of the week	
Time	

NCP Dump Transfer

Destination address	
Long session/LU name	(MOSSEEMU)
LU local address	(03 or greater)

Service Processor Integration

Definition of Service Processor LAN Address

Network adapter address	

Service Processor LAN Management Definition

C&SM LAN ID	(MOSSE)

Definition of the Service Processor in an SNA/Subarea Network

Network ID	(SYSTST)
Local node name	(MOSSNMVT)

Definition of Service Processor in an APPN/HPR Network

Network ID	(SYSTSTAP)
Local node name	(MOSSNMVT)

3746-900 Integration

Definition of 3746-900 LAN Address

Token-ring local address (MAC address)	

Definition of Service LAN IP Addresses

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 Model A	
IP address	(192.9.200.2)
Subnet mask	(255.255.255.240)

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

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

Network Routing Protocol for Each Processor Type

Select a routing protocol for each type of processor that you have.

Password

Table C-5. Service Processor Passwords

Mode	Password	Status	Attempts Threshold
Controller customer		---	
Controller maintenance			
Service Processor customer		---	
Service Processor maintenance			
Management password			

DCAF Remote Logon Password

Enable password	(Yes)
Password	(No default)

Disable Incoming Calls (to Service Processor)

Enable/Disable Service Processor Incoming Calls	(Enable)

Parameter Definitions for Reporting Alerts to NetView

Network Node Processor Alerts

Network identifier	(SYSTSTAP)
Control point name	

MOSS-E Alerts: Mainstream Path Definition

APPN/HPR Network

LAN destination address	

SNA/Subarea Network

LAN destination address	

MOSS-E Alerts: Alternate Path Definition

Telephone number for alert reporting on the switched SDLC link	

Generate MOSS-E Alerts

Problem management	(Generate alerts)

Performance Management CM/2 Parameters (NPM)

NPM **netid**	
PU name for CM/2	
NPA LU name	

Service Processor Parameters for DCAF using CM/2

For LAN-Attached Consoles

LU name	(DCAFLAN)

For SNA-Attached Consoles

LU name	(DCAFSNA)
Destination address	(400000502080)

For APPN/HPR-Attached Consoles

LU name	(DCAFAPPN)
Destination address	(400000502080)

For IP-Attached Consoles

Service Processor IP Address	(192.9.200.1)

For Modem-Attached Consoles

LU name	(DCAFSDLC)

Parameter Definitions for Point-to-Point Link Definition

Table C-6. For the PPP Server (Service Processor)	
IP address	(192.9.200.7)
Subnet mask	(255.255.255.240)

Table C-7. For the PPP Client (Remote Station)	
IP address	(192.9.200.8)
Subnet mask	(255.255.255.240)

DTE Speed	(115200)
MRU Size	(1500)

Parameter Definitions for RSF

Customer Information

Company Name	
Address	
System location	
Contact person	
Company telephone number for voice communications	
Company telephone number for modem communications	

Remote Support Facility Authorization

Enable/Disable Remote Support Facility	(Disable)

Set Automatic Microcode Download Option

Yes/No	(No)

Appendix D. Supported Connections between the Service Processor and a Remote Workstation

The following tables show the compatibility between the modems and ports used between the remote workstation and the Service Processor. For details about the remote workstation settings, refer to *3745 and 3746 Model 900 Console Setup Guide*, SA33-0158 if you are working on a 3746-900 or *3746 Nways Multiprotocol Controller Model 950: User's Guide*, SA33-0356 if you are working on a 3746-950.

If you have one of the following Service Processors:

- **6578**, **6563**, or **6275**, refer to Table D-1.
- **7585**, refer to Table D-2.
- **3172**, refer to Table D-3 on page D-2.
- **9585**, refer to Table D-4 on page D-2.

Table D-1. IBM Modems for Remote Workstations and a Target Service Processor 6578, 6563, or 6275

Service Processor Connection Type and Mode	Service Processor Modem Type	Remote Workstation DCAF/Java Console Modem Type						
		COM1 Port Connection						
		7855	7857		7858		Hayes	
		ASY	ASY	AUTO	ASY	AUTO	ASY	AUTO
COM1 ASY	7857	OK	OK	-	OK	-	OK	-
	7858	OK	OK	-	OK	-	OK	-
	Hayes	OK	OK	-	OK	-	OK	-

Table D-2. Modem Connections between a Remote Workstation and a Target Service Processor 7585

7585 (Connection Type and Mode)	Modem Type	Remote Workstation DCAF/Java Console Modem Type									
		MPA Card Connection			COM1 Port Connection						
		7855	7857	7858	7855	7857		7858		Hayes	
		SYNC			ASY	ASY	AUTO	ASY	AUTO	ASY	AUTO
COM1 ASY	7857	-	-	-	OK	OK	-	OK	-	OK	-
	7858	-	-	-	OK	OK	-	OK	-	OK	-
	Hayes	-	-	-	OK	OK	-	OK	-	OK	-

Table D-3. Modem Connections between a Remote Workstation and a Target Service Processor 3172

3172 (Connection Type and Mode)	Modem Type	Remote Workstation DCAF/Java Console Modem Type									
		MPA Card Connection			COM1 Port Connection						
		7855	7857	7858	7855	7857		7858		Hayes	
		SYNC			ASY	ASY	AUTO	ASY	AUTO	ASY	AUTO
MPA Card SYNC	7855	OK	OK	OK	-	-	OK	-	OK	-	OK
	7857	OK	OK	OK	-	-	OK	-	OK	-	OK
	7858	OK	OK	OK	-	-	OK	-	OK	-	OK
COM1 ASY	7857	-	-	-	OK	OK	-	OK	-	OK	-
	7858	-	-	-	OK	OK	-	OK	-	OK	-
	Hayes	-	-	-	OK	OK	-	OK	-	OK	-
MPA Card COM2	7857	-	-	-	OK	OK	-	OK	-	OK	-
	7858	-	-	-	OK	OK	-	OK	-	OK	-

Table D-4. Modem Connections between a Remote Workstation and a Target Service Processor 9585

9585 (Connection Type and Mode)	Modem Type	Remote Workstation DCAF/Java Console Modem Type									
		MPA Card Connection			COM1 Port Connection						
		7855	7857	7858	7855	7857		7858		Hayes	
		SYNC			ASY	ASY	AUTO	ASY	AUTO	ASY	AUTO
MPA Card SYNC	7855	OK	OK	OK	-	-	OK	-	OK	-	OK
	7857	OK	OK	OK	-	-	OK	-	OK	-	OK
	7858	OK	OK	OK	-	-	OK	-	OK	-	OK
	INT	OK	OK	OK	-	-	OK	-	OK	-	OK
COM1 ASY	7857	-	-	-	OK	OK	-	OK	-	OK	-
	7858	-	-	-	OK	OK	-	OK	-	OK	-
	Hayes	-	-	-	OK	OK	-	OK	-	OK	-

Appendix E. Use of the 7855 Buttons: ←, ↑, →, and ↓

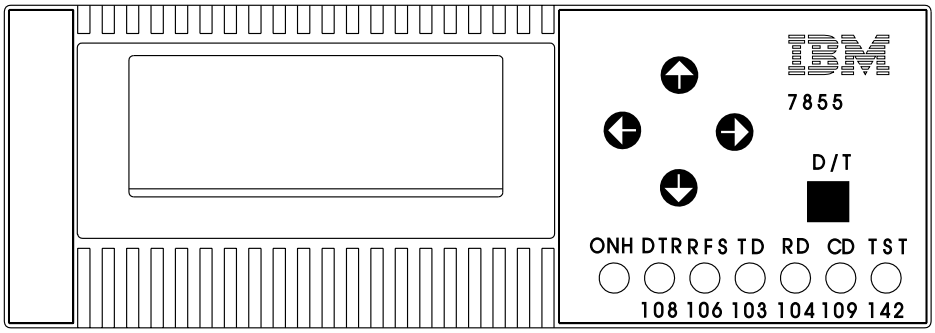


Figure E-1. 7855 Front Panel

There are four round buttons with arrows on their tips (see Figure E-1). They are used to move around in the configuration menus and to make configuration selections as you move around. You use one by pressing and then releasing it and if you use one at a time, they do the following:

← This button is analogous to an Enter or Run button. Use it to put your configuration choices into working memory unless you are in the view-only menu. You can also use it to make the modem start a test or start dialing a number.

↑ This button is used to select one out of several choices. When the choices are numerical, this button increments the numbers.

↓ This button is also used to select one out of several choices. When the choices are numerical, this button decrements the numbers.

→ This button makes the modem show additional detail. When the LCD is showing a multiple-digit field, this button moves the cursor one position to the right. Use this button to find out if there are additional configuration choices in a category.

If you press and release any of these buttons quickly, the display moves one position in the tree structure. If you hold one of the buttons pressed for more than approximately one second, the display will start to change quickly as it moves through multiple positions in the tree structure.

Attention: Pressing the ← button may change configuration parameters.

Appendix F. Controller Expansion Component Locations

If you want more information about:	Refer to
• Positioning the units in the front side of the controller expansion	• Figure F-1 on page F-2
• Positioning the units in the rear side of the controller expansion	• Figure F-2 on page F-3
• Installing captive nuts and brackets (for 6578)	• Figure F-3 on page F-4
• Installing captive nuts for LCBs	• Figure F-4 on page F-5
• Installing captive nuts for 8229s	• Figure F-5 on page F-6
• Installing captive nuts and brackets for MAE	• Figure F-6 on page F-7
• Installing brackets for processor type 6578	• Figure F-7 on page F-8
• Example of units installation (processor type 6578)	• Figure F-8 on page F-9
• Example of units installation (processor type 6578 + MAE)	• Figure F-9 on page F-9
• Connecting the units to the ac Outlet Distribution Box.	• Figure F-10 on page F-10

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 F-2 on page F-3.

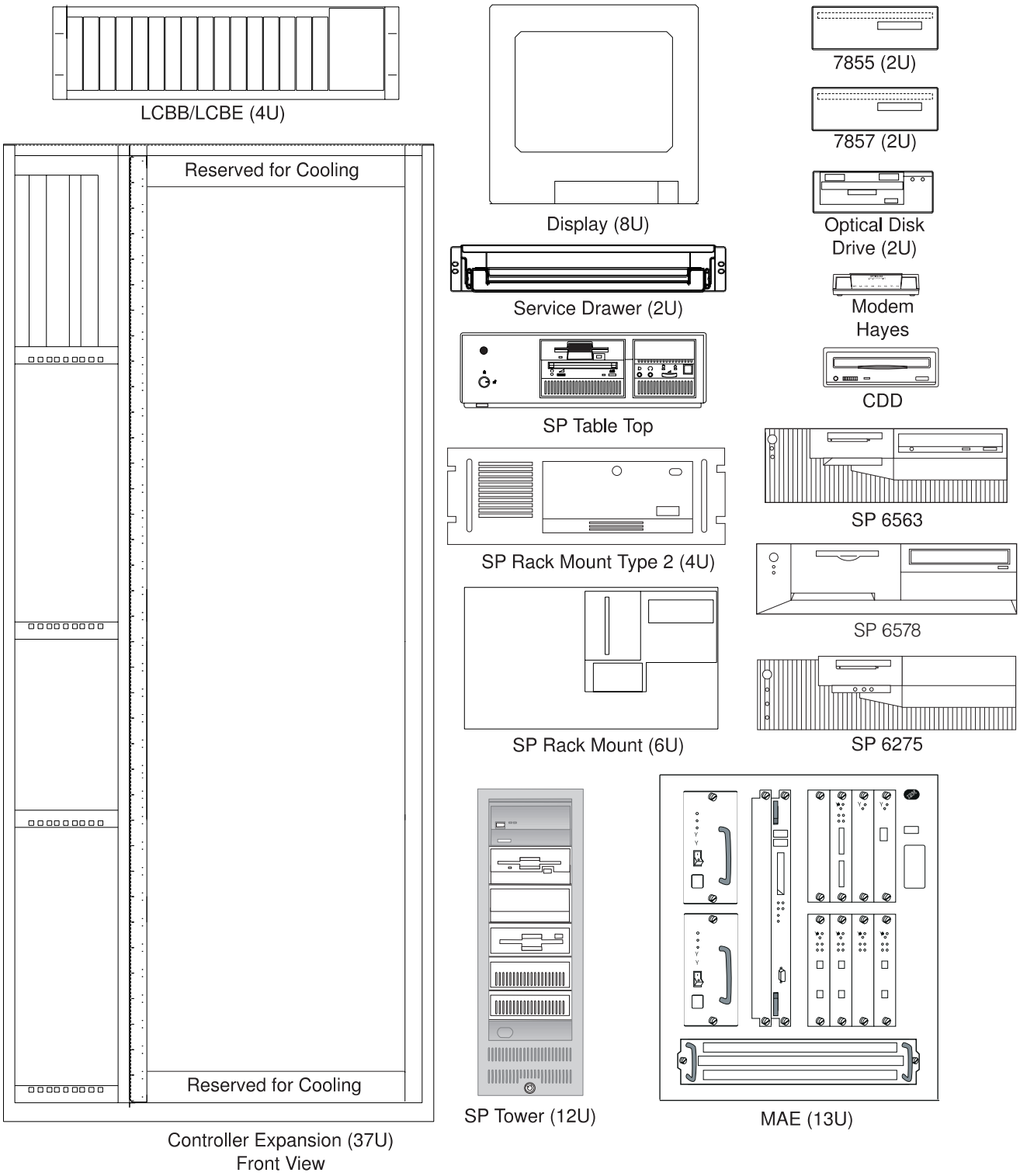


Figure F-1. Controller Expansion Inventory Chart (Front View)

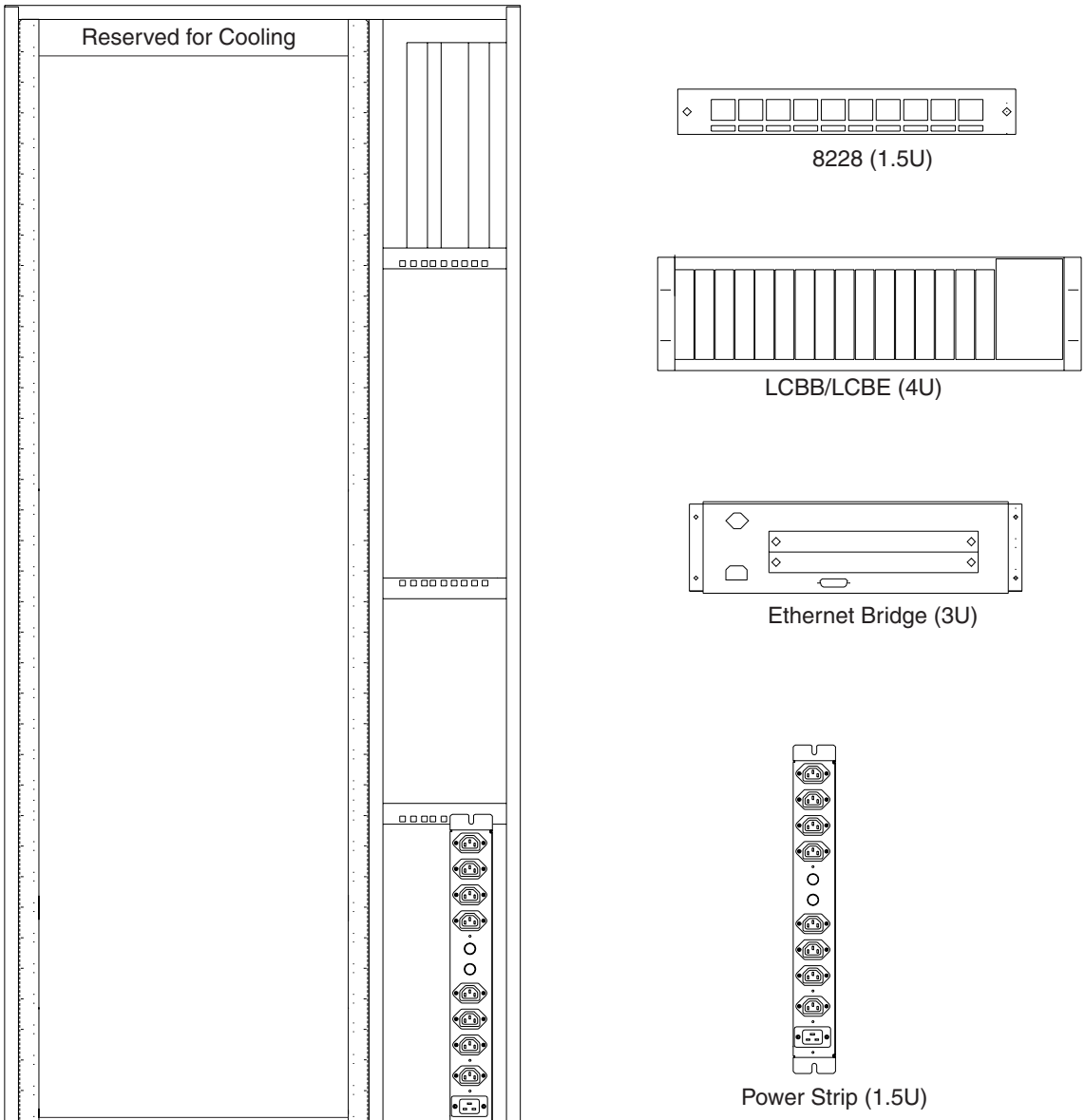


Figure F-2. Controller Expansion Inventory Chart (Rear View)

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 themselves.
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.

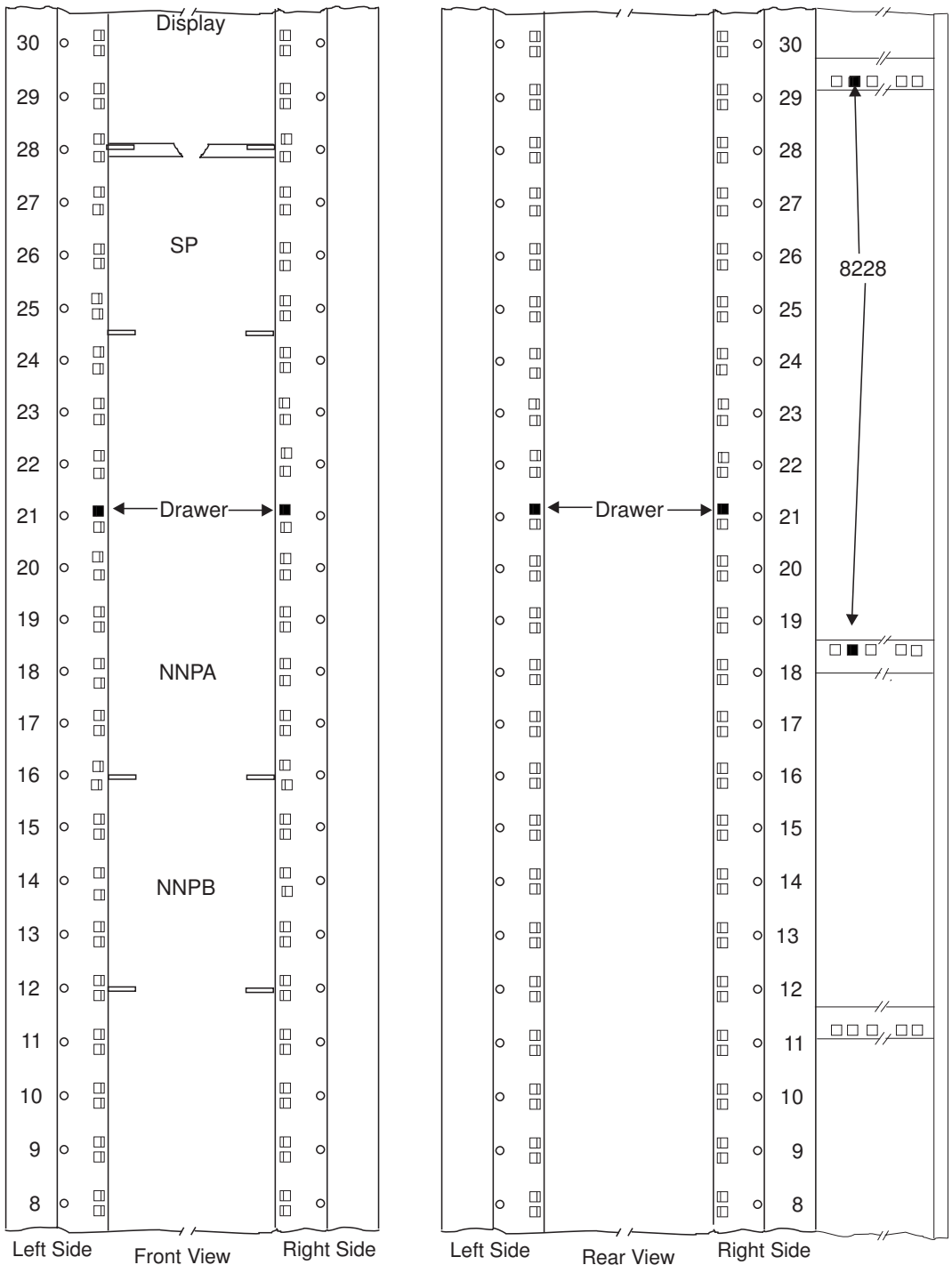


Figure F-3. Installing Captive Nuts and Brackets for the Display, Drawer, SP and NNP Based on PC Type 6578

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

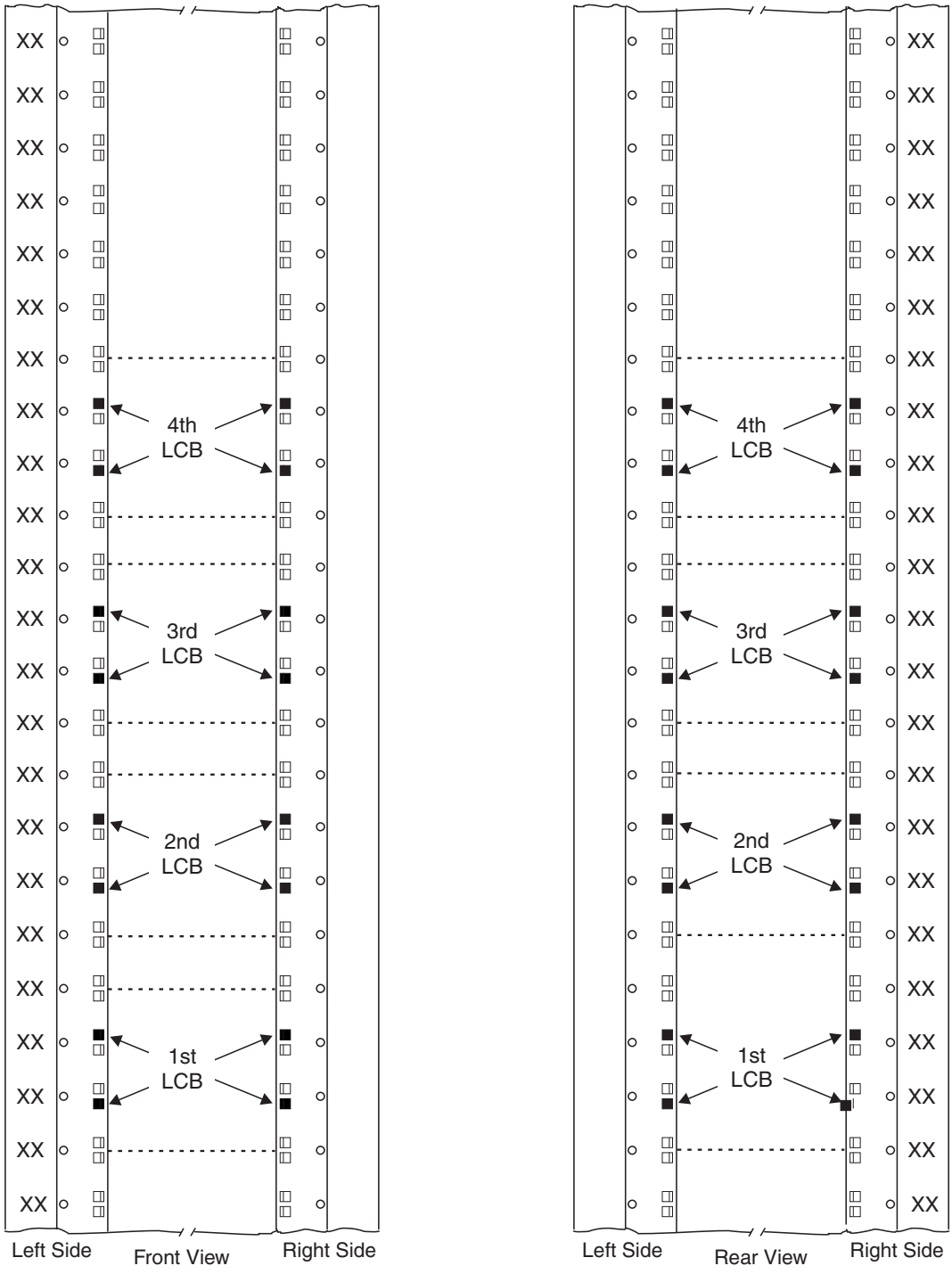


Figure F-4. Installing Captive Nuts for LCBs

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

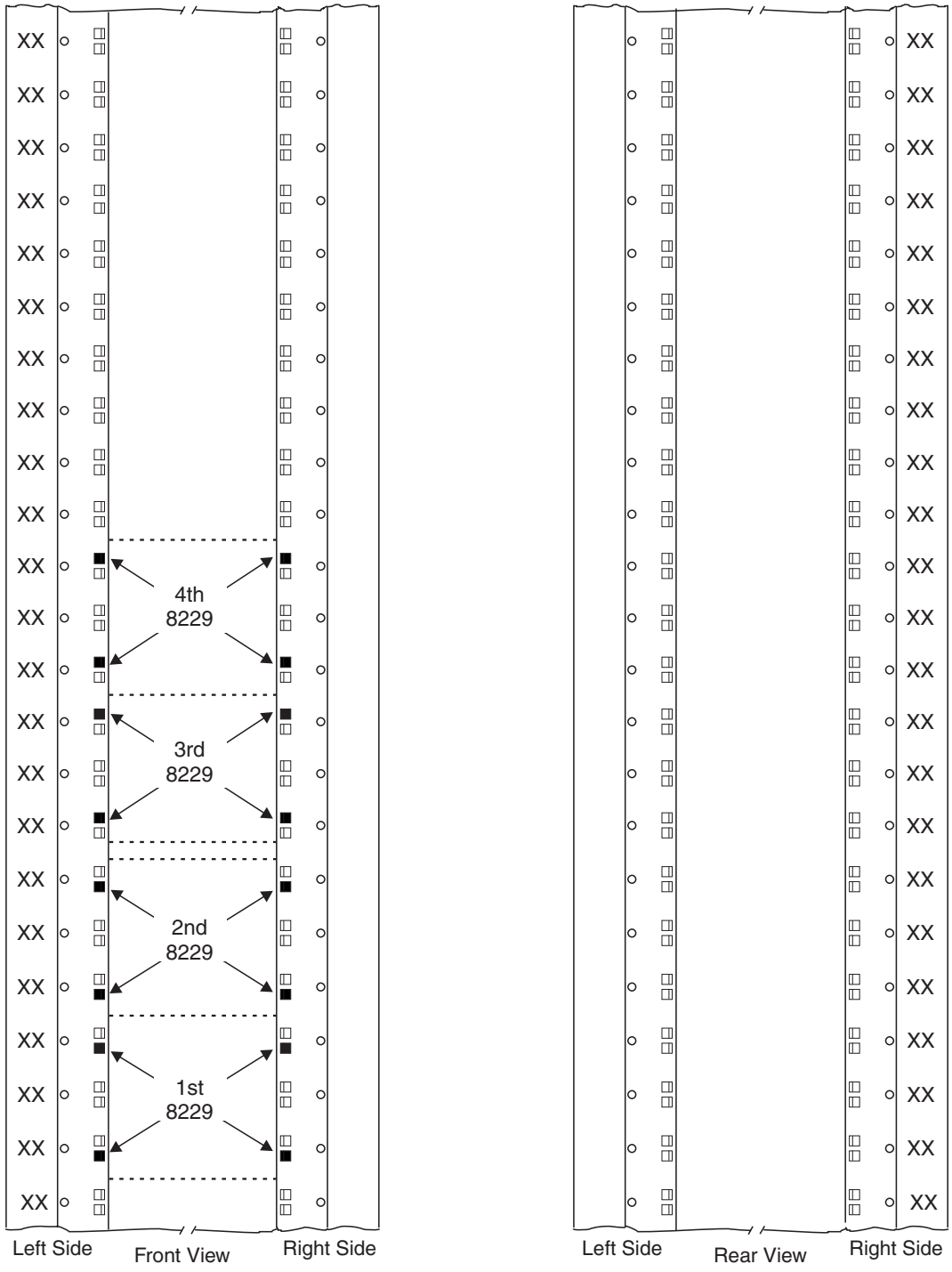


Figure F-5. Installing Captive Nuts for 8229s

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

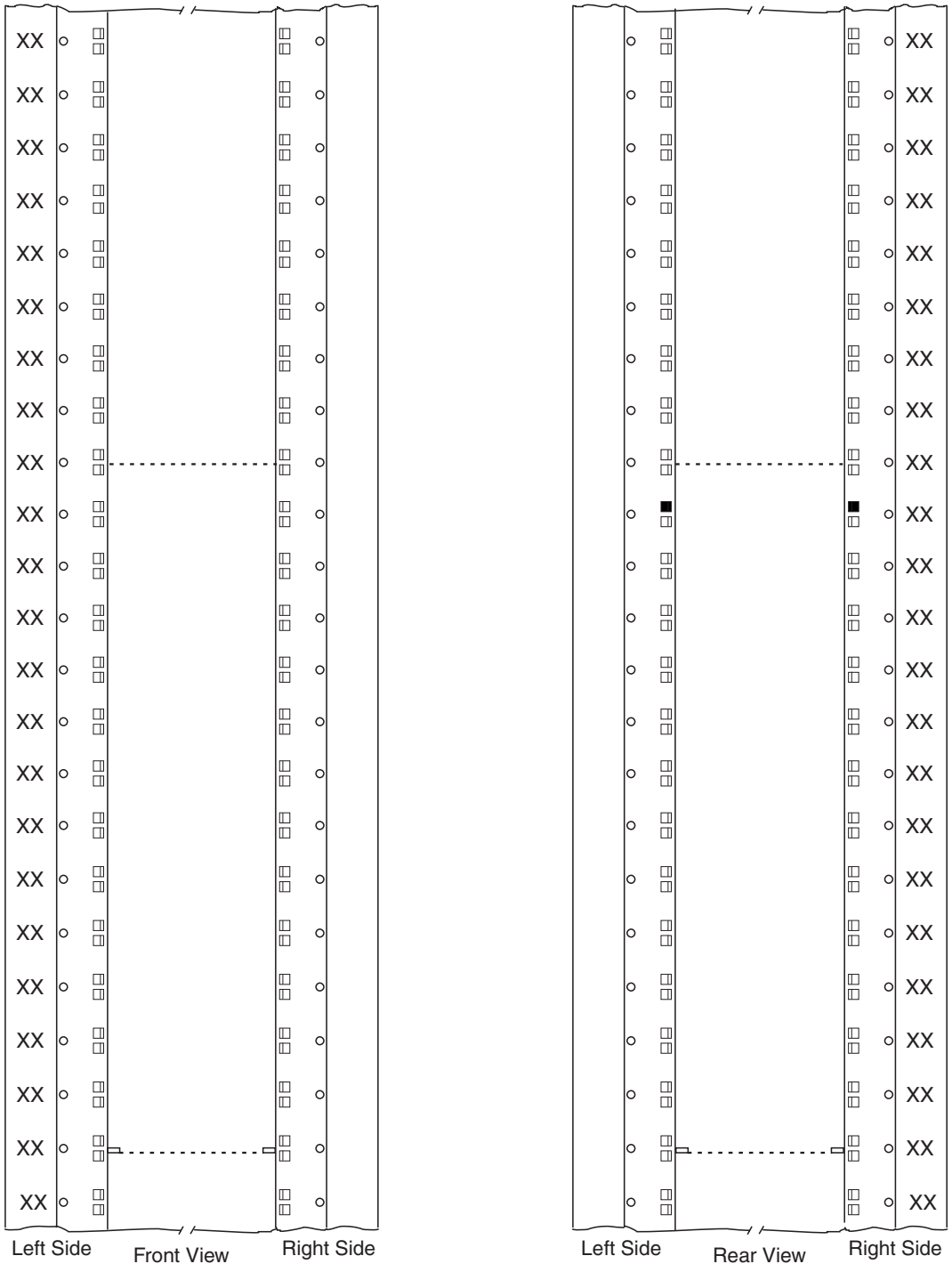


Figure F-6. Installing Captive Nuts and Brackets for MAE

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

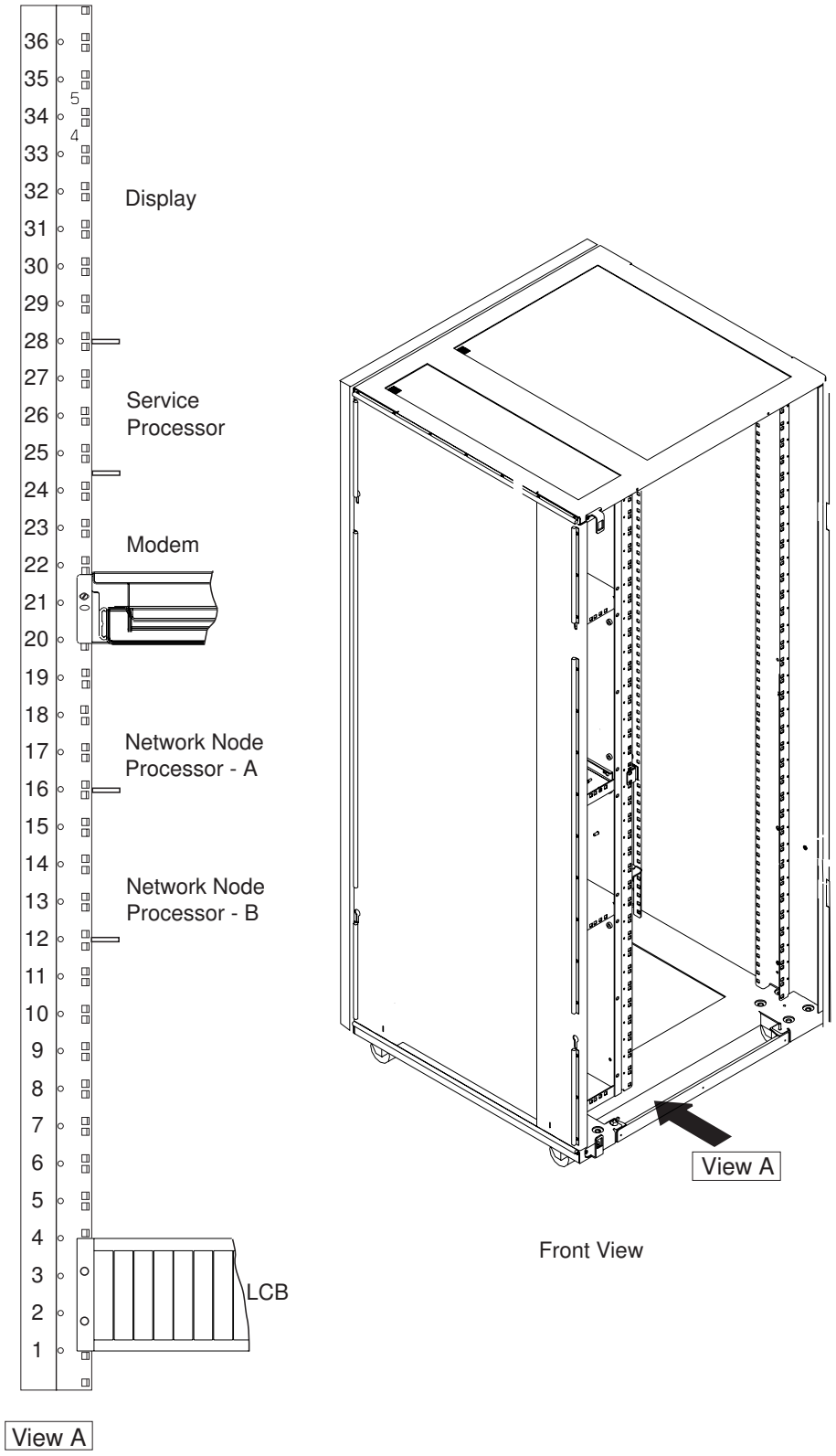


Figure F-7. Installing Brackets (PN 58G5752) for Processor Type 6578

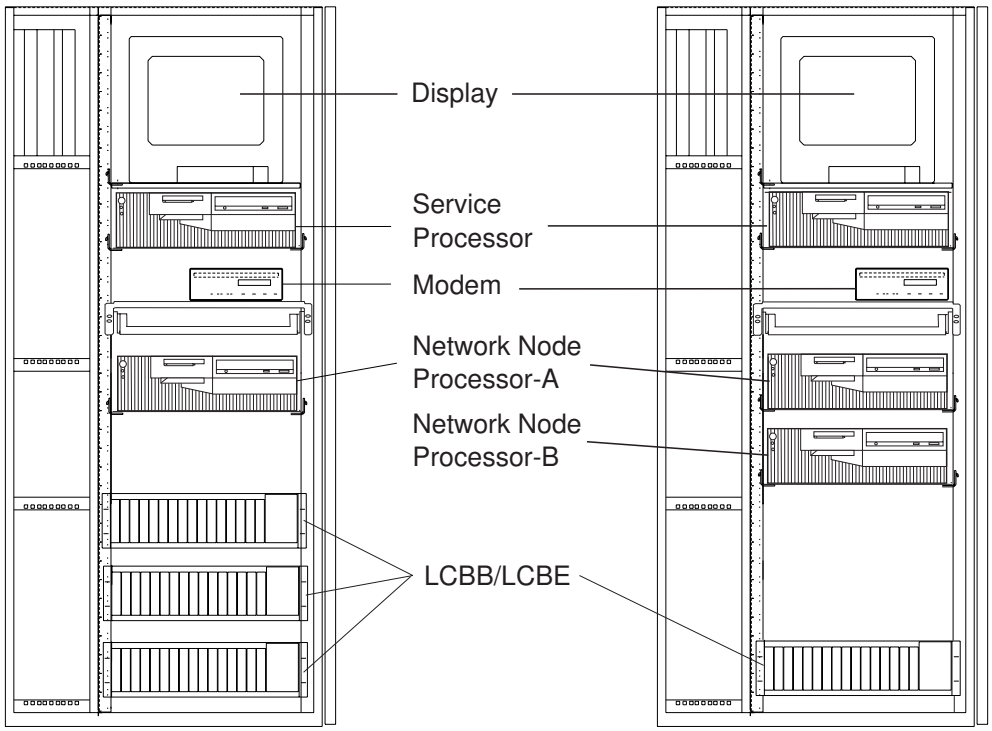


Figure F-8. Units Installation in the Controller Expansion (SP and NNP Type 6578)

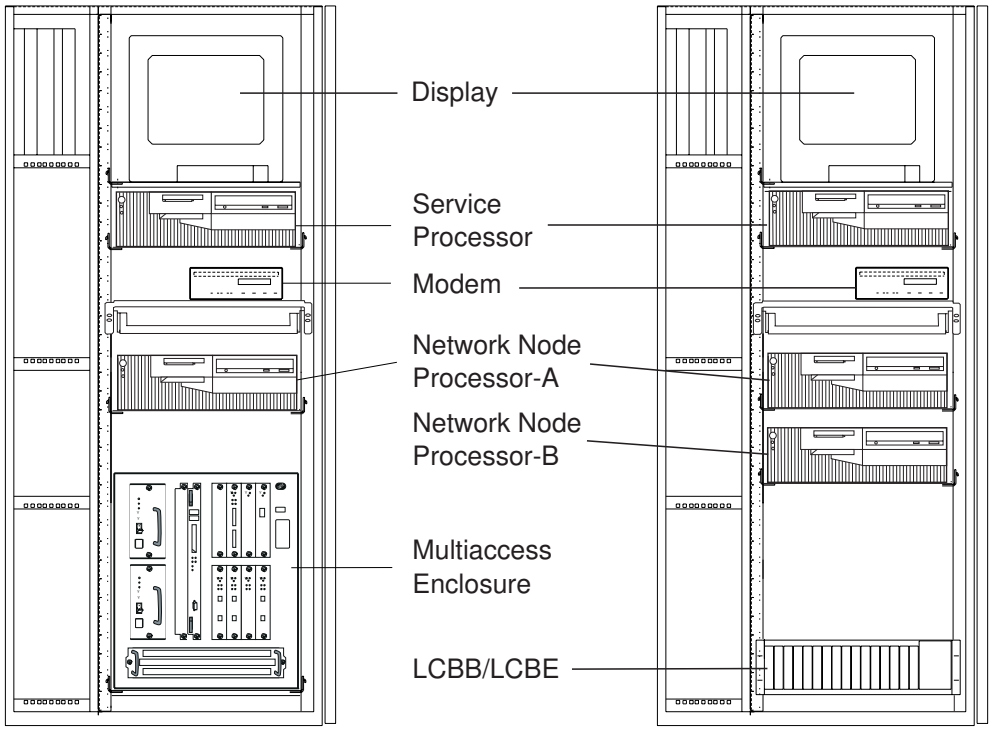


Figure F-9. Units Installation in the Controller Expansion (SP and NNP Type 6578 + MAE)

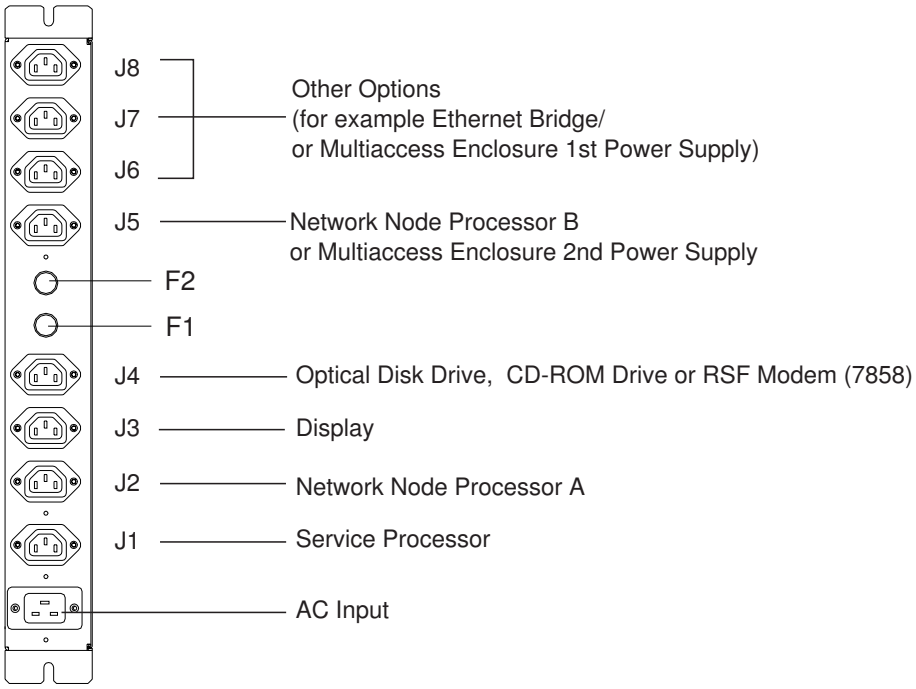


Figure F-10. Connecting the Units to the ac Outlet Distribution Box

Appendix G. Service Processor External Cable References

Service Processor and Network Node Processor Cables for the 3746-900

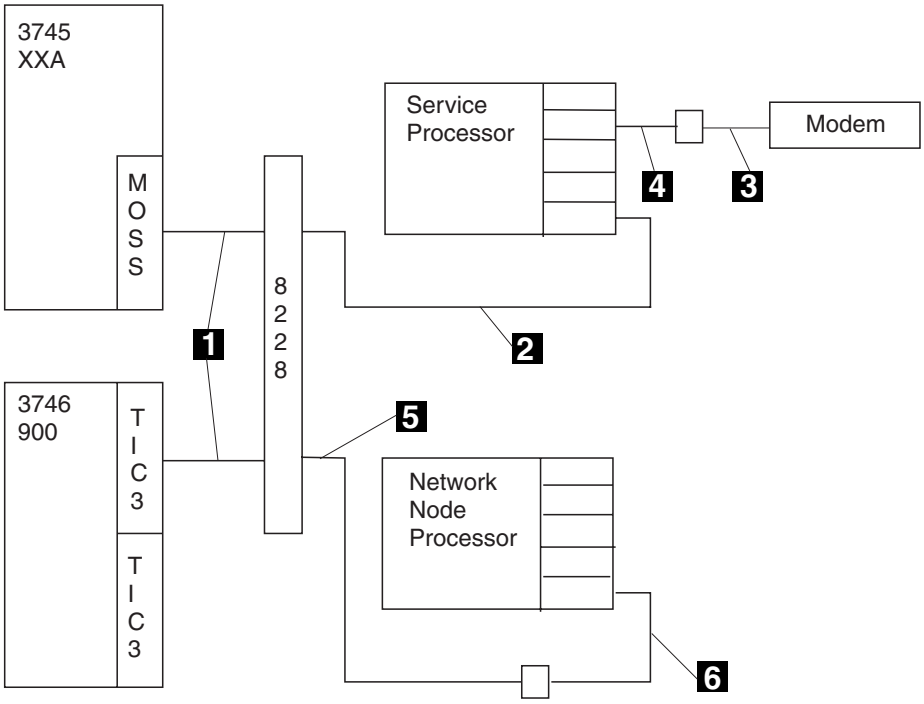


Figure G-1. Service Processor and Network Node Processor Cables for 3746-900

Notes:

1. For cable **1** refer to the appropriate *3746 Models 900 and 950 External Cable References* manual.
2. For cable **2** refer to "Cable from the Service Processor Processor to the 8228" on page G-4.
3. For cable **3** and **4** refer to "Cable from the Service Processor to the External Modem for RSF" on page G-5.
4. For cable **5** and **6** refer to the appropriate *Network Node Processor Installation and Maintenance* manual.

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

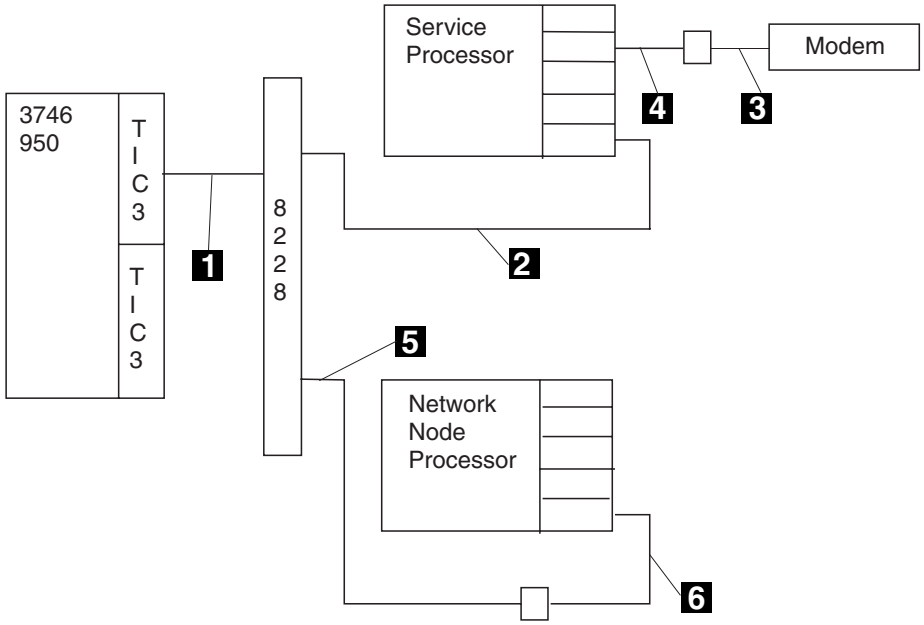


Figure G-2. Service Processor and Network Node Processor Cables for 3746-950

Notes:

1. For cable 1 refer to the appropriate *3746 Models 900 and 950 External Cable References* manual.
2. For cable 2 refer to “Cable from the Service Processor Processor to the 8228” on page G-4.
3. For cable 3 and 4 refer to “Cable from the Service Processor to the External Modem for RSF” on page G-5.
4. For cable 5 and 6 refer to the appropriate *Network Node Processor Installation and Maintenance* manual.

Service Processor Cables for the 3745 Models 21A, 31A, 41A, 61A, and 17A

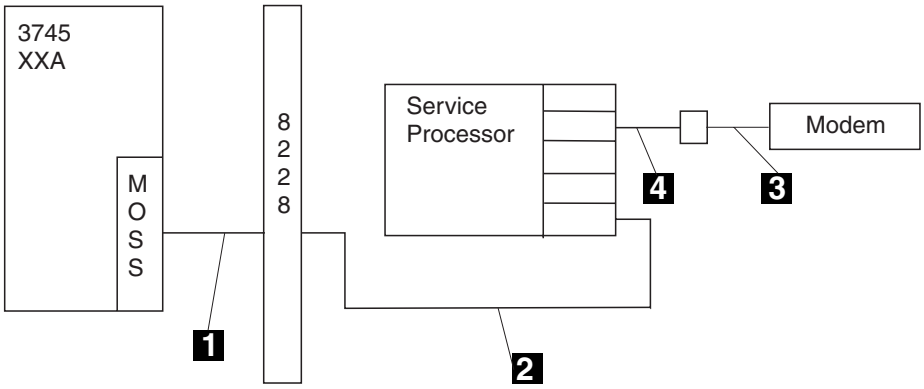


Figure G-3. Service Processor Cables for 3745 Models xxA

Notes:

1. For cable **1** refer to the appropriate *3746 Models 900 and 950 External Cable References* manual.
2. For cable **2** refer to "Cable from the Service Processor Processor to the 8228" on page G-4.
3. For cable **3** and **4** refer to "Cable from the Service Processor to the External Modem for RSF" on page G-5.

Cable from the Service Processor Processor to the 8228

Refer to Figure G-1 on page G-1, Figure G-2 on page G-2, and Figure G-3 on page G-3 reference **2** for details. This cable is a standard LAN cable.

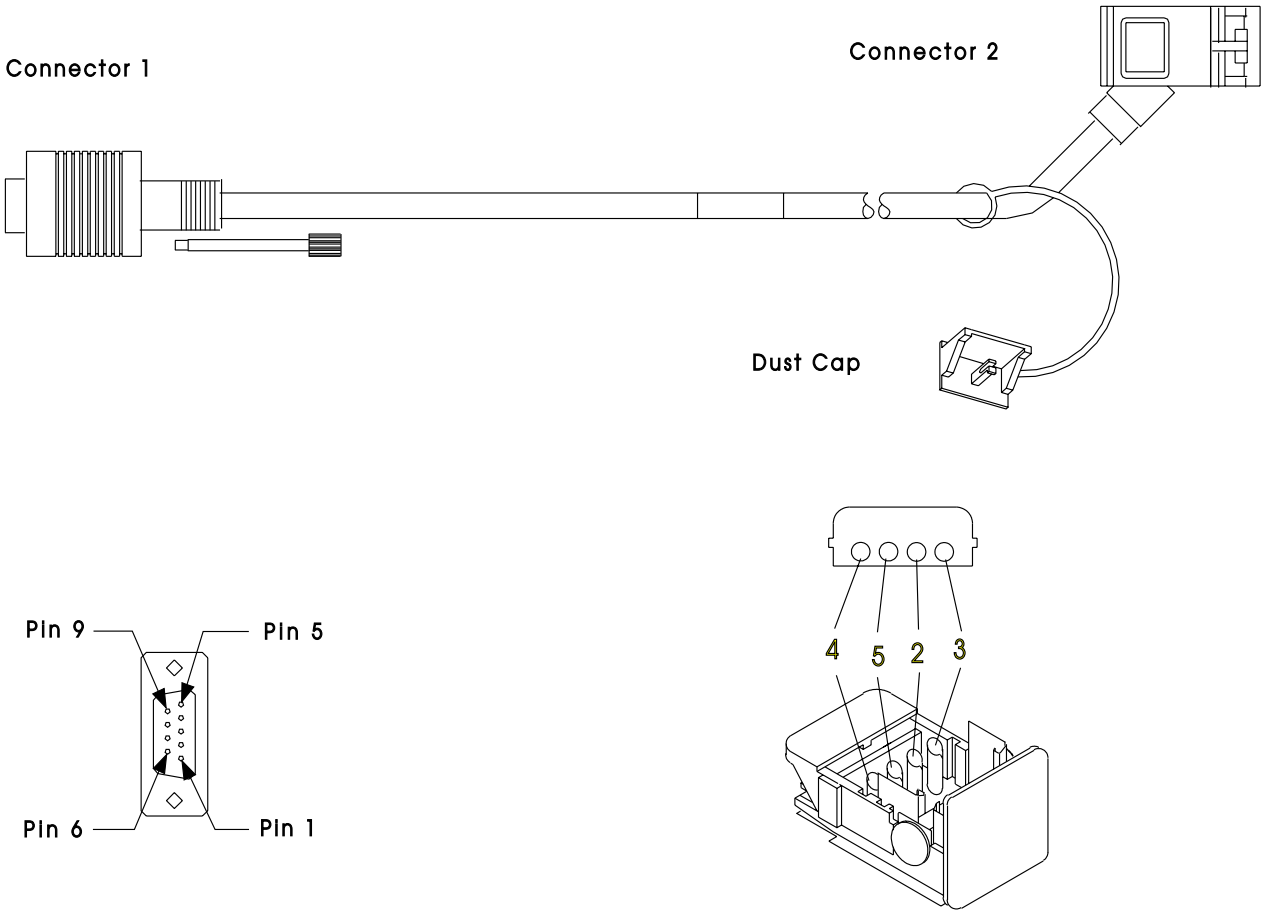


Figure G-4. LAN Cable

Interchange Circuit for Standard LAN Cable

Table G-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 G-2. Cable from Service Processor or Network Node Processor to 8228

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

Cable from the Service Processor to the External Modem for RSF

Refer to Figure G-1 on page G-1, Figure G-2 on page G-2, and Figure G-3 on page G-3 references **3** and **4** for details.

This cable depends on the configuration and may done with one or with the two cables provided according to the Service Processor type.

Modem Cable (PN 0782985)
3

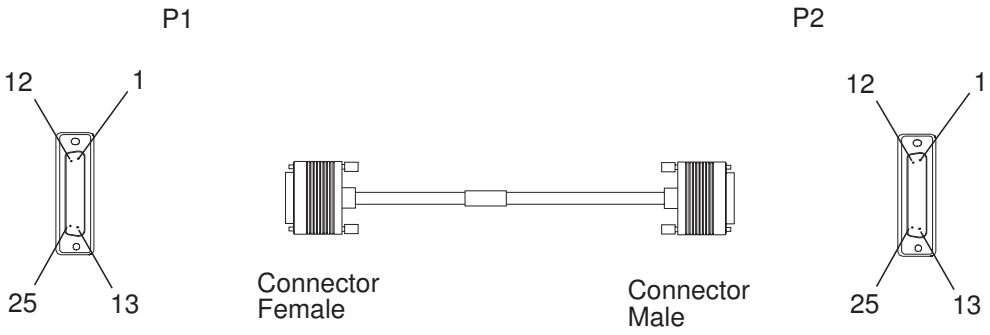


Figure G-5. Cable between the Service Processor and the Modem (PN 0782985)

Interchange Circuits for the Cables between the Service Processor and the Modem

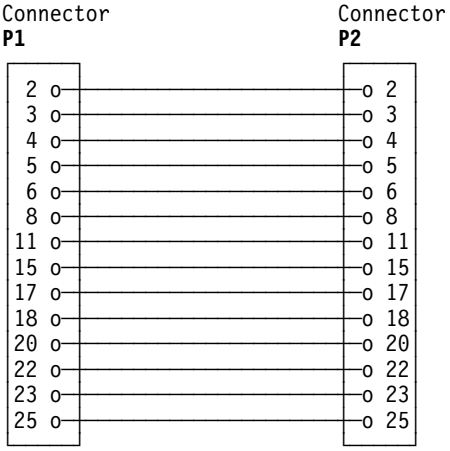


Figure G-6. Modem Cables Pin Assignments (PN 0782985)

Table G-3. Cable between the Service Processor and the Modem		
Cable Type	**Length**	**Cable PN**
Standard Fixed	5 m (17 ft.)	0782985

Modem Cable (PN 0782984)

4

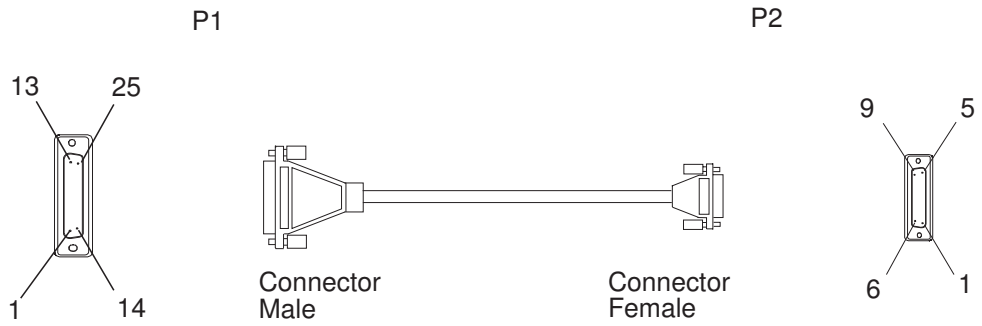


Figure G-7. Modem Cable Adapter (PN 0782984)

Interchange Circuits for the Modem Adapter Cable

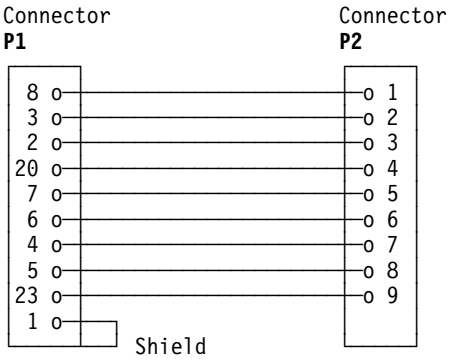


Figure G-8. Modem Cables Pin Assignments (PN 0782984)

Table G-4. Modem Adapter Cable		
Cable Type	**Length, m (ft)**	**Cable PN**
Standard Fixed	1 m (3)	0782984

Cable between the Service Processor and the Display

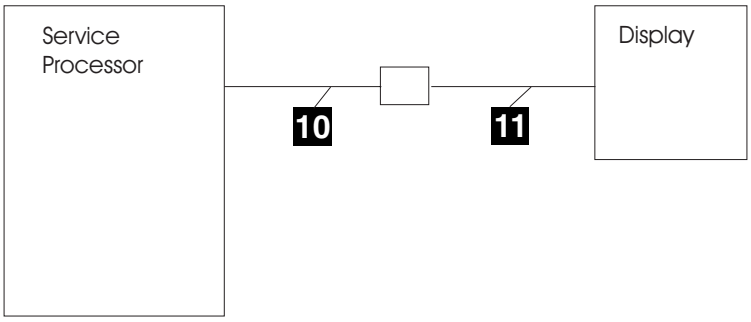


Figure G-9. Cables between the Service Processor and the Display

The display is shipped with its own attached cable (refer to Figure G-9 reference **11**) nevertheless if the display is installed far away from the Service Processor an extender cable is available **10** .

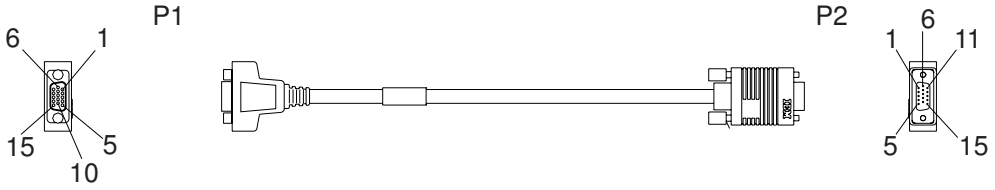


Figure G-10. Extender Cable for Service Processor and Display connection

Interchange Circuits for the Extender Cable between the Service Processor and the Display

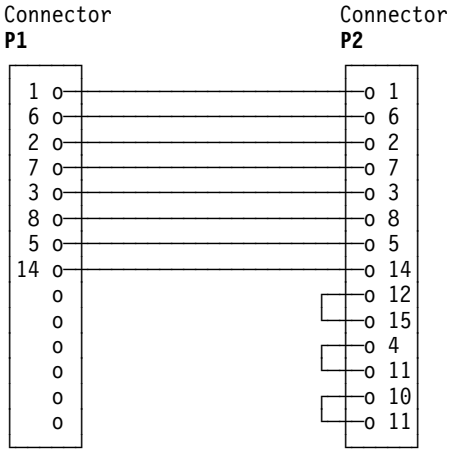


Table G-5. Extender Cable for Service Processor and Display Connection		
Cable Type	**Length**	**Cable PN**
Standard Fixed	4 m (13 ft.)	59G1270

Cables between the Keyboard, the Mouse and the Service Processor

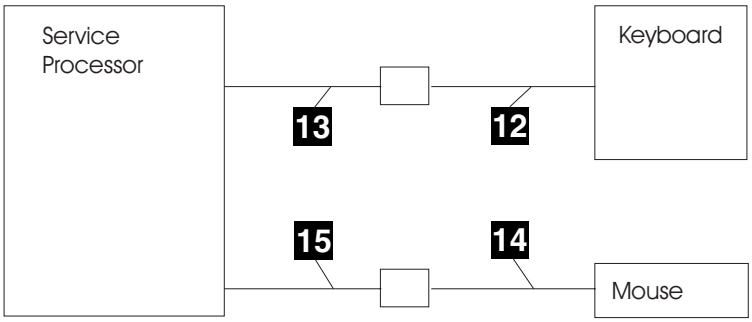


Figure G-11. Cables between the Service Processor and the Display

The Keyboard and the mouse are shipped with their own attached cable (refer to Figure G-11 reference **12** , and **14**) nevertheless if they are installed far away from the Service Processor an extender cable is available for the keyboard **13** and for the mouse **15** .

Keyboard Extender Cable

When the keyboard is installed outside the controller expansion an additional extender cable is used. (refer to Figure G-11 reference **13**).

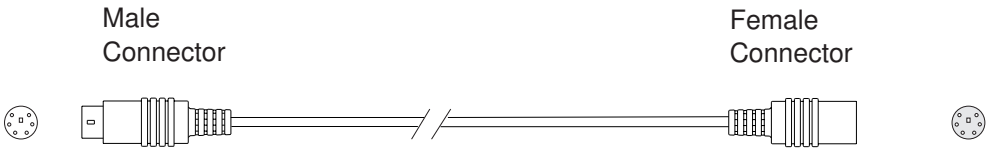


Figure G-12. Keyboard Extender Cable

Table G-6. Keyboard Extender Cable		
Cable Type	**Length**	**Cable PN**
Standard Fixed	4 m (12 ft.)	10K8632

Mouse Extender Cable

When the mouse is installed outside the controller expansion an additional extender cable is used. (refer to Figure G-11 reference **15**).

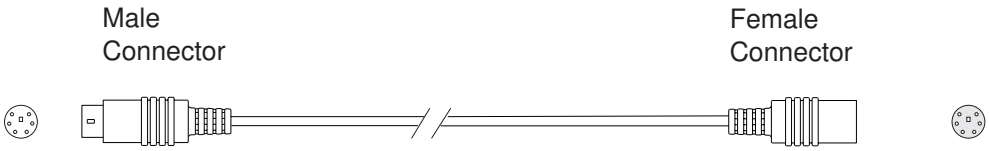
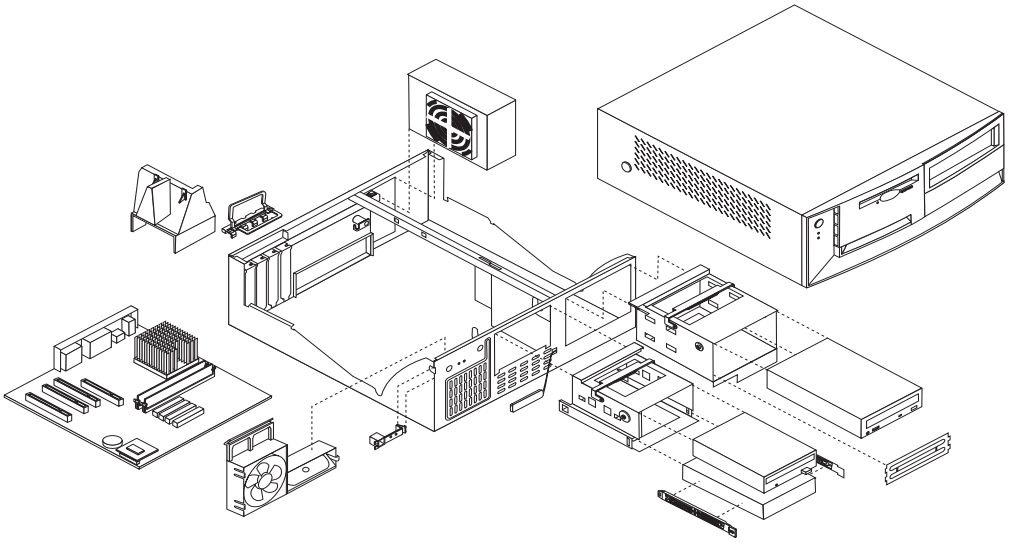


Figure G-13. Mouse Extender Cable

Table G-7. Keyboard Extender Cable		
Cable Type	**Length**	**Cable PN**
Standard Fixed	5 m (15 ft.)	10K8633

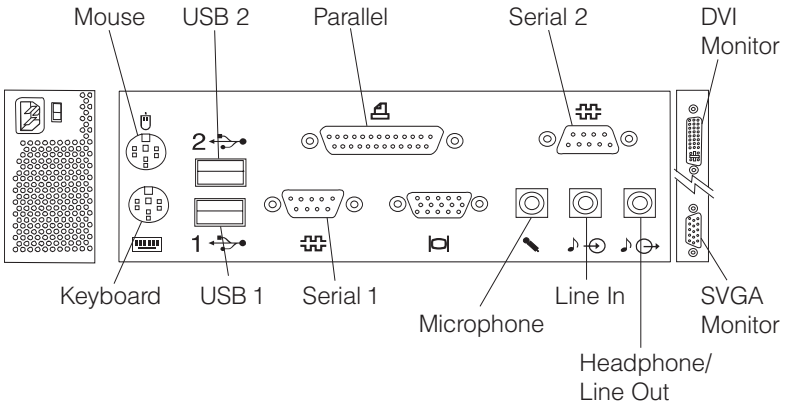
Appendix H. Service Processor Aids

Computer Exploded View



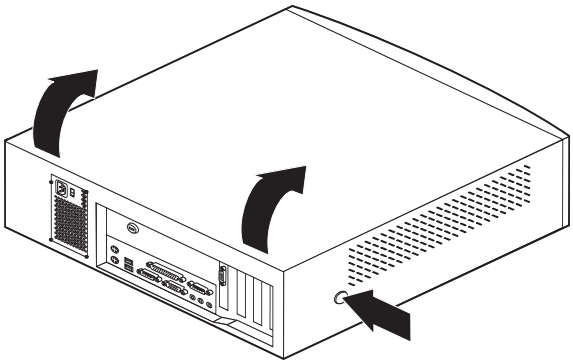
Input/output connectors and removal/service procedures for the cover, front panel, front bezel, diskette/hard disk drive bracket, CD-ROM drive, power supply, and system board are on the following pages.

Input/Output Connectors



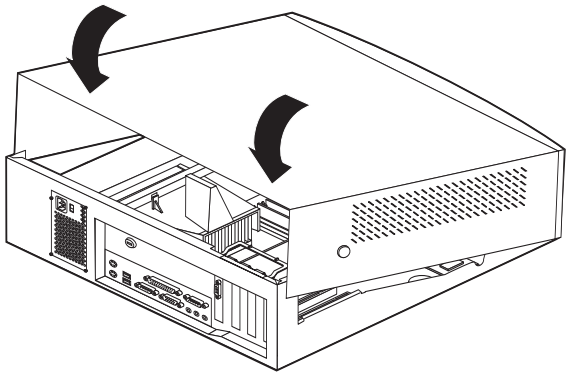
Cover Removal

Note: The front panel is integrated with the top cover.



To remove the top cover. firmly press the cover latch buttons on both sides, pull up the back end of the cover, and swing the cover towards the front of the service processor.

Cover Replacement



To replace the top cover, pivot the cover from the front, and move it down over the service processor until the cover snaps into place.

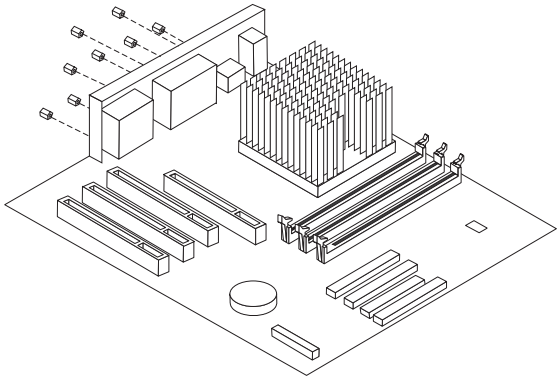
Front Bezel

To remove the front blank bezel:

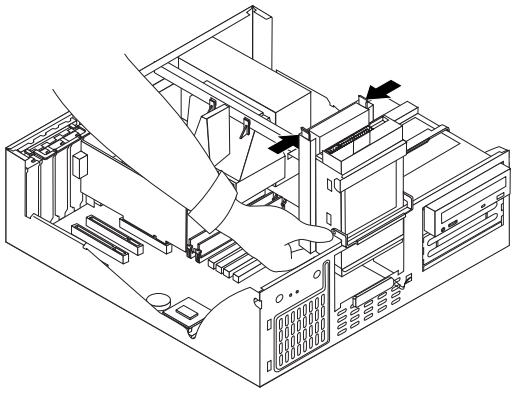
1. Remove the top cover and front panel.
2. Unlatch the tabs of the bezel and remove it from the panel.

EMC Shield

Remove the eight screws that hold the EMC shield in place.



Diskette / Hard Drive Removal



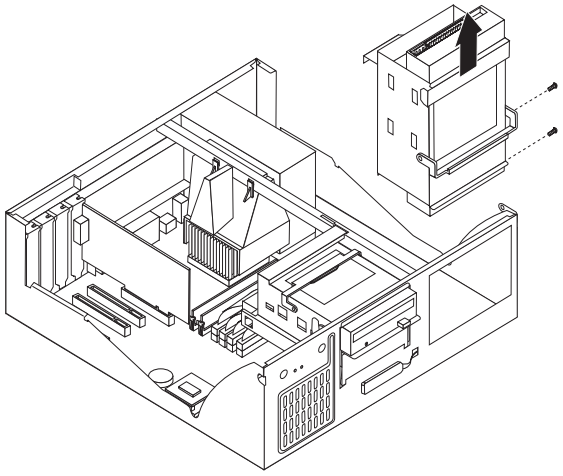
To remove the diskette or hard drive:

1. Swing the 3.5-in. drive cage up, and latch it to the vertical position.
2. Press the two side rail tabs and push the diskette or the hard drive from the bottom. Pull the diskette or the hard drive out.

CD-ROM Drive Removal

To remove the CD-ROM drive:

1. Swing the 5.25-in. drive cage up and out.



2. Remove the two screws that hold the CD-ROM drive in place. Lift the CD-ROM drive out of the cage.

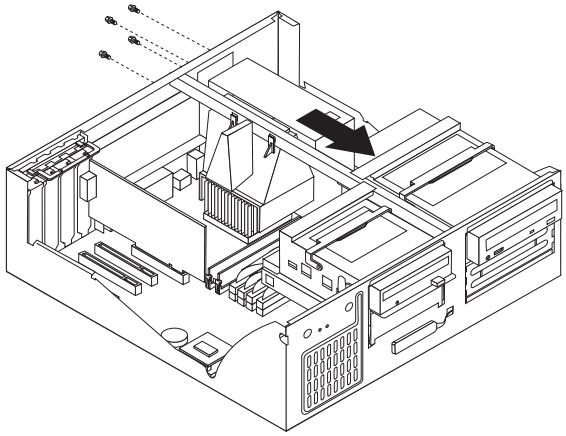
Note: When connecting the CD-ROM Audio Cable, make sure the cable is routed along the system board near the PCI adapter slots. Continue routing the cable along the system board between the power connector and primary IDE connector and then up to the CD-ROM drive. Do not route the CD-ROM cable near the system board I/O connectors.

Power Supply Removal

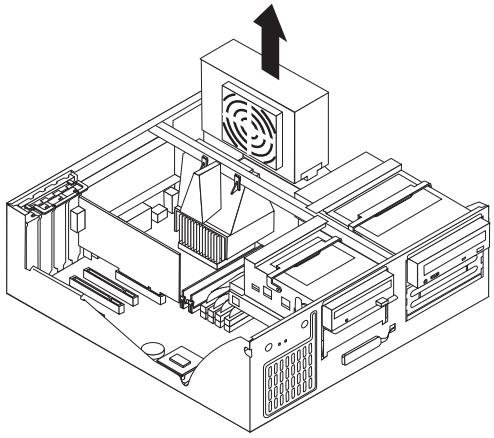
Note: Make sure the power supply voltage switch is set to the proper operating voltage: 115 or 230.

To remove the power supply:

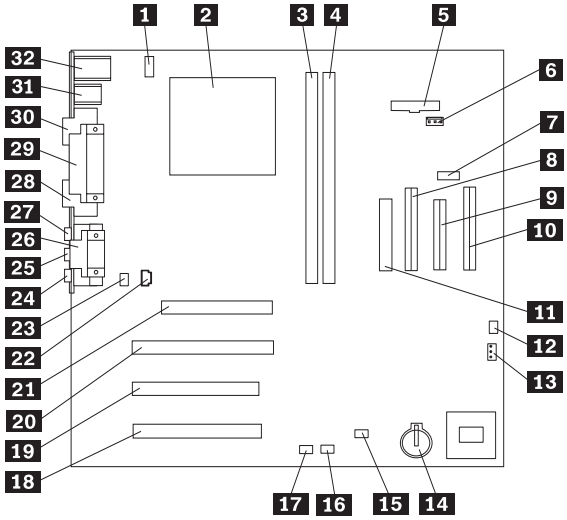
1. Remove the top cover.
2. Remove the air duct.
3. Disconnect the power supply connectors.
4. Remove the four screws that hold the power supply to the back of the chassis.



5. The power supply is attached to the base of the chassis by a latch on the front. Slide the power supply forward to dislatch it from the chassis.
6. Lift out the power supply.



System Board Layout



System Board Locations

1	#2 fan connector
2	Microprocessor
3	DIMM 0
4	DIMM 1
5	Power LED connector
6	RFID connector
7	Front USB connector
8	Secondary IDE connector
9	Diskette connector
10	Primary IDE connector
11	Power connector
12	CMOS clear/recovery jumper
13	#1 Fan connector
14	Battery

15	SCSI adapter LED connector
16	Alert on LAN
17	Wake on LAN
18	PCI slot 3
19	PCI slot 2
20	PCI slot 1
21	AGP connector
22	CD-ROM audio
23	Speaker Connector
24	Audio output
25	Audio input
26	Serial port 2
27	Microphone input
28	Monitor port
29	Parallel port
30	Serial port 1
31	USB connectors
32	Mouse and keyboard connectors

System Board Switch Settings

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

Diskette Write Access Switch (SW1-1)

Diskette Access	SW1-1
Write enabled	Off (D)
Write protected	On

Clear CMOS Switch (SW1-2)

Clear CMOS	SW1-2
Normal mode	Off (D)
CMOS clear	On

Reserved Switch (SW1-3)

Reserved	SW1-3
Reserved	Off

Reserved Switch (SW1-4)

Reserved	SW1-4
Reserved	Off

Processor Speed Settings

Processor speed for the PC 6578 is fixed and is determined by the processor. There are no settings required.

Service Processor Configuration / Setup Utility

1. Power On the Service Processor
2. Press **F1** to invoke the configuration/Setup utility after POST completion, and continue with “Service Processor Configuration Reference Based on 6578-RAU.”

Service Processor Configuration Reference Based on 6578-RAU

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

```
Configuration/Setup Utility

Select Option:

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

Save Settings
Restore Settings
Load Default Settings

Exit Setup
```

Screen 1

```
          System Summary

Processor         Pentium III
Processor Speed   933/133 MHz
System Memory     128 MB
Memory Bus Speed  133 MHz
Video Controller  Active Intel® 815 Chipset Video BI
Audio Support     Enabled
Diskette Drive A  1.44 MB 3.5"
IDE Hard-Disk Drive 0 20 GB
IDE Hard Disk Drive 1 Not Installed
IDE CD-ROM Drive 2  Installed
IDE Hard Disk Drive 3 Not Installed
```

Screen 2

```
          Product Data

Machine type/ Model          6578RAU
Flash EEPROM Revision Level  PIKT31AUS
Boot Block Revision Level    PI31A
System Board Identifier      xxxxxxx
System Serial Number         xxxxxxx
System UUID                  xxxxxxx
BIOS Date                    12/11/00
```

Screen 3 and sub-screens

```
         Device and I/O Ports

  Mouse                     (Installed)
  Diskette Drive A:         (1.44 MB 3.5")

- Serial Port Setup...
- USB Setup...
- Parallel Port Setup...
- Video Setup...
- IDE Drives Setup...
- Audio Setup...
- Network 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                     (Disabled)
USB Keyboard/Mouse Support      (Autodetect)
```

```
         Parallel Port Setup

Parallel Port                   (378h)
Parallel Port Mode               Extended
Parallel Port Extended Mode      ECP
Parallel Port Extended Mode DMA  DMA3
Parallel Port IRQ                IRQ 7
```

```
         Video Setup

Active Video                    Intel® 815 Chipset Video BI
Shared System Memory            1 MB
Select Active Video             (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                  20 GB
  IDE Performance       (High Performance)
  IDE Read Prefetch     (Disabled)
```

```
          IDE CD-ROM    Drive 2

  IDE Performance       (High Performance)
```

```
          Audio Setup...

  Audio Support         (Enabled)
```

```
          Network Setup...

  Mac Address                               Not Available
  Preboot Execution Environment Base Code   (Disabled)
  PCI Boot Entry Vector Startup             (Disabled)
```

Screen 4 and sub-screen

```
          Start Options

  Startup Sequence

  Keyboard Numlock State     (ON)
  Keyboard Speed             (Fast)
  Disketteless Operation     (Disabled)
  Keyboardless Operation Mode(Disabled)
  Power On Self-Test         (Quick)   (Note)
  Power On Logos             (Enabled)
  Option Key Display         (Enabled)
  Network Boot prompt        (Disabled)
  Power On Status            (Disabled)
  Virus detection            (Disabled)
```

Note: If you want a complete testing of the computer at power on, set this parameter to **Enhanced**.

```
          Startup Sequence

Main Startup Sequence...
  First Startup Device     (Diskette Drive 0)
  Second Startup Device    (Hard Disk 0)
  Third Startup Device     (Disabled)
  Fourth Startup Device    (Disabled)

Automatic Startup Sequence (Enabled)
  First Startup Device     (Hard Disk 0)
  Second Startup Device    (Disabled)
  Third Startup Device     (Disabled)
  Fourth Startup Device    (Disabled)

POST Error                 (Disabled)
```

Screen 5 and Sub-screen

```
          Date and Time

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

Screen 6 and Sub-screens

```
          System Security

- Advanced Security DISABLED
- Security Profile by Device
- Remote Administration
- Power-On Password
- Administrator Password
Adapter ROM Security        (No)
Asset ID                    (Disabled)
```

```
   Security Profile by Device

IDE Controller             (Enabled)
Diskette Drive Access      (Enabled)
Diskette Write Protect     (Disabled)

Password to request before booting:
Removable Media Devices  (User)
Hard Disk Devices        (User)
Network Device           (User)
```

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

Remote Administration           (Enabled)
Network Boot Integrity Services (Disabled)
```

```
          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

Required Administrator password Flashing  (No)
Power-on Password changeable by user      (No)
Require Power-on Password on Warm Boot    (No)
```

Screen 7 and Sub-screens

```
         Advanced Setup

Warning:

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

- PCI Control
- Plug and Play Control
- Processor Control
```

```
              PCI Control

  PCI Parity            (Enabled)
```

```
           Plug and Play Control

  Plug and Play Operating System (No)
```

```
         Processor Control

  Processor 0 ID       0686
    Microcode Revision (MM/DD/YYYY)   05/05/2000
  Processor Serial Number Access    (Disabled)
```

Screen 8 and sub-screens

```
           Power Managment

ACPI BIOS Mode       (IRQ 9)
ACPI Standby Mode    (S3)
- APM
- Automatic Power on
```

```
               APM

APM BIOS Mode                         (Disabled)

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

- Low Power Entry Activity Monitor
- Low Power Exit Activity Monitor
```

```
        Low Power Entry Activity Monitor

PS/2 Keyboard/Mouse                 (Enabled)
Diskette, Serial and Parallel Port  (Enabled)
IDE Hard Drive                      (Enabled)
IDE CD-ROM                          (Disabled)
```

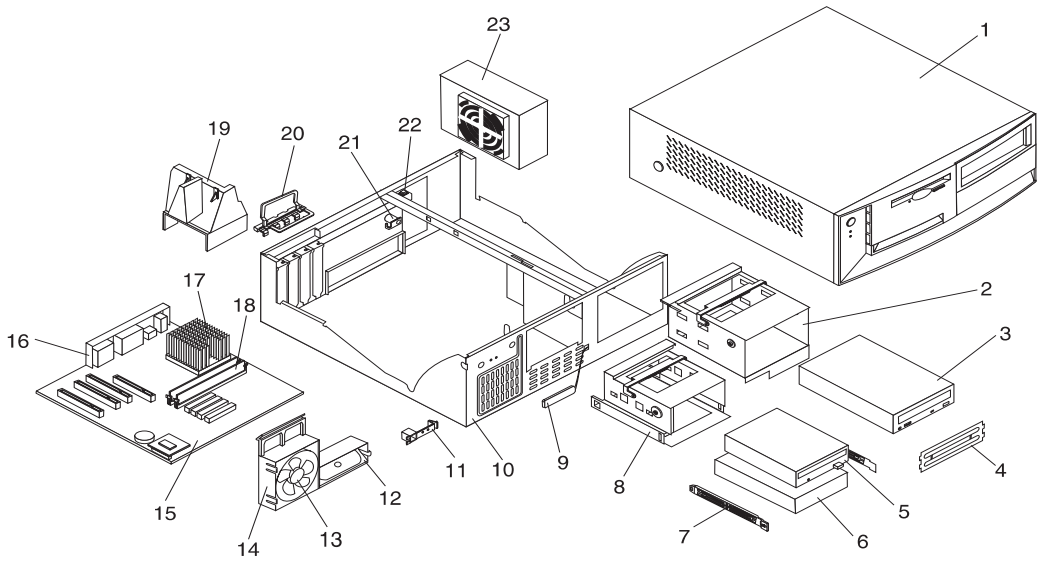
```
         Low Power Exit Activity Monitor

PS/2 Keyboard              (Enabled)
PS/2 Mouse                 (Enabled)
Serial Port A              (Enabled)
Serial Port B              (Enabled)
LAN                        (Enabled)
```

```
              Automatic Power on

- Wake on LAN

Serial Port A Ring Detect      (Disabled)
  Serial 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
```

* May be another value.

```
                  Wake on LAN

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

Appendix I. Service Processor Part Numbers



Parts Listing

Index	System (Type 6578)	FRU No.
1	Top Cover Assembly	09N5727
2	5.25-in. DASD Bracket	09N5746
3	CD-ROM Drive - 40x	09N0879
4	Bezel Kit	09N5723
5	3.5-in. 1.44MB Diskette Drive	75H9550
	3.5-in. 1.44MB Diskette Drive (Japan)	75H9552
6	10.1 GB EIDE Hard Disk Drive	36L8681
	20.4 GB EIDE Hard Disk Drive	09N0705
7	DASD Rail Kit	19K5331
8	3.5-in. DASD Bracket	09N5736
9	RFID Antenna	03K9654
10	Chassis Assembly	09N5728
11	Control Panel Assembly	37L5092
12	Apeaker with Cable Assembly	01K4909
13	92mm Fan Assembly with Grommets	33L2594
14	Fan/Speaker Bracket	09N5763
15	System Board (no processor, no memory)	09K9982
16	Planar EMC shield Kit	09N5770
17	Pentium® III 667MHz	10K0863
	Pentium III 733MHz	10K0864
	Pentium III 800MHz	10K1196
	Pentium III 933MHz	19K7537
18	Memory 64MB SDRAM	33L3072
	Memory 128MB SDRAM	33L3074
19	Air Baffle Duct	09N5735
20	I/O Cam Bracket	09N5734
21	Keylock Assembly	09K9829
22	C2 Switch	09K9827
23	155W Power Supply	00N7685
	155W Power Supply (Japan)	00N7687
	155 Power Supply (China)	00N7689
	5.25-in. DASD Bracket Handle	09N5747
	3.5-in. DASD Bracket Handle	09N5748
	Cable Hard Disk Drive (ATA)	37L4525
	SCSI Signal Cable Assembly (3 Drop)	33L2598

Index	System (Type 6578)	FRU No.
	Foot (4)	03K9655
	Cable Diskette Drive	33L2596
	Mouse (2 Button)	10L6145
	Miscellaneous Hardware Kit	09N5764
	ATA-66 Cable Assembly (2 Drop)	37L5098
	CD-ROM Audio Cable	75H9219
	Dual USB Cable	09N5729
	Lithium Battery	33F8354
	EMC Shield for 5.25-in. Bay	20L3073
	Nameplate	09N5733
	Roulette Ethernet Adapter	19K4885

Appendix J. Bibliography

Customer Documentation for the 3746 Model 950

Table J-1 (Page 1 of 5). Customer Documentation for the 3746 Model 950

This customer documentation has the following formats:

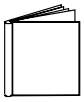
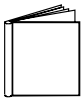
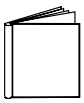
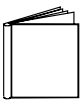
Finding Information		
		3745 Models A and 3746 Books All of the books in the 3745 Models A and 3746 library are available on the CD-ROM that contains the Licensed Internal Code (LIC) for the machine.
Preparing for Operation		
	GA33-0400	***IBM 3745 Communication Controller All Models***[1] ***IBM 3746 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 and 170***[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 Nways Multiprotocol Controller*** ***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 J-1 (Page 2 of 5). Customer Documentation for the 3746 Model 950



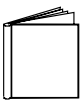
GA27-4235

IBM 3745 Communication Controller Models A[2]
IBM 3746 Nways Multiprotocol Controller
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.
- ISDN adapter description and configuration.



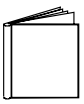
GA27-4236

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

Planning Series:
Token Ring and Ethernet

Provides information for:

- Token-ring adapter description and configuration
- Ethernet adapter description and configuration.



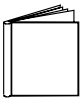
GA27-4237

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

Planning Series:
ESCON Channels

Provides information for:

- ESCON adapter descriptions
- ESCON configuration and tuning information
- ESCON configuration examples.



GA27-4238

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

Planning Series:
Physical Planning

Provides information for:

- 3746 and MAE physical planning details
- 3746 and MAE cable information
- Explanation of installation sheets
- 3746 plugging sheets.

Table J-1 (Page 3 of 5). Customer Documentation for the 3746 Model 950

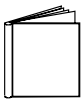
GA27-4239

IBM 3745 Communication Controller Models A2
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:
Management Planning

Provides information for:

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



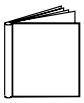
GA27-4240

IBM 3745 Communication Controller Models A2
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:
Multiaccess Enclosure Planning

Provides information for:

- MAE adapters details
- MAE ESCON planning and configuration
- ATM and ISDN support.



GA27-4241

IBM 3745 Communication Controller Models A2
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:
Protocol Descriptions

Provides information for:

- Overview and details about APPN/HPR and IP.

On-line information

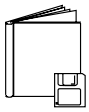
IBM 3745 Communication Controller Models A2
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:
Controller Configuration and Management Worksheets

Provides planning worksheets for ESCON, Multiaccess Enclosure, serial line, and token-ring definitions.

Table J-1 (Page 4 of 5). Customer Documentation for the 3746 Model 950

Operating and Testing



SA33-0356

IBM 3746 Nways Multiprotocol Controller Model 950

User's Guide[2]

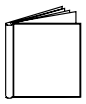
Explains how to:

- 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.
It 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.

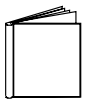


SH11-3081

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.



GA33-0479

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

NetView Console
APPN Command Reference Guide

Explains how to use the RUN COMMAND from the NetView S/390 Program and gives examples.

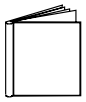
Managing Problems

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.

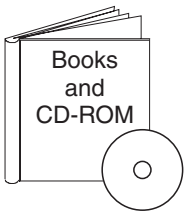
Table J-1 (Page 5 of 5). Customer Documentation for the 3746 Model 950

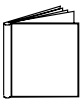
[1] Models 130 to 61A.
[2] Documentation shipped with the 3746-950
[3] 3745 Models 17A to 61A.

Service Documentation for the IBM 3746 Model 950

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

This service documentation has the following formats:



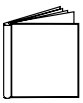


SY33-2107

IBM 3746 Nways Multiprotocol Controller Model 950

Installation Guide[1]

Provides instructions for installing or relocating the Nways Controller.

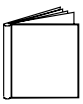


SY33-2108

IBM 3746 Nways Multiprotocol Controller Model 950

Service Guide[1]

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

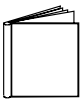


SY33-2115

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.

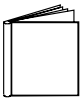


SY33-2120

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 PC Type 6275. Can be for systems with microcode EC F12380 or higher installed.

Table J-2 (Page 2 of 4). Service Documentation for the 3746 Model 950

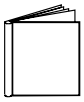
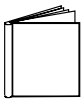
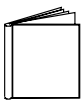
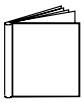
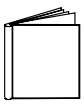
	SY27-0393	***IBM 3745 Communication Controller Models A***[3] ***IBM 3746 Expansion Unit Model 900*** ***IBM 3746 Nways Multiprotocol Controller Model 950*** ***Service Processor Installation and Maintenance***[4] ***(Based on 6563)*** Provides information on installing and maintaining the service processor based on PC Type 6563. Can be for systems with microcode EC F12380 or higher installed.
	GY27-0406	***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 6578)*** Provides information on installing and maintaining the service processor based on PC Type 6578. Can be for systems with microcode EC H10000A and EC H10010A or higher installed.
	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 PC Type 6275.

Table J-2 (Page 3 of 4). Service Documentation for the 3746 Model 950

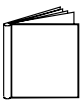
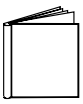
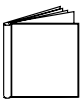
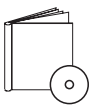
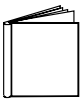
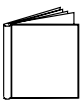
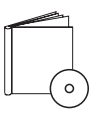
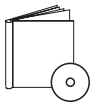
	SY27-0394	***IBM 3746 Nways Multiprotocol Controller Models 900 and 950*** ***Network Node Processor Installation and Maintenance***[3] ***(Based on 6563)*** Provides information on installing and maintaining the network node processor based on the PC Type 6563.
	GY27-0407	***IBM 3746 Nways Multiprotocol Controller Models 900 and 950*** ***Network Node Processor Installation and Maintenance***[3] ***(Based on 6578)*** Provides information on installing and maintaining the network node processor based on the PC Type 6578.
	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.
	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.

Table J-2 (Page 4 of 4). Service Documentation for the 3746 Model 950



ZK2T-8187

IBM Networking
Softcopy Collection Kit

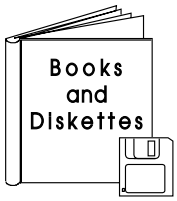
Allows service manuals consulting via CD-ROM viewer. US version.

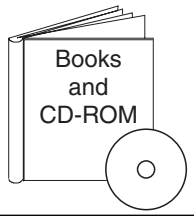
[1] Documentation shipped with the 3746 Model 950
[2] 3745 Models 17A to 61A
[3] Documentation shipped with the processor
[4] Documentation shipped with the 3746 Models 900 and 950

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

Table J-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:



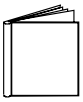


Finding Information

3745 Models A and 3746 Books

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 the machine.

Evaluating and Configuring



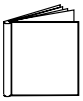
GA33-0092

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.

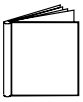


GA33-0180

IBM 3745 Communication Controller Models A and 170[2]
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 Nways Multiprotocol Controller
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 J-3 (Page 2 of 6). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

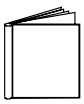
GA27-4235

IBM 3745 Communication Controller Models A²
IBM 3746 Nways Multiprotocol Controller
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.
- ISDN adapter description and configuration.



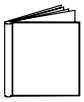
GA27-4236

IBM 3745 Communication Controller Models A²
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:
Token Ring and Ethernet

Provides information for:

- Token-ring adapter description and configuration
- Ethernet adapter description and configuration.



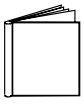
GA27-4237

IBM 3745 Communication Controller Models A²
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:
ESCON Channels

Provides information for:

- ESCON adapter descriptions
- ESCON configuration and tuning information
- ESCON configuration examples.



GA27-4238

IBM 3745 Communication Controller Models A²
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Planning Series:
Physical Planning

Provides information for:

- 3746 and MAE physical planning details
- 3746 and MAE cable information
- Explanation of installation sheets
- 3746 plugging sheets.

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

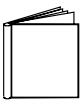
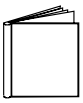
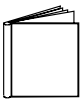
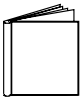
	GA27-4239	***IBM 3745 Communication Controller Models A²*** ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Planning Series:*** ***Management Planning*** Provides information for: • Overview for 3746 • 3746 APPN/HPR, IP router, and X.25 • NetView Performance Monitor (NPM), remote consoles, and RSF • MAE APPN/HPR management.
	GA27-4240	***IBM 3745 Communication Controller Models A²*** ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Planning Series:*** ***Multiaccess Enclosure Planning*** Provides information for: • MAE adapters details • MAE ESCON planning and configuration • ATM and ISDN support.
	GA27-4241	***IBM 3745 Communication Controller Models A²*** ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Planning Series:*** ***Protocol Descriptions*** Provides information for: • Overview and details about APPN/HPR and IP.
	On-line information	***IBM 3745 Communication Controller Models A²*** ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Planning Series:*** ***Controller Configuration and Management Worksheets*** Provides planning worksheets for ESCON, Multiaccess Enclosure, serial line, and token-ring definitions.
Preparing Your Site		
	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.

Table J-3 (Page 4 of 6). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

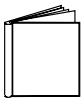
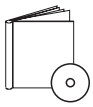
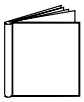
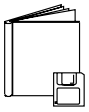
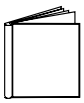
	GA33-0127	***IBM 3745 Communication Controller Models 210, 310, 410, and 610*** ***Preparing for Connection*** Helps for preparing the 3745 Models 210 to 610 cable installation. For 3745 Models A refer to the *Connection and Integration Guide*, SA33-0129.
Preparing for Operation		
	GA33-0400	***IBM 3745 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		
	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		

Table J-3 (Page 5 of 6). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

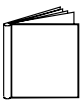
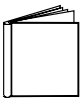
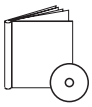
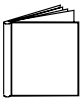
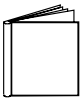
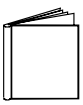
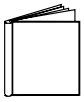
	SA33-0098	***IBM 3745 Communication Controller All Models***[4] ***Basic Operations Guide***[1] Provides instructions for daily routine operations on the 3745 Models 130 to 610.
	SA33-0177	***IBM 3745 Communication Controller Models A***[2] ***IBM 3746 Nways Multiprotocol Controller Model 900*** ***Basic 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. It 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.
	GA33-0479	***IBM 3745 Communication Controller Models A*** ***IBM 3746 Nways Multiprotocol Controller Models 900 and 950*** ***NetView Console APPN Command Reference Guide*** Explains how to use the RUN COMMAND from the NetView S/390 Program and gives examples.
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 J-3 (Page 6 of 6). Customer Documentation for the 3745 Models X10 and X1A, and 3746 Model 900

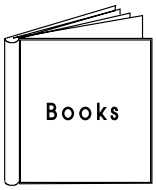
	On-line Information	***Problem Analysis Guide*** An online guide to analyze alarms, events, and control panel codes on: • IBM 3745 Communication Controller Models A[2] • IBM 3746 Nways Multiprotocol Controller Models 900 and 950.
	SA33-0175	***IBM 3745 Communication Controller Models A[2]*** ***IBM 3746 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, and 170

Table J-4. Additional Customer Documentation for the 3745 Models 130 to 170

This customer documentation has the following format:



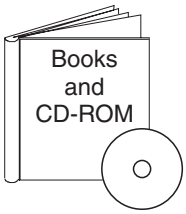
Finding Information	
	3745 Models A and 3746 Books All of the books in the 3745 Models A and 3746 library are available on the CD-ROM that contains the Licensed Internal Code (LIC) for the machine.
Evaluating and Configuring	
GA33-0138	***IBM 3745 Communication Controller Models 130, 150, 160, and 170*** ***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)

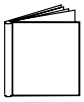
Table J-5 (Page 1 of 5). Service Documentation for the 3745 Models x10 and x1A, and 3746 Model 900

This service documentation has the following formats:



3745 Models A and 3746 Books

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 the Machine.

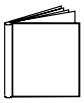


SY33-2057

IBM 3745 Communication Controller
Models 210 to 61A

Installation Guide[1]

Provides instructions for installing or relocating the IBM 3745 Models X10 and X1A.

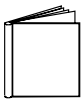


SY33-2114

IBM 3746 Nways Multiprotocol Controller
Model 900

Installation Guide[2]

Provides instructions for installing or relocating a 3746-900.

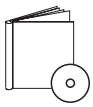


SY33-2116

IBM 3746 Nways Multiprotocol Controller
Model 900

Service Guide[2]

Provides procedures for isolating and fixing the IBM 3746-900 problems.



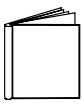
SY33-2055

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.



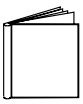
SY33-2054

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.

Table J-5 (Page 2 of 5). Service Documentation for the 3745 Models x10 and x1A, and 3746 Model 900

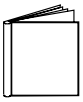


SY33-2115

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.

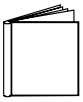


SY33-2120

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.

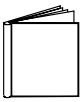


SY33-2125

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 PC Type 6275.
Can be for systems with microcode EC F12380 or higher installed.

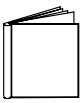


SY27-0393

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 6563)

Provides information on installing and maintaining the service processor based on PC Type 6563.
Can be for systems with microcode EC F12380 or higher installed.



GY27-0406

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 6578)

Provides information on installing and maintaining the service processor based on PC Type 6578.
Can be for systems with microcode EC H10000A and EC H10010A or higher installed.

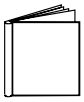
Table J-5 (Page 3 of 5). Service Documentation for the 3745 Models x10 and x1A, and 3746 Model 900

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.

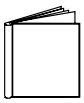


SY33-2118

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).

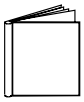


SY33-2124

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.

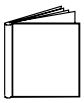


SY33-2112

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.

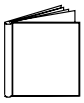


SY33-2126

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 PC Type 6275.



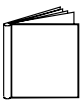
SY27-0394

IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Network Node Processor Installation and Maintenance[4]
(Based on 6563)

Provides information on installing and maintaining the network node processor based on the PC Type 6563.

Table J-5 (Page 4 of 5). Service Documentation for the 3745 Models x10 and x1A, and 3746 Model 900

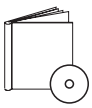


GY27-0407

IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

Network Node Processor Installation and Maintenance[3]
(Based on 6578)

Provides information on installing and maintaining the network node processor based on the PC Type 6578.

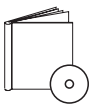


SY33-2056

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.

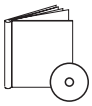


SY33-2075

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.

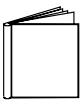


SY33-2117

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.

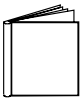


S135-2015

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.

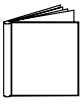


S135-2010

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

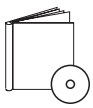
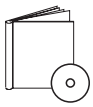
IBM Controller Expansion

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

Table J-5 (Page 5 of 5). Service Documentation for the 3745 Models x10 and x1A, and 3746 Model 900

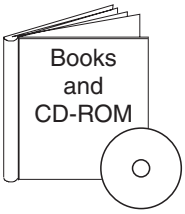
	ZK2T-8214	***IBM Networking Softcopy Collection Kit*** Allows service manuals consulting via CD-ROM viewer. EMEA version.
	ZK2T-8187	***IBM Networking Softcopy Collection Kit*** Allows service manuals consulting via CD-ROM viewer. US version.

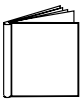
[1] Documentation shipped with the 3745.
[2] Documentation shipped with the 3746-900.
[3] 3745 Models 17A to 61A.
[4] Documentation shipped with the processor.
[5] 3745 Models 130 to 61A.
[6] Documentation shipped with the 3746 Models 900 and 950.

Additional Service Documentation for the IBM 3745 Models 130, 150, 160, 170, and 17A

Table J-6. Additional Service Documentation for the 3745 Models 1x0 and 17A

This service documentation has the following formats:



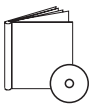


SY33-2067

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.

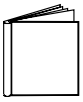


SY33-2069

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.

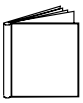


SY33-2070

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.

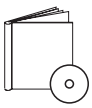


S135-2012

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.

[1] Documentation shipped with the 3745.

Glossary

Acronyms, Abbreviations and Terms

Term	Information
ACPA/A	Audio Capture and Playback Adapter
ADP	Automatic Data Processing
AGP	Advanced Graphics Port
Alt	Alternate
ANSI	American National Standards Institute
ARTIC	A Real Time Interface Coprocessor
ASCII	American National Standard Code for Interface Interchange
AT	Advanced Technology (as in AT Bus)
AVC	Audio Video Connection
BIOS	Basic Input/Output System (Controls System Resources)
bps	Bits Per Second
BPS	Bytes Per Second
CCITT	The International Telephone and Telegraph Consultative Committee
CCS	Common Command Set
CCSB	Common Complete Status Block
CCSB	Configuration Control Sub Board
CD	Compact Disc
CDPD	Cellular Digital Packet Data
CD-ROM	CD Read Only Memory (stores data/audio)
CGA	Color Graphics Adapter (See EGA, VGA, XGA)
CRC	Cyclic Redundancy Check
CRT	Cathode Ray Tube
CSA	Canadian Standards Association
CSD	Corrective Service Diskette
DASD	Direct Access Storage Device (hard disk, diskette)
DMA	Direct Memory Access
DRAM	Dynamic Random Access Memory
ECA	Engineering Change Announcement
ECC	Error Correction Code
EGA	Enhanced Graphics Adapter
ESD	Electrostatic Discharge
ESDI	Enhanced Small Device Interface
EEPROM	Electrically Erasable Programmable Read Only Memory
EWS	Energy Work Station
FRU	Field Replaceable Unit (replaceable part)
GPIB	General Purpose Interface Bus (IEEE 348)
GSA	General Services Administration
Ht	Height
IDE	Integrated Drive Electronics
IC	Integrated Circuit
IEEE	Institute of Electrical and Electronics Engineers
IEC	International Electrotechnical Commission
IML	Initial Machine Load
IPL	Initial Program Load

Term	Information
ISA	Industry Standard Architecture
ISO	International Organization for Standardization
ISDN	Integrated-Services Digital Network
LAN	Local Area Network
LBA	Local Block Address
LTB	Local Transfer Bus
LUN	Logical Unit Number (as in SCSI)
MAP	Maintenance Analysis Procedure
MCGA	Modified Color Graphics Adapter (320 x 200 x 256)
MCA	Micro Channel Architecture (bus structure)
MHz	Mega Hertz (million cycles per second)
MIDI	Musical Instrument Digital Interface
MM	Multimedia
N/A	Not Available or Not Applicable
NDD	National Distribution Division
NDIS	Network Driver Interface Specification
NMI	Non-Maskable Interrupt
NSC	National Support Center
NVRAM	Non Volatile Random Access Memory
OEM	Original Equipment Manufacturer
PCI	Peripheral component interconnect
PCMCIA	Personal Computer Memory Card International Association
POS	Programmable Option Select
PUN	Physical Unit Number (as in SCSI)
RAID	Redundant Array of Inexpensive Disks (disk array models)
RAM	Random Access Memory (read/write)
RGB	Red Green Blue (as in monitors)
RIPL	Remote Initial Program Load
ROM	Read Only Memory
SASD	Sequential Access Storage Device (Tape)
SCB	Subsystem Control Block
SCSI	Small Computer Systems Interface
SCSI ID	SCSI Identification Number (assigned device number)
SPD	Software Product Description
SR	Service Representative
SRAM	Static Random Access Memory
SVGA	Super Video Graphics Array
STN	Super Twisted Nematic
T/A	NDD Technical Advisor (See your Marketing Representative)
TDD	Telecommunications Device for the Deaf
TFT	Thin-Film Transistor
TPF	ThinkPad File
TSR	Terminate and Stay Resident
UL	Underwriters Laboratory
VCA	Video Capture Adapter
VESA	Video Electronics Standards Association
VGA	Video Graphics Array (640x480x16)
VPD	Vital Product Data

Term	Information
VRAM	Video Random Access Memory
WORM	Write Once, Read Many Media
XGA	Extended Graphics Array (1024 x 768 x 256)
Y/C	Luminance/Chrominance Signal (Video)

Index

Special Characters

Numerics

A

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Tell Us What You Think!

3745 Communication Controller Models A
3746 Expansion Unit Model 900
3746 Nways Multiprotocol Controller Model 950
Service Processor
Installation and Maintenance
(Based on 6578)

Publication No. GY27-0406-01

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Easy to understand	☐	☐
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Applicable to your task	☐	☐

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