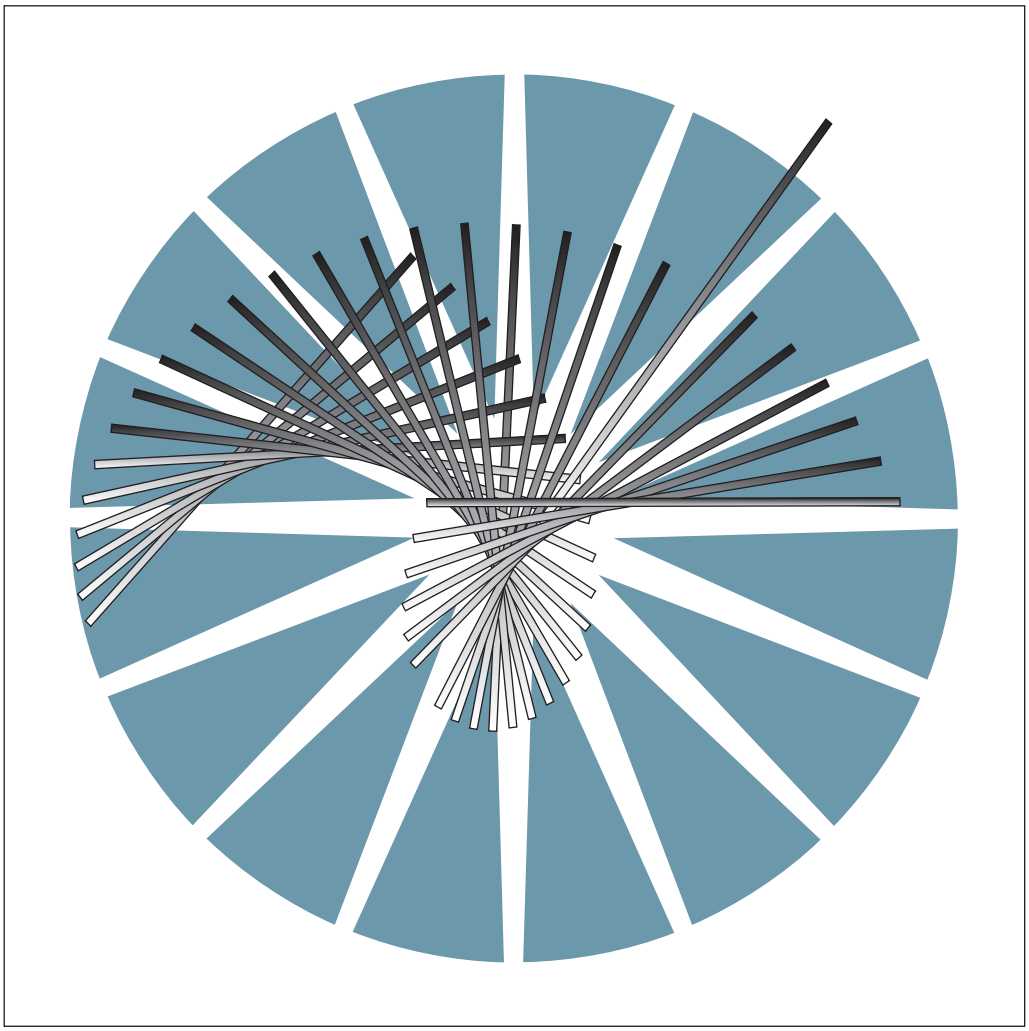
SY27-0393-00

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

Service Processor Installation and Maintenance (Based on 6563)



SY27-0393-00

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

Service Processor Installation and Maintenance (Based on 6563)

Note!

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

First Edition (December 1999)

This edition applies to the service processor based on 6563 Model 65U.

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

For 3745 all Models and 3746 Models 9X0 safety notices refer to *IBM 3745 Communication Controller All Models, IBM 3746 Expansion Unit Model 900, IBM 3746 Nways Multiprotocol Controller Model 950, Safety Information, GA33-0400*

Safety Notices for United Kingdom

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

Service Inspection Procedures

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

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

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

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

About this Book

Who Should Use this Book

The IBM personnel using this book 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 Book

This book 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 Book is Organized

Chapter 1	Presents the procedures to install and connect 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	Gives MAP for service processor troubleshooting.
Chapter 4	Presents the diagnostics and tests available on the service processor and how to invoke them.
Chapter 5	Gives the procedures for service processor FRU exchange.
Chapter 6	Gives the CE leaving procedure.
Appendix A	Provides safety notices for the service processor
Appendix B	Provides 6563 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 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 service and customer 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

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

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

World Wide Web

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

Online Documentation from CD-ROM

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

To access this page:

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

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

Service Personnel Definitions

See 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

Installation Scenarios And Documentation

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
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)*, SY27-0374
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 *IBM 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**). Refer to Table 1-1 on page 1-5 and Table 1-1 on page 1-5 to see how the **installation tasks** can be distributed **between 2 CEs** and define which **document** must be used to **start the installation** and have an overview of the installation sequence.

Note: Refer to Table 1-2 on page 1-5 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 are able to install the 3746-900 first, 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 Scenarios Details

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

Table 1-2 (Page 2 of 3). Installation Scenarios Details

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	
	2CEs	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 (off line)	3746-900 Installation Guide	
	2CEs	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 (off line)	3746-900 Installation Guide	
	2CEs	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 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	
	2CEs	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 install the 3745 XXA, using the SPIM install the SP, then 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	
	2CEs	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 Scenarios Details

Scenario	CE	Tasks	Documentation	Installation Sequence
Scenario 13	1st	Install the 3746-950	3746-950 Installation Guide	Start with the 3746 IG 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	

Go To

- **"Installing Your Service Processor (Based on 6563 Model 65U)" on page 1-8** .

Installing Your Service Processor (Based on 6563 Model 65U)

Service Processor Overview

The service processor is based on an IBM 6563 Model 65U, see “Service Processor Configuration / Setup Utility” on page H-9 for details of the features installed.

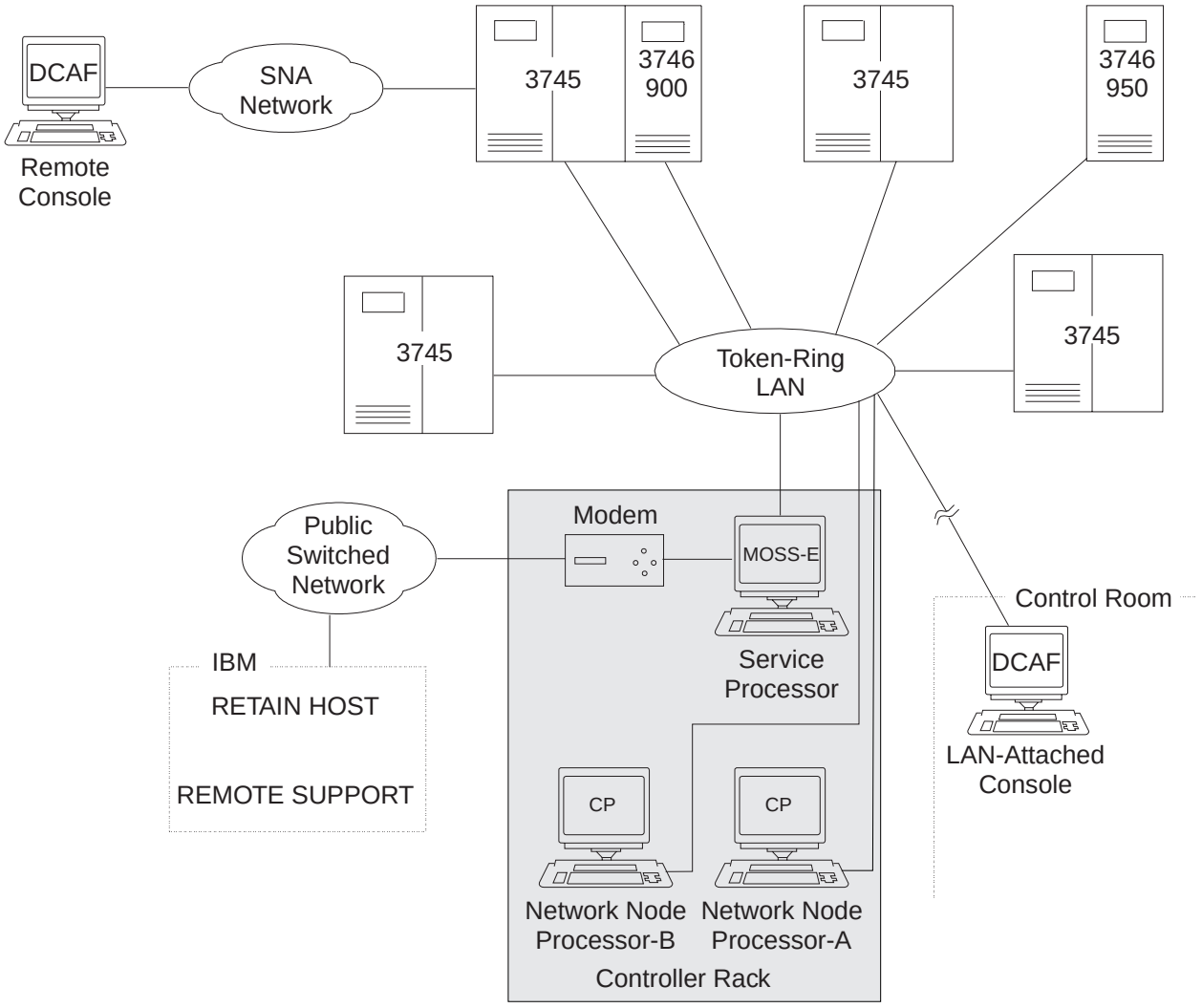


Figure 1-1. Service Processor Environment

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, 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 - Installingf the System Unit, Display, and keyboard” on page 1-10**..
3	Install the 8228 and connect to the Service Processor	**“Step 3 - Installing the Service Processor Access Unit (8228)” on page 1-19**..
4	Install and connect the RSF modem to the Service Processor	**“Installing and Connecting the RSF Modem to the Service Processor” on page 1-22** ..
5	Customize your service processor according to the customer's options	**“Step 5 - Customizing Your Service Processor” on page 1-34**..

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)

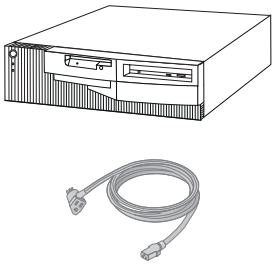
These parameter worksheets are part of the *3745 Communication Controller Models A and 3746 Models 900 and 950: Planning Guide*, GA33-0457 Appendix A and must be filled in by the customer. A copy of these parameter worksheets is given at the end of this manual see Appendix C, “Parameter Worksheets” on page C-1.

Step 2 - Installingf the System Unit, Display, and keyboard

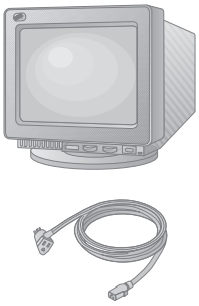
1. ____ **Unpack** Your Service Processor

   You need the following items to complete this installation:

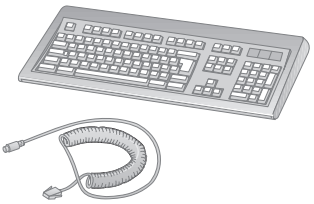
   - ☐ Service Processor and Power Cord

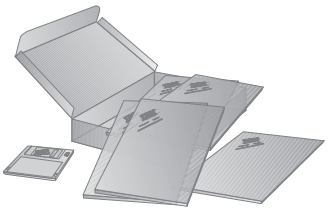
   - ☐ Display and Display Power Cord

   - ☐ Keyboard, Mouse, and Keyboard Cable

   - ☐ Publications and diskettes

2. ____ Check that you have received:

   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 (refer to Figure 1-2 on page 1-11).

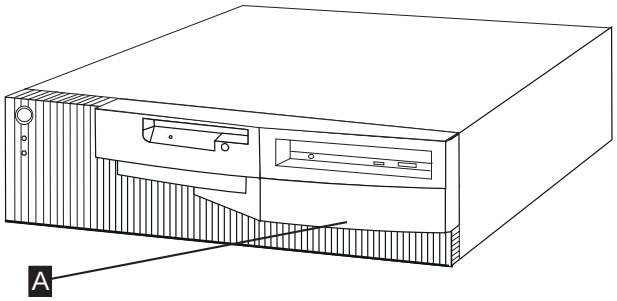


Figure 1-2. Installing Label on the Front Side of the Service Processor

4. ____ If you have a controller expansion, install the service processor kit PN 58G5698 (service drawer, brackets, and plates), go to Step 5. Otherwise go to Step 17 on page 1-15.
5. ____ Open the front and rear doors of the controller expansion. Refer to Figure F-3 on page F-4 and locate the positions to install the brackets for the display and the service processor. Locate also 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).

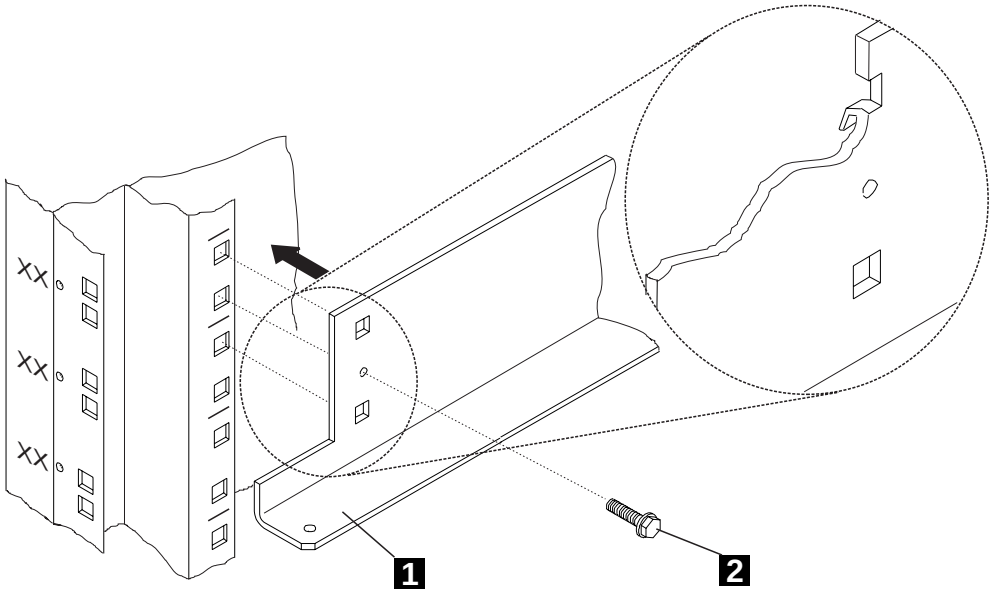


Figure 1-3. Installing Brackets PN 58G5752

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

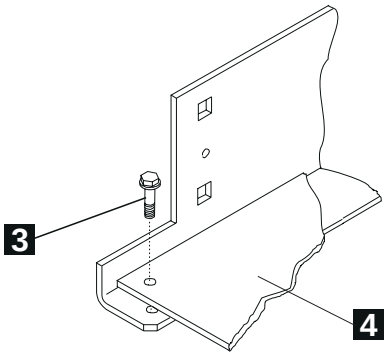


Figure 1-4. Installing Plate PN 58G5755

8. ____ Refer to 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.

.

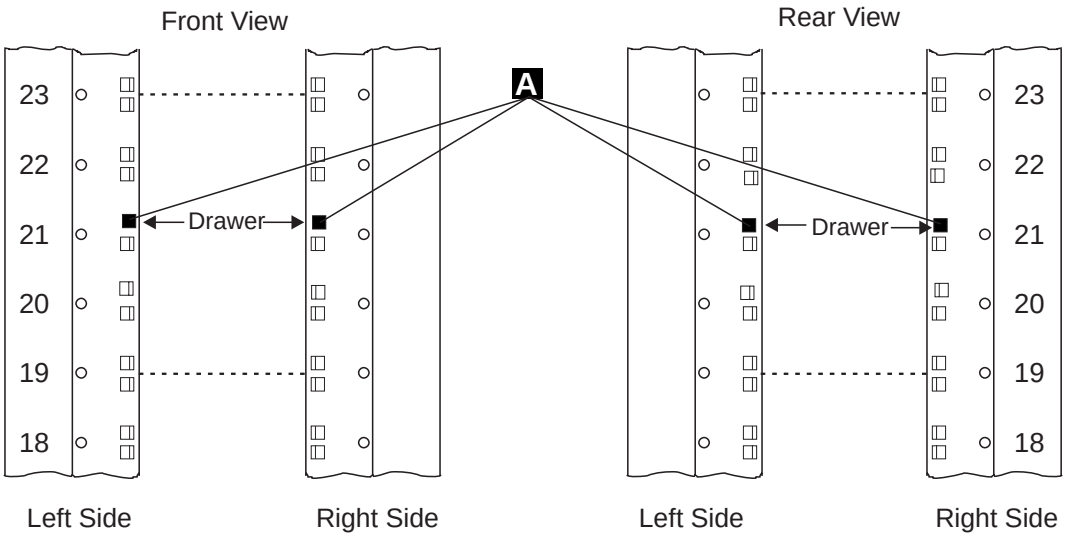


Figure 1-5. Installing Captive Nuts for the Service Drawer

9. ____ Refer to 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).

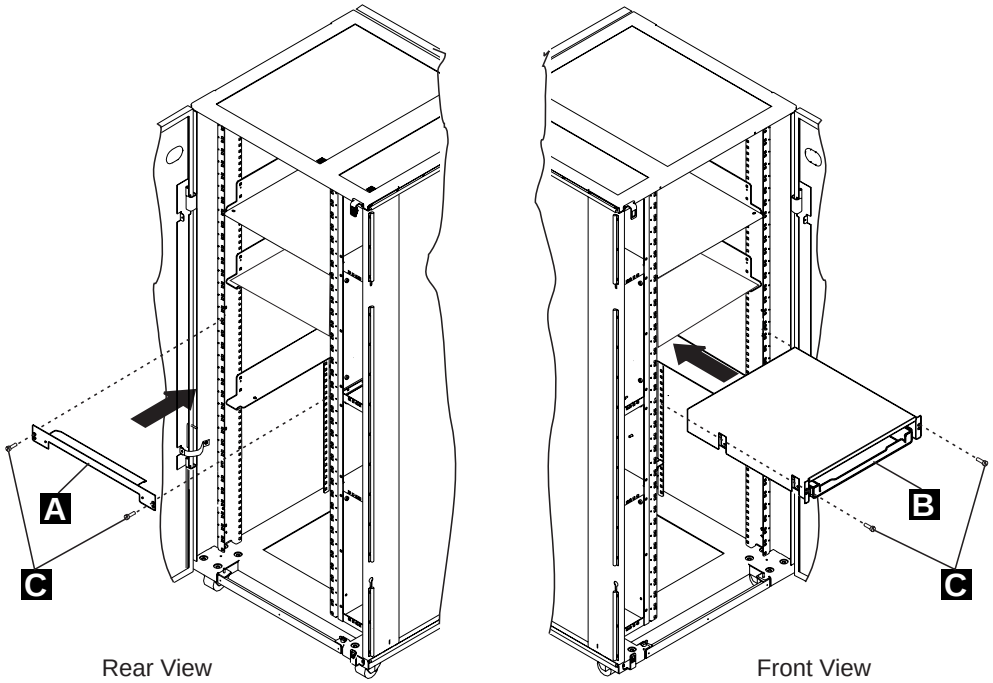


Figure 1-6. Installing the Service Drawer

11. If the service processor, is installed in the controller expansion go to Step 12. Otherwise go to Step 17 on page 1-15.
12. ____ Slide the service processor unit on the brackets as shown in Figure 1-7 on page 1-14.

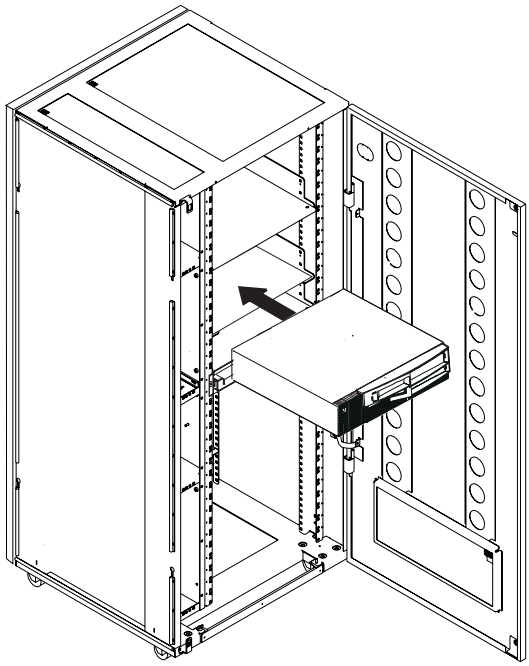


Figure 1-7. Installing the Service Processor Unit in the Controller Expansion (Front Side)f

13. ____ Now you have the choice to install the display and keyboard either in the rack or on a table. If the display is install in the rack go to Step 14. Otherwise go to Step 16 on page 1-15.

14. ____ Slide the display screen on the top of the controller expansion (refer to Figure 1-8).

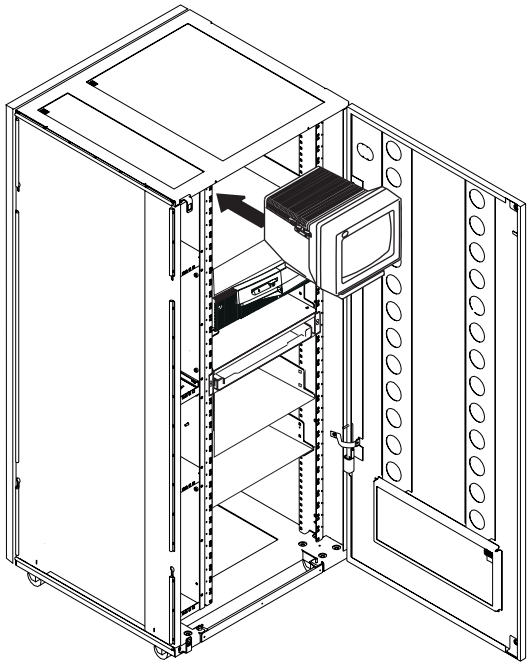


Figure 1-8. Installing the Display in the Controller Expansion (Front Side)

15. ____ Open the drawer and install the keyboard as shown in Figure 1-9 on page 1-15.

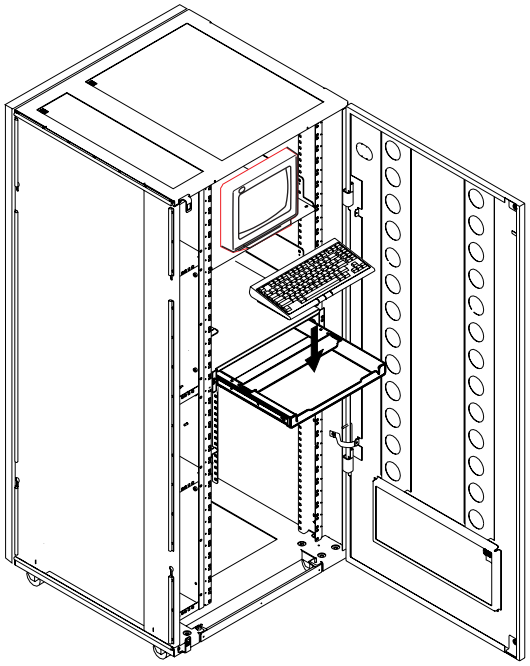


Figure 1-9. Installing the Keyboard

16. ____ **Obtain** a table or a desk large enough to receive the display, the keyboard, and the modem, and go to Step 18.
17. ____ **Obtain** a table or a desk large enough to receive the service processor, the display, the keyboard, and the modem, and go to Step 18.
18. ____ **Connect** the cables to the 6563 as follows (see Figure 1-10 on page 1-16):
    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 1-16).
    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 1-16, reference **J**).
    f. ____ *After you secure all these connections,* plug the power cords into properly grounded electrical outlets.

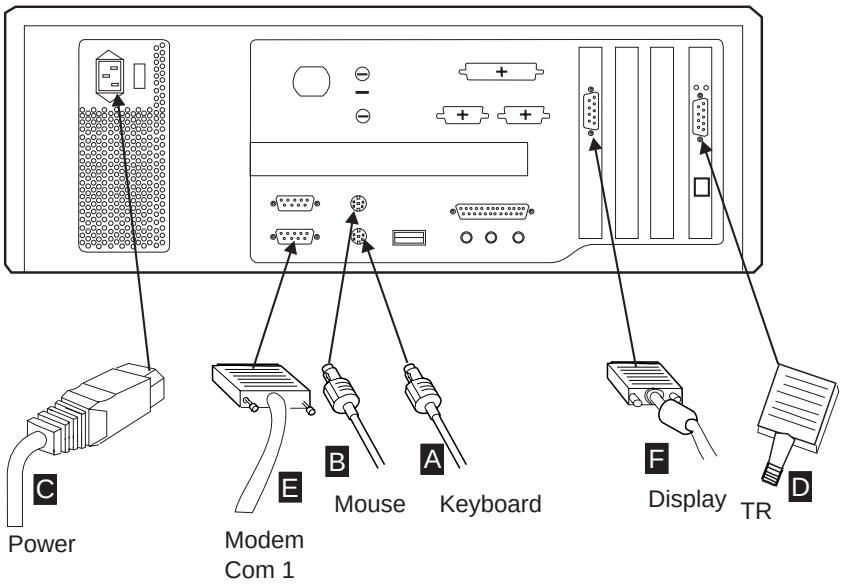


Figure 1-10. Cable Locations

Note: Cable **E** is the cable coming from the modem and it will be connected later, refer to “Installing and Connecting the RSF Modem to the Service Processor” on page 1-22.

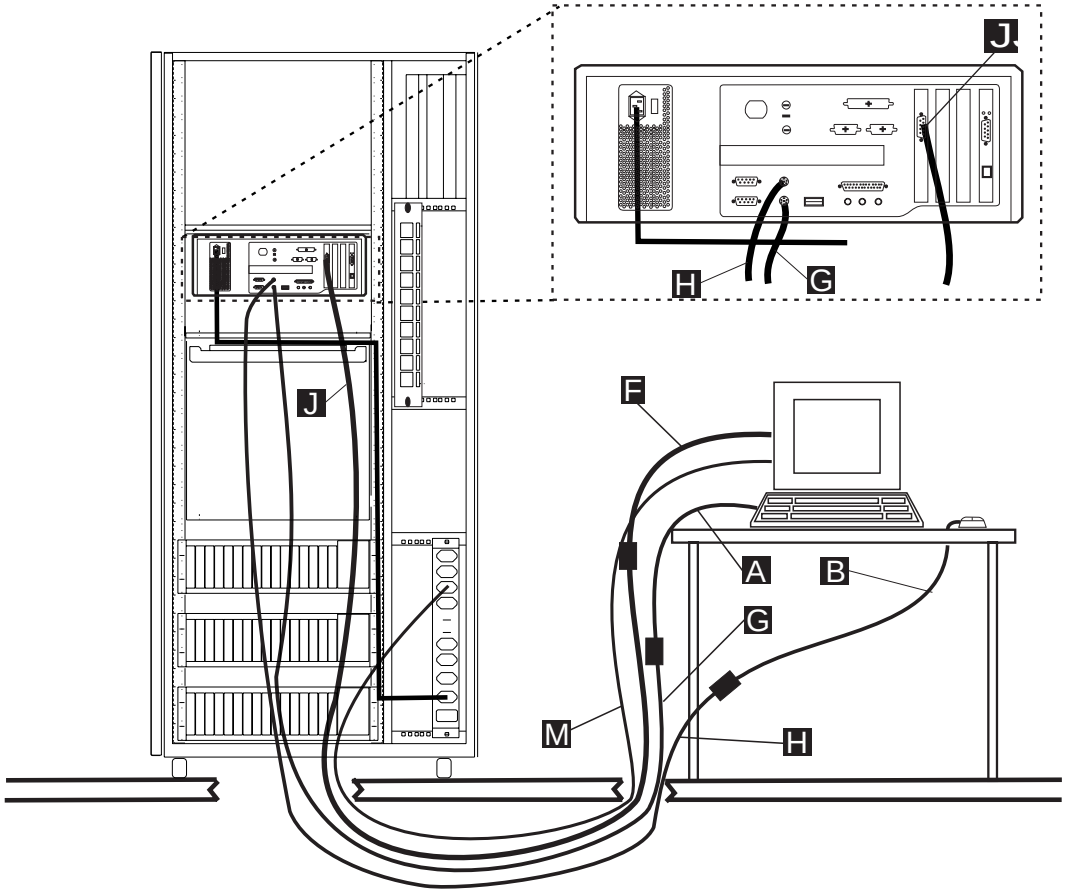


Figure 1-11. Installing the Display and Keyboard on a Table

Go To

If you have installed:

- **All the units** in the controller expansion, go to **Step 19 on page 1-17**
- The **keyboard** and **display** are installed **on a table**, go to **Step 20 on page 1-17**.
- **All the units** on a table, go to **Step 22 on page 1-18** .

Warning

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

.

19. ____ 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 21.

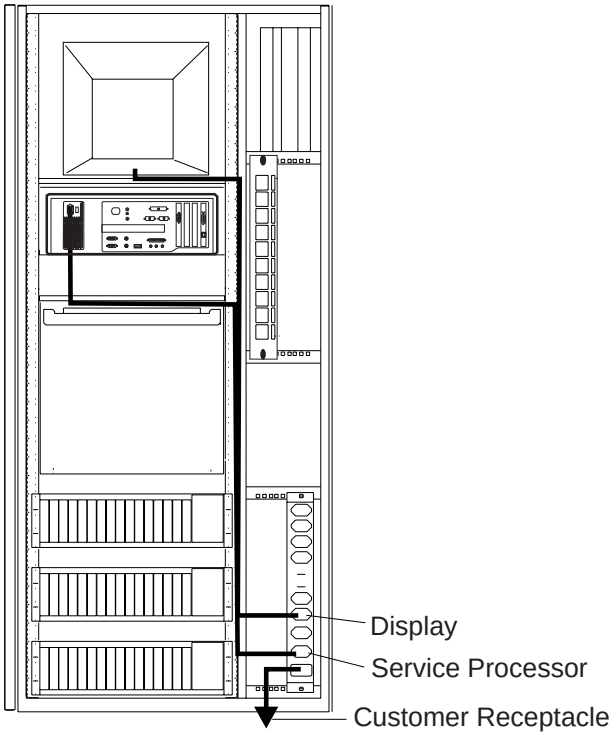


Figure 1-12. Power Cords Connection

20. ____ Connect the display power cable **M** to the ac outlet distribution box (refer to Figure 1-11 on page 1-16). Secure all the cables using tie clamps along the frame.

21. ____ If it is not already plugged, connect the main power cord **P** coming from the ac outlet distribution box to the customer receptacle (refer to Figure 1-13 on page 1-18).

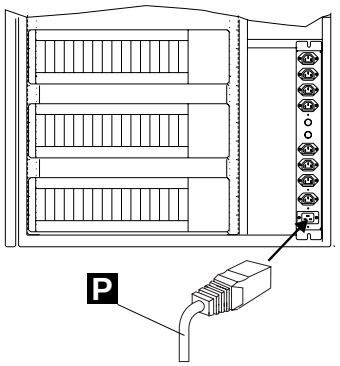


Figure 1-13. Power Cord for Power Strip

22. ____ If the customer ordered a **"backup"** Service Processor, resume step 1 on page 1-10 to step 17 on page 1-15 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.

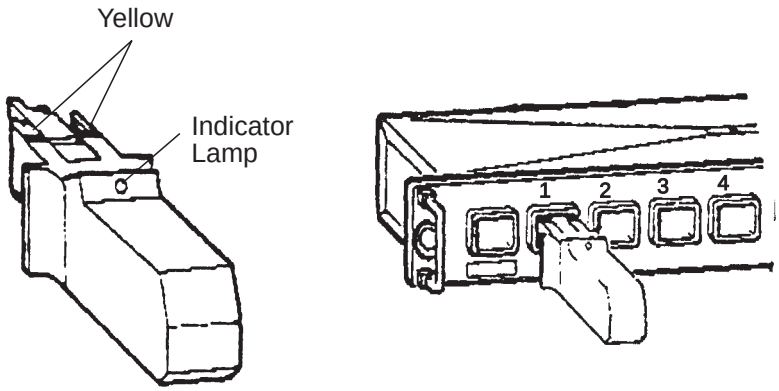


Figure 1-14. Use of the 8228 Setup Aid

   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 four 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 four 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 1-20. Using label **A** (PN 0782966), identify the 8228 as Service Processor Access Unit.

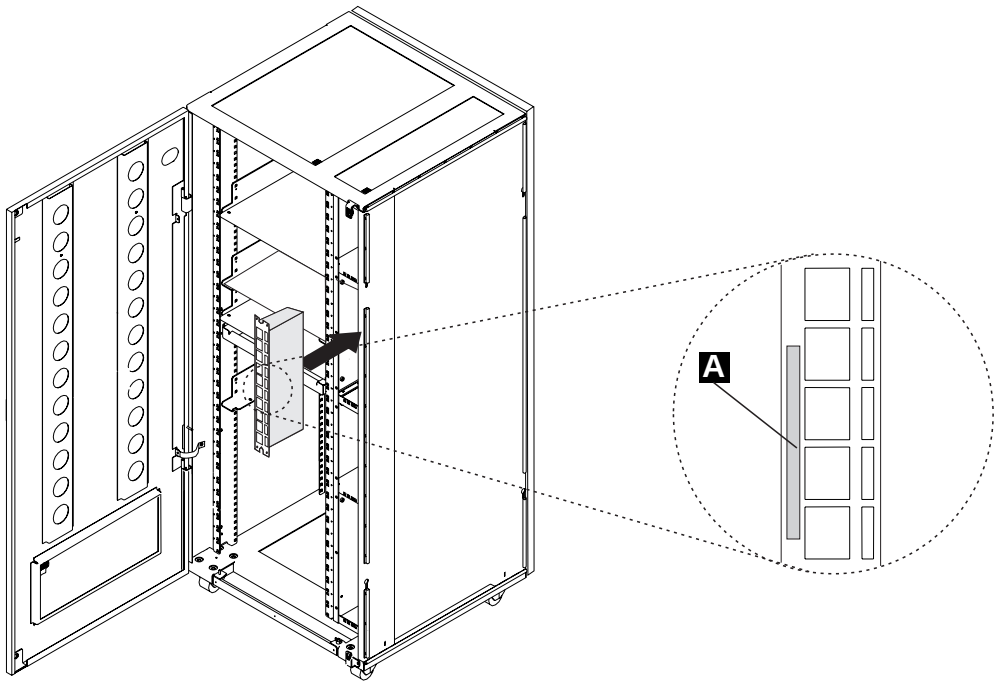


Figure 1-15. Installing the 8228 (Controller Expansion Rear side)

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

   Note: If you have a controller expansion, refer to Figure 1-17 on page 1-21, if not refer to Figure 1-16 on page 1-21.

   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**

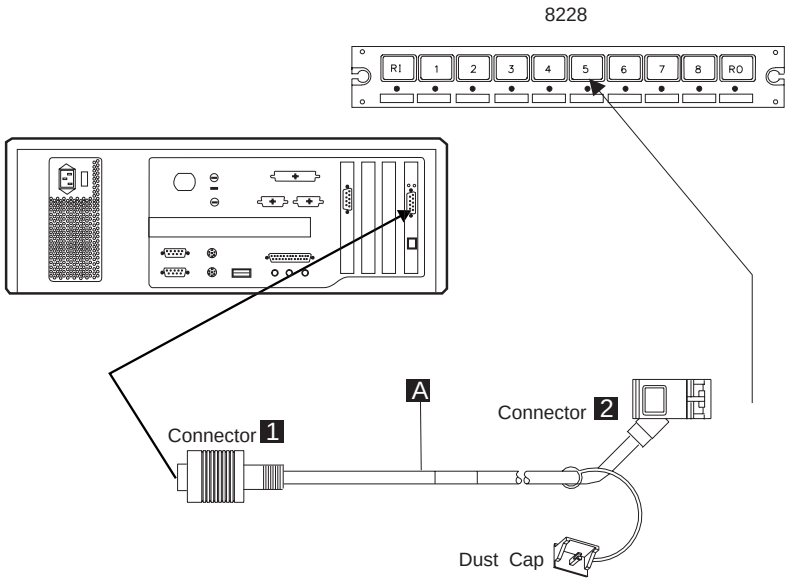


Figure 1-16. Connecting the 8228 to the Service Processor

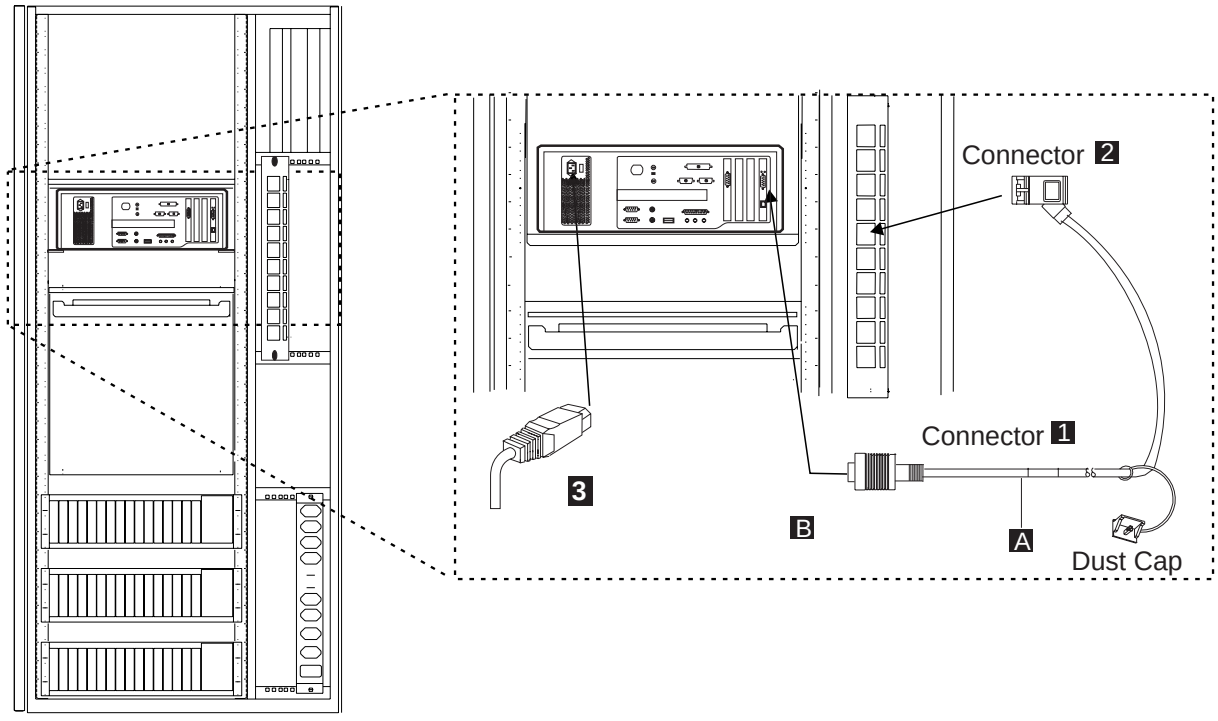


Figure 1-17. Connecting the 8228 to the Service Processor Installed in the Controller Expansion

Go to "Installing and Connecting the RSF Modem to the Service Processor" on page 1-22

Installing and Connecting the RSF Modem to the Service Processor

Refer to Appendix D, “Supported Connections between the Service Processor and a Remote Workstation” on page D-1 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 4 - Installing and Connecting the 7858 to the Service Processor” on page 1-23
- A **7857**, go to “Step 4 - Installing and Connecting the 7857 to the Service Processor” on page 1-28

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

Step 4 - Installing and Connecting the 7858 to the Service Processor

Notes

1. If you are not familiar with the 7858, refer to the *IBM 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.

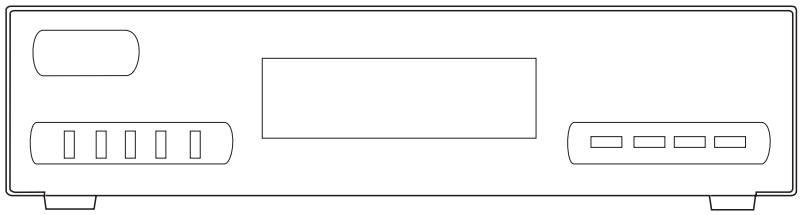


Figure 1-18. 7858 Front Side

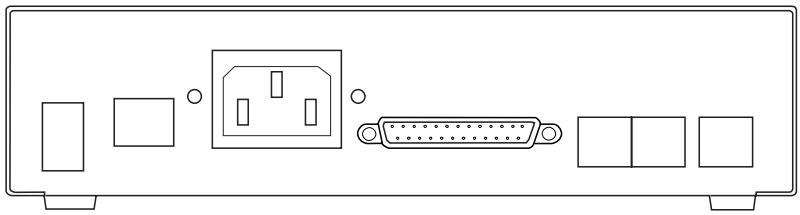


Figure 1-19. 7858 Rear Panel

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

Warning

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

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. Then, 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. ____You are now requested to 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 :

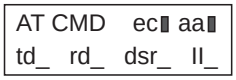


Figure 1-20. 7858 Operator Panel Display

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 one 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 the ENTER key 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 which 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, refer to “Setting the 7858 Connected to the COM1 Connector (ASYN)”

Note: Ten factory Redefined modem configurations are available. You could retrieve the factory configuration which 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 the **Enter** key at the same time. Release the **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, see "Problem Determination" chapter in the *IBM 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 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 displayed the bottom row.
3. ____ Press the ENTER key 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 the ENTER key save the current modem configuration.
6. ____ The defined configuration now active and saved.

Now every time the modem is reset (power on), the last user configuration which 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** .

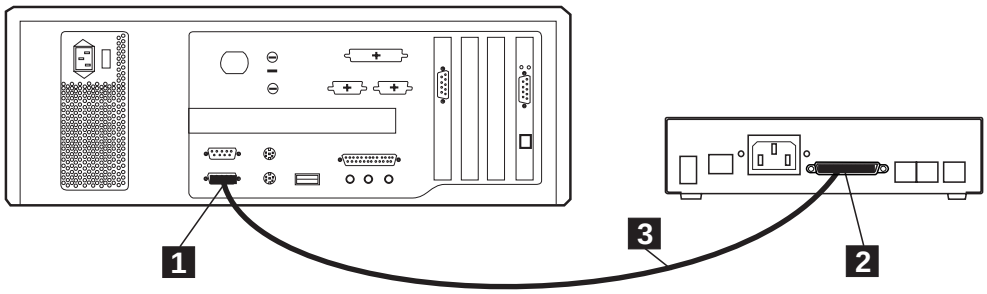


Figure 1-22. Connecting the Service Processor (6563) from COM1 to the 7858

If you received a **controller expansion**, go to **step 3** , otherwise go to “Step 5 - Customizing Your Service Processor” on page 1-34.

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

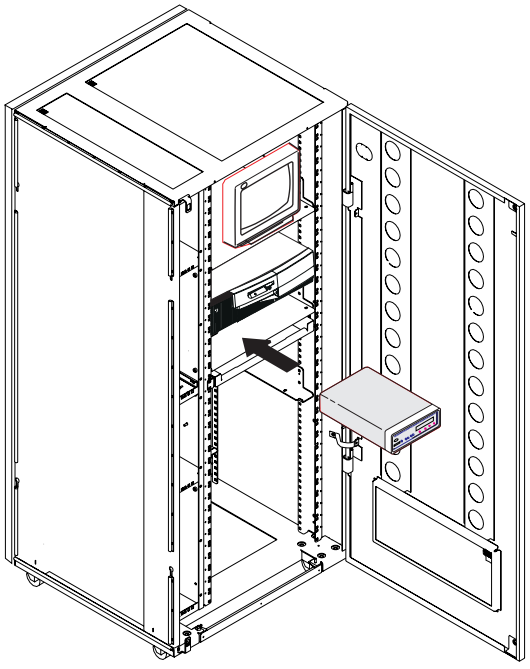


Figure 1-23. Installing the 7858 in the Controller Expansion

Go to “Step 5 - Customizing Your Service Processor” on page 1-34 .

Step 4 - Installing and Connecting the 7857 to the Service Processor

Notes

1. If you are not familiar with the 7857, refer to the *IBM 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

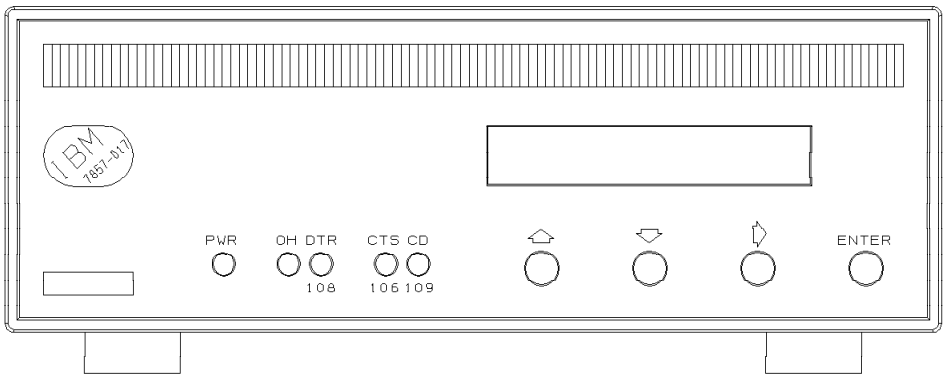


Figure 1-24. 7857 Front Panel

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” on page 1-29).

Telecommunication Cables Part Numbers

Table 1-3. Telecom. cables

Country	PN
Albania	89G2554
Argentina	89G2554
Australia	89G2564
Austria	89G2544
Belgium	89G2545
Bolivia	89G2554
Brazil	89G2554
Bulgaria	89G2554
Canada	89G2562
China	89G2554
Colombia	89G2554
Costarica	89G2554
Croatia	89G2554
Cyprus	89G2577
Czechland	89G2554
Denmark	89G2546
Egypt	89G2554
El Salvador	89G2554
Equador	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
Luxemburg	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
Rumania	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
UK	89G2577
Ukraine	89G2554
Uruguay	89G2554
US	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:

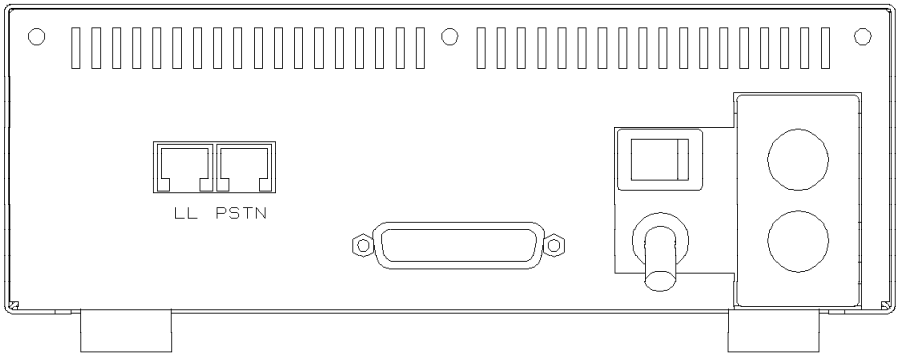


Figure 1-25. 7857 Rear Panel

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.

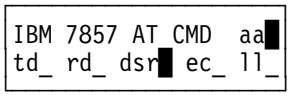
Step 4. ___ Connect the modem power plug to a standard 3 pin *grounded* ac outlet. Then, if this modem is being installed in the United Kingdom, connect the telecommunication cables you have attached to the modem, to the telecommunication lines.

Step 5. ___ You are now requested to observe the modem power on sequence. This is the normal power on sequence:

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



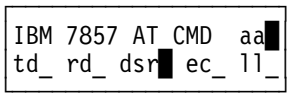
This operational message shows that the modem is set in AT command mode for switched line operation and will auto-answer an incoming call.

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 one 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:



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 the ENTER key 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, see *IBM 7857 Guide to Operation*, GA13-1839, chapter "Problem Determination".

If the 7857 operator panel does not show the following message (see Figure 1-26 on page 1-32), the modem needs to be configured through the operator panel, go to “Setting the 7857 Connected to the COM1 Connector (ASYN)” on page 1-32.

```
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 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 the ENTER key 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 the ENTER key save the current modem configuration.
6. ____ The defined configuration now active and saved.

Now every time the modem is reset (power on), the last user configuration which 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** .

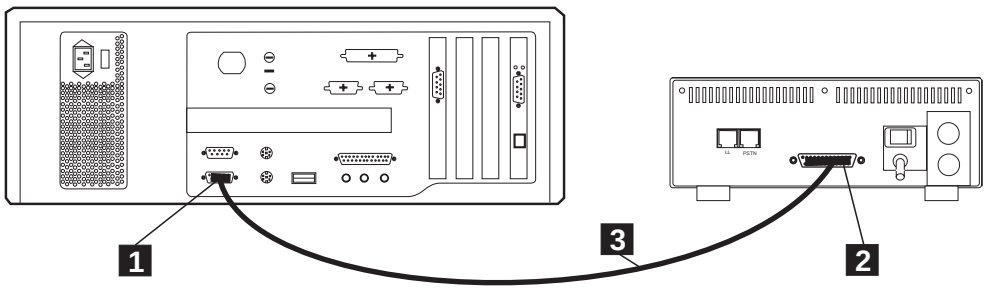


Figure 1-27. Connecting the Service Processor (6563) from COM1 to the 7857

If you received a **controller expansion**, go to **Step 3 on page 1-33** , otherwise go to “Step 5 - Customizing Your Service Processor” on page 1-34.

3. ____ Slide the 7857 in the controller expansion as shown in Figure 1-28.

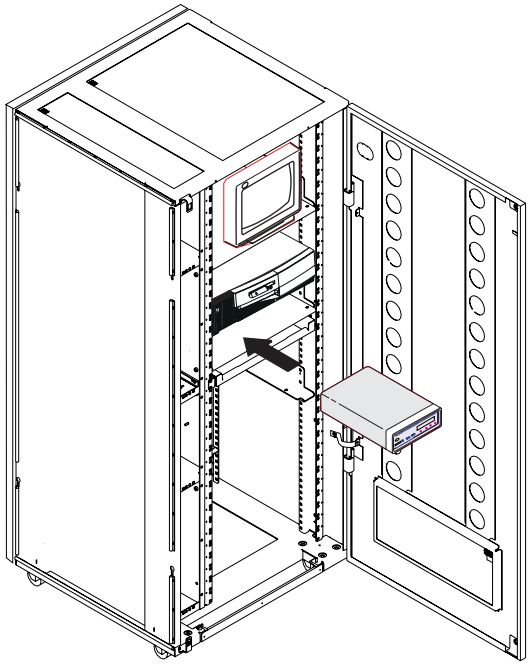


Figure 1-28. Installing the 7857 in the Controller Expansion

Go to “Step 5 - Customizing Your Service Processor” on page 1-34 .

Step 5 - Customizing Your Service Processor

Notes

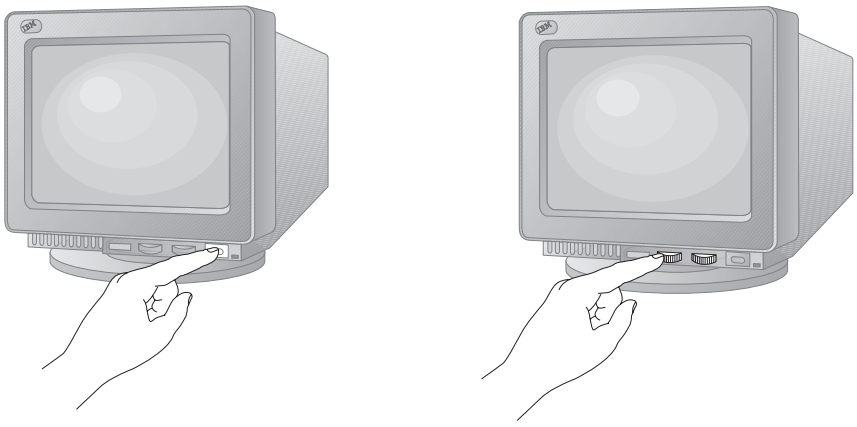
1. For any unexpected message or error concerning the service processor:
   - Go to, “MAP: Entry Point for Problem Isolation” on page 2-1

   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. Insure 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 for:
   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

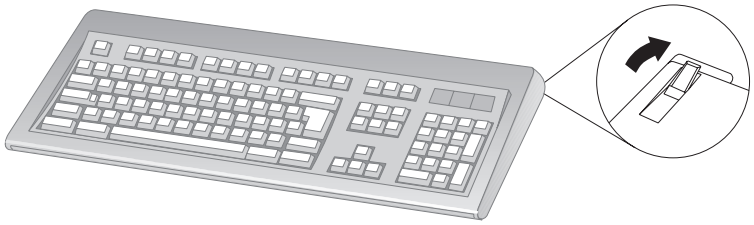
   a. ____ Turn on your display, and adjust the Brightness and Contrast controls to the approximate midpoint.

   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.

   When the test finishes, the screen displays a number that represents the amount of available service processor memory. The service processor beeps once to indicate it is working properly.
4. ____ **Wait** while the message *"MOSS-E is being loaded, please wait"* is displayed.
5. ____ When the following screen appears, enter the **Service Processor Maintenance password** (default is **IBM3745**).
6. ____ Press **"ENTER"** or click on **"OK"**, then go to step 10 on page 1-36 if nothing has been customized on your SP, or go to step 7 on page 1-36 to select the SP customization function.

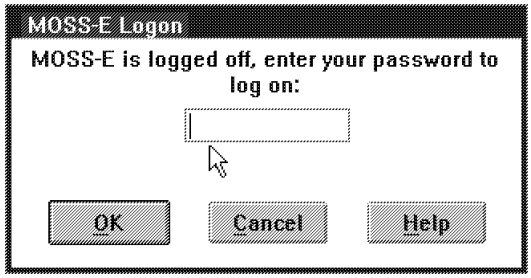


Figure 1-29. MOSS-E View Primary Window

7. ____ On the MOSS-E view primary window, double click on the **Service Processor object icon**.
8. ____ Click on **Configuration Management**
9. ____ Double click on **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 on the corresponding check box to deselect the item(s).
    Two **new 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 screens which support this option. It is mandatory to select 800x600 when an **MAE** is installed.

    Click on **Modem type** drop down list, then select (click on) 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 which match to the modem setting, refer to “Setting the 7858 Connected to the COM1 Connector (ASYN)” on page 1-26 or “Setting the 7857 Connected to the COM1 Connector (ASYN)” on page 1-32
    c. If you want to get more details about the different modems, press help key.

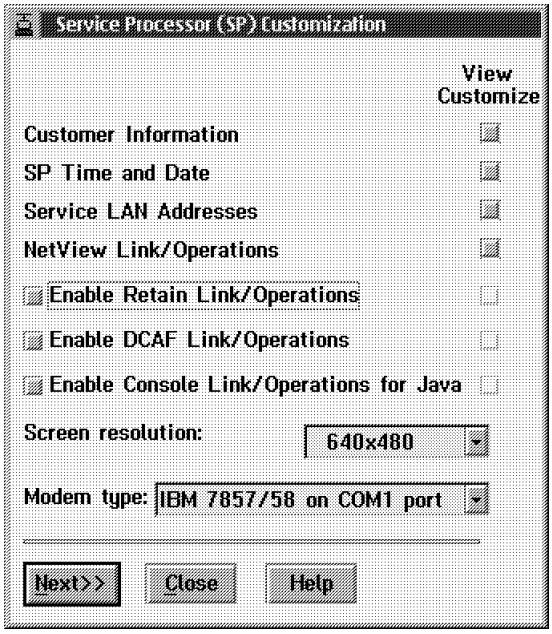


Figure 1-30. Service Processor Customization

11. ____ Click on **Next>>** and go to step 12 on page 1-37.

    Note: The next step will depend on the items list selected in the screen above (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** , click on **Next>>** then go to step 13 (if you selected in step 10 on page 1-36 customize the time and date).

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

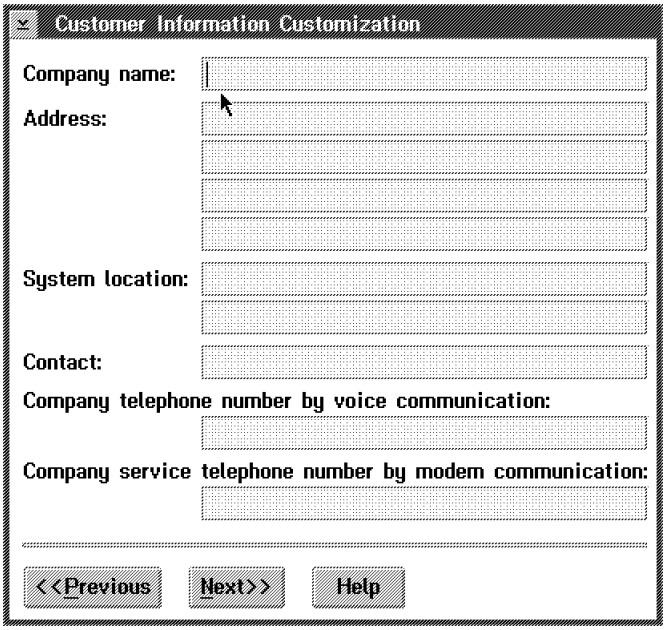


Figure 1-31. Customer Information Customization

13. ____ Modify the time, date, and time-zone offset. Click on **Apply** , click on **Next>>**, then go to step 14 on page 1-38 (if you selected in step 10 on page 1-36 to customize the service LAN addresses).

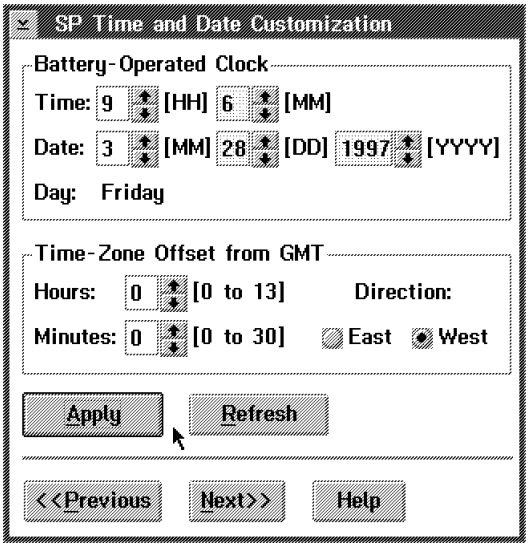


Figure 1-32. SP Time and Date Customization

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

    Note: Use the **F1** key 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** .

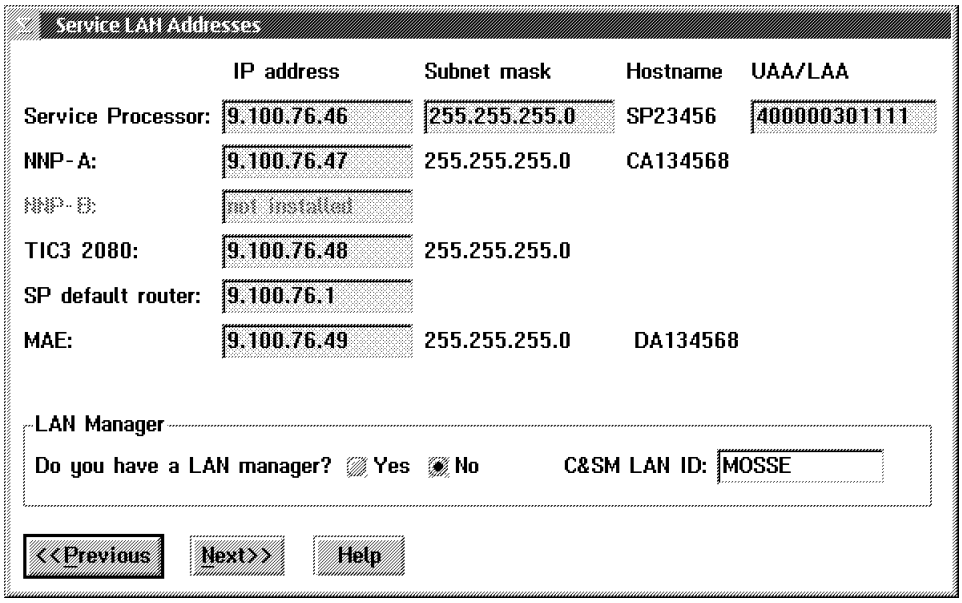


Figure 1-33. Service LAN Addresses

15. ____ Click on **Next>>**, then go to step 16 on page 1-39 (if you selected in step 10 on page 1-36 to customize the NetView™ parameters).

16. ____ Now you are defining the link(s) to **NetView**, two paths can be defined:

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

    b. And 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 via the **TIC2** or **TIC3** adapter.
    - Or, through an **SDLC** link via a 3745 SDLC port.

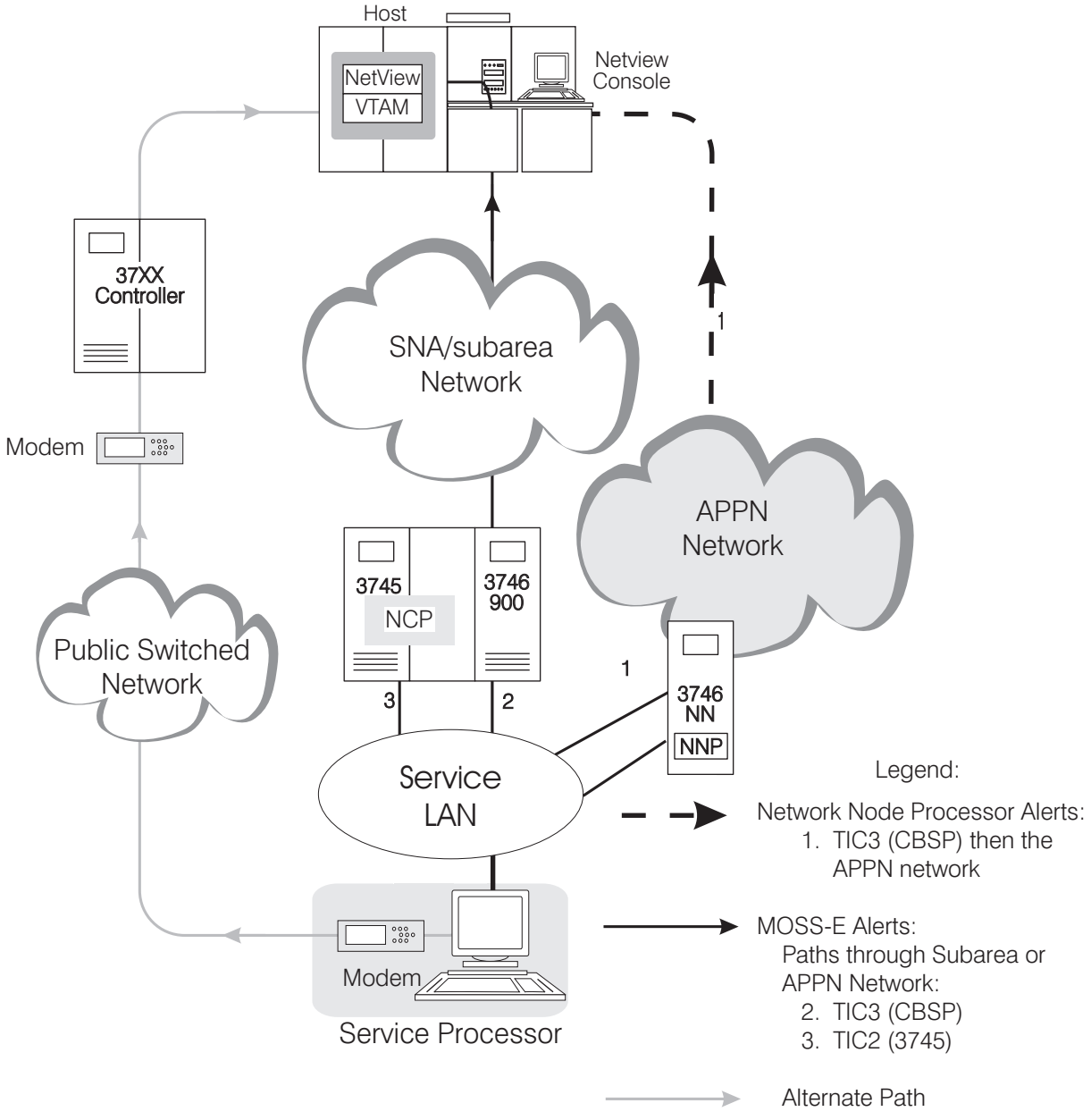


Figure 1-34. NetView Links

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

    a. ____ Generate (or not) the alerts to NetView (refer to 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 one link, 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**
    (Refer to Figure 1-36 on page 1-41 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.**

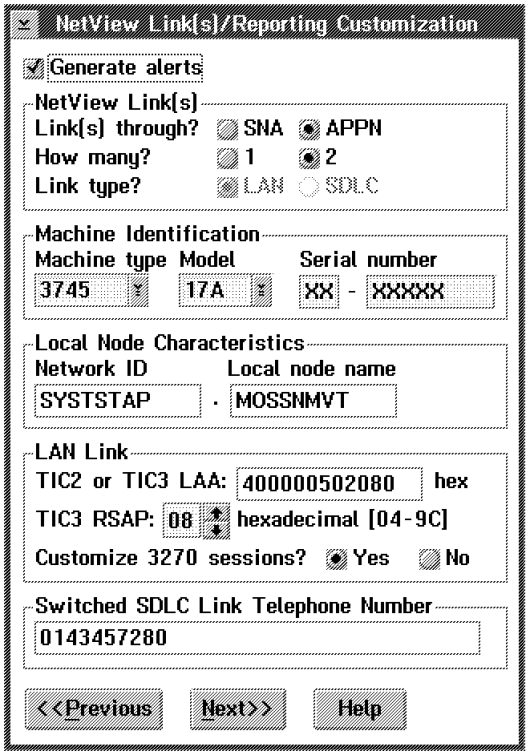


Figure 1-35. NetView Link/Reporting Customization

18. ____ Then click on **Next>>**, then go to step 19 on page 1-43 (if you selected in step 10 on page 1-36 to customize a 3270 session)

    When defining an **SDLC** link to NetView thru an **APPN** network, **CCM parameters** must be set as follows:

    a. DLC Parameters 1/3:

    - Transmit Receive Capability: Full Duplex
    - Interface: V25 B
    - 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 l
    - 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 thru an **SNA network**, for examples of the NCP generation, refer to:

    - Figure 1-38 on page 1-42 for a **LAN link**, the **LAN destination address** must be equal to the **LOCADD** (recorded in NCP gen).
    - Figure 1-37 on page 1-42 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. ____ The **"LU local / NAU address"** according to the value recorded on the parameter worksheet **"NCP Dump Transfer"** (refer to “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"** (refer to “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.

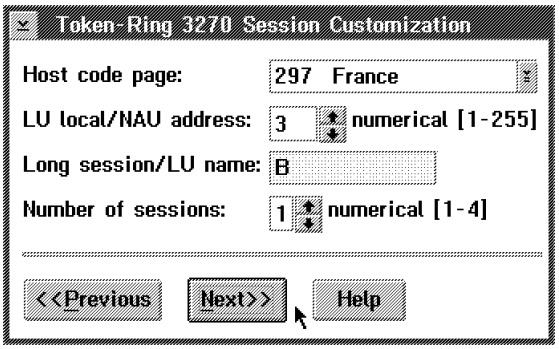


Figure 1-39. Token-Ring 3270 Session Customization

20. ____Then click on **"Next>>"**, then go to step 21 on page 1-44 (if you selected in step 10 on page 1-36 to customize a RETAIN link)

Notes

1. In the 3270 Session Customization screen, you have entered the:
   a. **LU local/NAU address**
   b. **Long session/LU name**

   These parameters must be the same as the values recorded in the switched major definition (refer to Figure 1-40 on page 1-44 for an example of a switched major node definition).
   In this example:
   a. **LU local/NAU address** <===> **03**
   b. **Long session/LU name** <===> **MOSSEEMU**
   c. For the **MOSSEEMU LU**, you must use the logon mode table entry **SNX32702** to allow the file transfer.
2. Use the **LU name** to identify the session.
3. 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 1-40. 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 (refer to the parameter worksheet **"Parameter Definitions for RSF" on page C-5**).
    b. ____ **Enable** or **disable** (set by default) the automatic microcode download option (refer to 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.

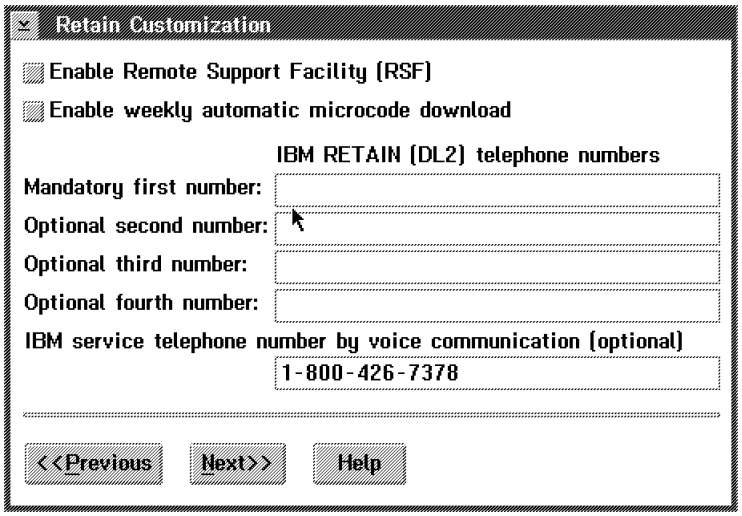


Figure 1-41. Retain Customization

22. ____ Click on **Next>>**, then go to step:
    - 23 on page 1-45 (if you selected in step 10 on page 1-36 to customize a **DCAF** link).
    - 26 on page 1-47 (if you selected in step 10 on page 1-36 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.

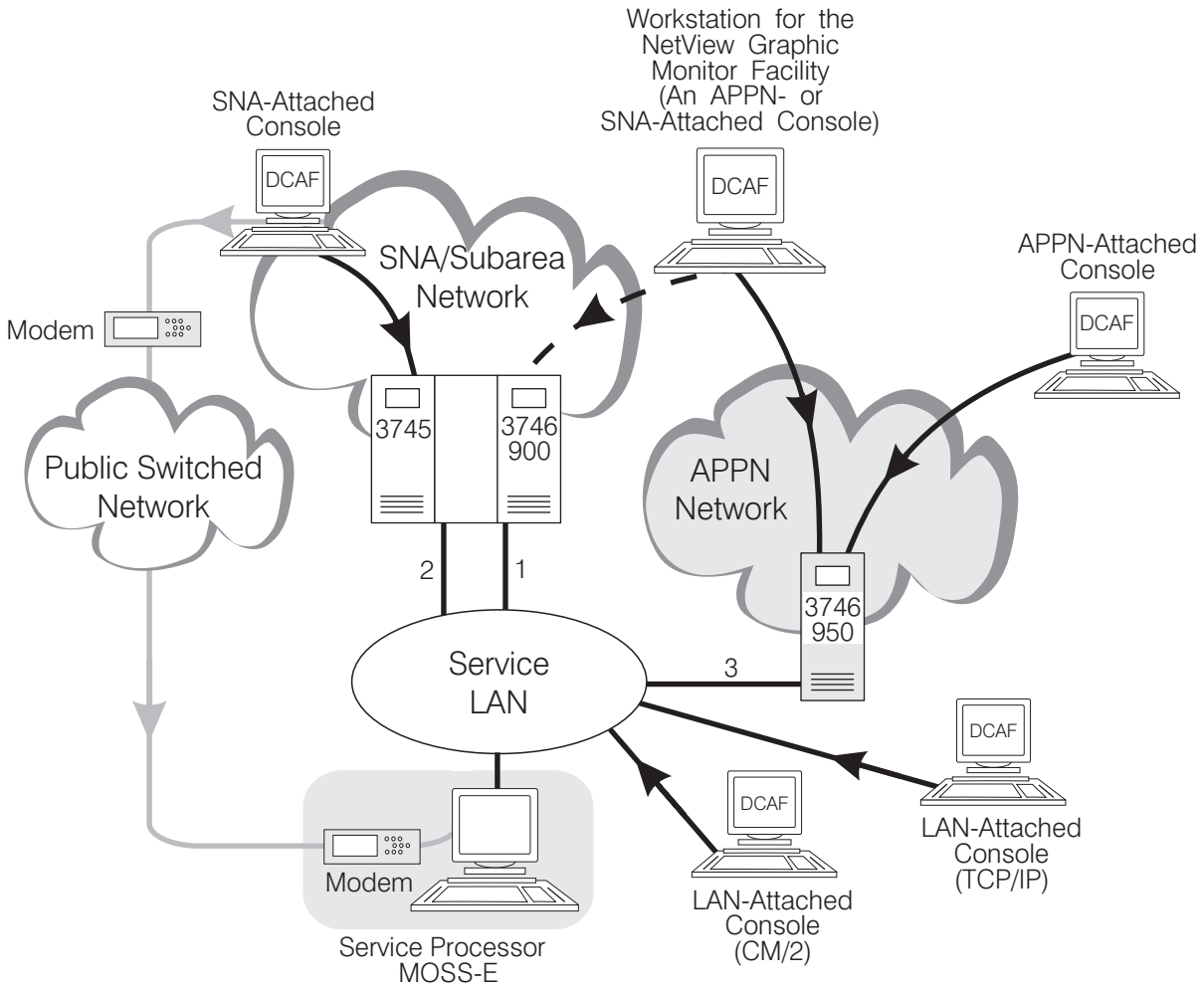


Figure 1-42. DCAF Links

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, refer to 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**, refer to Figure 1-42 on page 1-45 and according to the NetView path definition, set this address as follows:

    - If the alert **path to NetView** is **not defined** or thru **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 thru **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 1-40)
      - The DCAF APPN can be set for path: 3 with the same RSAP define for the NetView link (see Figure 1-35 on page 1-40).

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

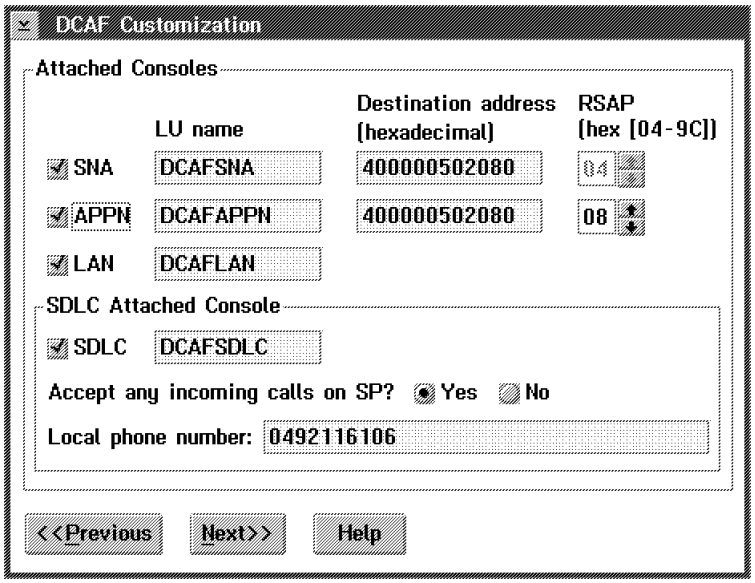


Figure 1-43. DCAF Customization

26. On the **JAVA Customization** screen, enter/select the following options:

    a. Click on **NO** to reject any incoming call.

    b. **Local Phone number** which is the phone number of the modem connected to the SP.

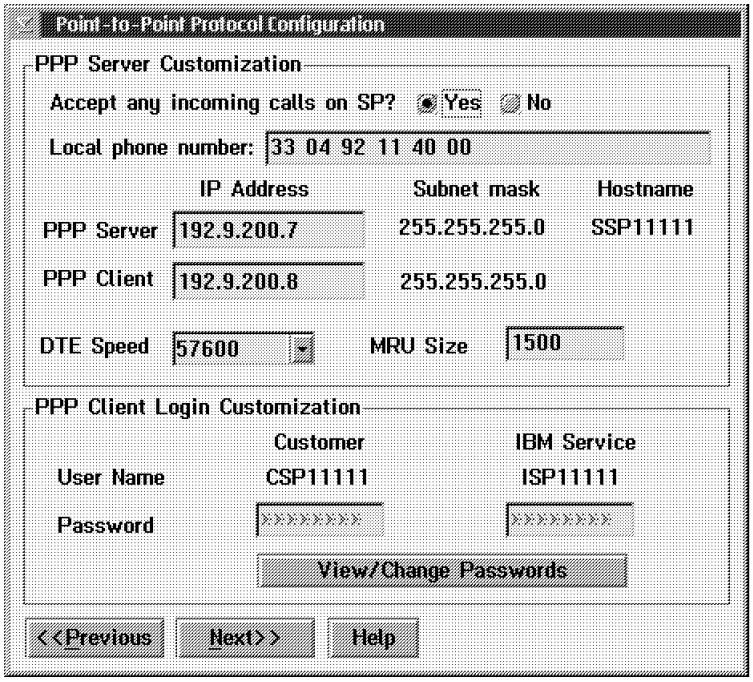
    c. The **IP addresses** of:

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

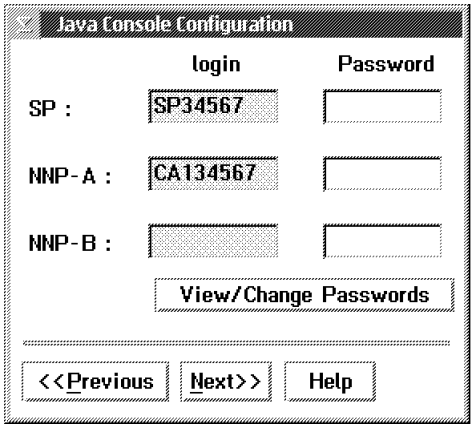
        Note: These IP addresses must be in the same subnet than the IP addresses of the units connected to the service LAN, refer to the worksheet “Parameter Definitions for Point to Point Link Definition” on page C-5.

    d. The **DTE speed** which must set according to the type of the modem installed (use the helps for more details).

    Then, click on **Next>>** button.



27. ____On **JAVA Console Configuration** screen, do not modify the passwords this the responsibility of your customer. Click on **Next>>** button.



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

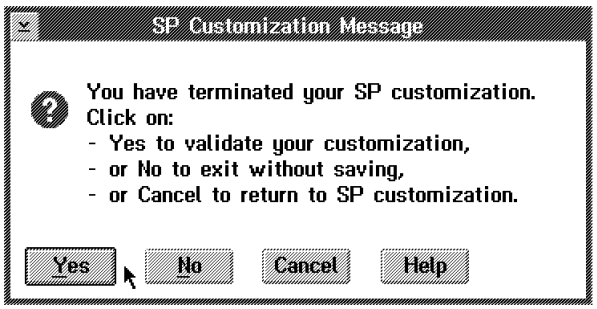


Figure 1-44. SP Customization Message

29. ____ The customization is in progress.

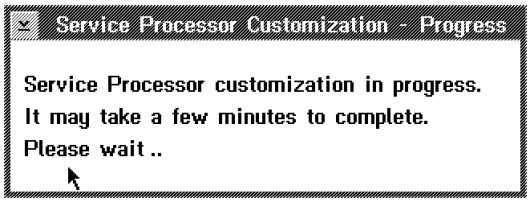


Figure 1-45. SP Customization In Progress

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

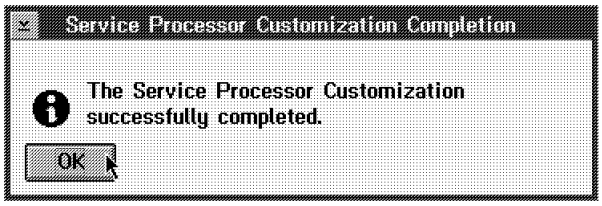


Figure 1-46. SP Customization Completed

31. ____ The service processor is going to reboot, click on **OK**.

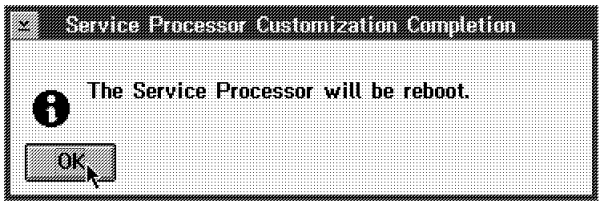


Figure 1-47. SP Reboot

Complete Your Installation

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 *IBM 7857 Guide to Operation*, GA13-1839 • For the IBM 7858, refer to the *IBM 7858 Professional Modem Guide to Operation*, GA13-1981 • For the Hayes™ modem, refer to the corresponding manual. • For other modem, 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.

(Step **003** continues)

003 (continued)

Is the suspected unit powered ON?

Yes **No**

004

Go to Step 006.

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?

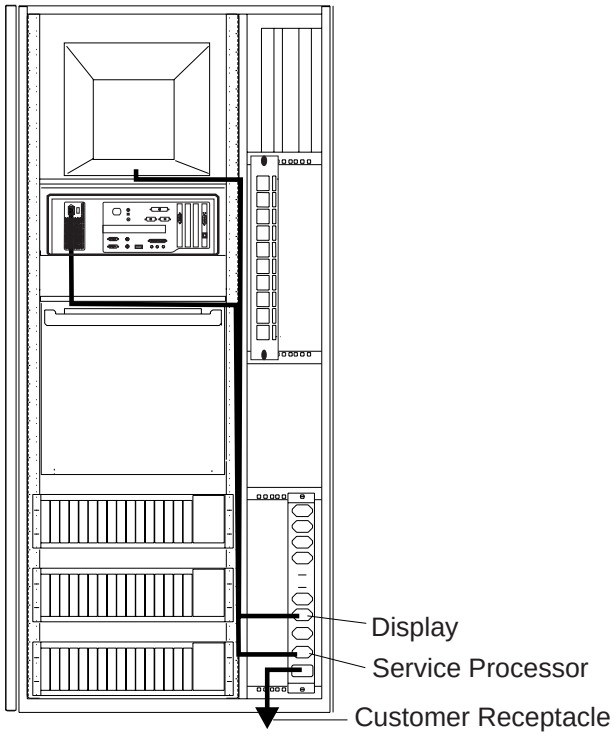


Figure 2-1. ac Outlet Distribution Box Connections in Controller Rack

Yes **No**

007

Go to Step 011 on page 2-3

008

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

(Step **008** continues)

008 (continued)

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

Is the problem solved?

Yes **No**

009

Continue with Step 016.

010

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

011

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

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

Is the problem solved?

Yes **No**

012

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

Is the device work OK?

Yes **No**

013

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

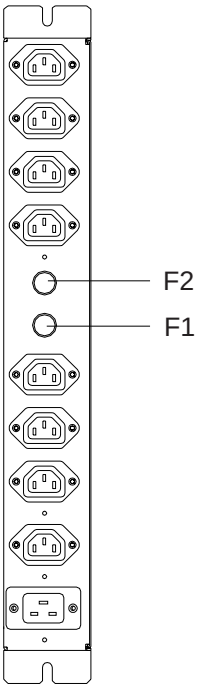
014

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 than the suspected unit.

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

Yes **No**

017

Go to Step 026 on page 2-5.

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

Is the fuse blown again?

Yes **No**

023

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

024

Suspect a power problem in a unit powered through the ac outlet distribution box.

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

025

Suspect the ac wall socket.

026

Check the corresponding fuse.

Is the fuse OK?

Yes **No**

027

- Switch to 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 3-2. Then if you have to exchange a FRU • Go to Chapter 5, "Service Processor FRU / Display Exchange" on page 5-1.
Display	Exchange it, go to Chapter 5, "Service Processor FRU / 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 *IBM 7857 Guide to Operation*, GA13-1839 • For the IBM 7858, refer to the *IBM 7858 Professional Modem Guide to Operation*, GA13-1981 • For the Hayes modem, refer to the corresponding manual. • For other modem, 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.

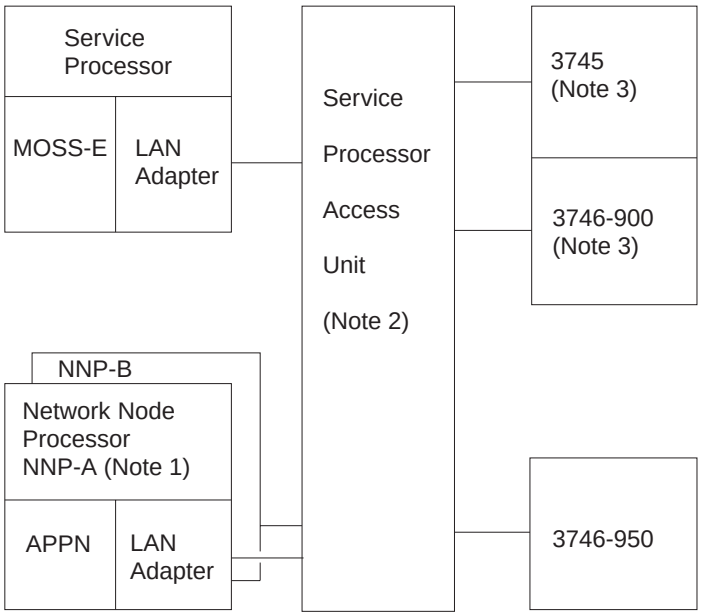


Figure 2-2. LAN attached to the Service Processor

Notes:

1. The network node processor is an optional feature which 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 **screen resolution change** perform the following:

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 screen, press simultaneously the **Alt** and **F1** keys.
3. Press **F3** key to recover the VGA mode.

If that does not solve your problem go to “MAP: Service Processor Troubleshooting” on page 3-2.

006

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

Yes **No**

007

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

Yes **No**

008

Go to “MAP: Service Processor Troubleshooting” on page 3-2.

009

Call support for assistance.

010

Is the keyboard and/or the mouse 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 an IBM 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 FRU / 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 FRU / Display Exchange" on page 5-1.

018

Replace the service processor mouse.

019

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

Did you find the problem?

Yes **No**

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

Example:

101 displayed means 00010100

1701 displayed means 00170100

16680 displayed means 01668000

Notes:

1. If you have both an error message and an incorrect audio response, diagnose the error message first.
2. If you cannot run the diagnostic tests, or you get a diagnostic error code when running a test, but did receive a POST error message, diagnose the POST error message first.
3. If you did not receive any error message, look for a description of your error symptoms in the first part of this index.
4. Check all power supply voltages before you replace the system board. (See "Power-Supply" on page 3-21)
5. Check the hard disk drive jumper settings before you replace a hard disk drive. (See "Hard Disk Drive Jumper Settings" on page 3-31).

Important

- Some errors are indicated with a series of beep codes. See "Beep Symptoms" on page 3-16 for an explanation of the beep codes.
- The service processor based on 6563 computer is default to come up quiet (No beep and no memory count and checkpoint code display) when no errors are detected by POST. To enable Beep and memory count and checkpoint code display when a successful POST occurs:
  - Enable **Power on Status** in Setup. See "Service Processor Configuration / Setup Utility" on page H-9.
- 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 3-23 before replacing the system board.

001

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

(Step **001** continues)

001 (continued)

- Power-on the system.

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

DID YOU RECEIVE A POST ERROR CODE?

Yes **No**

002

Go to Step 006 on page 3-14

003

Check your FIRST POST ERROR with the following list.

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

Symptom / Error	FRU / Action
162 Configuration mismatch	1. **Run Setup and verify Configuration** 2. 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-9).** 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 3-34** 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	1. **C2 Security**
175	1. **Run Configuration (See “Service Processor Configuration / Setup Utility” on page H-9).** 2. System Board
176	1. **Covers were removed from the computer**
177 Corrupted Administrator Password.	1. **System Board**
178	1. **System Board**
183	1. **Enter the administrator password**
184 Password removed due to check-sum error.	1. **Enter new password**
185 Corrupted boot sequence.	1. **Set configuration and reinstall the boot sequence**

Symptom / Error	FRU / Action
186	1. **System Board**
187	1. **Clear Administration password** 2. System Board
189	1. **More than three password attempts were made to access the computer**
190 Chassis intrusion detector was cleared. This is information only, no action required. If this code does not clear:	1. **System Board.**
1XX Not listed above.	1. **System Board**
201, 20X Memory data error.	1. **Run Enhanced Diagnostic Memory Test** 2. Memory Module 3. System Board
225	1. **Unsupported Memory**
229 External cache test error.	1. **L2 Cache Memory** 2. System Board
262 POST detected a base or extended memory type error.	1. **Run Setup. Check System Summary menu for memory type change. (See "Service Processor Configuration / Setup Utility" on page H-9.)** 2. Run the extended Memory Diagnostic tests.
301	1. **Keyboard** 2. Keyboard Cable 3. System Board
303 With an 8603 error.	1. **Mouse** 2. Keyboard 3. Keyboard Cable 4. System Board
303 With no 8603 error.	1. **Keyboard** 2. Keyboard Cable 3. System Board
3XX Not listed above	1. **Keyboard** 2. Keyboard Cable 3. System Board
5XX	1. **Video Adapter** (if installed) 2. System Board
601	1. **Diskette Drive A** 2. Diskette Drive Cable 3. System Board
602	1. **Bad Diskette ?** 2. Verify Diskette and retry.
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

Symptom / Error	FRU / Action
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**
6XX Not listed above.	1. **Diskette Drive** 2. System Board 3. External Drive Adapter 4. Diskette Drive Cable 5. Power Supply
762 Math coprocessor configuration error.	1. **Run Setup** 2. Processor 3. System Board
7XX Not listed above.	1. **Processor** 2. System Board
962 Parallel port configuration error.	1. **Run Configuration** 2. Parallel Adapter (if installed) 3. System Board
9XX	1. **Printer** 2. System Board
1047	1. **16-Bit AT Fast SCSI Adapter**
107X Check SCSI terminator installation.	1. **Check SCSI terminator installation**. 2. SCSI Cable 3. SCSI Terminator 4. SCSI Device 5. SCSI Adapter
1101 Serial connector error, possible system board failure.	1. **Run 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.	1. **Run Enhanced Diagnostics**
1103 Port fails register check.	1. **Run Enhanced Diagnostics** 2. System Board
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.	1. **Run Enhanced Diagnostics**
1117 Failed baud rate test.	1. **Run Enhanced Diagnostics**

Symptom / Error	FRU / Action
1162 Serial port configuration error.	1. **Run Configuration** 2. Serial Adapter (if installed) 3. System Board
11XX Not listed above.	1. **System Board**
1201	1. **System Board** 2. Any Serial Device
1202, **1206**, **1208**, **1209**, **12XX**	1. **Dual Async Adapter/A** 2. System Board 3. Any Serial Device
1207	1. **Communications Cable** 2. Dual Async Adapter/A
13XX	1. **Game Adapter**
1402 Printer not ready.	Information only
1403 No-paper error, or interrupt failure.	Information only
1404 System board timeout failure.	1. **Run Enhanced Diagnostics**
1405 Parallel adapter error.	1. **Run Enhanced Diagnostics**
1406 Presence test error.	1. **Run Enhanced Diagnostics**
14XX Not listed above. Check printer before replacing system board.	1. **See “Printer” on page 3-20** 2. System Board
15XX	1. **SDLC Adapter**
1692 Boot sequence error.	1. **Run FDISK to ensure at least one active partition is set active**
16XX	1. **36/38 Workstation Adapter**
1762 Hard disk drive configuration error.	1. **Run Configuration/Setup Utility (See “Service Processor Configuration / Setup Utility” on page H-9.)**
1780 (Disk Drive 0) **1781** (Disk Drive 1) **1782** (Disk Drive 2) **1783** (Disk Drive 3)	1. **See “Power-Supply” on page 3-21** 2. Hard Disk Drive 3. System Board 4. Hard Disk Cable 5. Power Supply
180X, 185X PCI configuration or resource error.	1. **Run Setup and verify PCI/ISA configuration settings** 2. If necessary, set ISA adapters to "Not available" to allow PCI adapters to properly configure. 3. Remove any suspect ISA adapters. 4. Rerun diagnostics. 5. PCI Adapter

Symptom / Error	FRU / Action
1962 Boot sequence error.	1. **Possible hard disk drive problem, see "Hard Disk Drive Boot Error" on page 3-25**
209X	1. **Diskette Drive** 2. Diskette Cable 3. 16-bit AT Fast SCSI Adapter
20XX Not listed above	1. **BSC Adapter**
21XX	1. **SCSI Device** 2. 16-bit AT Fast SCSI Adapter 3. Alternate BSC Adapter
2401, 2402 If screen colors change.	1. **Display**
2401, 2402 If screen colors are OK.	1. **System Board** 2. Display
2409	**Display**
2410	1. **System Board** 2. Display
2462 Video memory configuration error.	1. **Check cable and connections.** 2. Run Setup and verify video configuration settings. 3. Video Memory Modules 4. Video Adapter (if installed) 5. System Board
3015, 3040 Check for missing wrap or terminator plug on the adapter.	1. **Network Attached?** 2. LF Translator 3. Cable Problem 4. PC Network Adapter
30XX	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
31XX	1. **Alternate PC Network Adapter** 2. LF Translator 3. Cable Problem?
36XX	1. **GPIB Adapter**
38XX	1. **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	1. **Multiport Interface Cable**
46XX Not listed above.	1. **Multiport/2 Adapter** 2. Multiport/2 Interface Board 3. Memory Module

Symptom / Error	FRU / Action
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
62XX	1. **1st Store Loop Adapter** 2. Adapter Cable
63XX	1. **2nd Store Loop Adapter** 2. Adapter Cable
64XX	1. **Network Adapter**
71XX	1. **Voice Adapter**
74XX	1. **Video Adapter** (if installed)
76XX	1. **Page Printer Adapter**
78XX	1. **High Speed Adapter**
79XX	1. **3117 Adapter**
80XX	1. **PCMCIA Adapter**
84XX	1. **Speech Adapter** 2. Speech Control Assembly
8601, **8602**	1. **Pointing Device** (Mouse) 2. System Board
8603, **8604**	1. **System Board** 2. Pointing Device (Mouse)
86XX Not listed above	1. **Mouse** 2. System Board
89XX	1. **PC Music Adapter** 2. MIDI Adapter Unit
91XX	1. **Optical Drive** 2. Adapter
96XX	1. **SCSI Adapter** 2. Any SCSI Device 3. System Board
10101, **10102**, **10104** **10105**, **10106**, **10107** **10108**, **10109**, **10111** **10112**, **10113**, **10114** **10115**, **10116**	1. **Have customer verify correct operating system device drivers are installed and operational** 2. Modem
10103, **10110**, **101171**	1. **System Board** 2. Data/Fax Modem
10117 Not listed above.	1. **Check system speaker** 2. Check PSTN cable 3. External DAA (if installed) 4. Modem
10118	1. **Run Diagnostics and verify the correct operation of the modem slot** 2. Modem

Symptom / Error	FRU / Action
10119	1. **Diagnostics detected a non-IBM modem** 2. Modem
10120	1. **Check PSTN Cable** 2. External DAA (if installed) 3. Modem
10132, **10133**, **10134** **10135**, **10136**, **10137** **10138**, **10139**, **10140** **10141**, **10142**, **10143** **10144**, **10145**, **10146** **10147**, **10148**, **10149** **10150**, **10151**, **10152**	1. **Modem**
10153	1. **Data/Fax Modem** 2. System Board
101XX Not listed above.	1. **Modem Adapter/A** 2. Data/Fax Modem 3. System Board
10450, **10451**, **10490** **10491**, **10492**, **10499** Read/write error.	1. **Run Enhanced Diagnostics** 2. Hard Disk Drive 3. System Board
10452 Seek test error.	1. **Run Enhanced Diagnostics**
10453 Wrong drive type?	Information only
10454 Sector buffer test error.	1. **Run Enhanced Diagnostics**
10455, **10456** Controller error.	1. **Run Enhanced Diagnostics**
10459 Drive diagnostic command error.	Information only
10461 Drive format error	1. **Run Enhanced Diagnostics**
10462 Controller seek error.	1. **Run Enhanced Diagnostics**
10464 Hard Drive read error.	1. **Run Enhanced Diagnostics**
10467 Drive non-fatal seek error.	1. **Run Enhanced Diagnostics**
10468 Drive fatal seek error.	1. **Run Enhanced Diagnostics**
10469 Drive soft error count exceeded.	1. **Run Enhanced Diagnostics**
10470, **10471**, **10472** Controller wrap error.	1. **Run Enhanced Diagnostics**
10473 Corrupt data. Low-level format might be required.	Information only

Symptom / Error	FRU / Action
10480	1. **Hard Disk Drive** (ESDI) 2. Drive Cable 3. System Board
10481 ESDI drive D seek error.	1. **Run Enhanced Diagnostics**
10482 Drive select acknowledgement bad.	1. **Run Enhanced Diagnostics**
106X1	1. **Check Configuration** 2. Ethernet Adapter
10635	1. **Power-off computer, wait ten seconds, then power-on the computer** 2. Ethernet Adapter
10651, 10660	1. **Check Cables** 2. Ethernet Adapter
106XX Not listed above.	1. **Ethernet Adapter**
107XX	1. **5.25-inch External Diskette Drive** 2. 5.25-inch Diskette Drive Adapter/A
109XX Check the adapter cables.	1. **ActionMedia Adapter/A** 2. System Board
112XX This adapter does not have cache.	1. **SCSI Adapter** 2. Any SCSI Device 3. System Board
119XX	1. **3119 Adapter**
121XX	1. **Modem Adapter** 2. Any Serial Device 3. System Board
136XX	1. **ISDN Primary Rate Adapter** 2. System Board
137XX	1. **System Board**
141XX	1. **Realtime Interface Co-Processor Portmaster Adapter/A**
143XX	1. **Japanese Display Adapter** 2. System Board
14710, **14711**	1. **System Board Video Adapter** 2. Adapter Video Memory
148XX	1. **Video Adapter**
14901, **14902** **1491X**, **14922**	1. **Video Adapter** (if installed) 2. System Board 3. Display (any type)
14932	1. **External Display** 2. Video Adapter
161XX	1. **FaxConcentrator Adapter**
164XX	1. **120MB Internal Tape Drive** 2. Diskette Cable 3. System Board
16500	1. **6157 Tape Attachment Adapter**

Symptom / Error	FRU / Action
16520, **16540**	1. **6157 Streaming Tape Drive** 2. 6157 Tape Attachment Adapter
166XX, 167XX	1. **Token Ring Adapter** 2. System Board
18001 to **18029**	1. **Wizard Adapter** 2. Wizard Adapter Memory
18031 to **18039**	1. **Wizard Adapter Cable**
185XXXX	1. **DBCS Japanese Display Adapter/A** 2. System Board
20001 to **20003**	1. **Image Adapter/A** **Image-I Adapter/A** 2. Memory Module DRAM, VRAM
20004	1. **Memory Module DRAM, VRAM** 2. Image Adapter/A Image-I Adapter/A
20005 to **20010**	1. **Image Adapter/A** **Image-I Adapter/A** 2. Memory Module DRAM, VRAM
200XX Not listed above.	1. **Image Adapter/A** **Image-I Adapter/A** 2. Memory Module DRAM, VRAM 3. System Board
20101 to **20103**	1. **Printer/Scanner Option** 2. Image Adapter/A 3. Memory Module DRAM, VRAM
20104	1. **Memory Module DRAM, VRAM** 2. Printer/Scanner Option 3. Image Adapter/A
20105 to **20110**	1. **Printer/Scanner Option** 2. Image Adapter/A 3. Memory Module DRAM, VRAM
Image Adapter/A Memory Test failure indicated by graphic of adapter.	1. **Replace memory module (shown in graphic).**
206XX	1. **SCSI-2 Adapter** 2. Any SCSI Device 3. System Board
208XX Verify there are no duplicate SCSI ID settings on the same bus.	1. **Any SCSI Device**
210XXXX Internal bus, size unknown. **210XX**X**1** External bus, size unknown.	1. **SCSI Hard Disk Drive** 2. SCSI Adapter or System Board 3. SCSI Cable 4. SCSI ID Switch (on some models)
212XX	1. **SCSI Printer** 2. Printer Cable
213XX	1. **SCSI Processor**
214XX	1. **WORM Drive**

Symptom / Error	FRU / Action
215XXXC **215XX**XD **215XX**XE **215XX**XU If an external device and power-on LED is off, check external voltages.	1. **CD-ROM Drive I** **CD-ROM Drive II** **Enhanced CD-ROM Drive II** **Any CD-ROM Drive** 2. SCSI Cable 3. SCSI Adapter or System Board
216XX	1. **Scanner**
217XX If an external device and power-on LED is off, check external voltages.	1. **Rewritable Optical Drive** 2. SCSI Adapter or System Board 3. SCSI Cable
218XX Check for multi-CD tray, or juke box.	1. **Changer**
219XX	1. **SCSI Communications Device**
24201Y0, **24210**Y0 Be sure wrap plug is attached.	1. **ISDN/2 Adapter** 2. ISDN/2 Wrap Plug 3. ISDN/2 Communications Cable
273XX	1. **1M bps Micro Channel® Infrared LAN Adapter**
27501, **27503** **27506**, **27507**	1. **ServerGuard Adapter** 2. System Board
27502, **27504**, **27510** **27511**, **27533**, **27534** **27536**, **27537**	1. **ServerGuard Adapter**
27509	1. **Remove redundant adapters, run Auto Configuration program, then retest**
27512	1. **WMSELF.DGS diagnostics file missing** 2. WMSELF.DGS diagnostics file incorrect.
27535	1. **3V Lithium Backup Battery** 2. ServerGuard Adapter
27554	1. **Internal Temperature out of range** 2. ServerGuard Adapter
27555, **27556**	1. **ServerGuard Adapter** 2. Power Supply
27557	1. **7.2V NiCad Main Battery Pack** 2. ServerGuard Adapter
27558, **27559** **27560**, **27561**	1. **PCMCIA Type II Modem** 2. ServerGuard Adapter
27562	1. **External Power Control not connected** 2. External Power Control 3. ServerGuard Adapter
27563, **27564**	1. **External Power Control** 2. ServerGuard Adapter
275XX	1. **Update Diagnostic Software**

Symptom / Error	FRU / Action
27801 to **27879**	1. **Personal Dictation System Adapter** 2. System Board
27880 to **27889**	1. **External FRU** (Speaker, Microphone)
I999030X Hard disk reset failure.	1. **Possible hard disk drive problem** (See "Hard Disk Drive Boot Error" on page 3-25).

DID YOU FIND YOUR POST ERROR CODE IN THE LIST?

Yes **No**

004

Error Range Is Not Listed

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

005

- **Action:**
  - **Change the FRU suspected**, go to Chapter 5, "Service Processor FRU / 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/Action
Changing colors.	1. **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 3-21.	1. Power Switch 2. System Board
Computer will **not** RPL from server	1. **Ensure Network is in startup sequence as first device or first device after diskette.** 2. Ensure Network adapter is enabled for RPL. 3. Network adapter (advise network administrator of a new MAC address)

Message/Symptom	FRU/Action
Computer will **not** Wake On LAN	1. **Check power supply and signal cable connections to network adapter.** 2. Ensure Wake On LAN feature is enabled in Setup/Configuration. See "Service Processor Configuration / Setup Utility" on page H-9. 3. Ensure Network network administrator is using correct MAC address. 4. Ensure no interrupt or I/O address conflicts. 5. Network adapter (Advise network administrator of new MAC address).
Dead computer. See "Power-Supply" on page 3-21	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 3.5-inch diskette drive.	1. **Diskette Drive** 2. System Board 3. Diskette Drive Cable 4. Network Adapter
Intensity or color varies from left to right of characters and color bars.	1. **Display** 2. System Board
No power, or fan not running.	1. **See "Power-Supply" on page 3-21**
Nonsystem disk or disk error-type message with a known-good diagnostic diskette.	1. **Diskette Drive** 2. System Board 3. Diskette Drive Cable
Other display symptoms not listed above (including blank or illegible display).	1. **See "Display" on page 3-19** 2. System Board 3. Display
Power-on indicator or hard disk drive in-use light not on, but computer works correctly.	1. **Power Supply** 2. System Board 3. LED Cables
Printer problems.	1. **See "Printer" on page 3-20**
Program loads from the hard disk with a known-good diagnostics diskette in the first 3.5-inch diskette drive.	1. **Check the Configuration/Setup Utility** 2. Diskette Drive 3. Diskette Drive Cable 4. System Board 5. Power Supply

Message/Symptom	FRU/Action
RPL computer cannot access programs from its ownn hard disk.	1. **If network admin. is using LCCM Hybrid RPL, check startup sequence: First device: network; Second device: hard disk** 2. Hard disk drive
RPL computer does not RPL from server.	1. **Check startup sequence** 2. Check the “Token-ring Adapter Card LED Status” on page 3-26.
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 the following example.

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

Beep Symptom	FRU/Action
1-1-3 CMOS read/write error	1. **Run Setup** 2. System Board
1-1-4 ROM BIOS check error	1. **System Board**
1-2-X DMA error	1. **System Board**
1-3-X	1. **Memory Module** 2. System Board
1-4-4	1. **Keyboard** 2. System Board
1-4-X Error detected in first 64KB of RAM.	1. **Memory Module** 2. System Board
2-1-1, 2-1-2	1. **Run Setup** 2. System Board

Beep Symptom	FRU/Action
2-1-X First 64KB of RAM failed.	1. **Memory Module** 2. System Board
2-2-2	1. **Video Card** (if installed) 2. System Board
2-2-X First 64KB of RAM failed.	1. **Memory Module** 2. System Board
2-3-X	1. **Memory Module** 2. System Board
2-4-X	1. **Run Setup** 2. Memory Module 3. System Board
3-1-X DMA register failed.	1. **System Board**
3-2-4 Keyboard controller failed.	1. **System Board** 2. Keyboard
3-3-4 Screen initialization failed.	1. **Video Adapter** (if installed) 2. System Board 3. Display
3-4-1 Screen retrace test detected an error.	1. **Video Adapter** (if installed) 2. System Board 3. Display
3-4-2 POST is searching for video ROM.	1. **Video Adapter** (if installed) 2. System Board
4	1. **Video Adapter** (if installed) 2. System Board
All other beep code sequences.	1. **System Board**
One long and one short beep during POST. Base 640KB memory error or shadow RAM error.	1. **Memory Module** 2. System Board
One long beep and two or three short beeps during POST. (Video error)	1. **Display Adapter** (if installed) 2. System Board
Three short beeps during POST.	1. **See "System Board Memory" on page 3-38** 2. System Board
Continuous beep.	1. **System Board**
Repeating short beeps.	1. **Keyboard stuck key?** 2. Keyboard Cable 3. System Board

No Beep Symptoms

Symptom/Error	FRU/Action
No beep during POST but computer works correctly	1. **System Board**

Symptom/Error	FRU/Action
No beep during POST	1. **See "Undetermined Problems" on page 3-23** 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. Refer to "Starting the IBM PC Enhanced Diagnostics Program" on page 4-4 to start the diagnostics.

Did the Enhanced Diagnostics error free?

Yes **No**

008

Refer to "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 3-23.

010

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

Display

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

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

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

   Note

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

   If you do not see any test margin on the screen replace the display. If there is a test margin on the screen, replace the video adapter (if installed) or replace the system board.

   Note

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

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

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

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

   If you are unable to correct the problem, go to “Undetermined Problems” on page 3-23.

Keyboard

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

001

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

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

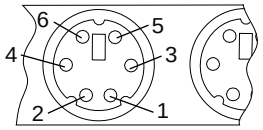


Figure 3-1. Keyboard Connector Voltages

ARE THE VOLTAGES CORRECT?
Yes No

002

Replace the system board.

003

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

Printer

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

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

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

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

Power-Supply

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

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

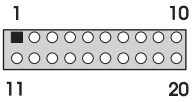
If the above are correct, check the following voltages (see “20-Pin Main Power Supply Connection”).

20-Pin Main Power Supply Connection

See “System Board Layout” on page H-6 for connector location.

Attention

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	5VSB	Standby Voltage
10	12 V	+12 V dc

Pin	Signal	Function
11	3.3 V	+3.3 V dc
12	-12 V	-12 V dc
13	COM	Ground
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 3-21). If the voltages are correct, return here and continue with the following steps.

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

      Before removing or replacing memory modules, see “System Board Memory” on page 3-38.
   e. Extended video memory
   f. External Cache
   g. External Cache RAM
   h. Hard drive
   i. Diskette drive
3. Power-on the computer to re-test the system.
4. Repeat steps 1 through 3 until you find the failing device or adapter.

If all devices and adapters have been removed, and the problem continues, replace the system board (see “Before Replacing a System Board”).

Before Replacing a System Board

Notes

1. 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 3-34.
2. Always ensure the latest level of BIOS is installed on the computer. A down level BIOS may cause false errors and unnecessary replacement of the system board.
3. The processor is a separate FRU from the system board and is not included with the system board FRU. If you are instructed to replace the system board, do the following.
4. Remove the processor from the old system board and install it on the new system board.
5. Remove any of the following installed options on the old system board, and install them on the new system board.
   - Memory modules
6. Ensure that the new system board jumper settings match the old system board jumper settings.
7. If the new system board does not correct the problem, reinstall the options on the old system board, reinstall the old system board, then replace the processor.

Devices List

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

Attention:
A customized setup configuration (other than default settings) might exist on the computer you are servicing. Running the Configuration/Setup Utility program (see “Service Processor Configuration / Setup Utility” on page H-9) might alter those settings. Note the current configuration settings and verify that the settings are in place when service is complete.

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

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

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

1. Check the hard disk drive jumper settings. All supported hard disk drives use jumpers or tabs to set drives as either primary or secondary. Refer to the jumper instructions that came with your hard disk drives.
2. Check the voltages to the hard disk drives (see “Power-Supply” on page 3-21).
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 I999030X) can be caused by the following:

cause	Actions
The start-up drive is not in the boot sequence in configuration.	Check the configuration and ensure the start-up drive is in boot sequence.
No operating system installed on the boot drive.	Install an operating system on the boot drive.
The boot sector on the start-up drive is corrupted.	The drive must be formatted, do the following: 1. Attempt to access and recover (back-up) the failing hard disk drive. 2. Using the operating systems programs, format the hard disk drive. 3. Go to “Preparing the hard disk 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 the table below to determine the status of the Token-ring adapter card for diagnosing network problems.

Amber	Green	Explanation
Blinking	Blinking	The adapter is waiting for initialization (during POST).
Off	Off	The adapter initialization is in progress (during POST), or the computer is powered off.
Off	Blinking	The adapter did not detected any problems during its self-diagnostic tests and is waiting to open. If this LED state occurs after the adapter has been opened, this state indicates that the adapter has been closed under software control.
Off	On	The adapter is open and operating correctly.
On	Off	The adapter self-diagnostic tests failed or there is a problem with the adapter. Replace: • Adapter • System board
Blinking	Off	The adapter is closed due to an undetected error. One of the following exists: • The adapter open failed. • The adapter detect a wire fault. • The adapter failed the auto-removal test.
Blinking	On	The adapter has detected beaconing or hard error. If network is known good, check cable between computer and network receptacle. Replace: • Adapter • 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 3-27 for definition of terms in this table.

Token-Ring Table Terms and Definitions

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

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

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

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

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

Additional service information

The following additional service information supports the PC 300 type 6563.

Security features

Security features in this section include:

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

Passwords

The following 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-9 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 do the following:

Attention

This procedure will remove the administrator password. Also, this procedure will clear 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. Refer to “System Board Layout” on page H-6 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.
   - 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 6563 have Enhanced Security Mode. If Enhanced Security mode is enabled and there is no password given, the computer will act as if Enhanced Security is 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. Refer to “Service Processor Configuration / Setup Utility” on page H-9

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 3-34.

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 will be loaded with the serial numbers of the system and all major components. The customer will have access to the MIF file via the DMI MIF Browser that is installed with the preload and is also available on the SSCD provided with the system.

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 may 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 on the component you want to change.
7. Enter new data in the **Value** field, then click **Apply**.

Alert on LAN

Alert on LAN provides notification of changes in the computer, even when the computer power is turned off. Working with DMI and Wake on LAN technologies, Alert on LAN helps to manage and monitor the hardware and software features of the computer. Alert on LAN 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 6563 use jumpers to set the drives as primary (master) or secondary (slave).

Attention

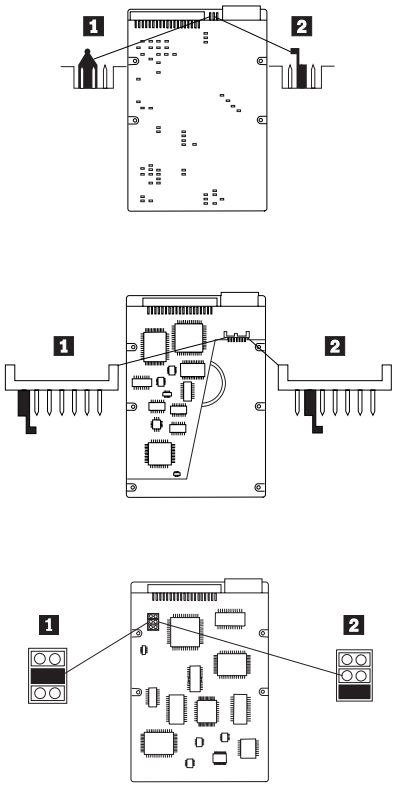
For drives not listed below, refer to the label on the hard disk drive for the hard disk drive settings.

IDE Hard Disk Drive Settings

1 Primary (Master) Hard Disk Drive

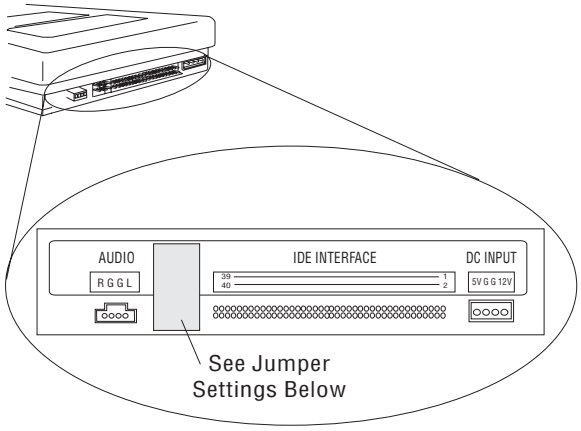
2 Secondary (Slave) Hard Disk Drive

IDE Drives



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

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



CD-ROM, PD/CD-ROM Type	Primary (Master)	Secondary (Slave)
2X CD-ROM FRU 06H5906	: : ▮ : :	: ▮ : : :
4X CD-ROM FRU 06H7654	: : ▮ : :	: ▮ : : :
6X CD-ROM	: : ▮	: ▮ :
8X CD-ROM	: : ▮	: ▮ :
6X PD/CD-ROM	: : ▮	: ▮ :
16X Max CD-ROM	: : ▮	: ▮ :
24X Max CD-ROM	: : ▮	: ▮ :
32X Max CD-ROM	: : ▮	: ▮ :
40X Max CD-ROM	: : ▮	: ▮ :
48X Max CD-ROM	: : ▮	: ▮ :

BIOS Levels

An incorrect level of BIOS can cause false error 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 BIOS available.
  1. IBM PC Company Home Page
     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 BIOS available.
  1. IBM PC Company Home Page
     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 3-34.

Flash (BIOS/VPD) Update Procedure

Attention

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. Refer to “System Board Layout” on page H-6 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 depress 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-9).
2. Select **Advanced Power Management** from the Configuration/Setup Utility program menu.
3. Be sure **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-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 3-37.

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 3-34.

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-9.
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-9.
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 Wake on LAN, 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 6563 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 6563	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 (POST)

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

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

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

Note

The service processor based on 6563 computer is default to come up quiet (No beep and no memory count and checkpoint code display) when no errors are detected by POST.

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

1. Enable **Power on Status** in setup. See “Service Processor Configuration / Setup Utility” on page H-9.

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

POST Beep Codes

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

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

Note

The service processor based on 6563 computer is default to come up quiet (No beep and no memory count and checkpoint code display) when no errors are detected by POST.

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

1. Enable **Power on Status** in setup. See "Service Processor Configuration / Setup Utility" on page H-9.

Error Code Format

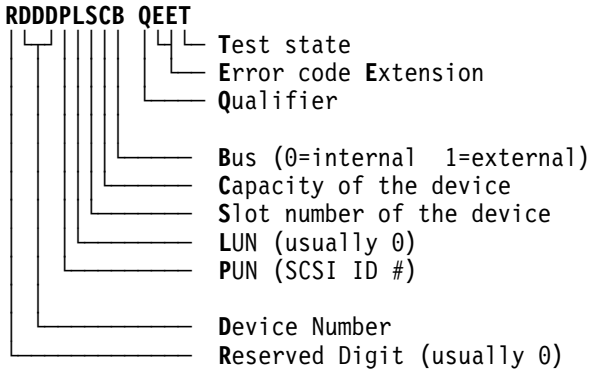
This section provides an explanation of the encoded non-SCSI and SCSI POST error codes.

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

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

Notes

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



Diagnostics Test Programs

IBM PC Enhanced Diagnostics

The IBM PC Enhanced Diagnostics programs use a full range of diagnostic utilities to determine the operating condition of the computers hardware components. The user interface is WaterGate's PC-Doctor which serves as the control program for running the IBM PC Enhanced Memory Diagnostics and the suite of diagnostic tests provided by PC-Doctor (diagnostic diskette PN 10K8635).

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

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

This diagnostic diskette includes:

- A new user interface (WaterGate Software's PC-Doctor)
  - This interface serves as the control program for running both the IBM 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.
- The **Enter** key is used to select a menu item.
- The **Esc** key is used to back up to the previous menu.
- For online help select F1.

Running diagnostic tests

There are four ways to run the diagnostic tests:

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

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

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

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

Test Selection

To select one or more tests:

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

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

IBM 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-6 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

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

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

Alert On LAN Test

The Alert On Lan test does the following:

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

Asset ID Test

The Asset ID test does the following:

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

Test Results

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

Function Code	Failure Type	DeviceID	Date	ChkDigits	Text

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

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

Text: Description of the error.

Note

See “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 does the following:

- Interrogates IDE devices for support of the SMART instruction set.
- Issues a ENABLE SMART command to make sure 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 the 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:

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

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

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

Important

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

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

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

Asset EEPROM Backup

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

To run this utility:

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

Viewing the Test Log

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

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

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

SIMM/DIMM Memory Errors

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

Message	Failure Found	Recommended Actions
2xx-1y	A memory error was detected in SIMM socket Y	Replace the SIMM in the socket identified by the last digit of the error code. Re-run the test. If the same error code occurs again, replace the system board.
2xx-2y	A memory error was detected in DIMM socket Y	Replace the DIMM in the socket identified by the last digit of the error code. Re-run the test. If the same error code occurs again, replace the system board or where memory is on the processor card, replace the processor card.
Corrupt BIOS	Information in BIOS is not as expected. Not able to find expected DMI information from BIOS. Memory controller chipset vendor ID does not match expected value.	Reflash the BIOS. Replace the system board.
Test aborted by user	User stopped test.	Restart test.
Note: "Y" is the SIMM/DIMM socket number. See “System Board Layout” on page H-6 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/Action
000-000-XXX BIOS Test Passed	1. **No action**
000-002-XXX BIOS Timeout	1. **Flash the system** 2. System board
000-024-XXX BIOS Addressing test failure	1. **Flash the system** 2. System board
000-025-XXX BIOS Checksum Value error	1. **Flash the system** 2. Boot block 3. System board
000-026-XXX FLASH data error	1. **Flash the system** 2. Boot block 3. System board
000-027-XXX BIOS Configuration/Setup error	1. **Run Setup** 2. Flash the system 3. Boot block 4. System board
000-034-XXX BIOS Buffer Allocation failure	1. **Reboot the system** 2. Flash the system 3. Run memory test 4. System board
000-035-XXX BIOS Reset Condition detected	1. **Flash the system** 2. System board
000-036-XXX BIOS Register error	1. **Flash the system** 2. Boot block 3. System board
000-038-XXX BIOS Extension failure	1. **Flash the system** 2. Adapter card 3. System board
000-039-XXX BIOS DMI data error	1. **Flash the system** 2. System board
000-195-XXX BIOS Test aborted by user	1. **Information** 2. Re-start the test, if need to
000-196-XXX BIOS test halt, error threshold exceeded	1. **Depress F3 to review the log file. See “Viewing the Test Log” on page 4-8.** 2. Re-start the test to reset the log file.
000-197-XXX BIOS test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test

Diagnostic Error Code	FRU/Action
000-198-XXX BIOS test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to “Undetermined Problems” on page 3-23
000-199-XXX BIOS test failed, cause unknown	1. **Go to “Undetermined Problems” on page 3-23.** 2. Flash the system and re-test 3. Replace component under function test.
000-250-XXX BIOS APM failure	1. **Flash the system** 2. System board
000-270-XXX BIOS ACPI failure	1. **Flash the system** 2. System board
001-000-XXX System Test Passed	1. **No action**
001-00X-XXX System Error	1. **System board**
001-01X-XXX System Error	1. **System board**
001-024-XXX System Addressing test failure	1. **System board**
001-025-XXX System Checksum Value error	1. **Flash the system** 2. System board
001-026-XXX System FLASH data error	1. **Flash the system** 2. System board
001-027-XXX System Configuration/Setup error	1. **Run Setup** 2. Flash the system 3. System board
001-032-XXX System Device Controller failure	1. **System board**
001-034-XXX System Device Buffer Allocation failure	1. **Reboot the system** 2. Flash the system 3. Run memory test 4. System board
001-035-XXX System Device Reset condition detected	1. **System board**
001-036-XXX System Register error	1. **System board**
001-038-XXX System Extension failure	1. **Adapter card** 2. System board
001-039-XXX System DMI data structure error	1. **Flash the system** 2. System board
001-040-XXX System IRQ failure	1. **Power-off/on system and re-test** 2. System board
001-041-XXX System DMA failure	1. **Power-off/on system and re-test** 2. System board

Diagnostic Error Code	FRU/Action
001-195-XXX System Test aborted by user	1. **Information** 2. Re-start the test, if need to
001-196-XXX System test halt, error threshold exceeded	1. **Depress F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Re-start the test to reset the log file.
001-197-XXX System test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
001-198-XXX System test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to "Undetermined Problems" on page 3-23
001-199-XXX System test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-23.** 2. Flash the system and re-test 3. Replace component under function test.
001-250-XXX System ECC error	1. **System board**
001-254-XXX **001-255-XXX** **001-256-XXX** **001-257-XXX** System DMA error	1. **System board**
001-260-XXX **001-264-XXX** System IRQ error	1. **System board**
001-268-XXX System IRQ1 failure	1. **device on IRQ1** 2. System board
001-269-XXX System IRQ2 failure	1. **device on IRQ2** 2. System board
001-270-XXX System IRQ3 failure	1. **device on IRQ3** 2. System board
001-271-XXX System IRQ4 failure	1. **device on IRQ4** 2. System board
001-272-XXX System IRQ5 failure	1. **device on IRQ5** 2. System board
001-273-XXX System IRQ6 (diskette drive) failure	1. **Diskette Cable** 2. Diskette drive 3. System board
001-274-XXX System IRQ7 failure	1. **device on IRQ7** 2. System board
001-275-XXX System IRQ8 failure	1. **device on IRQ8** 2. System board

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

Diagnostic Error Code	FRU/Action
005-027-XXX Video Configuration/Setup error	1. **Run Setup** 2. Video drivers update 3. Video card, if installed 4. System board
005-031-XXX Video Device Cable failure	1. **Video cable** 2. Monitor 3. Video card, if installed 4. System board
005-032-XXX Video Device Controller failure	1. **Video card, if installed** 2. System board
005-036-XXX Video Register error	1. **Video card, if installed** 2. System board
005-038-XXX System BIOS extension failure	1. **Video card, if installed** 2. System board
005-040-XXX Video IRQ failure	1. **Video card, if installed** 2. System board
005-195-XXX Video Test aborted by user	1. **Information** 2. Re-start the test, if need to
005-196-XXX Video test halt, error threshold exceeded	1. **Depress F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Re-start the test to reset the log file.
005-197-XXX Video test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
005-198-XXX Video test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to "Undetermined Problems" on page 3-23
005-199-XXX Video test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-23.** 2. Flash the system and re-test 3. Replace component under function test.
005-2XX-XXX **005-3XX-XXX** Video subsystem error	1. **Video card, if installed** 2. System board
006-000-XXX Diskette interface Test Passed	1. **No action**
006-0XX-XXX Diskette interface error	1. **Diskette drive Cable** 2. Diskette drive 3. System board
006-195-XXX Diskette interface Test aborted by user	1. **Information** 2. Re-start the test, if need to

Diagnostic Error Code	FRU/Action
006-196-XXX Diskette interface test halt, error threshold exceeded	1. **Depress F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Re-start the test to reset the log file.
006-197-XXX Diskette interface test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
006-198-XXX Diskette interface test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to "Undetermined Problems" on page 3-23
006-199-XXX Diskette interface test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-23.** 2. Flash the system and re-test 3. Replace component under function test.
006-25X-XXX Diskette interface Error	1. **Diskette drive Cable** 2. Diskette drive 3. System board
011-000-XXX Serial port Interface Test Passed	1. **No action**
011-001-XXX Serial port Presence	1. **Remove external serial device, if present** 2. Run setup, enable port 3. System board
011-002-XXX **011-003-XXX** Serial port Timeout/Parity error	1. **System board**
011-013-XXX **011-014-XXX** Serial port Control Signal/Loopback test failure	1. **System board**
011-015-XXX Serial port External Loopback failure	1. **Wrap plug** 2. System board
011-027-XXX Serial port Configuration/Setup error	1. **Run Setup, enable port** 2. Flash the system 3. System board
011-03X-XXX **011-04X-XXX** Serial port failure	1. **System board**
011-195-XXX Serial port Test aborted by user	1. **Information** 2. Re-start the test, if need to

Diagnostic Error Code	FRU/Action
011-196-XXX Serial port test halt, error threshold exceeded	1. **Depress F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Re-start the test to reset the log file.
011-197-XXX Serial port test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
011-198-XXX Serial port test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to "Undetermined Problems" on page 3-23
011-199-XXX Serial port test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-23.** 2. Flash the system and re-test 3. Replace component under function test.
011-2XX-XXX Serial port signal failure	1. **External serial device** 2. System board
014-000-XXX Parallel port Interface Test Passed	1. **No action**
014-001-XXX Parallel port Presence	1. **Remove external parallel device, if present** 2. Run setup, enable port 3. System board
014-002-XXX **014-003-XXX** Parallel port Timeout/Parity error	1. **System board**
014-013-XXX **014-014-XXX** Parallel port Control Signal/Loopback test failure	1. **System board**
014-015-XXX Parallel port External Loopback failure	1. **Wrap plug** 2. System board
014-027-XXX Parallel port Configuration/Setup error	1. **Run Setup, enable port** 2. Flash the system 3. System board
014-03X-XXX **014-04X-XXX** Parallel port failure	1. **System board**
014-195-XXX Parallel port Test aborted by user	1. **Information** 2. Re-start the test, if need to
014-196-XXX Parallel port test halt, error threshold exceeded	1. **Depress F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Re-start the test to reset the log file.

Diagnostic Error Code	FRU/Action
014-197-XXX Parallel port test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
014-198-XXX Parallel port test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to “Undetermined Problems” on page 3-23
014-199-XXX Parallel port test failed, cause unknown	1. **Go to “Undetermined Problems” on page 3-23.** 2. Flash the system and re-test 3. Replace component under function test.
014-2XX-XXX **014-3XX-XXX** Parallel port failure	1. **External parallel device** 2. System board
015-000-XXX USB port Interface Test Passed	1. **No action**
015-001-XXX USB port Presence	1. **Remove USB Device(s) and re-test** 2. System board
015-002-XXX USB port Timeout	1. **Remove USB Device(s) and re-test** 2. System board
015-015-XXX USB port External Loopback failure	1. **Remove USB Device(s) and re-test** 2. System board
015-027-XXX USB port Configuration/Setup error	1. **Flash the system** 2. System board
015-032-XXX USB port Device Controller failure	1. **System board**
015-034-XXX USB port buffer allocation failure	1. **Reboot the system** 2. Flash the system 3. Run memory test 4. System board
015-035-XXX USB port Reset condition detected	1. **Remove USB Device(s) and re-test** 2. System board
015-036-XXX USB port Register error	1. **System board**
015-040-XXX USB port IRQ failure	1. **Run setup and check for conflicts** 2. Flash the system 3. System board
015-195-XXX USB port Test aborted by user	1. **Information** 2. Re-start the test, if need to
015-196-XXX USB port test halt, error threshold exceeded	1. **Depress F3 to review the log file. See “Viewing the Test Log” on page 4-8.** 2. Re-start the test to reset the log file.

Diagnostic Error Code	FRU/Action
015-197-XXX USB port test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
015-198-XXX USB port test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to “Undetermined Problems” on page 3-23
015-199-XXX USB port test failed, cause unknown	1. **Go to “Undetermined Problems” on page 3-23.** 2. Flash the system and re-test 3. Replace component under function test.
018-000-XXX PCI Card Test Passed	1. **No action**
018-0XX-XXX PCI Card Failure	1. **PCI card** 2. Riser card, if installed 3. System board
018-195-XXX PCI Card Test aborted by user	1. **Information** 2. Re-start the test, if need to
018-196-XXX PCI Card test halt, error threshold exceeded	1. **Depress F3 to review the log file. See “Viewing the Test Log” on page 4-8.** 2. Re-start the test to reset the log file.
018-197-XXX PCI Card test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
018-198-XXX PCI Card test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to “Undetermined Problems” on page 3-23
018-199-XXX PCI Card test failed, cause unknown	1. **Go to “Undetermined Problems” on page 3-23.** 2. Flash the system and re-test 3. Replace component under function test.
018-250-XXX PCI Card Services error	1. **PCI card** 2. Riser card, if installed 3. System board
020-000-XXX PCI Interface Test Passed	1. **No action**
020-0XX-XXX PCI Interface error	1. **PCI card** 2. Riser card, if installed 3. System board

Diagnostic Error Code	FRU/Action
020-195-XXX PCI Test aborted by user	1. **Information** 2. Re-start the test, if need to
020-196-XXX PCI test halt, error threshold exceeded	1. **Depress F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Re-start the test to reset the log file.
020-197-XXX PCI test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
020-198-XXX PCI test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to "Undetermined Problems" on page 3-23
020-199-XXX PCI test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-23.** 2. Flash the system and re-test 3. Replace component under function test.
020-262-XXX PCI system error	1. **PCI card** 2. Riser card, if installed 3. System board
025-000-XXX IDE interface Test Passed	1. **No action**
025-00X-XXX **025-01X-XXX** IDE interface failure	1. **IDE signal cable** 2. Check power supply 3. IDE device 4. System board
025-027-XXX IDE interface Configuration/Setup error	1. **IDE signal cable** 2. Flash the system 3. IDE device 4. System board
025-02X-XXX **025-03X-XXX** **025-04X-XXX** IDE Interface failure	1. **IDE signal cable** 2. Check power supply 3. IDE device 4. System board
025-195-XXX IDE interface Test aborted by user	1. **Information** 2. Re-start the test, if need to
025-196-XXX IDE interface test halt, error threshold exceeded	1. **Depress F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Re-start the test to reset the log file.

Diagnostic Error Code	FRU/Action
025-197-XXX IDE interface test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
025-198-XXX IDE interface test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to “Undetermined Problems” on page 3-23
025-199-XXX IDE interface test failed, cause unknown	1. **Go to “Undetermined Problems” on page 3-23.** 2. Flash the system and re-test 3. Replace component under function test.
030-000-XXX SCSI interface Test Passed	1. **No action**
030-00X-XXX **030-01X-XXX** SCSI interface failure	1. **SCSI signal cable** 2. Check power supply 3. SCSI device 4. SCSI adapter card, if installed 5. System board
030-027-XXX SCSI interface Configuration/Setup error	1. **SCSI signal cable** 2. Flash the system 3. SCSI device 4. SCSI adapter card, if installed 5. System board
030-03X-XXX **030-04X-XXX** SCSI interface error	1. **SCSI signal cable** 2. Check power supply 3. SCSI device 4. SCSI adapter card, if installed 5. System board
030-195-XXX SCSI interface Test aborted by user	1. **Information** 2. Re-start the test, if need to
030-196-XXX SCSI interface test halt, error threshold exceeded	1. **Depress F3 to review the log file. See “Viewing the Test Log” on page 4-8.** 2. Re-start the test to reset the log file.
030-197-XXX SCSI interface test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
030-198-XXX SCSI interface test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to “Undetermined Problems” on page 3-23

Diagnostic Error Code	FRU/Action
030-199-XXX SCSI interface test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-23.** 2. Flash the system and re-test 3. Replace component under function test.
035-000-XXX RAID interface Test Passed	1. **No action**
035-0XX-XXX RAID interface Failure	1. **RAID signal cable** 2. RAID device 3. RAID adapter card, if installed 4. System board
035-195-XXX RAID interface Test aborted by user	1. **Information** 2. Re-start the test, if need to
035-196-XXX RAID interface test halt, error threshold exceeded	1. **Depress F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Re-start the test to reset the log file.
035-197-XXX RAID interface test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
035-198-XXX RAID interface test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to "Undetermined Problems" on page 3-23
035-199-XXX RAID interface test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-23.** 2. Flash the system and re-test 3. Replace component under function test.
071-000-XXX Audio port Interface Test Passed	1. **No action**
071-00X-XXX **071-01X-XXX** **071-02X-XXX** **Audio port error**	1. **Run Setup** 2. Flash the system 3. System board
071-03X-XXX Audio port failure	1. **Speakers** 2. Microphone 3. Audio card, if installed 4. System board
071-04X-XXX Audio port failure	1. **Run Setup** 2. Audio card, if installed 3. System board
071-195-XXX Audio port Test aborted by user	1. **Information** 2. Re-start the test, if need to

Diagnostic Error Code	FRU/Action
071-196-XXX Audio port test halt, error threshold exceeded	1. **Depress F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Re-start the test to reset the log file.
071-197-XXX Audio port test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
071-198-XXX Audio port test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to "Undetermined Problems" on page 3-23
071-199-XXX Audio port test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-23.** 2. Flash the system and re-test 3. Replace component under function test.
071-25X-XXX Audio port failure	1. **Speakers** 2. Audio card, if installed 3. System board
080-000-XXX Game Port interface Test Passed	1. **No action**
080-XXX-XXX Game Port interface Error	1. **Remove the game port device and re-test the system**
080-195-XXX Game Port interface Test aborted by user	1. **Information** 2. Re-start the test, if need to
080-196-XXX Game Port interface test halt, error threshold exceeded	1. **Depress F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Re-start the test to reset the log file.
080-197-XXX Game Port interface test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
080-198-XXX Game Port interface test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to "Undetermined Problems" on page 3-23
080-199-XXX Game Port interface test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-23.** 2. Flash the system and re-test 3. Replace component under function test.

Diagnostic Error Code	FRU/Action
086-000-XXX Mouse Port interface Test Passed	1. **No action**
086-001-XXX Mouse Port interface Presence	1. **Mouse** 2. System board
086-032-XXX Mouse Port interface Device controller failure	1. **Mouse** 2. System board
086-035-XXX Mouse Port interface Reset	1. **Mouse** 2. System board
086-040-XXX Mouse Port interface IRQ failure	1. **Run Setup** 2. Mouse 3. System board
086-195-XXX Mouse Port interface Test aborted by user	1. **Information** 2. Re-start the test, if need to
086-196-XXX Mouse Port interface test halt, error threshold exceeded	1. **Depress F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Re-start the test to reset the log file.
086-197-XXX Mouse Port interface test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
086-198-XXX Mouse Port interface test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to "Undetermined Problems" on page 3-23
086-199-XXX Mouse Port interface test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-23.** 2. Flash the system and re-test 3. Replace component under function test.
089-000-XXX Microprocessor Test Passed	1. **No action**
089-XXX-XXX Microprocessor failure	1. **Microprocessor(s)** 2. System board
089-195-XXX Microprocessor Test aborted by user	1. **Information** 2. Re-start the test, if need to
089-196-XXX Microprocessor test halt, error threshold exceeded	1. **Depress F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Re-start the test to reset the log file.

Diagnostic Error Code	FRU/Action
089-197-XXX Microprocessor test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
089-198-XXX Microprocessor test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to “Undetermined Problems” on page 3-23
089-199-XXX Microprocessor test failed, cause unknown	1. **Go to “Undetermined Problems” on page 3-23.** 2. Flash the system and re-test 3. Replace component under function test.
170-000-XXX Voltage Sensor(s) Test Passed	1. **No action**
170-0XX-XXX Voltage Sensor(s) failure	1. **Flash system** 2. System board
170-195-XXX Voltage Sensor(s) Test aborted by user	1. **Information** 2. Re-start the test, if need to
170-196-XXX Voltage Sensor(s) test halt, error threshold exceeded	1. **Depress F3 to review the log file. See “Viewing the Test Log” on page 4-8.** 2. Re-start the test to reset the log file.
170-197-XXX Voltage Sensor(s) test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
170-198-XXX Voltage Sensor(s) test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to “Undetermined Problems” on page 3-23
170-199-XXX Voltage Sensor(s) test failed, cause unknown	1. **Go to “Undetermined Problems” on page 3-23.** 2. Flash the system and re-test 3. Replace component under function test.
170-250-XXX **170-251-XXX** Voltage Sensor(s) Voltage limit error	1. **Power supply** 2. System board
170-254-XXX Voltage Sensor(s) Voltage Regulator Module error	1. **Voltage Regulator Module (VRM)** 2. Microprocessor 3. System board
175-000-XXX Thermal Sensor(s) Test Passed	1. **No action**

Diagnostic Error Code	FRU/Action
175-0XX-XXX Thermal Sensor(s) failure	1. **Flash system** 2. System board
175-195-XXX Thermal Sensor(s) Test aborted by user	1. **Information** 2. Re-start the test, if need to
175-196-XXX Thermal Sensor(s) test halt, error threshold exceeded	1. **Depress F3 to review the log file. See "Viewing the Test Log" on page 4-8.** 2. Re-start the test to reset the log file.
175-197-XXX Thermal Sensor(s) test warning	1. **Make sure component that is called out is enabled and/or connected** 2. Re-run test 3. Component that is called out in warning statement 4. Component under test
175-198-XXX Thermal Sensor(s) test aborted	1. **If a component is called out, make sure it is enabled and/or connected** 2. Flash the system and re-test 3. Go to "Undetermined Problems" on page 3-23
175-199-XXX Thermal Sensor(s) test failed, cause unknown	1. **Go to "Undetermined Problems" on page 3-23.** 2. Flash the system and re-test 3. Replace component under function test.
175-250-XXX **175-251-XXX** Thermal Sensor(s) limit error	1. **Check fans** 2. Check Power supply 3. Microprocessor 4. System board
185-000-XXX Asset Security Test Passed	1. **No action**
185-XXX-XXX Asset Security failure	1. **Assure Asset Security Enabled** 2. Flash system 3. System board
185-278-XXX Asset Security Chassis Intrusion	1. **C2 Cover Switch** 2. System board
201-000-XXX System Memory Test Passed	1. **No action**
201-XXX-XXX System Memory error	1. **Replace the memory module called out by the test** 2. System board
202-000-XXX System Cache Test Passed	1. **No action**
202-XXX-XXX System Cache error	1. **Cache, if removable** 2. System board 3. Microprocessor
206-000-XXX Diskette Drive Test Passed	1. **No action**

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

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

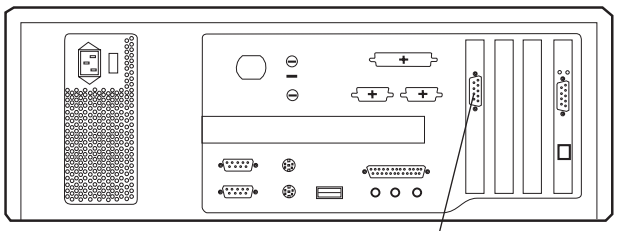
Chapter 5. Service Processor FRU / Display Exchange

If you exchange:

- A Display, go to “Display Removal/Display Install” on page 5-2.
- A service processor FRU, go to “Removing and Installing Service Processor FRU” on page 5-3.

Display Removal/Display Install

1. Switch OFF the display and the service processor using their respective power ON/OFF switch located on the front panel.
2. Disconnect the power plug of the display from the ac power source.
3. At the rear of the service processor disconnect the display cable.



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

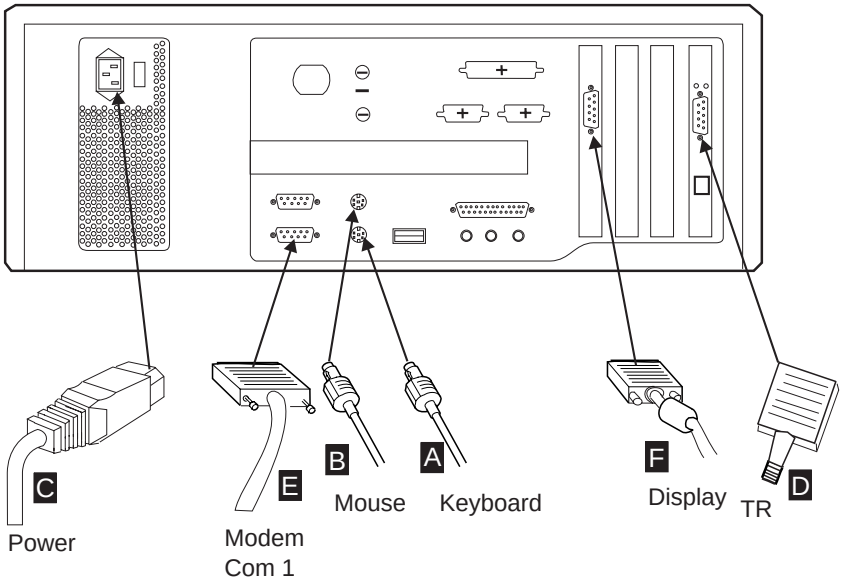
Warning

Be carefull the weight of the display is about 15 kg.

5. Unpack the new display.
6. To re-install 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 switch located on the front panel.
2. On the rear of the service processor disconnect all the cables.

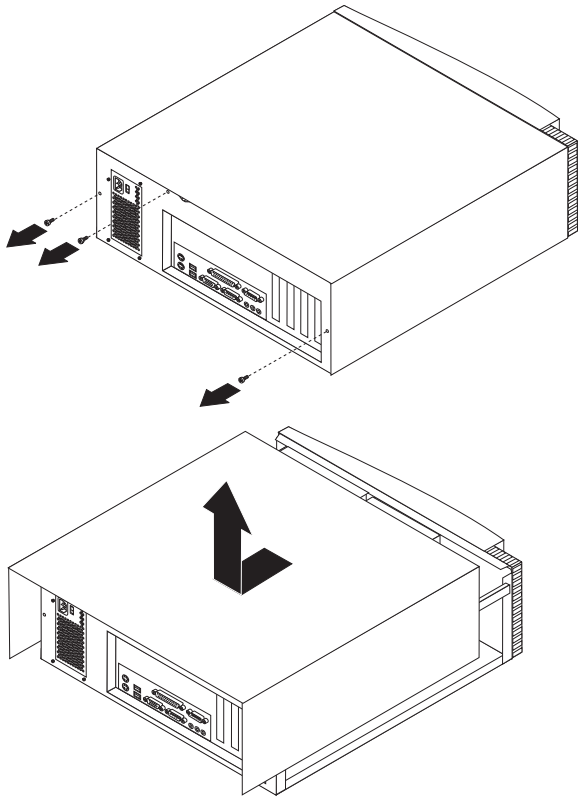


3. If your service processor is installed in the controller rack go to Step 4. Otherwise go to Step 5.
4. Slide out the service processor from the controller expansion and install it on a table to continue the FRUs removal.

Warning

Be careful the weight of the processor is about 8 kg.

5. Open the service processor using the following Steps:
   a. Remove the three cover thumb screws.



b. Slide cover toward the rear of the chassis about 1-inch (2 cm) to clear the front panel.
c. Lift the cover up.

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

Important

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

Service Processor FRU to Exchange	Action
Battery	Go to “Battery Exchange” on page 5-5.
Board	Go to “Board Exchange” on page 5-6.
CD-ROM	Go to “CD-ROM Drive Exchange” on page 5-10.
Diskette Drive	Go to “Diskette Drive Exchange” on page 5-11.
Hard Disk Drive	Go to “Hard Disk Drive Exchange” on page 5-9.
Display or Token-Ring Adapter Card	Go to “Display and Token-Ring Adapter Card Exchange” on page 5-12.
Processor	Go to “Processor Exchange” on page 5-8.
Other FRU	Go to “Other FRUs Exchange” on page 5-13.

Battery Exchange

Safety

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

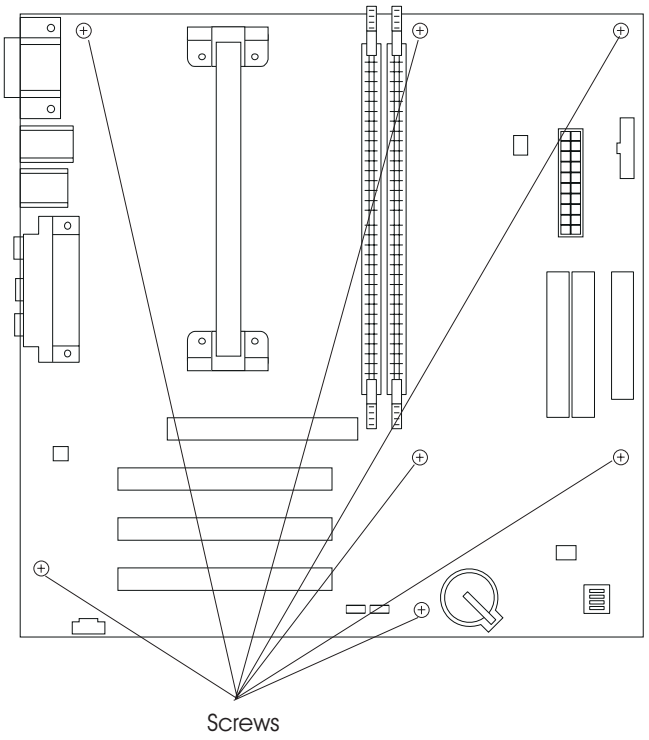
1. Locate the battery on the board (see “System Board Layout” on page H-6 for details).
2. Note the orientation of the battery on the system board and remove it.
3. Install the new battery.
4. Re-install service processor cover.
5. Go to “After FRU Exchange” on page 5-14.

Board Exchange

Notes

- A new system board comes without microprocessor, no memory options on it. You must transfer all such components from the system board being removed.
- Be sur to have read “Before Replacing a System Board” on page 3-23.

1. Remove the system board using the following Steps:
   a. Remove the service processor front panel (see “Front Panel” on page H-3 for details).
   b. Remove the Token-Ring adapter card (Slot 4).
   c. Remove the display adapter card (Slot 1).
   d. Remove the plastic cover of the processor.
   e. Remove the diskette and hard disk drive (see “Diskette / Hard Drive Bracket” on page H-4, for details).
   f. Remove the seven cables connector coming from diskette, disk, CD-ROM, fan, and panel.
   g. Remove the seven screws which secure the board.



   h. Remove the board from the service processor box.
2. Unpack the new system board.
3. Remove the processor from the old system board and install it on the new system board.

4. Remove the memory from the old sytem board, install them on the new system board.
5. Ensure that the new system board jumper/switch settings match the old system board jumper/switch settings.
6. Re-install the system board using the Steps 1a on page 5-6 to 1h on page 5-6 in reverse order.
7. Re-install the service processor front and top covers.
8. Go to “After FRU Exchange” on page 5-14.

Processor Exchange

1. Locate the processor on the board (for details see “System Board Layout” on page H-6).
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.

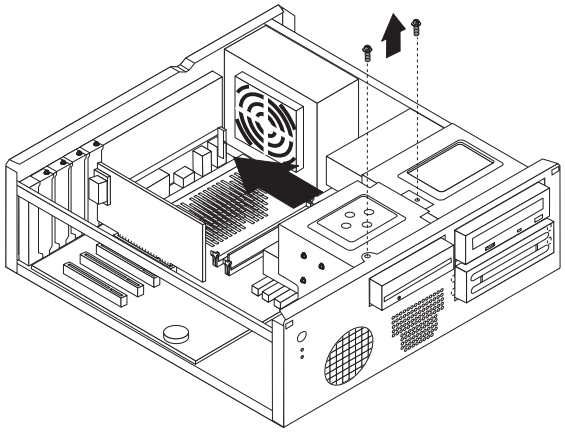
   Note

   If the processor is 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. Re-install the service processor top cover.
7. Go to “After FRU Exchange” on page 5-14.

Hard Disk Drive Exchange

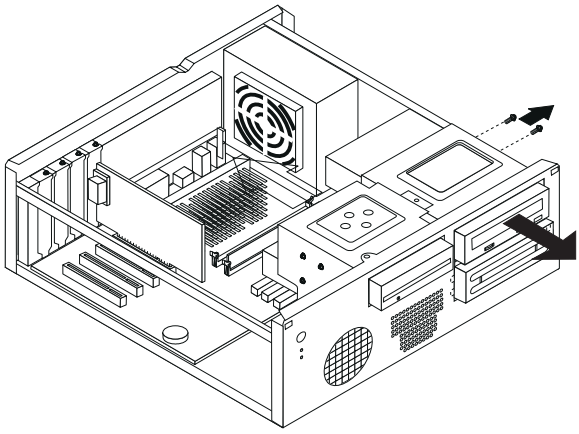
1. Locate the hard disk drive under the diskette drive.
2. Remove the front panel of the service processor (refer to “Front Panel” on page H-3 for details).
3. At the rear of the hard disk drive and diskette drive, disconnect the cables.
4. Remove the two top screws securing the diskette/hard disk drive bracket.



5. Slide the bracket toward the back of the chassis to unlatch it from the chassis.
6. Remove the four screws which secure the hard disk drive in the bracket (two screws on each side).
7. Slide the hard disk drive from the bracket.
8. Unpack the new hard disk drive.
9. 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 3-31.
10. Install and secure the new hard disk drive into the bracket using the four screws previously removed.
11. Re-install the bracket into the chassis.
12. Secure the bracket with the two top screws previously removed.
13. Re-Connect the cables previously disconnect at the rear of the diskette and hard disk drive.
14. Re-install the service processor top cover.
15. Go to “After FRU Exchange” on page 5-14.

CD-ROM Drive Exchange

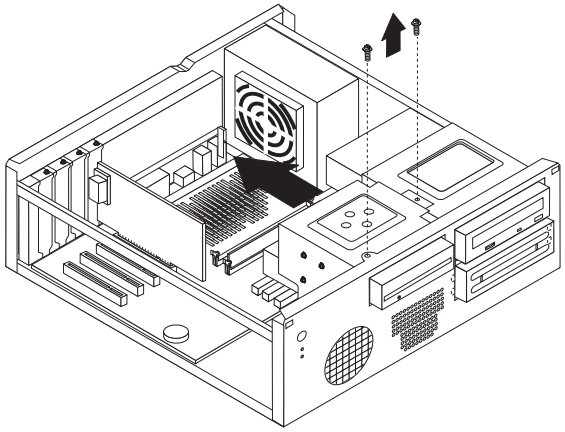
1. Locate the CD-ROM drive on the top right of the service processor.



2. Remove the front panel of the service processor (refer to “Front Panel” on page H-3 for details).
3. Remove the three cables located at the rear of the CD-ROM drive.
4. Remove the two screws securing the CD-ROM drive.
5. Pull the CD-ROM drive out of the chassis.
6. Unpack the new CD-ROM drive.
7. 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 3-32.
8. Install and secure the new CD-ROM drive into the chassis using the two screws previously removed.
9. Re-plug the cables previously removed.
10. Re-install the service processor front and top covers.
11. Go to “After FRU Exchange” on page 5-14.

Diskette Drive Exchange

1. At the rear of the hard disk drive and diskette drive, disconnect the cables.
2. Remove the front panel of the service processor (refer to “Front Panel” on page H-3 for details).
3. Remove the two top screws securing the diskette/hard disk drive bracket.



4. Slide the bracket toward the back of the chassis to unlatch it from the chassis.
5. Remove the four screws which secure the hard disk drive in the bracket (two screws on each side).
6. Slide the diskette drive from the bracket.
7. Unpack the new diskette drive.
8. Install and secure the new diskette drive into the bracket using the four screws previously removed.
9. Re-install the bracket into the chassis.
10. Secure the bracket with the two top screws previously removed.
11. Re-Connect the cables previously disconnect at the rear of the diskette and hard disk drive.
12. Re-install the service processor front and top covers.
13. Go to “After FRU Exchange” on page 5-14.

Display and Token-Ring Adapter Card Exchange

1. Locate the Display or Token-Ring adapter card which 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. Unpack and install the new adapter card.
6. Install the retainer and secure it with the screw previously removed.
7. Plug the cable previously removed to the rear of the adapter card.
8. Re-install the service processor top cover.
9. Go to “After FRU Exchange” on page 5-14.

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. Re-install the service processor top cover.
5. Go to “After FRU Exchange” on page 5-14.

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 re-connect all the cable previously removed.
2. Use the following table to find the procedure you need to follow after exchanging an FRU.

Service Processor FRU to Exchange	**Action**
Battery **Board**	Go to “After Battery or Board Exchange” on page 5-15.
Hard Disk Drive	Go to “After Hard Disk Drive Exchange” on page 5-17.
Token-Ring Adapter	Go to “After Token-Ring Adapter Card Exchange” on page 5-16.
Other FRUs	Go to “After Other FRUs Exchange” on page 5-21.

After Battery or Board Exchange

You are here after battery or board exchange.

1. Power ON the service processor and its attached display.
2. A count of computer memory appears at the upper-left corner of the display.
3. If an error is detected, a message is displayed requesting an action. Select **Continue**, then press **Enter**.
4. Follow the prompts to continue untill the **Configuration/Setup Utility** window is displayed.
5. On the **Configuration/Setup Utility** window the area where the configuration has been modified is pointed by an arrow. Refer to “Service Processor Configuration / Setup Utility” on page H-9 to check the configuration and correct it if necessary.
6. At the end of configuration, a message asks you if you want to save your changes.
7. Select **Yes** and press **Enter** to reboot the service processor.
8. If you have changed the board go to Step 9. Otherwise, if you have changed the battery, go to Chapter 6, “CE Leaving Procedure” on page 6-1.
9. Run the diagnostics on the service processor see “Starting the IBM PC Enhanced Diagnostics Program” on page 4-4.
10. 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

You are here 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 window is displayed:

```
 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 LANIDC from diskette or remove diskette
 and reboot system normally
```

4. Press a key on the keyboard. The following lines are added at the previous screen.

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

   Examples: /View
             /Help

 LANAIDC >
```

5. Enter **/VIEW**
6. The following screen is displayed:

```
             Current Adapter Setting

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

 * changes to RIPL and EXPROM will not be reflected until reboot

LANAIDC>
```

   Note: Use the following command to change the value according to the previous screen:

   - **/EXPROM=Y**

7. Using the **Esc** to leave the configuration.
8. Remove the diskette.
9. Power OFF the service processor
10. Power ON the service processor
11. Go to Chapter 6, “CE Leaving Procedure” on page 6-1.

After Hard Disk Drive Exchange

You are here after hard disk drive exchange.

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

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

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

5. Select the **Diagnostics** option in the title bar and press **Enter**.
6. The following window 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 the **Fixed Disks** option, then press **Enter**.
8. The following window 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 the **Clear All** option to remove all the chevrons >>.
10. With the arrow keys and the space bar select the test that you want to run on the disk. At each selection a chevron >> is displayed.
11. Select the **Run Screen** option at the bottom of the window. All the tests previously selected are started.

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

    No Restart the problem determination.
    Yes You must restore the service processor hard disk after its replacement. Continue with **Step 13** .
13. Press **esc** for exit from the test window.
14. Select **Quit** in the title bar, then press **Enter**.
15. Select **Exit Diags**, then press **Enter**.
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 which 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 window 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 proceding:
    - 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 window 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 re-insert the service processor installation diskette, then press **Enter**.

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

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

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

25. The following windows appear successively:

```
Please wait fo the MOSS-E database building (10 mn)
```

```
Please wait fo the MOSS-E LSCT restoration (8 mn)
```

26. The **MOSS-E View** window 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** window is displayed followed by a window asking the password. Enter the password.

28. The **Installation Chaining Process** window is displayed:

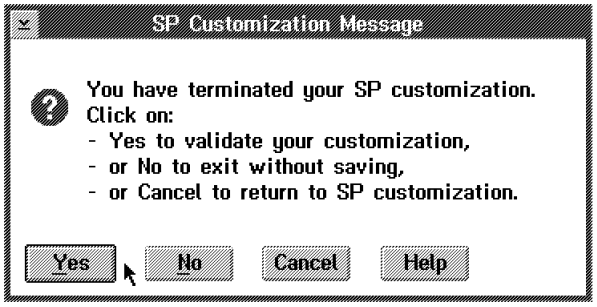
```
You can now customize your service processor.

OK    Cancel
```

    Click on **OK**

29. Check and modify parameters setting if necessary (refer to “Step 5 - Customizing Your Service Processor” on page 1-34 for details). Click on **Next>>** to go to the next windows.

30. When the following window is displayed:



Click on **Yes**.

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

    ```
    Customization ended
    ```

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

After Other FRUs Exchange

1. Run the 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

Check List

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** window displayed.
   d. The 374X units are connected to the service processor.
      - For 3745 check the control panel code.
      - For 3746-9xx check that the **Service Processor not accessible** digit if **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 13.
3. On the "MOSS-E VIEW" window, double click on the service processor icon.
4. The "Service Processor Menu" window is displayed.
5. Click on the "Configuration Management" option.
6. Double click on the "Manage Remote Operations" option.
7. On the "Remote Operation Management" window, select the "Remote operations authorization" option and click on "OK".
8. On the "Remote Support Facility" window, select the two following options:
   - "Enable Remote Support Facility"
   - "Generate alerts"

   and click on "OK".
9. Click on "Cancel" to return to "Service Processor Menu", then click on "Function" and "Exit" to return to the "MOSS-E View" window.
10. On the "MOSS-E VIEW" window, click on "Program" in the action bar.
11. Click on "Log off MOSS-E".
12. Continue with Step 13.
13. You should use the following list to ensure that the machine is in suitable condition for customer operation and that call information is recorded.
    a. If previously, you have worked on 3745 or 3746, be sure to have restore them at a correct status for customer application (MOSS online, 3746 online, FRU active in CDF-E).
    b. Ask the customer to restart his application.

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

Appendix A. Safety Information

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

General Safety

Follow these rules to ensure general safety:

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

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

Electrical Safety

Observe the following rules when working on electrical equipment.

Important

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

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

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

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

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

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

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

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

Safety Inspection Guide

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

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

Consider these conditions and the safety hazards they present:

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

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

Checklist:

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

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

Handling Electrostatic Discharge-Sensitive Devices

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

Notes:

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

When handling ESD-sensitive parts:

- Keep the parts in protective packages until they are inserted into the product.
- Avoid contact with other people.
- Wear a grounded wrist strap against your skin to eliminate static on your body.
- Prevent the part from touching your clothing. Most clothing is insulative and retains a charge even when you are wearing a wrist strap.
- Use the black side of a grounded work mat to provide a static-free work surface. The mat is especially useful when handling ESD-sensitive devices.
- 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 (Multi-lingual Translations)

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

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

DANGER

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

To avoid shock hazard:

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

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

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

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

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

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

Do not:

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

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

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

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

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

DANGER

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

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

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

Caution:
Use safe lifting practices when lifting your machine.

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

PERIGO

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

Para evitar choques elétricos:

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

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

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

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

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

Não:

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

Descarte a bateria conforme requerido pelas disposições e regulamentações locais.

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

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

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

PERIGO

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

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

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

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

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

声明 1

危险！

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

为避免电击危险：

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

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

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

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

声明 2

注意！

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

不要：

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

应按照当地法规和条例对此电池进行处理。

声明 3

注意 ！

在已安装 CD-ROM 驱动器的情况下，请注意下面的内容。

不遵循此处指定的控制、调整、或操作过程的操作将可能导致危险的辐射泄漏。

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

声明 4

危险 ！

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

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

声明 5

32 kg (70.5 磅)

55 kg (121.2 磅)

注意！

搬运机器时，请进行安全搬运操作。

声明 10

注意！

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

• 聲明 1

危險

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

為了避免雷擊：

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

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

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

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

• 聲明 2

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

嚴禁：.

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

處理廢棄電池時，請遵照當地法令規章處理。

• 聲明 3

注意：
安裝光碟機時，請注意下列事項：

不依此處所指示的控制、調整或處理步驟，恐有遭致輻射之虞。

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

• 聲明 4

危險

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

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

• 聲明 5

>= 32 公斤(70.5 磅)

>= 55 公斤(121.2 磅)

注意：
提昇機器時，請使用安全提昇措施。

• 聲明 10

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

DANGER

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

Pour éviter tout risque de choc électrique :

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

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

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

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

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

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

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

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

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

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

DANGER

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

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

≥32 kg ≥55 kg

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

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

VORSICHT

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

Aus Sicherheitsgründen:

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

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

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

Kabel anschließen

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

Kabel lösen

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

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

Die Batterie nicht

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

Die örtlichen Bestimmungen für die Entsorgung von Sondermüll beachten.

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

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

VORSICHT

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

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

≥32 kg ≥55 kg

achtung:
Beim Anheben der Maschine die vorgeschriebenen Sicherheitsbestimmungen beachten.

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

PERICOLO

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

Per evitare il pericolo di scosse elettriche:

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

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

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

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

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

Evitare di:

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

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

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

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

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

PERICOLO

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

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

≥32 kg ≥55 kg

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

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

경고문 1

위험

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

전기 충격을 피하려면 다음과 같아야 합니다.

– 고압선은 적절한 배선 및 접지 상태의 콘센트로 연결되어야 합니다.

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

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

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

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

경고문 2

주의:

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

다음을 주의하십시오.

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

지역 법령이나 규정의 요구에 따라 배터리를 처분하십시오.

경고문 3

주의:

CD-ROM 드라이브가 설치되어 있으면 다음 사항을 명심하십시오.

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

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

경고문 4

위험

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

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

경고문 5

32kg(70.5 파운드)

55kg(121.2 파운드)

주의:

기계를 들 때는 안전하게 들어 올리십시오.

경고문 10

주의:

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

PELIGRO

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

Para evitar una posible descarga:

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

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

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

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

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

Lo que no debe hacer

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

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

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

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

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

PELIGRO

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

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

≥32 kg ≥55 kg

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

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

Appendix B. Specifications 6563

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: 422.8 mm (16.64 in.) Height: 138.8 mm (5.46 in.) Width: 400 mm (15.75 in.)
Weight	Weight: 7.25 kg (16 lb)
Environment	Air temperature: • System on: 10° to 32°C (50° to 90°F) • System off: 10° to 43°C (50° to 110°F) Humidity: • System on: 8% to 80% • System off: 8% to 80% Maximum altitude: 3048 m(10,000 ft)
Heat Output	Approximate heat output in BTUs per hour: • Minimum: 256 BTU (75 watts) • Maximum: 706 BTU (207 watts)(Note 2)
Electrical Input	Sine-wave input (50 to 60 Hz) required. Low range input voltage: • Minimum: 90 V ac • Maximum: 137 V ac High range input voltage: • Minimum: 180 V ac • Maximum: 265 V ac Input kVA (approximately): • Maximum (as shipped): 0.10 kVA
Airflow	Approximately 0.56 cubic meters/minute (20 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

Notes:

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

Appendix C. Parameter 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 a:

- **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 6563 or 6275

Service Processor Connection Type and Mode	Service Processor Modem Type	Remote Workstation DCAF 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 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 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 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 ↓

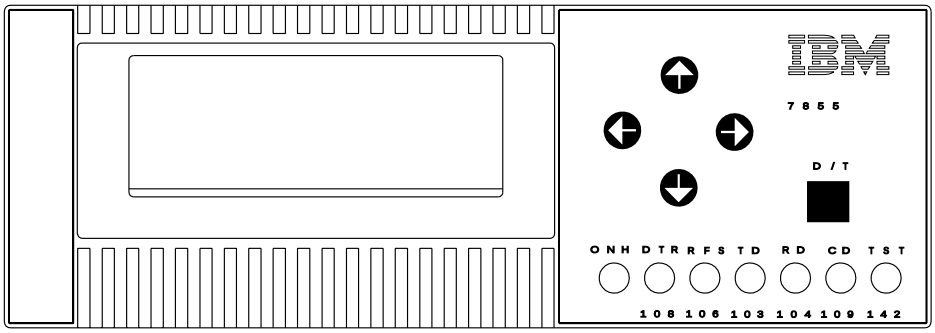


Figure E-1. 7855 Front Panel

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.

Warning: 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 6563)	• 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 6563	• Figure F-7 on page F-8
• Example of units installation (processor type 6563)	• Figure F-8 on page F-9
• Example of units installation (processor type 6563 + 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.

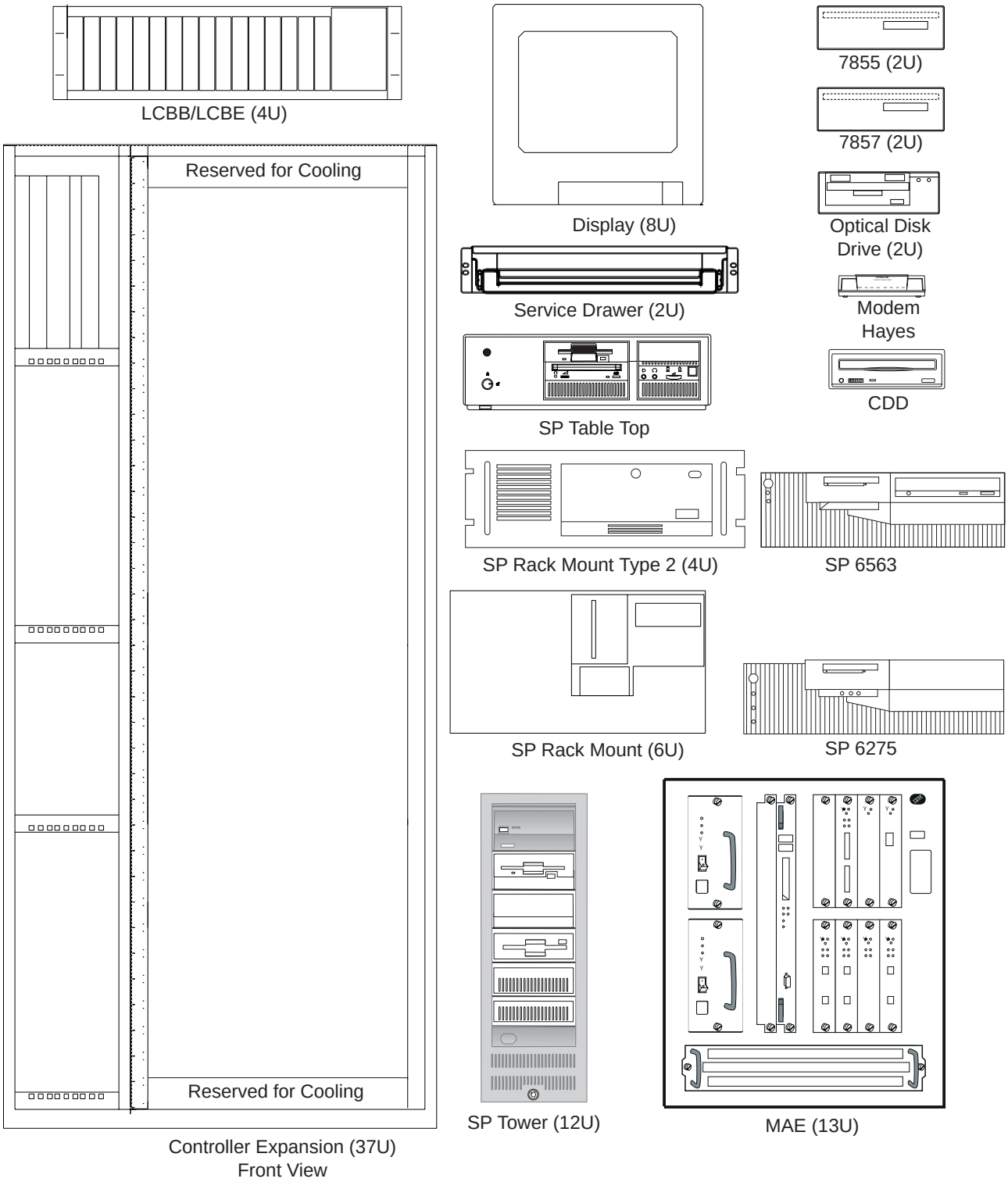


Figure F-1. Controller Expansion Inventory Chart (Front View).

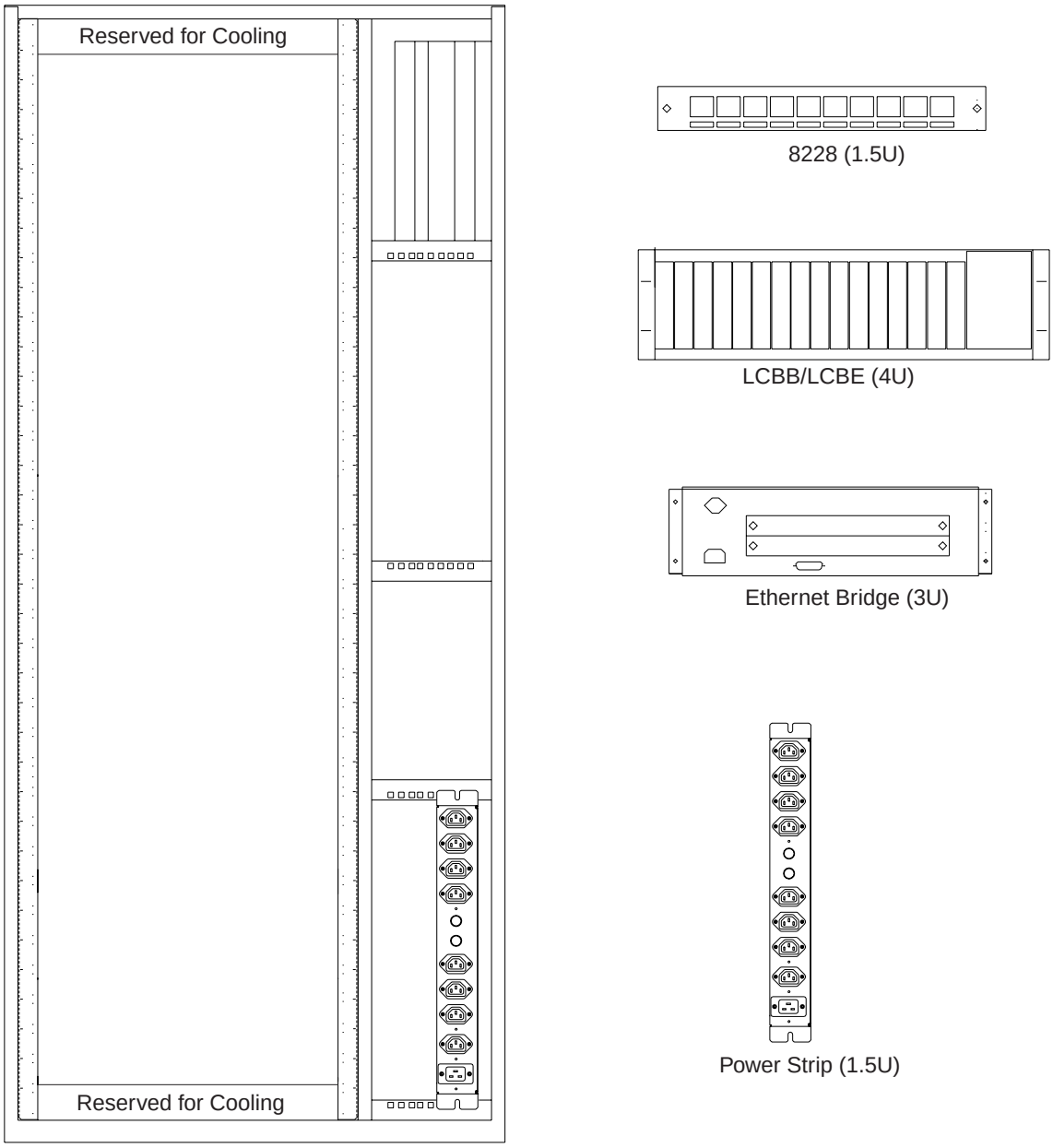


Figure F-2. Controller Expansion Inventory Chart (Rear View).

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 themself.
2. The attachment holes along each side of the controller expansion are divided into units of measure called EIA units. Each EIA unit (U) equals 44.5 millimeters (1.75 inches).
3. The controller expansion is 37 U high but only 35 are usable, one U must be reserved at the top and at the bottom for proper cooling.

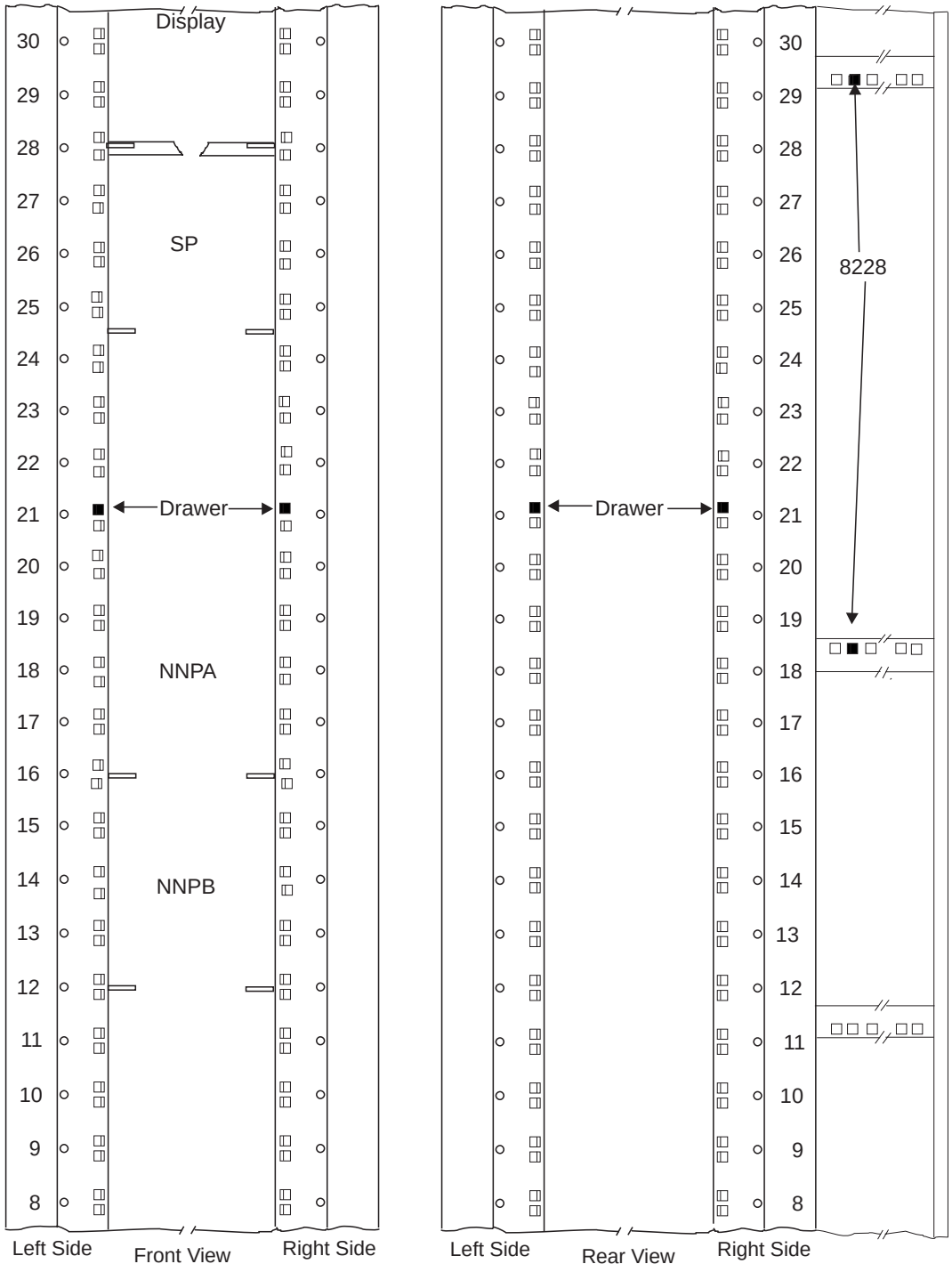


Figure F-3. Installing Captive Nuts and Brackets for the Display, Drawer, SP and NNP Based on PC Type 6563

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

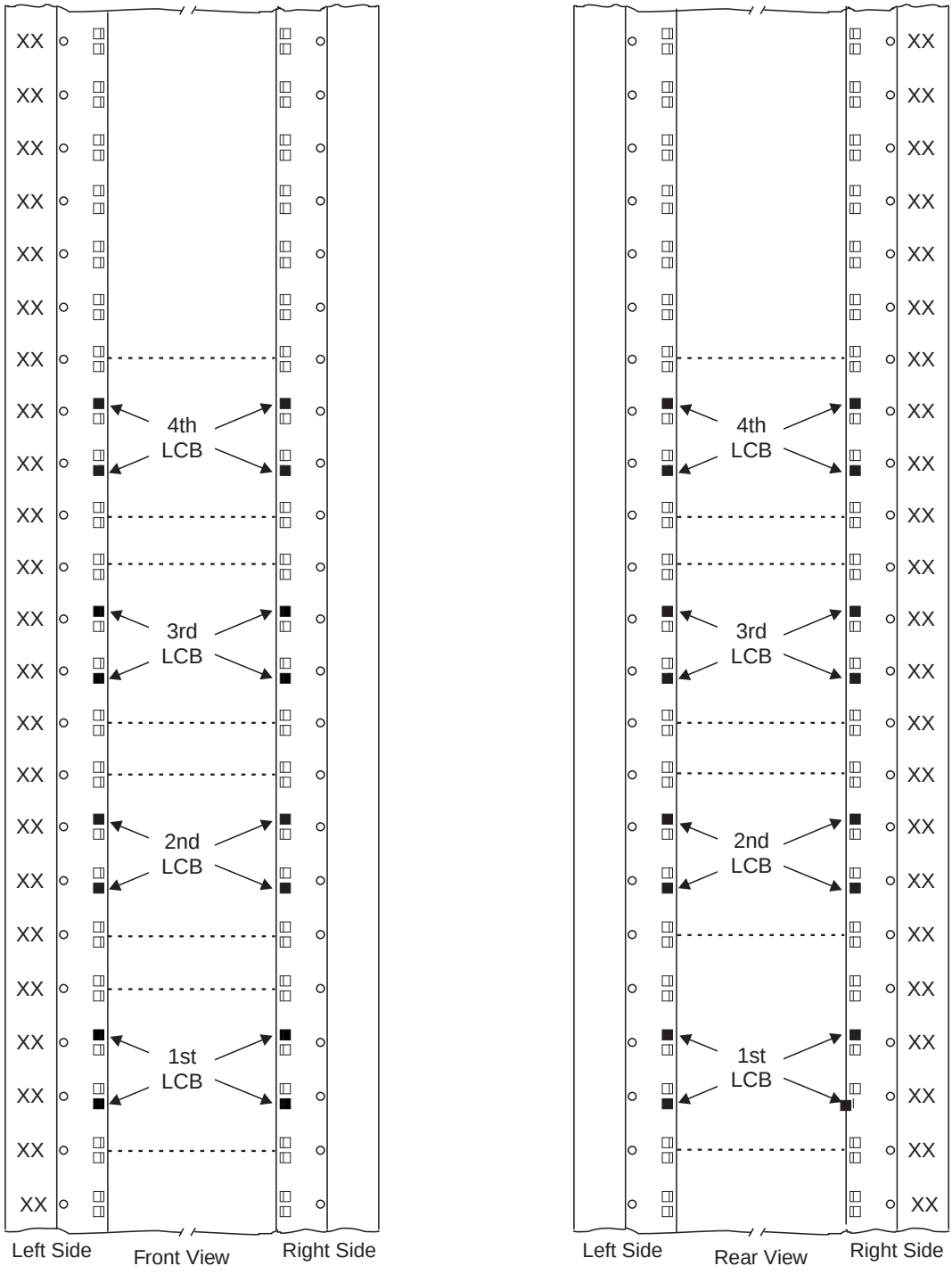


Figure F-4. Installing Captive Nuts for LCBs

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

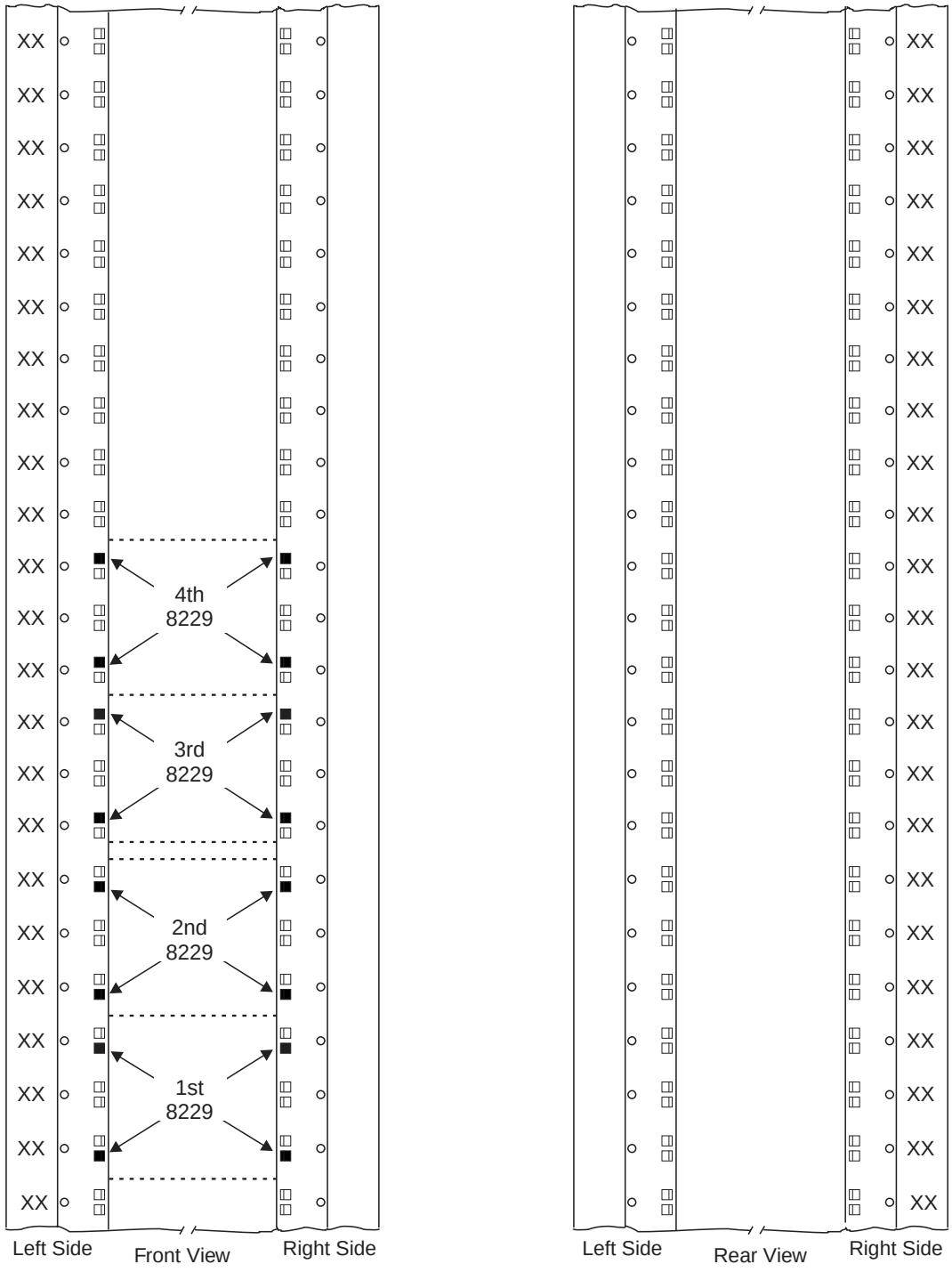


Figure F-5. Installing Captive Nuts for 8229s

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

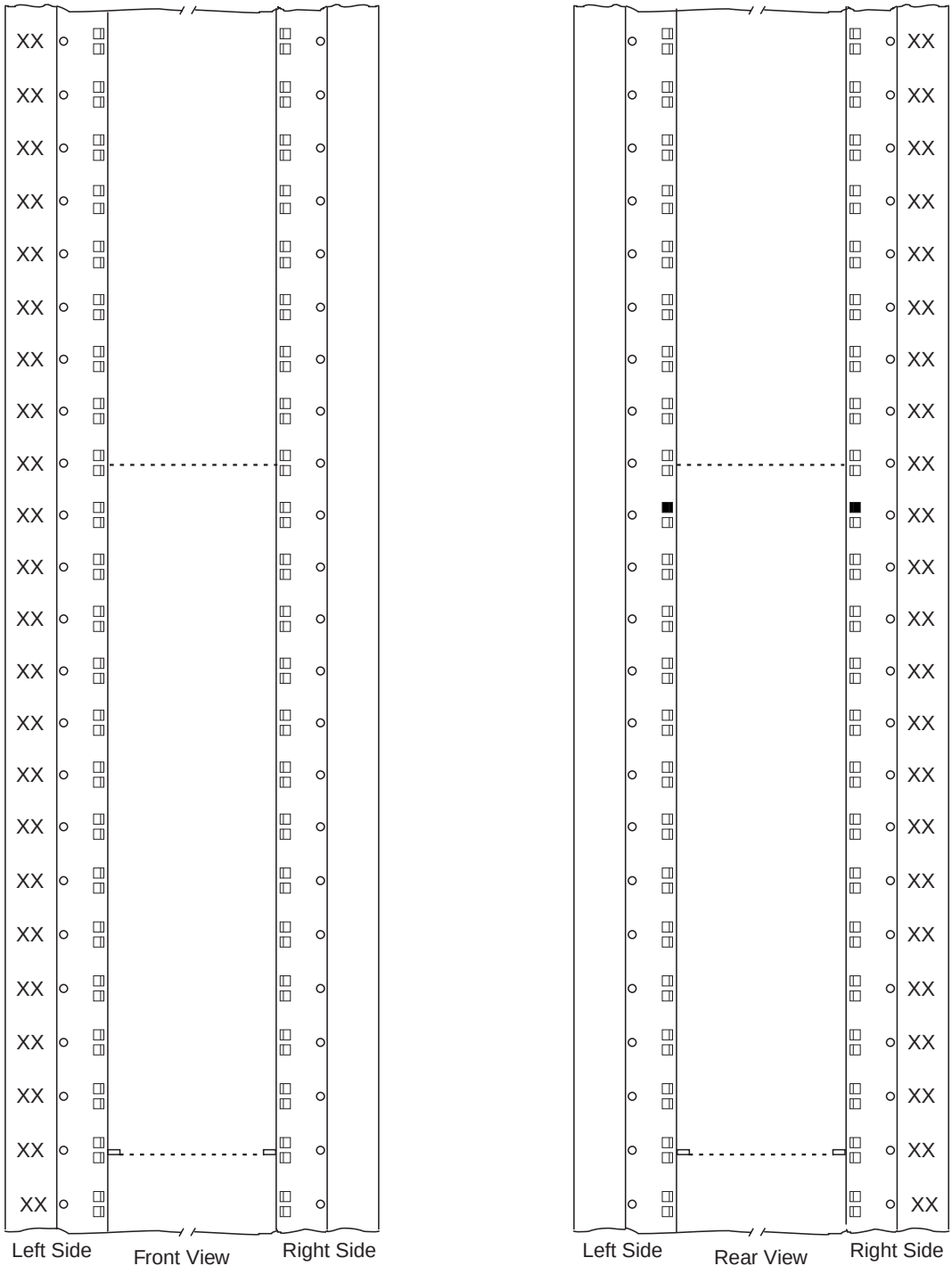


Figure F-6. Installing Captive Nuts and Brackets for MAE

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

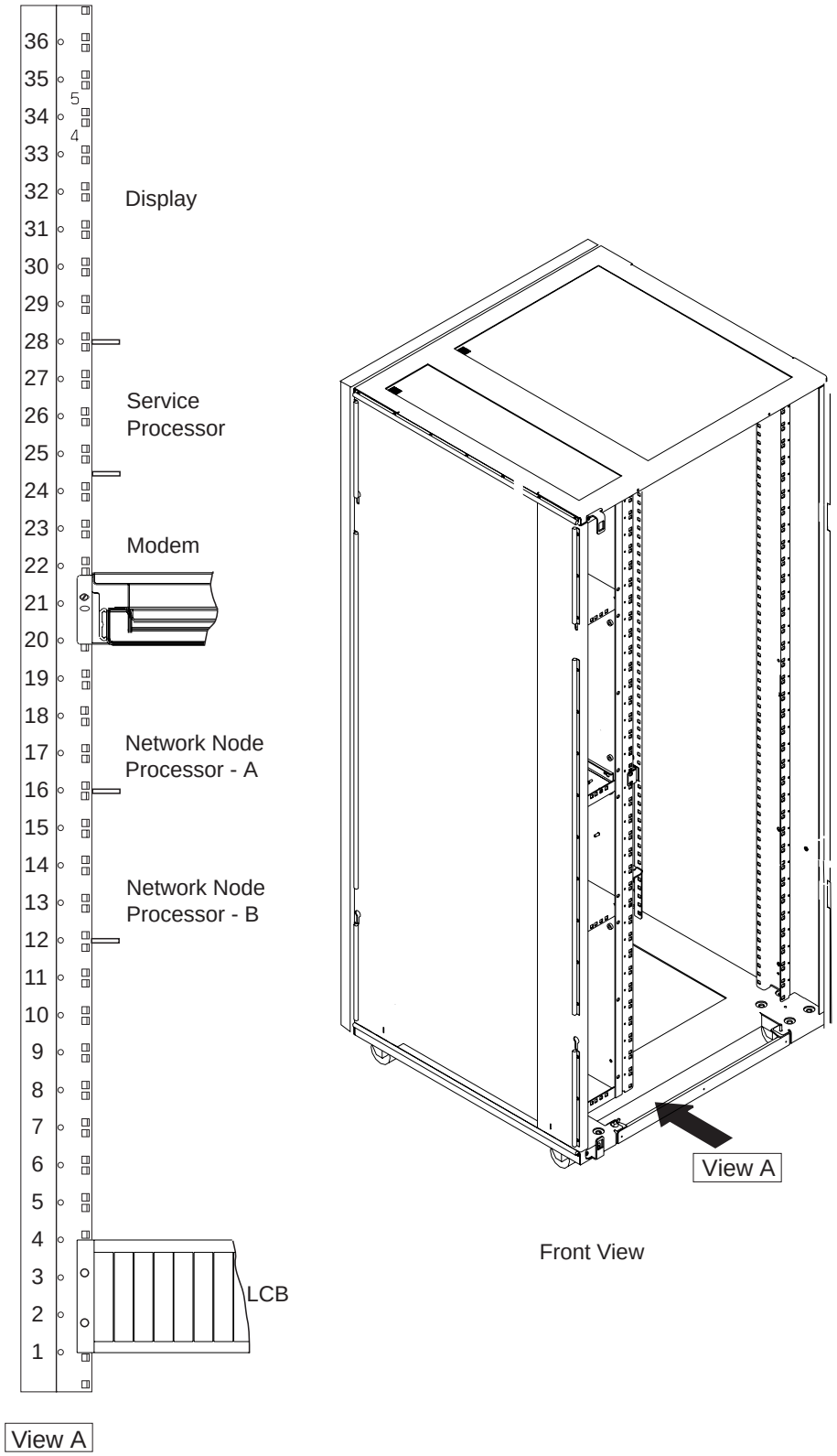


Figure F-7. Installing Brackets (PN 58G5752) for Processor Type 6563

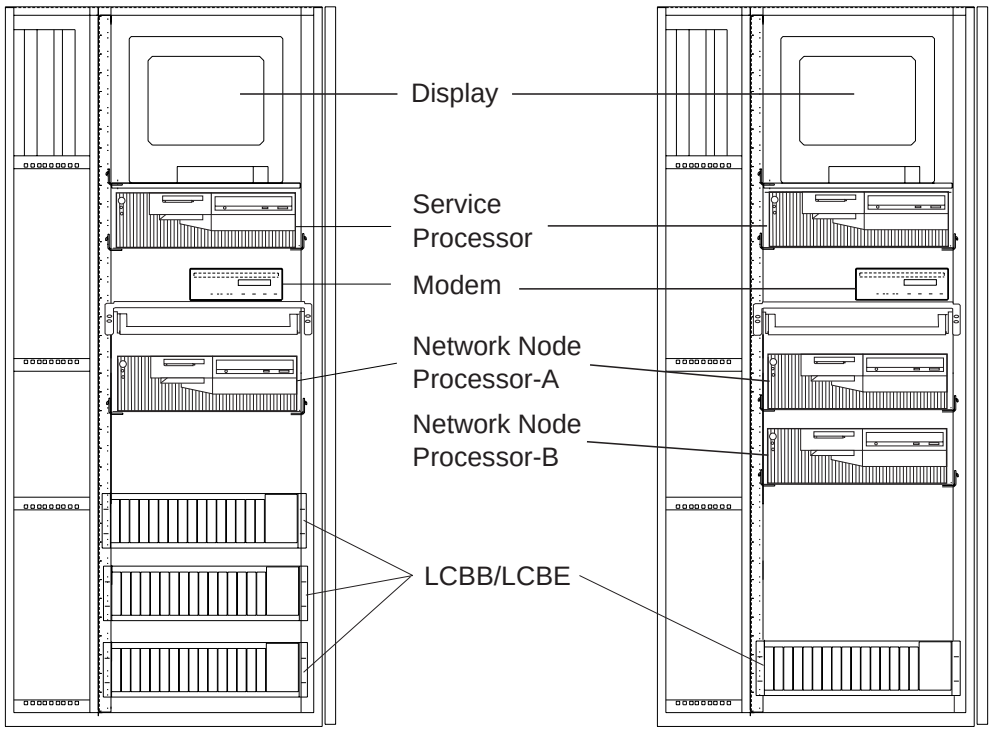


Figure F-8. Units Installation in the Controller Expansion (SP and NNP Type 6563)

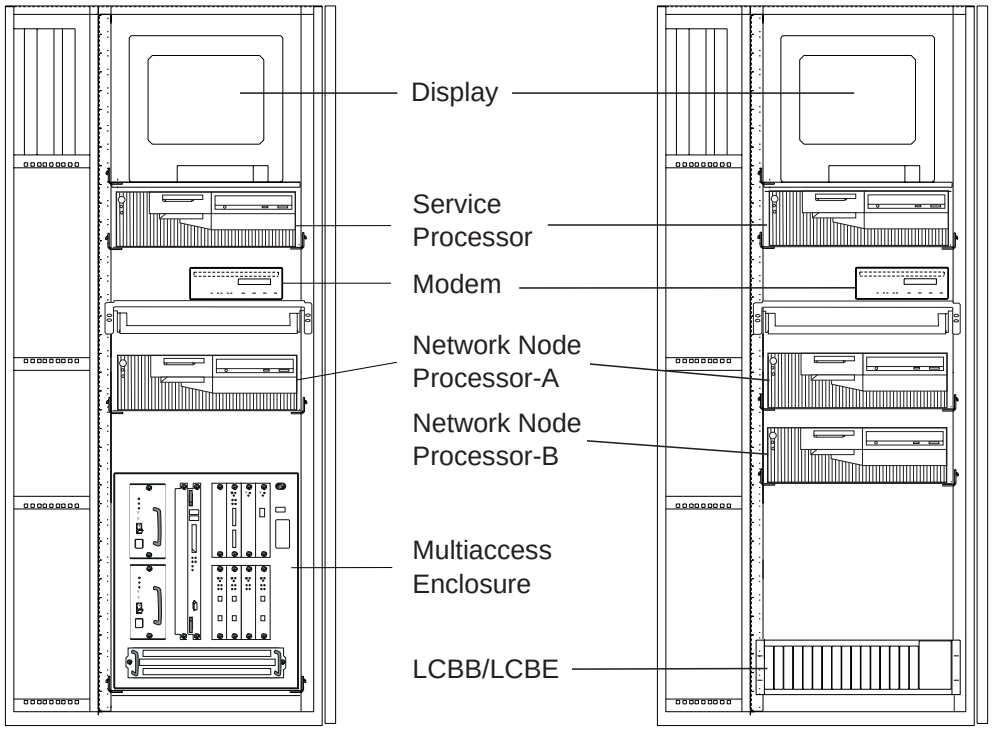


Figure F-9. Units Installation in the Controller Expansion (SP and NNP Type 6563 + MAE)

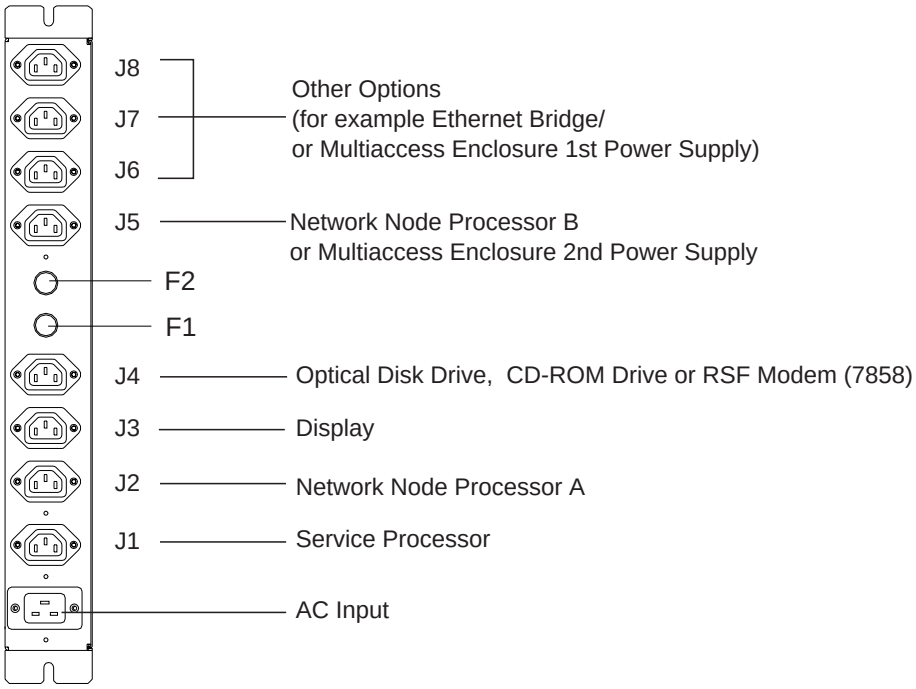


Figure F-10. Connecting the Units to the ac Outlet Distribution Box.

Appendix G. Service Processor External Cable References

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

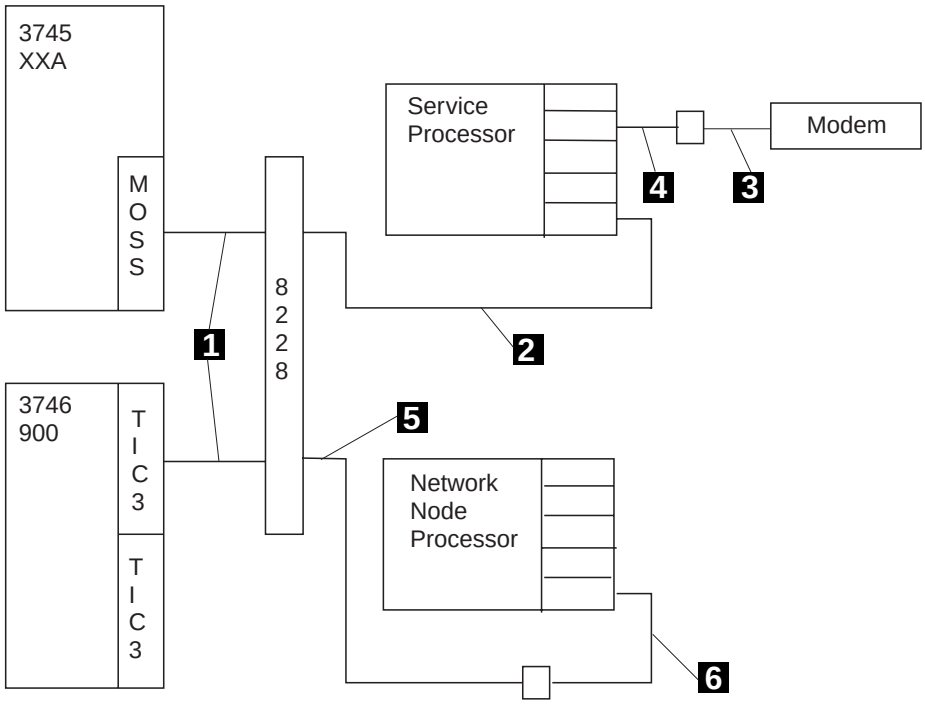


Figure G-1. Service Processor and Network Node Processor Cables for 3746-900

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

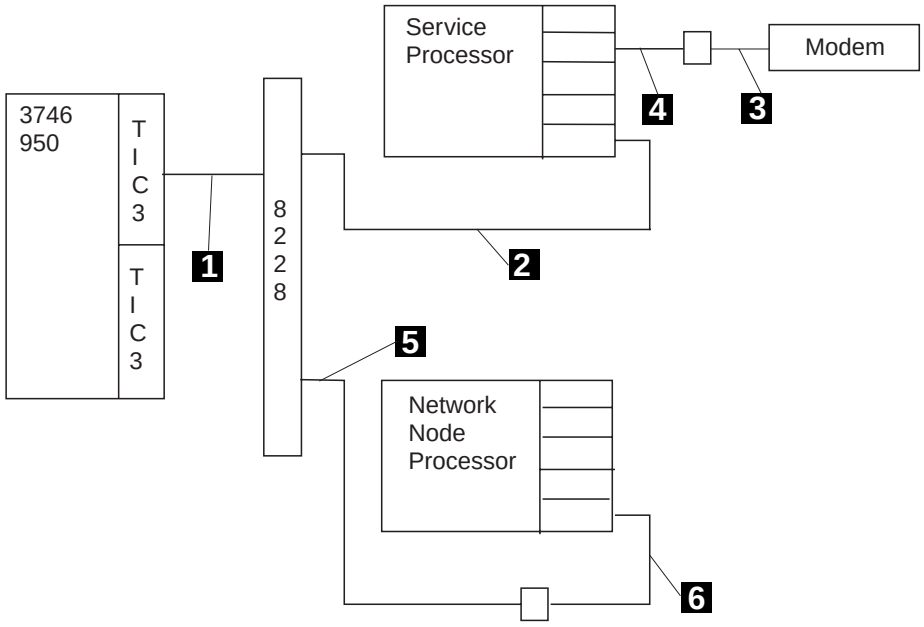


Figure G-2. Service Processor and Network Node Processor Cables for 3746-950

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

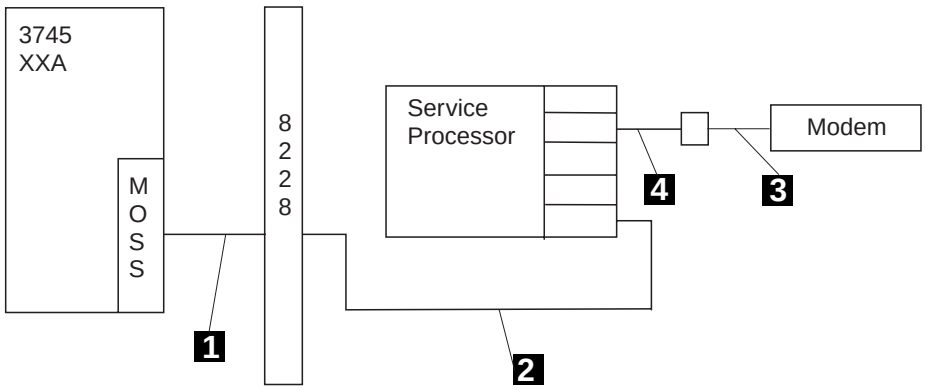


Figure G-3. Service Processor Cables for 3745 Models xxA

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.

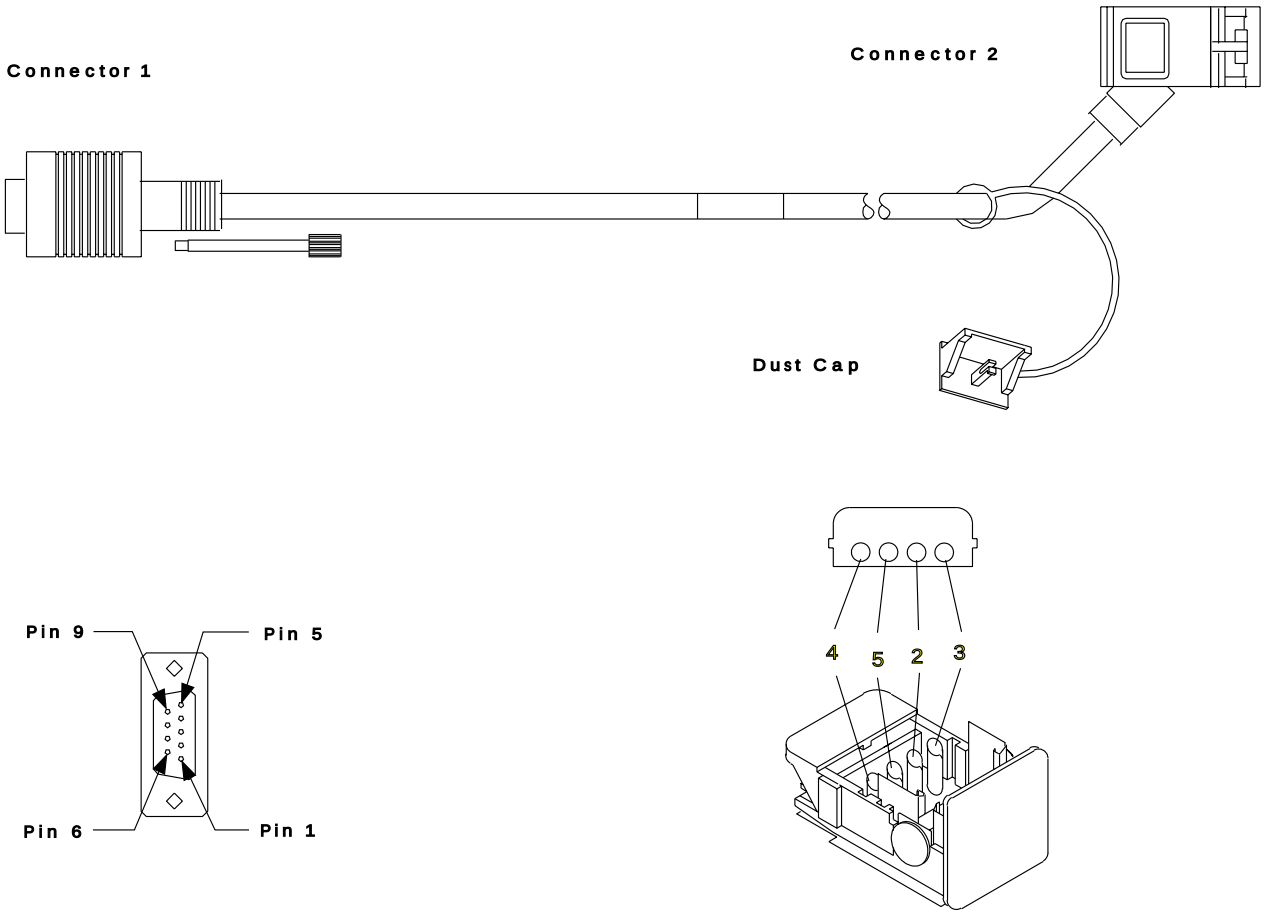


Figure G-4. LAN Cable

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

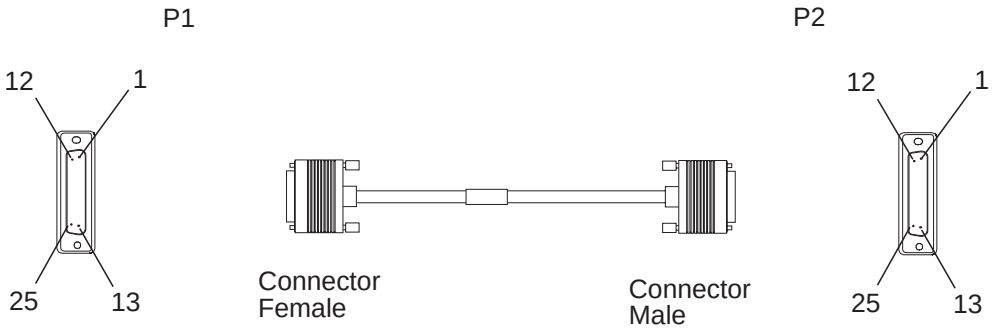


Figure G-5. Cable between the Service Processor and the Modem (PN 0782985)

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

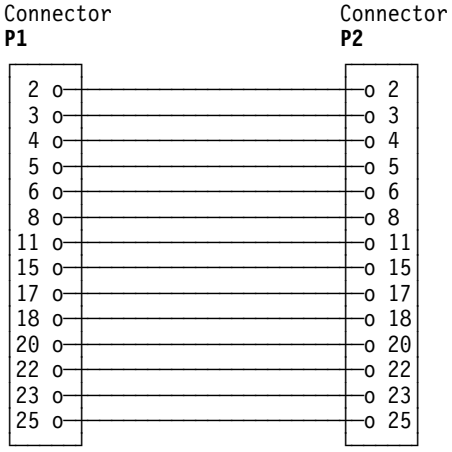


Figure G-6. Modem Cables Pin Assignments (PN 0782985)

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

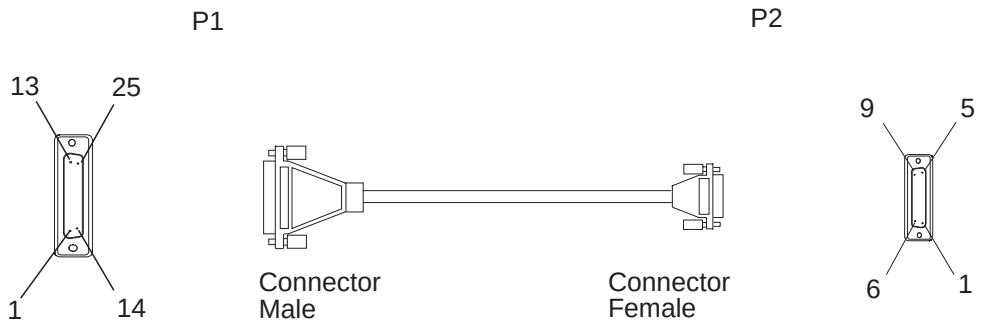


Figure G-7. Modem Cable Adapter (PN 0782984)

Interchange Circuits for the Modem Adapter Cable

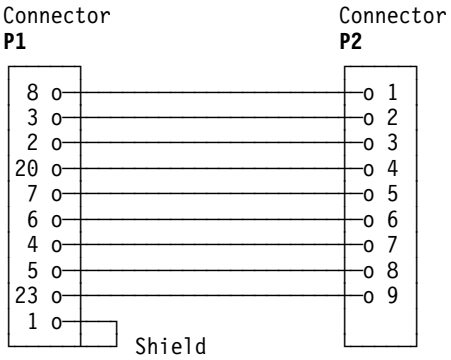


Figure G-8. Modem Cables Pin Assignments (PN 0782984)

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

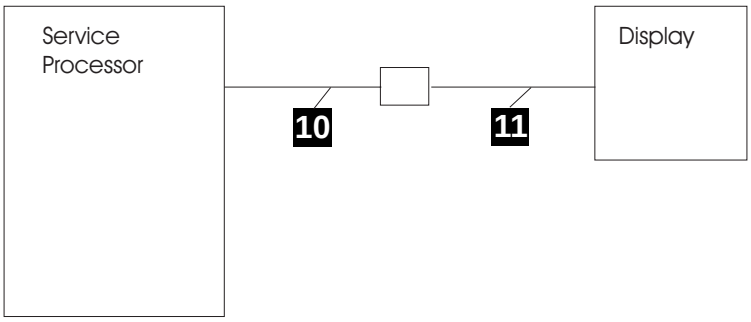


Figure G-9. Cables between the Service Processor and the Display

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** .

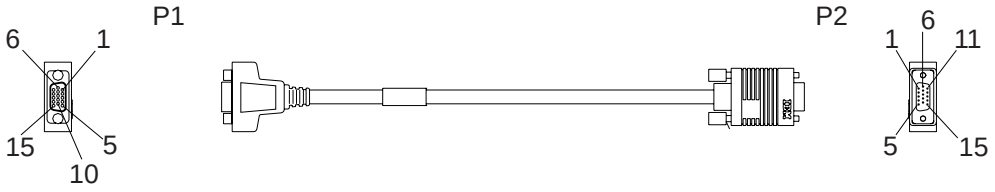


Figure G-10. Extender Cable for Service Processor and Display connection

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

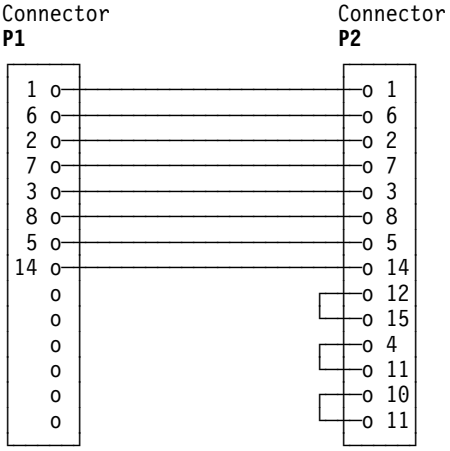


Table G-5. Extender Cable for Service Processor and Display Connection		
Cable Type	**Length**	**Cable PN**
Standard Fixed	4 m (13 ft.)	59G1270

Cables Between the Keyboard, the Mouse and the Service Processor

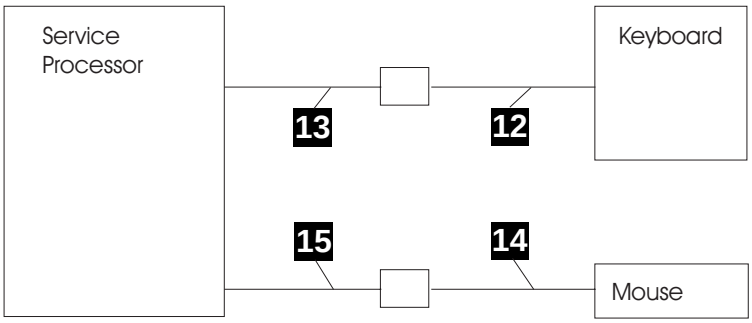


Figure G-11. Cables between the Service Processor and the Display

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**).

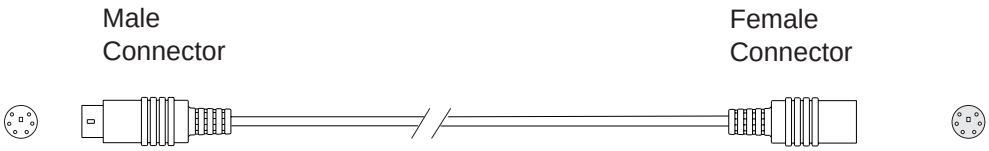


Figure G-12. Keyboard Extender Cable

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**).

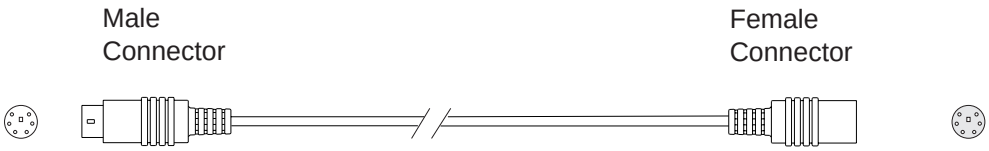
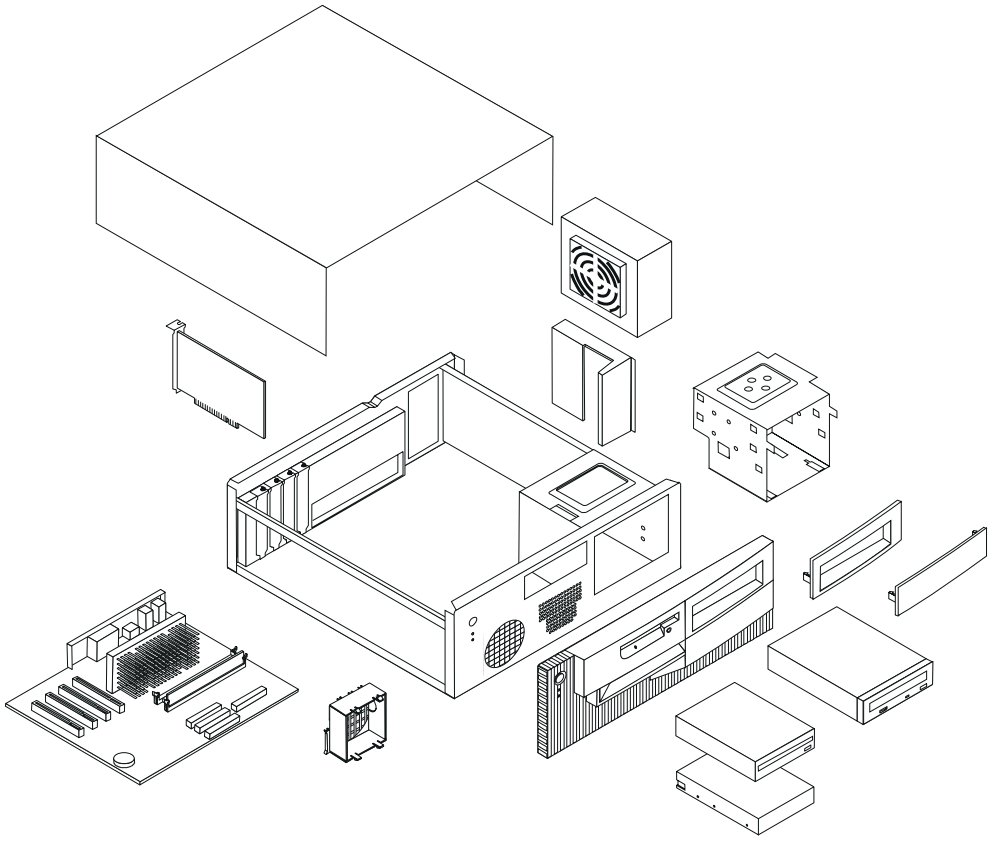


Figure G-13. Mouse Extender Cable

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

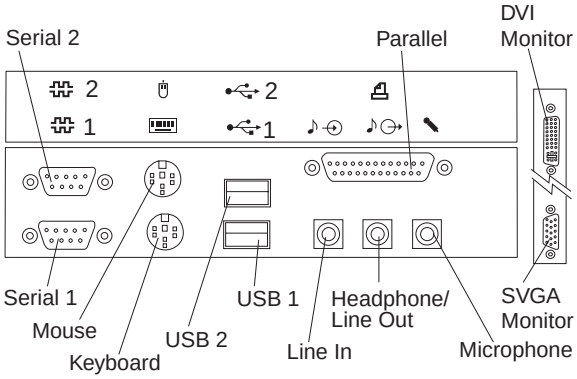
Appendix H. Service Processor Aids

Computer Exploded View

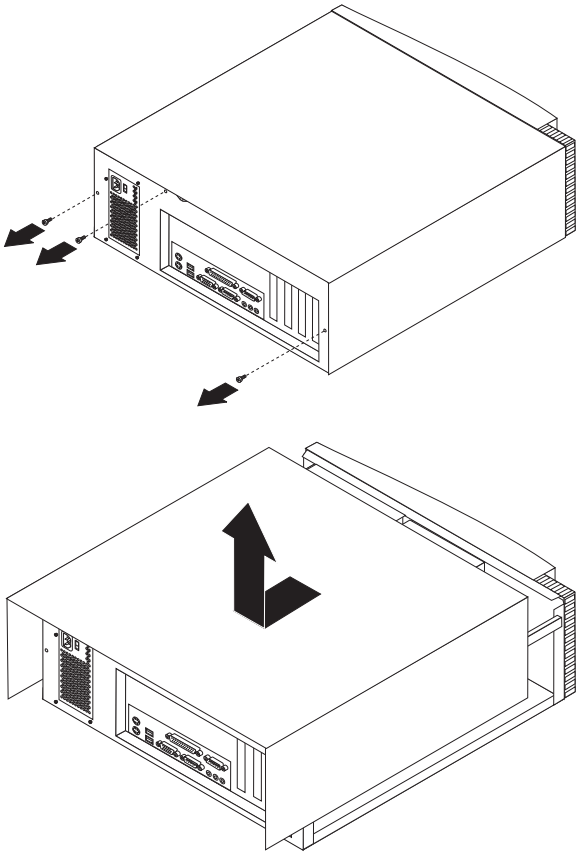


Input/output connectors and removal/service procedures for the cover, front panel, front bezel, diskette/hard disk drive bracket, CD-ROM drive, power supply, and system board are on the following pages.

Input/Output Connectors



Cover Removal



To remove top cover:

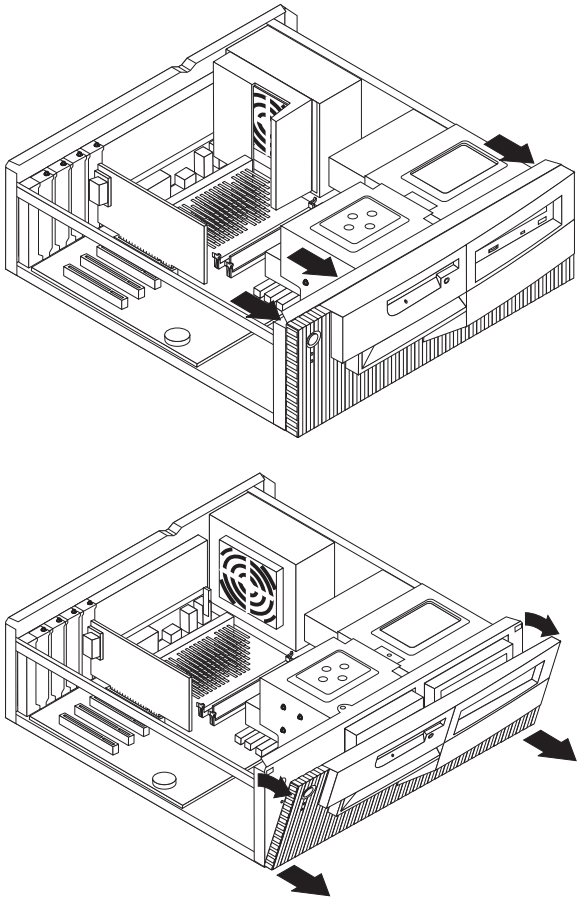
1. Remove the three cover thumb screws.
2. Slide cover toward the rear of the chassis about 1-inch (2 cm) to clear the front panel.
3. Lift cover up.

To install top cover:

1. Slide cover down onto the chassis about 1-inch (2 cm) from the front panel.
2. Make sure bottom cover slots are engaged on the chassis.

3. Slide cover forward to engage the front cover slots onto the chassis.
4. Install the three thumb screws.

Front Panel



To remove the front panel:

1. Remove the top cover.
2. Release the three top latches while gently pulling the top of the panel outward.
3. Keeping the panel at the same angle, gently pull the panel out from the bottom of the chassis.

To install the front panel:

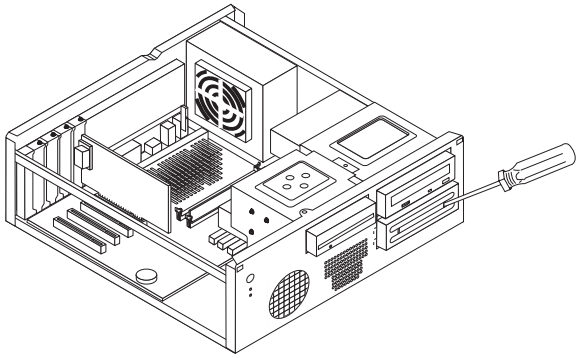
1. At the same angle that the panel was when removed, install the bottom tabs of the panel in the chassis. Push up on the left and right bottom tabs, if necessary, to get the tabs in the holes of the chassis.
2. Push the top of the panel toward the chassis until the three top latches lock in place.

Front Bezel

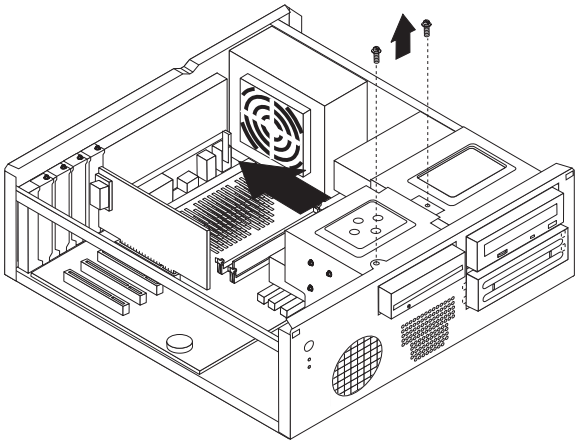
To remove the front blank bezel:

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

EMC Shield



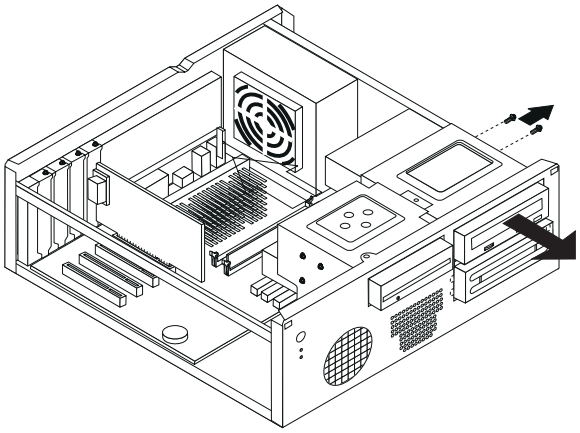
Diskette / Hard Drive Bracket



To remove the diskette/hard drive brackets:

1. Remove the top cover.
2. Remove the diskette and hard drives or disconnect their cables.
3. Remove the two top screws securing the bracket.
4. Slide bracket toward the back of the chassis to unlatch it from the chassis.
5. Lift the bracket out of the chassis.

CD-ROM Drive Removal



To remove the CD-ROM drive:

1. Remove the top cover.
2. Remove the front panel.
3. Remove the cables from the CD-ROM drive.
4. Remove two screws securing the CD-ROM drive.
5. Pull the CD-ROM drive out of the chassis.

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.

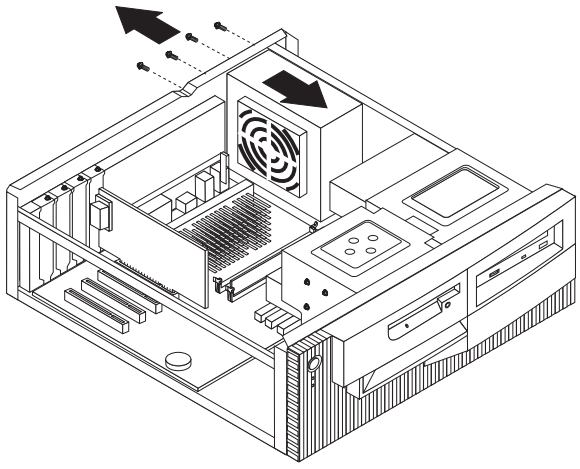
Power Supply Removal

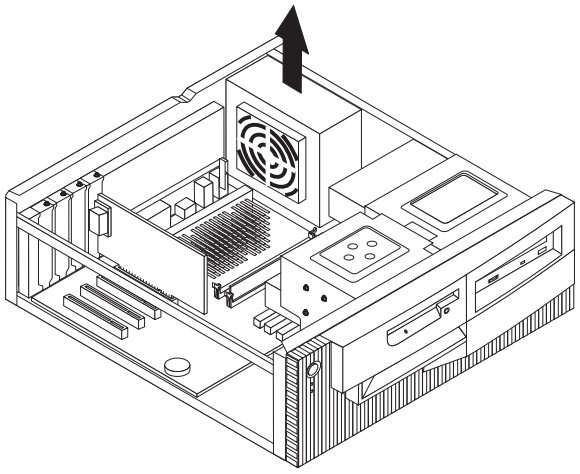
Note

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

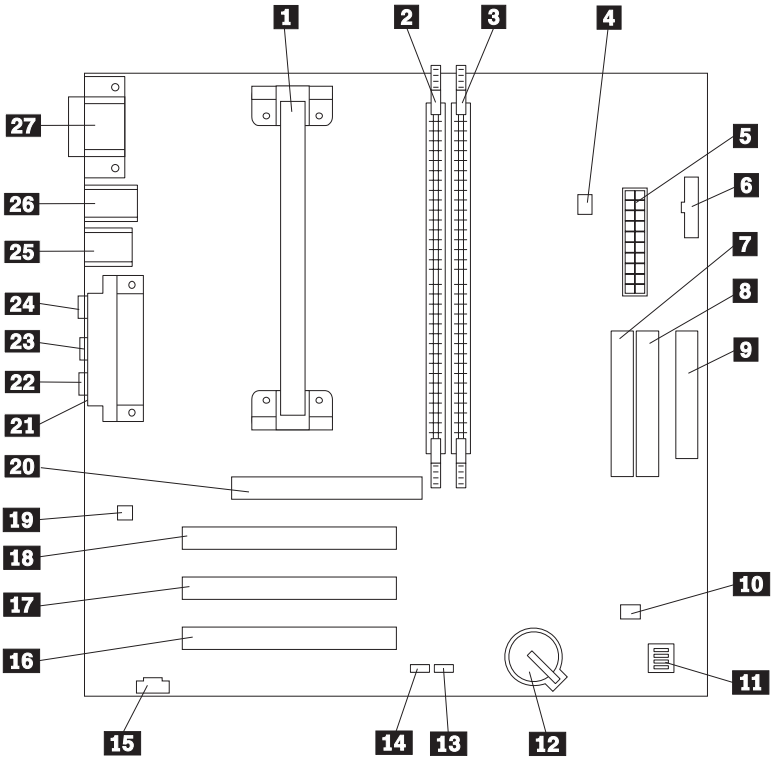
To remove the power supply:

1. Remove the top cover.
2. Remove the air duct.
3. Disconnect the power supply connectors.
4. Remove the four screws securing the power supply to the chassis.
5. Move power supply inward, then lift out of the chassis.





System Board Layout



System Board Locations

1	Processor socket
2	DIMM socket 1
3	DIMM socket 2
4	Processor fan connector
5	Power connector
6	Power Switch/LED connector
7	Primary IDE connector
8	Secondary IDE connector
9	Diskette drive connector

10 Front fan connector
11 Switch assembly
12 Battery
13 Wake on LAN connector
14 Alert on LAN connector
15 CD Audio Connector
16 PCI 1 slot
17 PCI 2 slot
18 PCI 3 slot
19 Internal speaker connector
20 AGP connector
21 Parallel connector
22 Microphone connector
23 Line Out Connector
24 Line In connector
25 USB connectors
26 Mouse/Keyboard connectors
27 Serial connectors (COM 1, COM 2)

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 6563 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 the **F1** key to invoke the configuration/Setup utility after POST completion, and continue with “Service Processor Configuration Reference Based on 6563-65U.”

Service Processor Configuration Reference Based on 6563-65U

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

```
Configuration/Setup Utility

Select Option:

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

Save Settings
Restore Settings
Load Default Settings

Exit Setup
```

1

```
          System Summary

Processor          Pentium III
Processor Speed    533/133 MHz
L2 Cache Size      512 KB
Cache State        Enabled with NO ECC
System Memory      128 MB
Memory Type        Non-ECC
Memory Bus Speed   133 MHz
Video Controller   S3 Incorporated. Savage4
Audio Support      Enabled
Diskette Drive A   1.44 MB 3.5"
IDE Hard Disk Drive 0 13579 MB
IDE Hard Disk Drive 1 Not Installed
IDE CD-ROM Drive 2  Installed
IDE Hard Disk Drive 3 Not Installed
```

2

```
          Product Data

Machine type/ Model          656365U
Flash EEPROM Revision Level  PJKT24AUS
Boot Block Revision Level    PJ23A
System Board Identifier      xxxxxxx
System Serial Number         xxxxxxx
System UUID                  xxxxxxx
BIOS Date                    10/05/99
```

3

```
         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                   S3 Incorporated. Savage4
Active Video Memory            8192 KB
Video Aperture                 (64 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

- Drive 0&1 Prefetch     (Disabled)
- Drive 2&3 Prefetch     (Disabled)
```

```
         IDE Hard Disk Drive 0

Size                  13579 MB
IDE Performance       (High Performance)
```

```
         IDE CD-ROM    Drive 2

IDE Performance       (High Performance)
```

```
         Audio Setup...

Audio Support         (Enabled)
```

```
         Network Setup...

Preboot Execution Environment Base Code  (Disabled)
PCI Boot Entry Vector Startup            (Disabled)
```

4

```
         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 F12 Option    (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.

5

```
          Date and Time

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

6

```
          System Security

  - Security Profile by Device
  - Remote Administration
  - Power-On Password
  - Administrator Password
    Adapter ROM Security        (No)
```

```
    Security Profile by Device

  IDE Controller             (Enable )
  Diskette Drive Access      (Enable )
  Diskette Write Protect     (Disable)

  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)
```

```
          Power-On Password

  Enter your new Power-on password twice.

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

  Change Power-on Password
  Delete Power-on Password

  Password Prompt                (Dual)
```

```
         Administrator Password

Enter your new Administrator password twice.

Enter Administrtor Password          (       )
Enter Administrator Password Again   (       )

Change Administrator Password
Delete Administrator Password

Power-on Password changeable by user      (NO)
Require Power-on Password on Warn Boot,   (NO)
```

7

```
         Advanced Setup

Warning:

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

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

```
         Cache Control

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

```
         ROM Shadowing

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

```
              PCI Control

   PCI Parity            (Enabled    )
```

```
          Plug and Play Control

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

```
         Processor Control

   Processor 0 ID       0673
     Microcode Revision (MM/DD/YYYY) 06/29/1999
   Processor Serial Number Access    (Disabled)
```

8

```
         ISA Legacy Resources

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

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

```
         Memory Resources

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

```
      I/O Port Resources


   100h-103h    (Available      )
     -   -           -
   16Ch-16Fh    (Available      )
   170h-173h    IDE Drives
   174h-177h    IDE Drives
   178h-17Bh    (Available      )
     -   -           -
   1ECh-1EFh    (Available      )
   1F0h-1F3h    IDE Drives
   1F4h-1F7h    IDE Drives
   1F8h-1FBh    (Available      )
     -   -           -
   2F4h-2F7h    (Available      )
   2F8h-2FBh    Serial Port B
   2FCh-2FFh    Serial Port B
   300h-303h    (Available      )
     -   -           -
   370h-373h    (Available      )
   374h-377h     System Board
   378H-37Bh    Parallel Port
   37Ch-37Fh    Parallel Port
   380h-383h    (Available      )
     -   -           -
   3B0h-3B3h    (Available      )
   3B4h-3B7h    Video
   3B8h-3BBh    Video
   3BCh-3BFh    (Available      )
   3C0h-3C3h     Video
     -   -           -
   3DCh-3DFh     Video
   3E0h-3E3h    (Available      )
     -   -           -
   3ECh-3EFh    (Available      )
   3F0h-3F3h     System Board
   3F4h-3F7h     System Board
   3F8h-3FBh     Serial Port A
   3FCh-3FFh     Serial Port A
```

```
      DMA Resources

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

```
       Interrupt Resources

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

9

```
        Power Management

  ACPI BIOS Mode               (IRQ 9)

  - 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 Exit Activity Monitor

 Activity Monitor
```

```
          Low Power Entry Activity Monitor

    PS/2 Keyboard   (Enabled)
    PS/2 Mouse      (Enabled)
    Diskette        (Enabled)
    Parallel Port   (Enabled)
    Parallel Port A (Enabled)
    Parallel Port B (Enabled)
    Primary IDE     (Enabled)
    Secondary IDE   (Disabled)
    USB Devices     (Disabled)
```

```
          Low Power Exit Activity Monitor

   PS/2 Keyboard   (Enabled)
   PS/2 Mouse      (Enabled)
   Diskette        (Enabled)
   Parallel Port   (Enabled)
   Parallel Port A (Enabled)
   Parallel Port B (Enabled)
   Primary IDE     (Enabled)
   Secondary IDE   (Disabled)
   USB Devices     (Disabled)
   LAN             (Enabled)
   PCI Other       (Enabled)
```

```
          Automatic Power On
Wake on LAN

  Serial Port A Ring Detect     (Disabled)
   Startup Sequence              Primary

  Modem Ring Detect             (Disabled)
   Startup Sequence              Primary

  Wake Up on Alarm              (Disabled)
    Alarm day of month           01
    Alarm Time                   01:00    (Note 1)
    Alarm day of week            Monday   (Note 2)
    Startup Sequence             Primary

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

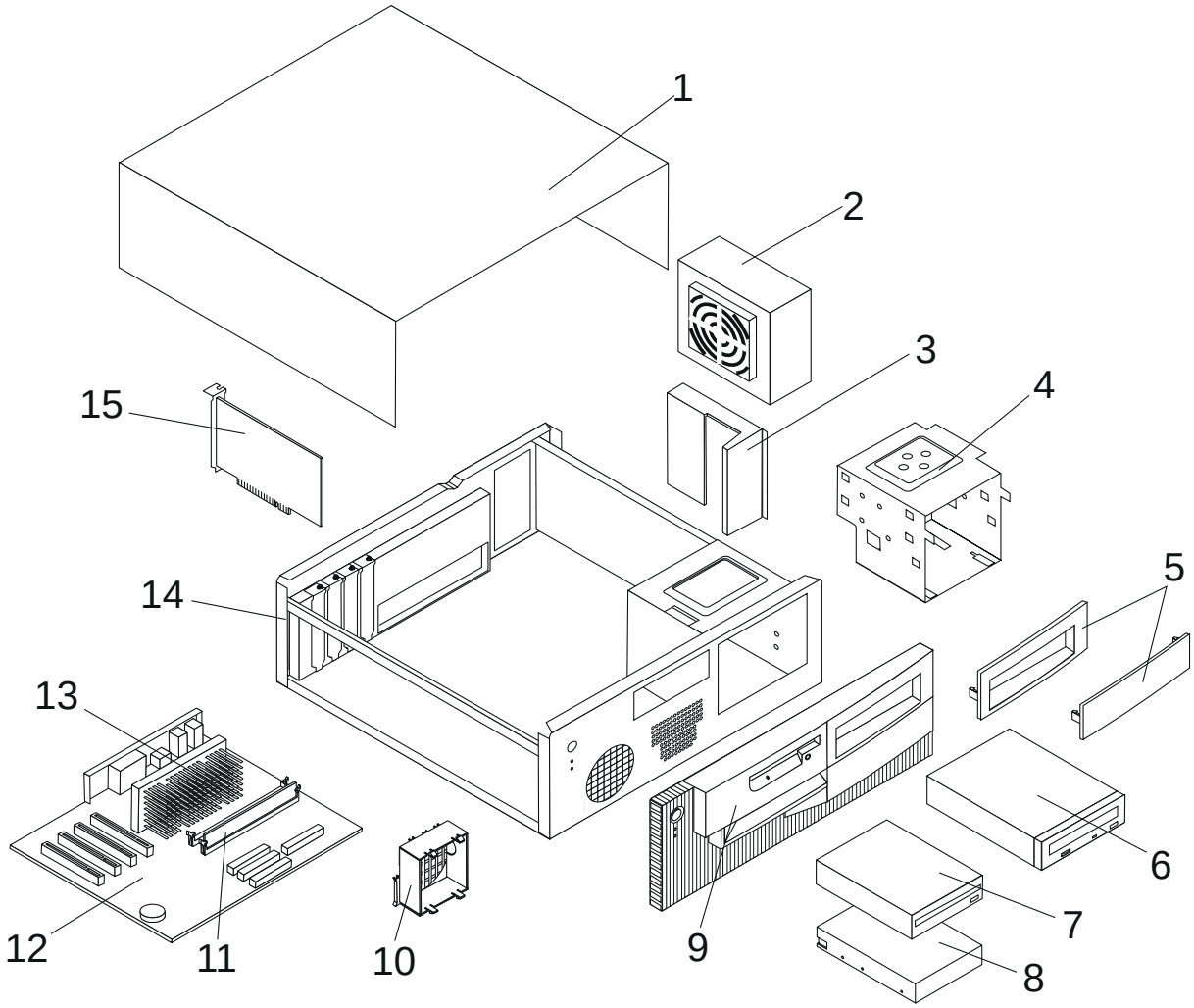
Notes:

1. May be another time
2. May be another day

```
          Wake on LAN

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

Appendix I. Service Processor Part Numbers


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

Parts listing

Index	System (Type 6563)	FRU No.
1	Top Cover Assembly	37L5090
2	Power Supply-145W	01K9870
2	Power Supply-145W (China)	36L8815
2	Power Supply-145W (Japan)	20L2314
3	Fan Duct Kit	37L4995
4	Hard File/Floppy Bracket	37L5094
5	Bezel Kit	37L5097
6	CD-ROM (40X Max)	36L8789
6	CD-ROM (48X Max)	09N0735
6	CD-ROM Read/Write	36L8719
7	1.44 MB, 3.5-Inch Diskette Drive	75H9550
7	1.44 MB, 3.5-Inch Diskette Drive (Japan)	75H9552
8	10.1 GB EIDE Hard Disk Drive	36L8681
8	13.5 GB EIDE Hard Disk Drive	36L8689
8	20.4 GB EIDE Hard Disk Drive	36L8628
9	Front Bezel Assembly	37L5096
10	Fan/Card Guide Assembly	37L5093
11	Memory - 64 MB SDRAM, Non-Parity	33L3072
11	Memory - 128 MB SDRAM, Non-Parity	33L3074
11	Memory - 64 MB SDRAM, ECC	33L3080
12	System Board (no processor, no memory)	61H2470
13	Pentium III 533/133 MHz.	33L4066
14	Chassis Assembly	37L5091
15	IBM Token-Ring 16/4 PCI Adapter 2	34L0601
	Cable - ATA-66 2 Drop	37L5098
	Cable - CD-ROM Audio	75H9219
	Cable - Diskette Drive	33L2596
	Cable - Hard Disk Cable, ATA	37L4525
	Cable - Wake On Ring	76H7345
	EMC Shield Kit for System Board	37L5095
	Foot (4)	03K9655
	EMC Shield for 5.25-inch Bay	20L3073
	LED/Power Switch Assembly	37L5092
	Lithium Battery	33F8354
	Miscellaneous Hardware Kit	20L3094
	Mouse - 2 button	10L6145
	Name Plate (6563)	00n6083
	Savage2 Video Card-100 2xAGP	09N5898
	Savage2 Video Card-143 4xAGP	33L1618
	Savage2 Video Card-143 4xAGP dongle	09N3435
	Speaker/Cable Assembly	01K4909
	URM retainer Kit	33L4521

Appendix J. Bibliography

Customer Documentation for the 3746 Model 950

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

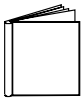
This customer documentation has the following formats:

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



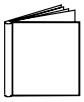
GA33-0400

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

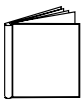


GA33-0180

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

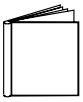
IBM 3745 Communication Controller Models A[2]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

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



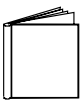
GA27-4235

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.



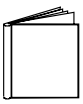
GA27-4236

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.



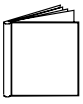
GA27-4237

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

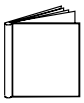
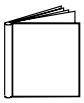
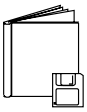
	GA27-4239	***IBM 3745 Communication Controller Models A²*** ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Planning Series:*** ***Management Planning*** Provides information for: • Overview for 3746 • 3746 APPN/HPR, IP router, and X.25 • NetView Performance Monitor (NPM), remote 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:*** ***Protocols Description*** 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]

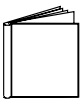
Explains how to:

- 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.

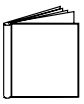


SH11-3081

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.

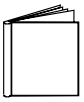
Managing Problems

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.

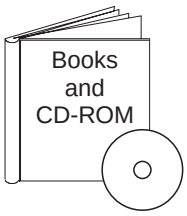
Table J-1 (Page 5 of 5). Customer Documentation for the 3746 Model 950

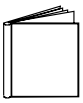
[1] Models 130 to 61A.
[2] Documentation shipped with the 3746-950
[3] 3745 Models 17A to 61A.

Service Documentation for the IBM 3746 Model 950

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

This service documentation has the following formats:



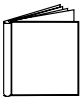


SY33-2107

IBM 3746 Nways Multiprotocol Controller Model 950

Installation Guide[1]

Provides instructions for installing or relocating the Nways Controller.

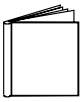


SY33-2108

IBM 3746 Nways Multiprotocol Controller Model 950

Service Guide[1]

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

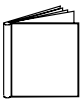


SY33-2115

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

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

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

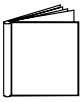


SY33-2120

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

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

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



SY33-2125

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

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

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

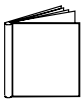
Table J-2 (Page 2 of 3). Service Documentation for the 3746 Model 950

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.

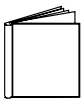


SY33-2118

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).

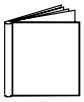


SY33-2124

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.

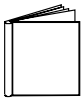


SY33-2112

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.

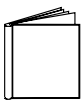


SY33-2126

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.



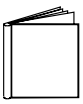
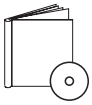
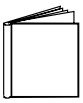
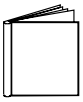
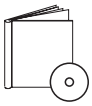
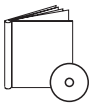
SY27-0394

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.

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

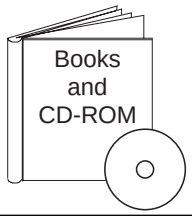
 SY33-2127	***IBM 3745 Communication Controller Models A***[3] ***IBM 3746 Expansion Unit Model 900*** ***IBM 3746 Nways Multiprotocol Controller Model 950*** ***Service Processor and Network Node Processor***[4] ***Service User's Guide*** Provides information on installing and maintaining the operational 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.
 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:

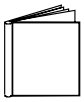


Finding Information

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



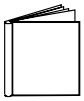
GA33-0092

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

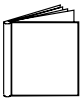
IBM 3745 Communication Controller Models A[2]
IBM 3746 Nways Multiprotocol Controller
Models 900 and 950

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



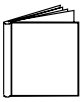
GA27-4235

IBM 3745 Communication Controller Models 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.



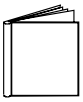
GA27-4236

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 desription and configuration.



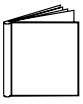
GA27-4237

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

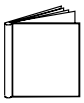
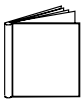
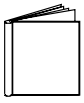
	GA27-4239	***IBM 3745 Communication Controller Models A²*** ***IBM 3746 Nways Multiprotocol Controller*** ***Models 900 and 950*** ***Planning Series:*** ***Management Planning*** Provides information for: • Overview for 3746 • 3746 APPN/HPR, IP router, and X.25 • NetView Performance Monitor (NPM), remote 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:*** ***Protocols Description*** 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

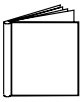
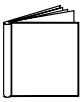
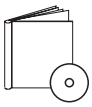
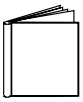
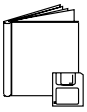
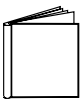
	GA33-0127	***IBM 3745 Communication Controller Models 210, 310, 410, and 610*** ***Preparing for Connection*** Helps for preparing the 3745 Models 210 to 610 cable installation. For 3745 Models A refer to the *Connection and Integration Guide*, SA33-0129.
Preparing for Operation		
	GA33-0400	***IBM 3745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

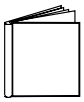
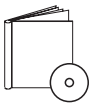
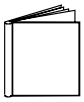
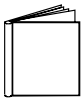
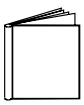
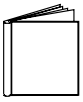
	SA33-0098	***IBM 3745 Communication Controller All Models***[4] ***Basic Operations Guide***[1] Provides instructions for daily routine operations on the 3745 Models 130 to 610.
	SA33-0177	***IBM 3745 Communication Controller Models A***[2] ***IBM 3746 Nways Multiprotocol Controller Model 900*** ***Basic 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

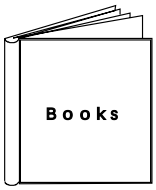
	On-line Information	***Problem Analysis Guide*** An online guide to analyze alarms, events, and control panel codes on: • IBM 3745 Communication Controller Models A[2] • IBM 3746 Nways Multiprotocol Controller Models 900 and 950.
	SA33-0175	***IBM 3745 Communication Controller Models A[2]*** ***IBM 3746 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, 170, and 17A

Table J-4. Additional Customer Documentation for the 3745 Models 130 to 17A

This customer documentation has the following format:

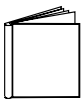


Finding Information

3745 Models A and 3746 Books

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

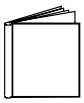
IBM 3745 Communication Controller Models 130, 150, 160, and 170

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.

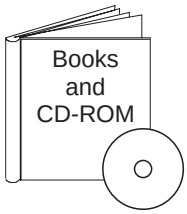
For 3745 Model 17A refer to the *Connection and Integration Guide*, SA33-0129.

[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)

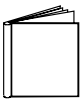
Table J-5 (Page 1 of 4). Service Documentation for the 3745 Models x10 and x1A, and 3746 Model 900

This service documentation has the following formats:



3745 Models A and 3746 Books

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.

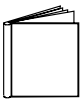


SY33-2057

IBM 3745 Communication Controller
Models 210 to 61A

Installation Guide[1]

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

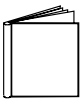


SY33-2114

IBM 3746 Nways Multiprotocol Controller
Model 900

Installation Guide[2]

Provides instructions for installing or relocating a 3746-900.

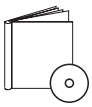


SY33-2116

IBM 3746 Nways Multiprotocol Controller
Model 900

Service Guide[2]

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



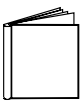
SY33-2055

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.

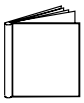
Table J-5 (Page 2 of 4). Service Documentation for the 3745 Models x10 and x1A, and 3746 Model 900

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.

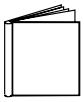


SY33-2120

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.

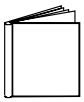


SY33-2125

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.

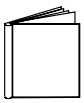


SY27-0393

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.



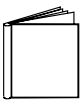
SY33-2127

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

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

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

Table J-5 (Page 3 of 4). Service Documentation for the 3745 Models x10 and x1A, and 3746 Model 900

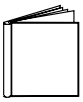


SY33-2118

IBM 3746 Nways Multiprotocol Controller Models 900 and 950

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

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

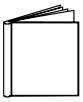


SY33-2124

IBM 3746 Nways Multiprotocol Controller Models 900 and 950

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

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

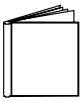


SY33-2112

IBM 3746 Nways Multiprotocol Controller Models 900 and 950

Network Node Processor Installation and Maintenance*[4] *(Based on the 7585 or 3172)

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

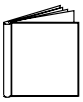


SY33-2126

IBM 3746 Nways Multiprotocol Controller Models 900 and 950

Network Node Processor Installation and Maintenance*[4] *(Based on 6275)

Provides information on installing and maintaining the network node processor based on the PC Type 6275.

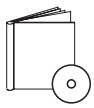


SY27-0394

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.

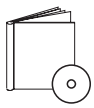


SY33-2056

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.



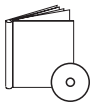
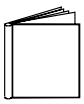
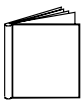
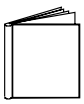
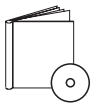
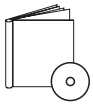
SY33-2075

***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.

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

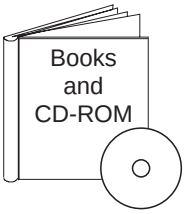
	SY33-2117	***IBM 3746 Nways Multiprotocol Controller Models 900 and 950*** ***External Cable Reference***[6] Provides references to console and line cables used for connecting the IBM 3746 Models 900 and 950.
	S135-2015	***IBM 3746 Nways Multiprotocol Controller Models 900 and 950*** ***Parts Catalog***[6] 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		
	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.

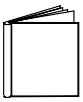
[1] Documentation shipped with the 3745.
[2] Documentation shipped with the 3746-900.
[3] 3745 Models 17A to 61A.
[4] Documentation shipped with the processor.
[5] 3745 Models 130 to 61A.
[6] Documentation shipped with the 3746 Models 900 and 950.

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:



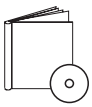


SY33-2067

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.

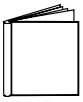


SY33-2069

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.

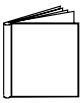


SY33-2070

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.

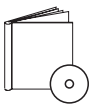


S135-2012

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

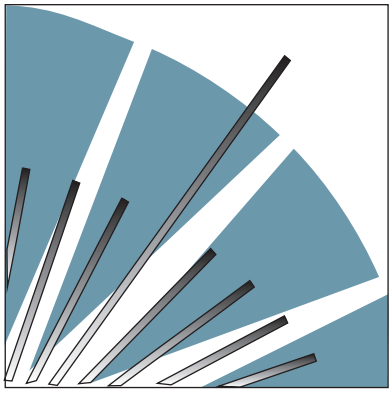
Term	Information
ACPA/A	Audio Capture and Playback Adapter
ADP	Automatic Data Processing
AGP	Advanced Graphics Port
Alt	Alternate
ANSI	American National Standards Institute
ARTIC	A Real Time Interface Coprocessor
ASCII	American National Standard Code for Interface Interchange
AT	Advanced Technology (as 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)

Part Number: 10K8590

Printed in U.S.A.



10K8590

SY27-0393-00