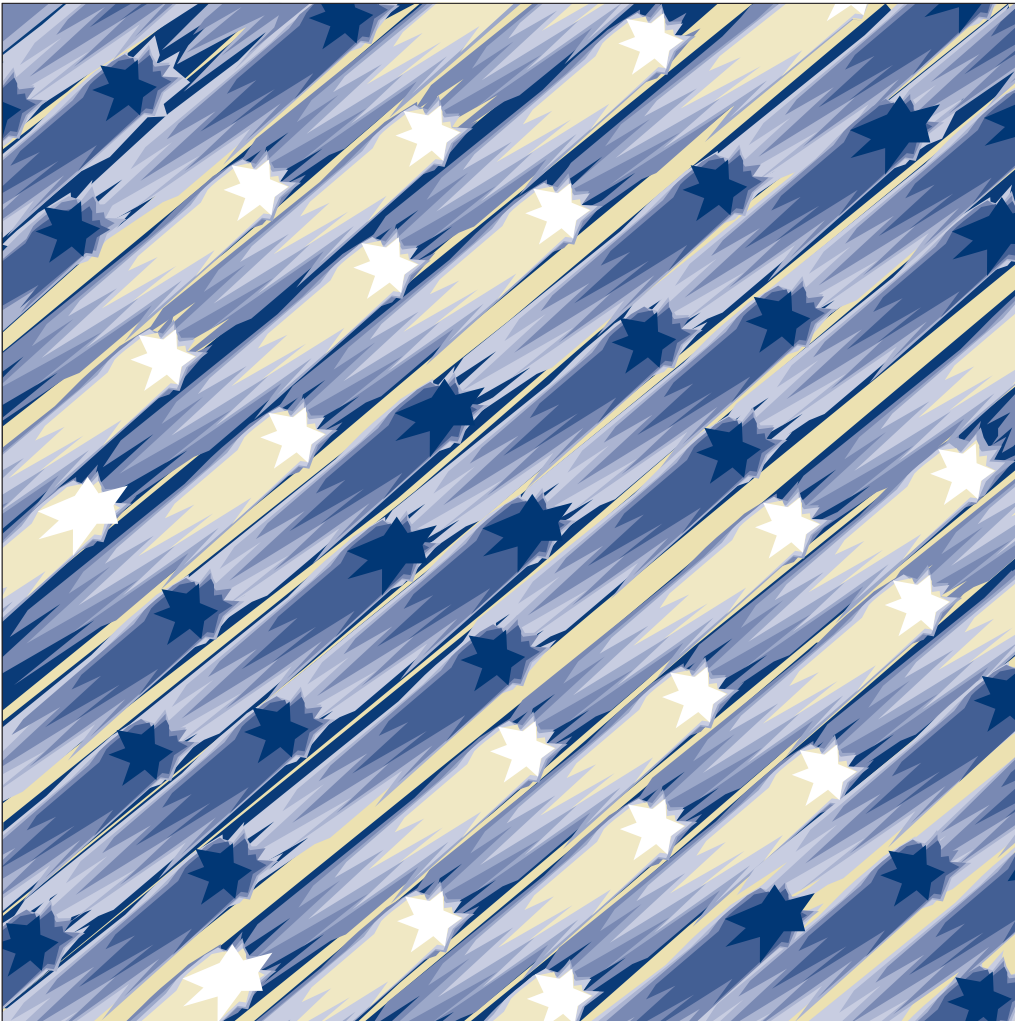


8265 Nways ATM Switch



Installation Guide





8265 Nways ATM Switch

Installation Guide

Note!

Before using this information and the product it supports, be sure to read the general information under "Notices" on page 63.

Second Edition (January 1998)

The information contained in this manual is subject to change from time to time. Any such changes will be reported in subsequent revisions. Changes have been made throughout this edition, and this manual should be read in its entirety.

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About This Book

This book gives a description of the activities required to unpack, prepare, and install the IBM 8265 Nways ATM Switch and accessories.

Who Should Use This Book

This book is intended for the following people at your site:

- Hardware installer.
-

How to Use This Book

This book is divided into the following chapters and appendixes. It essentially covers all the activities necessary to install your 8265.

Chapter 1 provides a summary of the installation steps required to install the 8265.

Chapter 2 describes the basic and optional components, and how to unpack them.

Chapter 3 describes how to install the 8265 chassis in a rack or on a table or shelf.

Chapter 4 describes how to install the power supplies (AC or DC).

Chapter 5 details how to install the Controller, Control Point and Switch, and media modules.

Chapter 6 explains how to attach a configuration console to the 8265.

Chapter 7 describes how to complete the installation of the 8265, by checking that the required components are installed, powering on the 8265, and verifying that the installed components are working properly.

Appendix A provides troubleshooting information.

Appendix B details maintenance and services procedures.

Prerequisite Knowledge

This book assumes that you are familiar with the IBM 8265 Nways ATM Switch, as described in the *8265 Nways ATM Switch Product Description*, GA33-0449.

Where to Find More Information

Refer to the "Bibliography" on page 71 for a list of IBM manuals that contain related information and publications for the 8265 Switch.

Information is also available via the Internet, at URL:

<http://www.networking.ibm.com>

Chapter 1. Introduction

This chapter describes the steps required to install your IBM 8265 Nways ATM Switch.

These steps are explained in detail in later chapters of this book.

Before You Begin

The 8265 ATM Switch is designed for easy access, maintenance, installation, and upgrade by service personnel. When installing the switch, be sure to comply with the environmental and power guidelines given in the *IBM 8265 Nways ATM Switch Planning and Site Preparation Guide*, SA33-0460. In particular:

- Ambient (room) Temperature: 10° to 40° Celsius (50° to 104° Fahrenheit)
- Relative humidity: 8% - 85%, non-condensing
- Power source (AC or DC) within 6 feet (approximately 2.7 meters)
- Safety regulations stipulate that the table, shelf or rack on which the 8265 rests should be able to support at least *three times* the weight of a fully loaded 8265. A fully loaded 8265 weighs approximately 120 lbs., or 54 kg, so the table, shelf, or rack must be able to support 360 lbs. or 163 kg.
- That the surface on which the 8265 is to be installed is level.

Installation Summary

Table 1 describes the installation steps and the order in which you perform them.

Step	Description	See
1	Unpack the 8265 and components.	page 3
2	Check that you have all the required components.	pages 3 to 6
3	Install the cable management tray in the rack if you plan to install the 8265 in a rack (optional).	page 8
4	Install the 8265 chassis in a rack or on a table or shelf	page 11 or 15
5	Install AC or DC power supplies.	page 18 or 20
6	Install the power supply bay grille.	page 25
7	Install the Controller module(s).	page 29
8	Install the Control Point and Switch module(s).	page 31
9	Determine the number, types, and slot locations of media modules you plan to install in the 8265 before installing your first module.	page 34
10	Connect a configuration console to the Control Point and Switch module	page 37
11	Check that you have installed all the required components.	page 42
13	Power on the 8265.	page 43
14	Verify that all components are operating correctly.	page 44

Chapter 2. Unpacking the 8265

This chapter describes how to unpack the 8265 chassis and additional components.

8265 Shipping Group Contents

An 8265 ATM Switch is automatically shipped with the following components:

- 17-slot chassis, with the following components already installed:
 - Backplane
 - Three fan units
 - Fourteen blank single-slot faceplates
 - Two blank Control Point and Switch module slot faceplates
 - Two blank Controller Module slot faceplates
 - Two rack mount flanges
- A power supply bay grille to manage power supply cords
- Cables and connectors for connecting a configuration console
 - Adaptor DTE/DCE Cable DB9/DB25
 - Interposer “Null modem”
 - Gender Changer
- 8265 installation hardware – includes screws and clip nuts needed to install the 8265
- Rubber feet kit for table or shelf installations. Consists of 4 rubber feet and 4 screws.

Figure 1 shows the 8265 chassis components included in the shipping box.

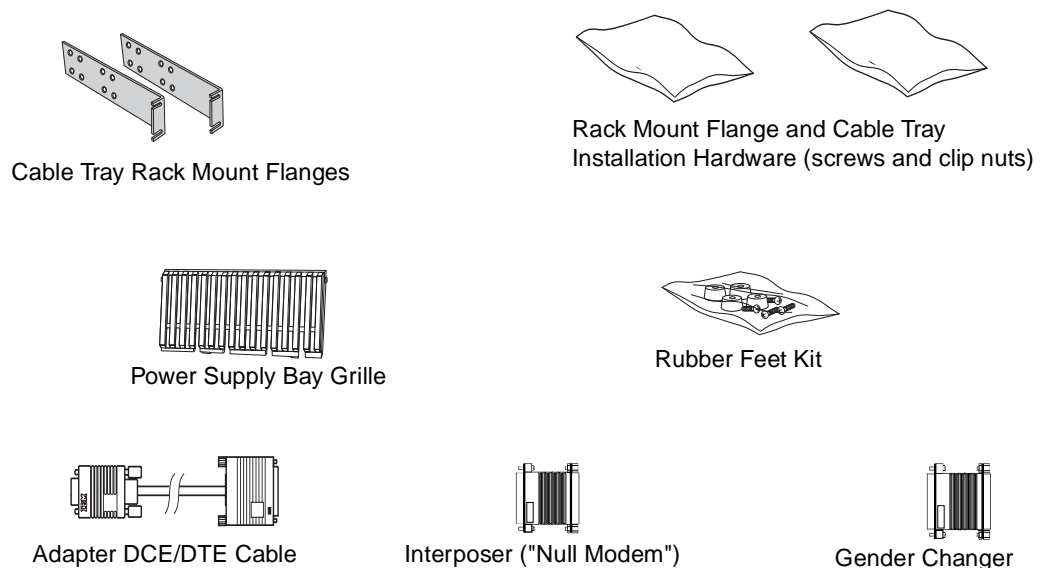


Figure 1. 8265 Chassis Components

Removing the Switch From the Shipping Box

This section explains how to unpack your switch. Refer to the section earlier in this chapter for a list of shipped items.

Note: All shipping boxes are reusable. After removing all contents, replace the packing materials and store the shipping box for future use.

Unpacking the 8265 Switch

To remove a switch from the shipping box:

1. Place the switch shipping box on the floor or on a table.

Caution: UL safety requirements stipulate that a table used to support the switch and shipping box prior to table top switch installation should be capable of supporting approximately three times the weight of the switch as shipped.

Switch weight as shipped averages about 49 lbs. (22 kg), so a table used to support the hub must support 147 lbs. (66 kg).

2. Cut the tape that covers the seam on the top of the box and remove the foam packing material. To remove the foam packing material, pull it straight up.
3. Squeeze and remove the locking inserts at the bottom of the box.

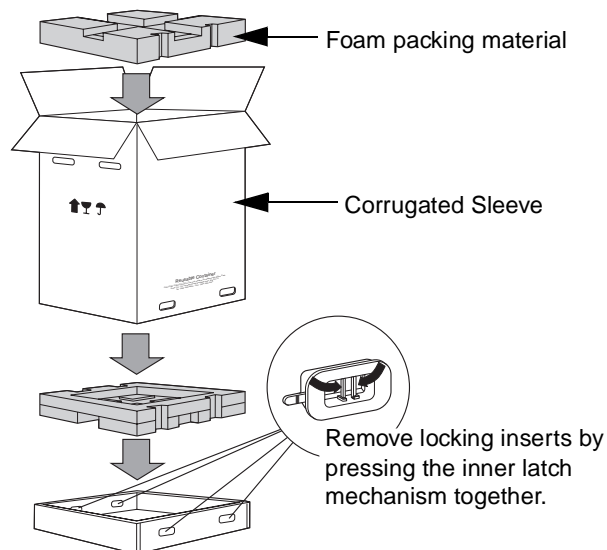


Figure 2. Unpacking the Switch Shipping Box

4. Remove the corrugated sleeve by pulling it straight up.
5. Pull off the tape from the top of the bag that covers the switch.

6. Remove the bag by pulling it straight up.
7. Remove the power supply grille from the switch shipping box.
8. Place the switch next to the rack or on the table on which it will be installed. Be sure to stand the switch on its bottom (do not lay the switch down on its top or back).
9. Place all packing materials in the switch shipping box and store the box for future use.

Note: Do not remove blank faceplates until after you have installed the switch. If modules do not slide easily into the switch, it may be because the switch has been lifted after some or all blank faceplates have been removed.

Additional Components

The following components are required to operate the 8265 (these components are ordered separately from the 8265 chassis):

- Power supplies (at least two are required)
- Control Point and Switch module(s)
- Controller module(s)
- PCMCIA card(s) containing the Control Point and Switch module microcode, that must be inserted on to the CPSW module before the CPSW module is inserted in the 8265.
- Media modules (at least one is required).

Check that these components are available before commencing the installation of the 8265.

The following components are optional (and are ordered separately from the 8265 chassis):

- Rack Mount Kit
- Cable Management Tray
- Memory upgrade for the Control Point and Switch module (required to use PNNI microcode)
- Documentation CD-ROM (automatically included when PCMCIA card ordered).

Unpacking Components

Unpack components only when you are ready to install them. Instructions and guidelines for unpacking components are given in each section later in the book.

Chapter 3. Installing the Chassis

This chapter describes step by step instructions to install the chassis in a rack, or on a table or shelf.

Note: The information and procedures in this chapter should be used only by service personnel.

Caution: To reduce the possibility of personal injury or serious damage to the switch, install the switch with the help of a partner. This is especially important for rack installations because you must hold the switch in place while securing the switch to the selected rack.

Installing the Cable Management Tray in a Rack

The Cable Management Tray manages module cables at the front of the 8265 by feeding them under the 8265 and out the back. Use is optional. The Cable Management Tray kit includes:

- Two rack-mount flanges (used to secure the tray to the rack)
- Installation rack-mount hardware (screws and clip nuts)
- Cable Management Tray.

This section describes:

- Pre-installation guidelines
- Installing the Cable Management Tray.

Pre-installation Guidelines

Before installing the cable management tray in a rack, determine which cable management tray rack mount position is best for you by examining the following:

- Location in the rack where the switch will be installed (refer to page 11) Pre-installation Rack Mount Guidelines later in this chapter.
- Depth of the rack in to which the switch will be installed.
- Space required for ventilation. A minimum of 15 cm (6 in.) is required between the rear of the 8265 and the nearest wall or vertical surface.
- Room required for module cables to bend.
- Proximity of other devices in the rack and their installation or environmental requirements.

Figure 3 shows cable management tray rack mount positions.

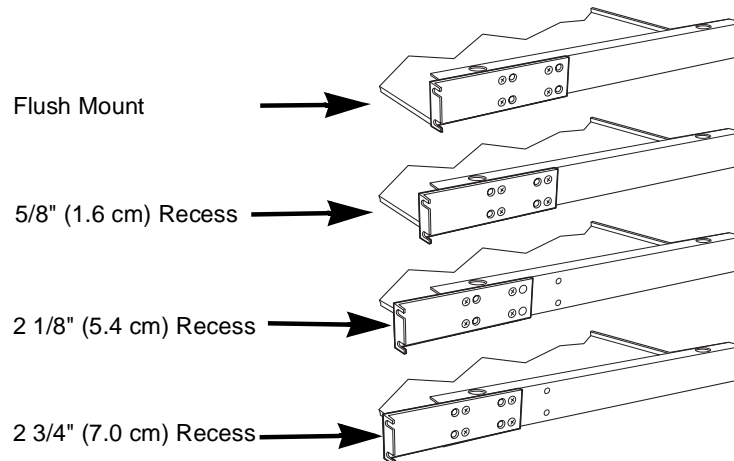


Figure 3. Cable Management Tray Rack Mount Positions

Table 2 provides cable management tray rack settings.

Setting	Description
Flush mount	Flush mounts the tray to the front of the rack
5/8-inch (1.6 cm) recess	Recesses the tray 5/8-inch (1.6 cm) from the front of the rack
2 1/8-inch (5.4 cm) recess	Recesses the tray 2 1/8 inches (5.4 cm) from the front of the rack
2 3/4-inch (7.0 cm) recess	Recesses the tray 2 3/4 inches (7.0 cm) from the front of the rack

Select any rack position that is at least 28 inches (approximately 71 cm) from the top of the rack or the next higher unit in the rack.

Be sure to select a rack position that leaves you enough room to install the cable management tray below the installed switch.

Installing the Tray

To install the Cable Management Tray in the selected rack:

1. Attach the two rack mount flanges (supplied) to the Cable Management Tray using the flathead screws provided (eight, 8-32 x 1/4-inch screws, four per side). Install the screws using a Phillips-head screwdriver. Installed Cable Management Tray rack mount flanges are shown in Figure 5.
2. Install the clip nuts provided (four) onto the front of the rack at the position where the Cable Management Tray will be attached.

Figure 4 shows the Clip nut installation.

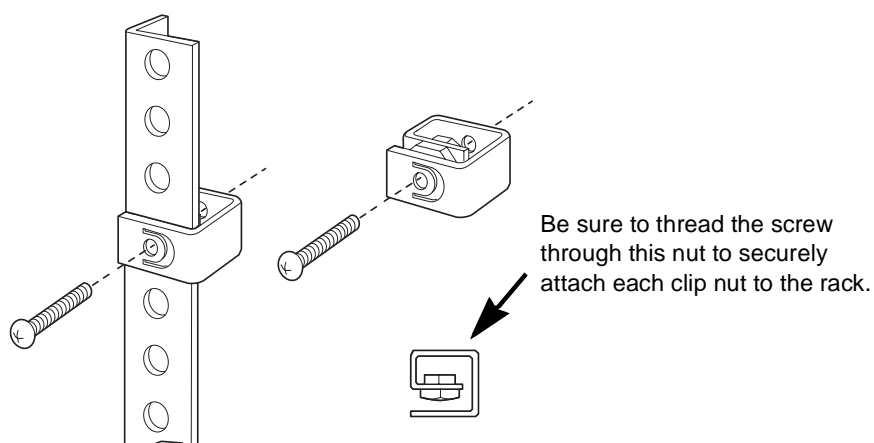


Figure 4. Installing a Clip Nut in the Rack

Figure 5 shows the Cable Management Tray in the rack.

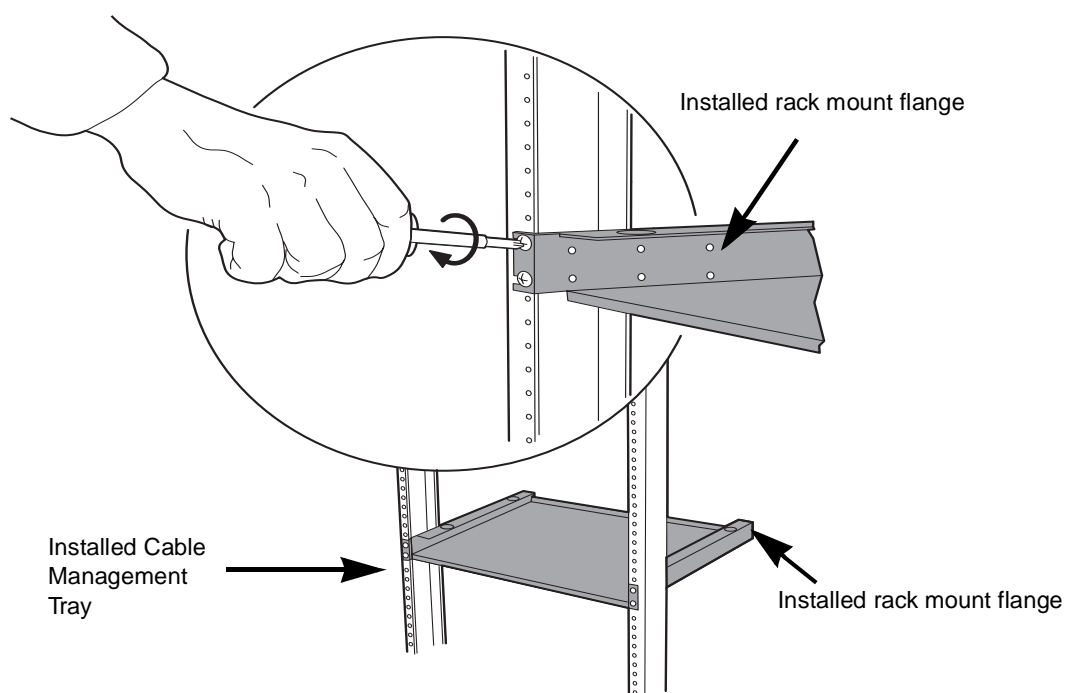


Figure 5. Installing the Cable Management Tray in a Rack

3. Place the Cable Management Tray in the rack and attach the tray to the front of the rack using the screws provided (four, 10-32 x 1/2-inch screws). Install the screws with a Phillips head screwdriver.

Installing the 8265 in a Rack

This section describes:

- Pre-installation Precautions
- Pre-installation Guidelines
- Installing the Switch in a Telco Rack
- Installing the Switch in a Metric Rack.

Use the rack mount installation precautions guidelines below to ensure safety and optimal performance. These precautions and guidelines apply to all versions of the switch. Review all guidelines prior to installation.

Pre-installation Precautions

Before installing the 8265 in an equipment rack, observe the following precautions:

- Because the equipment rack environment can cause increased ambient temperatures and reduced air flow, review the switch specifications and site requirements contained in *IBM 8265 Nways ATM Switch Planning and Site Preparation Guide*, SA33-0460.
- To ensure mechanical stability and to avoid circuit overloading and improper grounding, follow the rack manufacturer's instructions for rack installation. If the instructions are unclear, consult a qualified electrician.

Pre-installation Guidelines

Before attempting to rack mount the 8265:

- First make sure the selected rack can support at least three times the weight of a fully- loaded switch.
- Bolt the rack to the floor.
- Brace the top of the rack to the wall.
- Provide sufficient vertical space in your rack for each 8265 you wish to install.
- For proper ventilation, install the switch in a rack that has an open back.
- Install patch panels in the rack for easier cable management.
- Continue to support the weight of the switch until *after* you have installed four of the eight screws (two screws per rack mount flange). Install all eight screws (four screws per rack mount flange) to fully secure both rack mount flanges to the rack.
- Install the Cable Management Tray beneath the switch. The tray is designed to manage the cables attached to the front of the switch by feeding them under and through the back of the unit. Use of the cable tray is optional. You can mount the cable tray onto the rack in one of four positions. Mount the switch using the same rack mount position settings as those used to mount the cable tray.

Caution: You can install the switch in the rack either before *or* after you install the Cable Management Tray, but the tray must be installed below the switch. Never allow an installed cable tray to support the weight of the switch. The weight of a switch resting on a rack mounted cable tray may cause the tray to buckle or separate from the rack. Personal injury may result.

Installing the Switch in a Telco Rack

All rack mount illustrations provided in this chapter show the switch installed in a *Telco* rack.

Install the screws that secure the switch to the Telco rack in *open* slots on each rack mount flange.

Telco rack and Metric rack screw locations are shown in Figure 3-16. For descriptions of Telco and Metric racks, refer to Location Requirements earlier in this chapter.

To install the switch in a Telco rack:

1. Install each of the 8 clip nuts provided onto each side of the front of the rack (4 clip nuts per rack mount flange). Install each clip nut behind a hole into which you plan to install a trusshead screw. Refer to Figure 6.

Warning: With a full complement of modules and load-sharing power supplies, the 8265 Switch weighs approximately 120 lbs. (54 kg). Therefore, install your switch before you install modules and power supplies. Continue to support the weight of the switch until after you have installed four of the eight screws (2 screws per rack-mount flange).

If you attempt to place the weight of the rack-mounted 8265 switch on fewer than four fully installed screws, the switch may drop off of the rack. Personal injury or serious damage to the switch may result.

2. Slide the switch into the rack until both rack mount flanges are flush with the front of the rack.
Note: Rack mount flanges are set to *flush mount* at the factory. If desired, change the rack mount flange position by removing the screws that attach each flange to the switch. When re-installing the rack mount flanges on the switch, make sure both flanges are set to the same position before you re-install the screws. Also, make certain that all removed screws are re-installed correctly.
3. Match the uppermost open slot on each rack mount flange with the corresponding hole on the rack (see Figure 5). *Hold the switch in place until you complete step 4.* The remaining three open slots on each rack mount flange automatically line up when each uppermost open slot is matched to a hole on the rack.
4. Secure the switch to the rack with the screws provided (eight, 10-32 x 1/2-inch screws).
 - a. Install one screw in the uppermost open slot on *each* rack mount flange (see Figure 5). Install two screws per rack mount flange before you allow the weight of the switch to rest (unaided) on the rack. Tighten all screws completely. *A fully installed screw is flush with the surface of each rack mount flange.*

Caution: If you attempt to place the weight of the rack mounted switch on fewer than four fully installed screws, the switch may drop off of the rack. Personal injury or serious damage to the switch may result.

- b. Install the remaining screws in open slots on each rack mount flange (for a total of four screws per rack mount flange, see Figure 6). Tighten all screws completely.

Installing the Switch in a Metric Rack

To install the switch in a Metric Rack (see Figure 6):

Note: When installing the switch in a *metric* rack, install the screws in the *closed* slots.

1. Install each of the eight clip nuts provided onto the front of the rack (install four clip nuts per rack mount flange). Install each clip nut behind a hole into which you plan to install a trusshead screw.
2. Slide the switch into the rack until the switch is flush with the front of the rack.
3. Match the uppermost closed slot on each rack mount flange to the uppermost hole on the rack where you previously installed a clip nut. Do *not* attempt to install screws in open slots on either rack mount flange.
4. Secure the switch to the rack with the screws provided (eight, 10-32 x 1/2-inch screws).
 - a. Install one screw in the uppermost closed slot on *each* rack mount flange. Install two screws per rack mount flange before you allow the weight of the switch to rest (unaided) on the rack. Tighten all screws completely. *A fully-installed screw is flush with the surface of each rack mount flange.*

Caution: If you attempt to place the weight of the rack mounted switch on fewer than four fully installed screws, the switch may drop off of the rack. Personal injury or serious damage to the switch may result.

- b. Install the remaining screws in closed slots on each rack mount flange (for a total of four screws per rack mount flange). Install each screw so it is (approximately) equidistant from the screw installed directly above it and the screw installed directly below it. Tighten all screws completely.

Figure 6 shows a rack mounted 8265 switch with a Cable Management Tray installed.

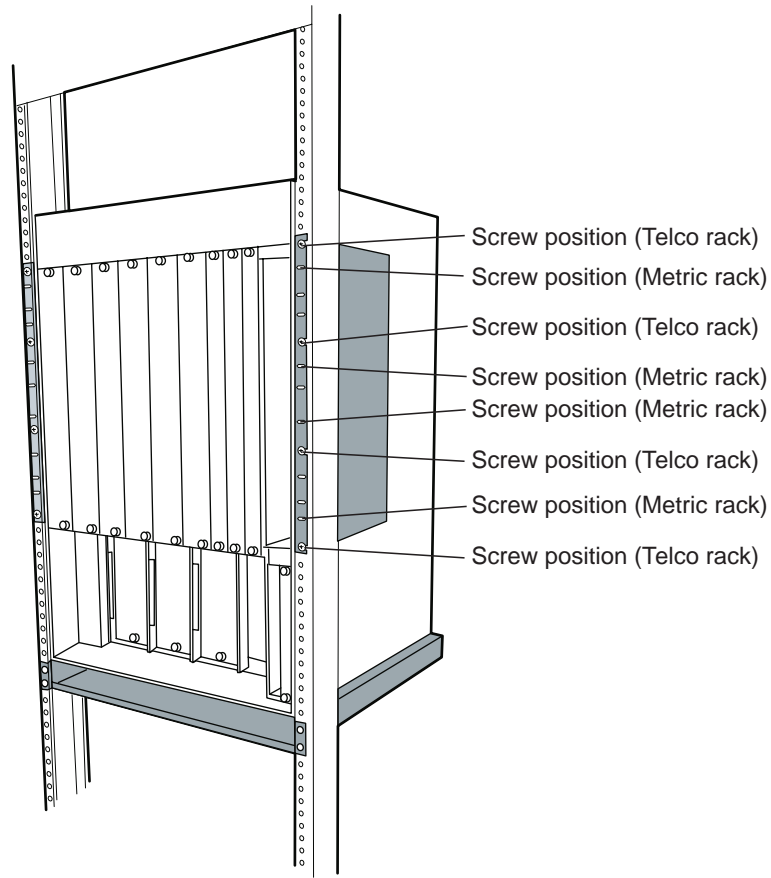


Figure 6. Rack-Mounted 8265 Switch With Cable Management Tray

Installing the Switch on a Table or Shelf

Though it is recommended that you install the 8265 switch in a rack, you can also install the switch on a table or shelf.

Caution: Do not use the Cable Management Tray when installing the switch on a table top or shelf. If you choose to install the rubber feet, be advised that the switch could tip over under certain conditions. Hardware damage or personal injury may result.

Safety regulations state that the selected table or shelf must be able to support at least three times the weight of a fully loaded switch.

To install the 8265 switch on a table or shelf:

1. If you wish to install the rubber feet to the switch, lay the switch on its side on the table or shelf so the bottom of the switch is accessible.
2. Optionally, remove the rubber feet (4) and the screws supplied (4) from the plastic bag in which they were shipped and fasten the rubber feet to the bottom of the switch with the screws.

Figure 7 shows how to attach the rubber feet to the bottom of the switch.

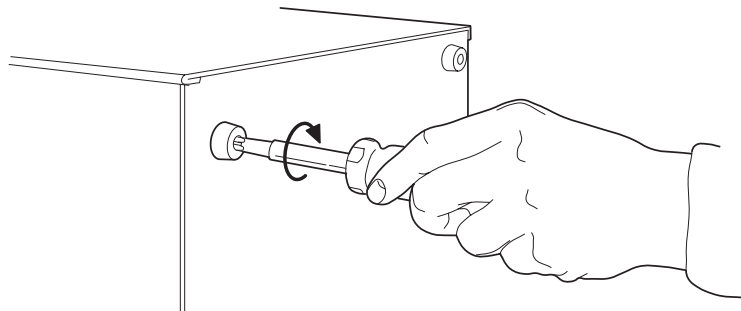


Figure 7. Attaching a Rubber Foot to the 8265 Switch

3. Reposition the switch on the table or shelf so it rests squarely on the table or shelf. Ensure module and power supply slots are unobstructed and easy to reach.

Chapter 4. Installing Power Supplies

This chapter describes how to install power supplies in an 8265.

For information on the power requirements for AC and DC power supplies, refer to the *IBM 8265 Nways ATM Switch Planning and Site Preparation Guide*, SA33-0460.

Figure 8 shows the installation locations for the four power supplies, marked PS1, PS2, PS3, and PS4.

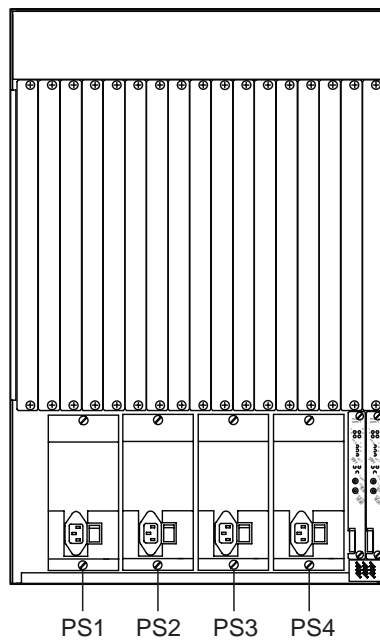


Figure 8. 8265 Power Supply Locations

Installing an AC Power Supply

You can install power supplies in any of the power supply slots. A factory label located directly below the power supply slots identifies the slot number associated with each power supply.

To install a power supply:

1. Remove the blank faceplate covering each slot in which you will install a power supply. Keep this blank faceplate for later use.
2. Set the ON/OFF (I/O) switch on the front of the power supply you are installing to the OFF (O) position before inserting the power supply into the switch.
3. Slide the power supply into the selected power supply slot. Push the power supply unit into the switch until the front panel of the power supply is flush with the front of the switch. The rear power supply connectors should now be firmly seated into the 8265 power supply connectors.

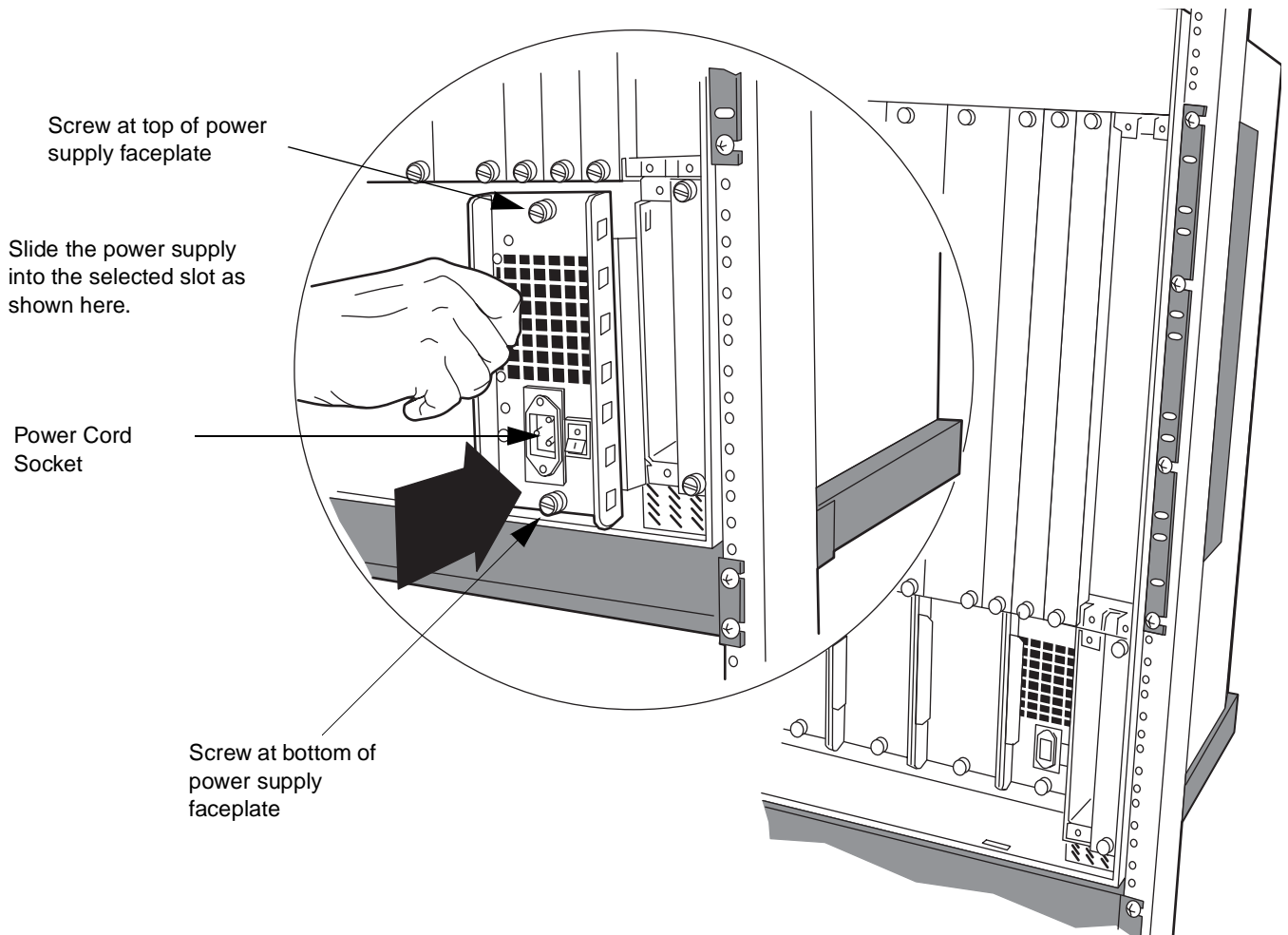


Figure 9. Installing a Load-Sharing Power Supply

4. Fasten the power supply to the 8265 by tightening the two screws on the power supply faceplate. Ensure that both screws are securely fastened (finger-tight).
5. Plug the power cord into the power supply unit socket.
6. Set the power supply's ON/OFF (| / O) switch to the ON (|) position.
7. Repeat steps 1 through 6 for subsequent power supplies.

Installing a DC Power Supply

This section describes how to prepare and install the -48 Volt DC power supply and power cord in your 8265.

Caution: *Only* trained electrical service personnel must make connections and disconnections to the -48 Volt DC power source. A circuit breaker (short-circuit protection) must be set up in the main power source. This circuit must be grounded to a safety ground. **For each power supply** use one 20-A protection device to protect the cabling of the -48 Volt DC power supply against short-circuits.

To comply with UL requirements, the -48 Volt DC Power Supply *must only* be installed in a rack-mounted 8265 installed in an enclosed cabinet.

The -48 Volt Power Supply switch *only* shuts off the output side of the power supply.

Before You Begin

This section describes what you should know before you begin installing the -48 Volt DC Power Supply in your 8265.

Before you install the -48 Volt DC Power Supply:

1. Verify that the power source is compatible with the voltage and tolerances specified on the input rating plate located on the power supply unit. The nominal value is -48 Volt DC, 11 Amps.
2. Remove the following items from the shipping box:
 - Power supply unit
 - Power input cable
 - Bags containing the terminal rings

The -48 Volt DC power supply ships with 3 bags of terminal rings:

- Part Number AMP 320563 – Contains 1 terminal ring for *only* the green/yellow ground wire.
- Part Number AMP 31890 – Contains 4 terminal rings for the red and black wires.
- Part Number AMP 31880 – Contains 4 terminal rings for the red and black wires.

The -48 Volt DC power supply ships with different size terminal rings. One terminal ring is for *only* the green/yellow ground wire. The remaining terminal rings are used with the red and black wires. Choose the correct the terminal rings to support your installation.

The AMP part number for the terminal crimping tool is AMP # 58433-2 (this includes the correct crimping die set). The AMP Die Set part number is 58423-1 (for people that already have the crimping tool with other dies).

3. Set the power supply ON/STANDBY switch to the Standby position.

Figure 10 shows the front panel of the -48 Volt DC power supply with the ON/STANDBY switch.

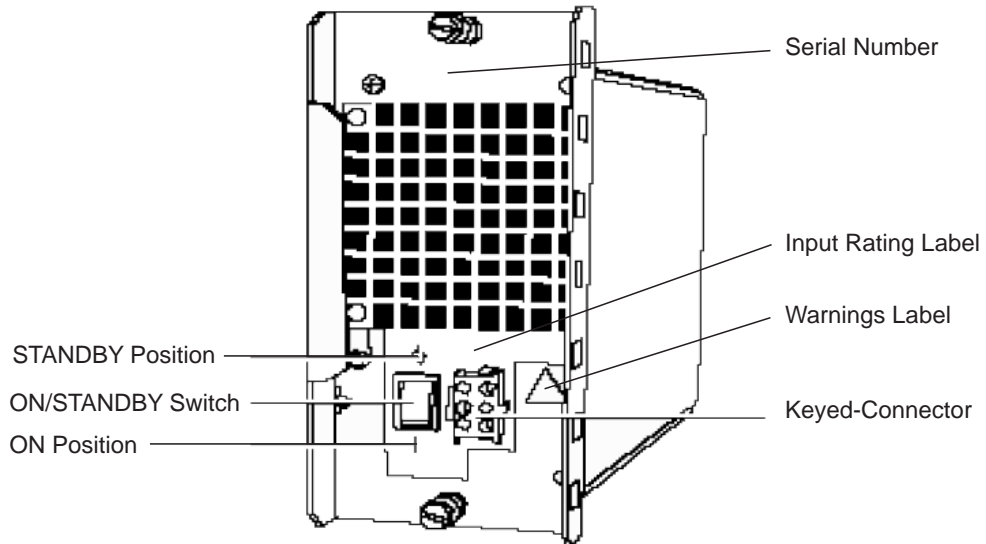


Figure 10. -48 Volt DC Power Supply

Note: The following terminal ring installation shows how you install terminal rings to the power cord. The installer should adapt the building DC input and make the power cord connection using the terminal rings shipped with the power supply or whatever method is necessary to meet system installation requirements. For compatibility with the building power source, the installer chooses which size terminals rings are to be crimped on the power cord wires.

Preparing and Installing the DC Input Power Cords

To prepare and install the -48 Volt DC input power cords:

1. Obtain the power supply cables that you removed from the shipping boxes. The input power cables have 3 groups of wires. Each wire is labeled with the corresponding voltage. The 2 red wires are labeled **48VDC** and the 2 black wires are labeled **0VDC**.

Figure 11 shows the -48V DC input power cord.

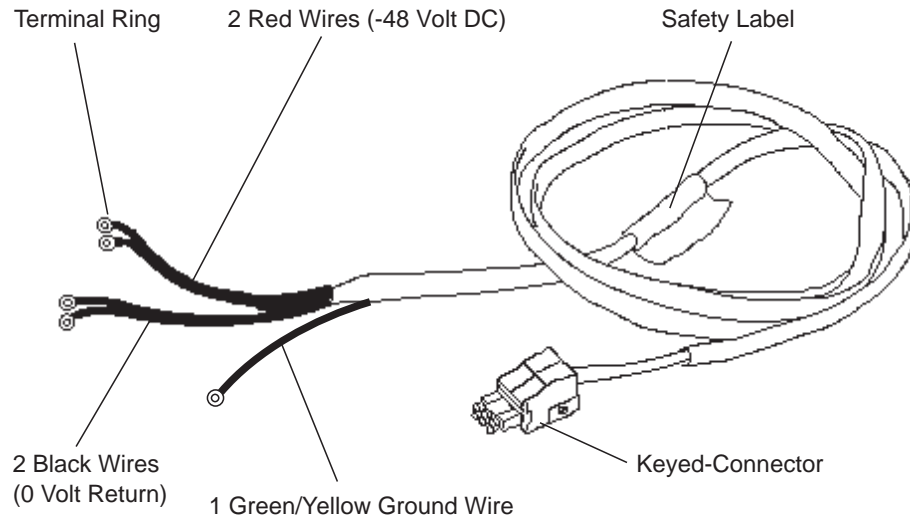


Figure 11. -48 Volt DC Input Power Cord

Note: To comply with UL requirements, the power cords must be routed through a rack or cabinet raceway to the rack or cabinet distribution panel delivering the -48 Volt DC input power. The cables may be routed to the back using the cable tray option of the 8265.

Caution: You must install the green/yellow ground wire *first*.

2. Fit the terminal rings to each wire of the power cords and tighten them with a crimping tool according to the AMP rings size. Each wire has a terminal ring at the end (see Figure 4-6).
3. Connect the cable ground wire (green/yellow) to the ground terminal lugs (Figure 12).

Figure 12 shows how to connect the green/yellow ground wire, for standard and 'Bellcore' installations.

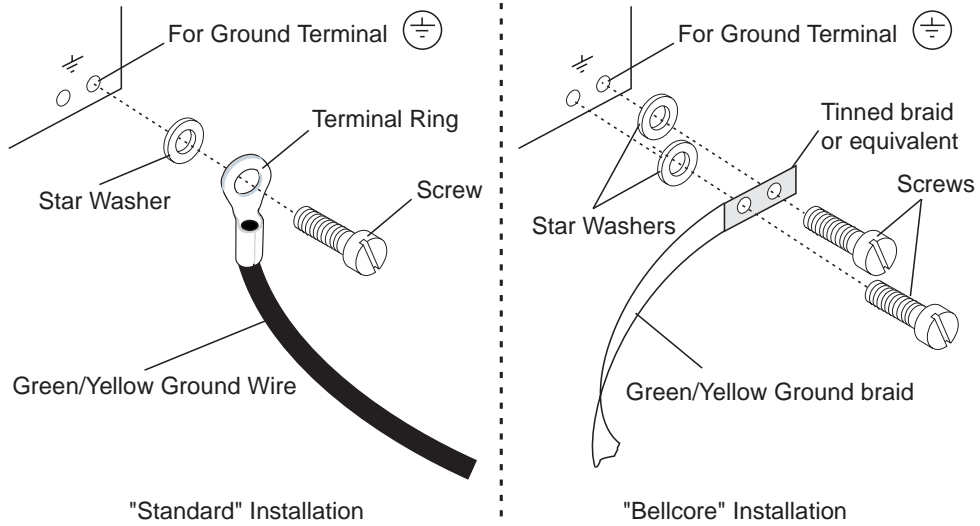


Figure 12. Connecting the Cable Ground Wire

Note: The power source should be labeled with minus (-) and positive (+) symbols.

4. Take the 2 black wires and connect the 2 black wires to the positive (+) symbol on the power source (zero Volt return).
5. Take the 2 red wires and connect the 2 red wires to the minus (-) symbol of the power source (-48 Volt).

Figure 13 shows how to connect the red and black wires.

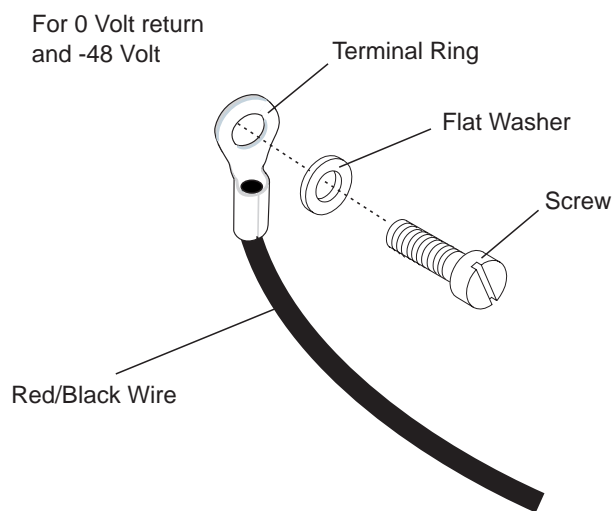


Figure 13. Connecting the Red/Black Wires

Installing the DC Power Supply

To install the -48 Volt DC power supply:

1. Make certain that the ON/STANDBY switch is in the STANDBY position.
2. After removing a blank faceplate that covers a power supply slot, carefully slide the power supply into the selected slot of the 8265 chassis.
3. Fasten the power supply to the 8265 by tightening the two spring-loaded screws on the power supply faceplate. Ensure that both screws are securely fastened (tighten the screws to 3 to 5 inch pounds).
4. Plug the keyed-connector into the power supply socket.

Figure 14 shows the power supply keyed-connector with strain relief.

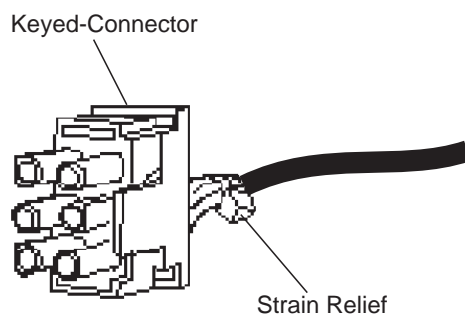


Figure 14. -48Volt DC Power Supply Keyed-Connector

5. Set the ON/STANDBY switch to the ON (|) position.
6. Repeat steps 1 through 5 for each subsequent power supply.

Installing the Power Supply Bay Grille

This section describes how to install the power supply bay grille for the 8265 switch.

Note: If your installation applies standard GR-63-CORE (Issue 1, October 1995), you should not install this grille.

To install the power supply bay grille:

1. Remove the power supply bay grille from the switch shipping box.
2. Grasp both ends of the grille and place the two bottom tabs into the notches at the base of the power supply bay.
3. Flex the grille so the tab on each end of the grille can be fitted into the corresponding notches on the power supply bay.
4. Still flexing the grille, insert the tabs into each respective notch.

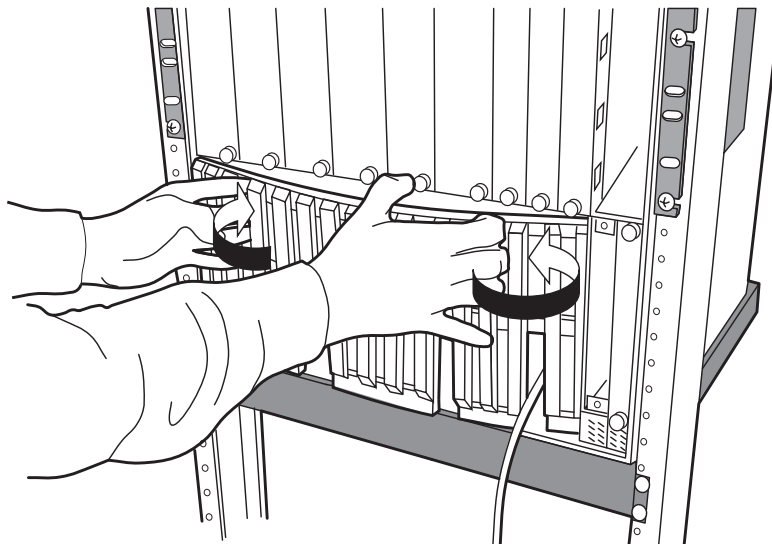


Figure 15. Installing the Power Supply Bay Grille

5. Once the tabs have been inserted in each notch, release the grille to complete the installation.

Chapter 5. Installing Modules

This chapter describes the following:

- Installing the 8265 Controller module(s)
- Installing the 8265 Control Point and Switch module(s)
- Guidelines for installing 8265 media modules
- Guidelines for installing 8260 media modules.

Before You Start

Take the following precautions before unpacking any modules:

- Do not remove components from their anti-static bags until you are ready to install the modules in the 8265. This avoids the possibility of having electrostatic discharge damage static-sensitive devices on the components.
- Always use a floor strap and grounded mat, or wear a grounded static discharge wrist strap whenever you inspect or install a module. Alternatively, touch a grounded rack or another source of ground before handling the module.
- Verify that the module (and daughter cards if required) are the correct feature by matching the part number listed on the side of the shipping carton to the part number you ordered.

Unpacking Modules

When unpacking modules, follow these steps:

1. Remove the anti-static bag containing the module from the shipping carton.
2. Remove the module from the anti-static bag and inspect it for damage. Always handle modules by their faceplates, being careful not to touch the internal components.

If the module appears damaged, put it back in the anti-static bag, and put the bag back into the shipping carton. Then contact your local IBM dealer or IBM representative.

It is recommended that you retain the shipping carton and anti-static bag in case you later want to repackage the module for storage or shipment.

Installing the 8265 Controller Module

The 8265 Controller modules must be installed in the Controller module slots.

The Controller module slots are located at the lower right front corner of the switch, slot 18 (left) and slot 19 (right).

Controller modules are not designed for installation in any other slot.

The 8265 Controller module bay accommodates up to two Controller modules. Install at least one Controller module for normal 8265 operation. Install a second Controller module to achieve Controller module fault-tolerance.

Installing Two Controller Modules into a Powered-Down 8265

If two Controller modules are installed in a 8265 that is not yet powered up:

- The Controller module installed in slot 18 always becomes the active Controller module when the 8265 is subsequently powered on.
- If the 8265 is reset:
 - The Controller Module in slot 18 becomes the active Controller module.
 - The Controller Module in slot 19 becomes the standby Controller module.

Installing Two Controller Modules into a Powered-Up 8265

If two Controller modules are installed in a 8265 that is already powered up:

- The first Controller module installed becomes the active Controller Module.
- The second Controller module installed becomes the standby Controller module.

Under these circumstances, the number of the slot in which a Controller module is installed does *not* determine whether the module becomes the active or standby Controller module.

Installing the Controller Module

To install a Controller module:

1. Remove the Controller module from the shipping carton.
2. Remove the Controller module from the anti-static bag and inspect it for damage. If the module appears to be damaged, put it back in the anti-static bag, place it in the shipping carton, and contact your local supplier.
3. Record the serial number and software version of your Controller Module. (Once the switch is operational, you can view this information by entering the SHOW INVENTORY command at the terminal prompt.)
4. If one of the Controller slots is covered by a blank faceplate (and assuming you wish to install two Controller Modules), remove the faceplate by turning the two spring-loaded screws that hold the faceplate in place, counterclockwise. The Controller bay is located at the lower right front corner of the switch.

Note: Each 8265 Controller module is equipped with an ejector that helps you to remove the Controller module. This ejector can be in any position when you install the Controller module.

Figure 16 shows how to install a Controller module.

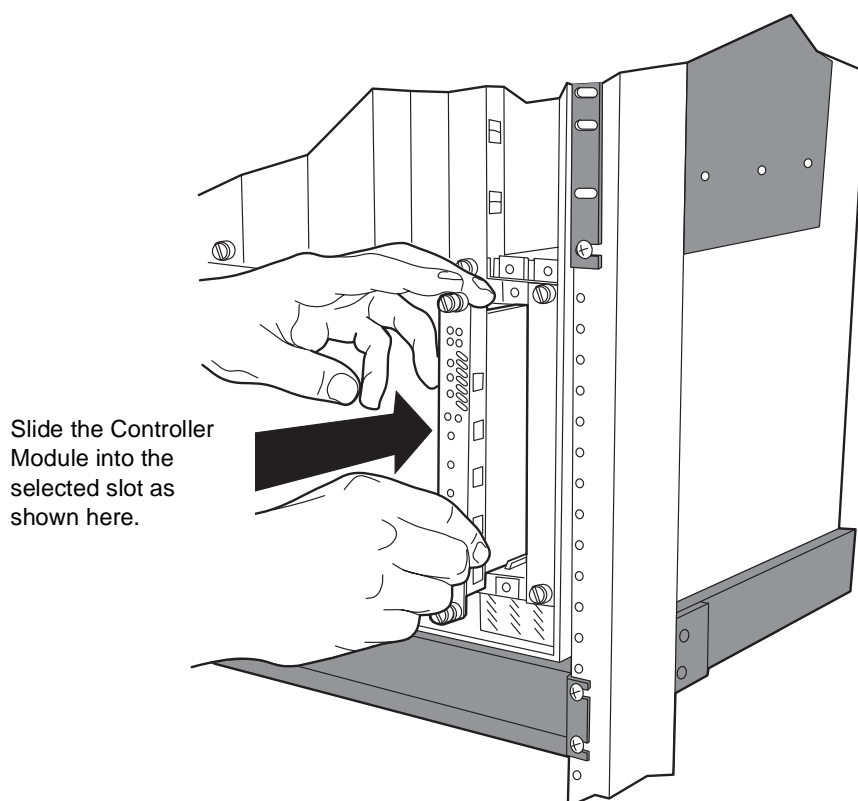


Figure 16. Installing a Controller Module

5. Lock the ejector into place by applying pressure to the Controller module faceplate with one hand as you pull up on the end of the ejector. Ensure that the Controller module remains fully seated in the backplane connector as you close the Controller module ejector.
6. Lift the end of the ejector until the ejector locks into place.
7. Complete the installation by hand-turning each of the spring-loaded screws at the top and bottom of the module in a clockwise direction. Do not overtighten the screws.

Caution: To ensure adequate cooling airflow, install blank slot cover plates over *all* empty slots.

Installing the 8265 Control Point and Switch Module

Before You Begin

Before installing a Control Point and Switch module, make sure that you also have the following:

- PCMCIA card containing the CPSW module microcode. There are two versions, a basic version containing IISP and UNI protocols, and an enhanced version containing the PNNI protocol. One of these **MUST** be installed on the module before the module is installed in the 8265.
- Additional memory - if you have ordered the 16MB memory upgrade, this memory module must be installed on the CPSW module before its insertion in the 8265.

Important: You must not install an 8260 CPSW module into the 8265.

Figure 17 illustrates where the PCMCIA card and memory upgrade are to be installed.

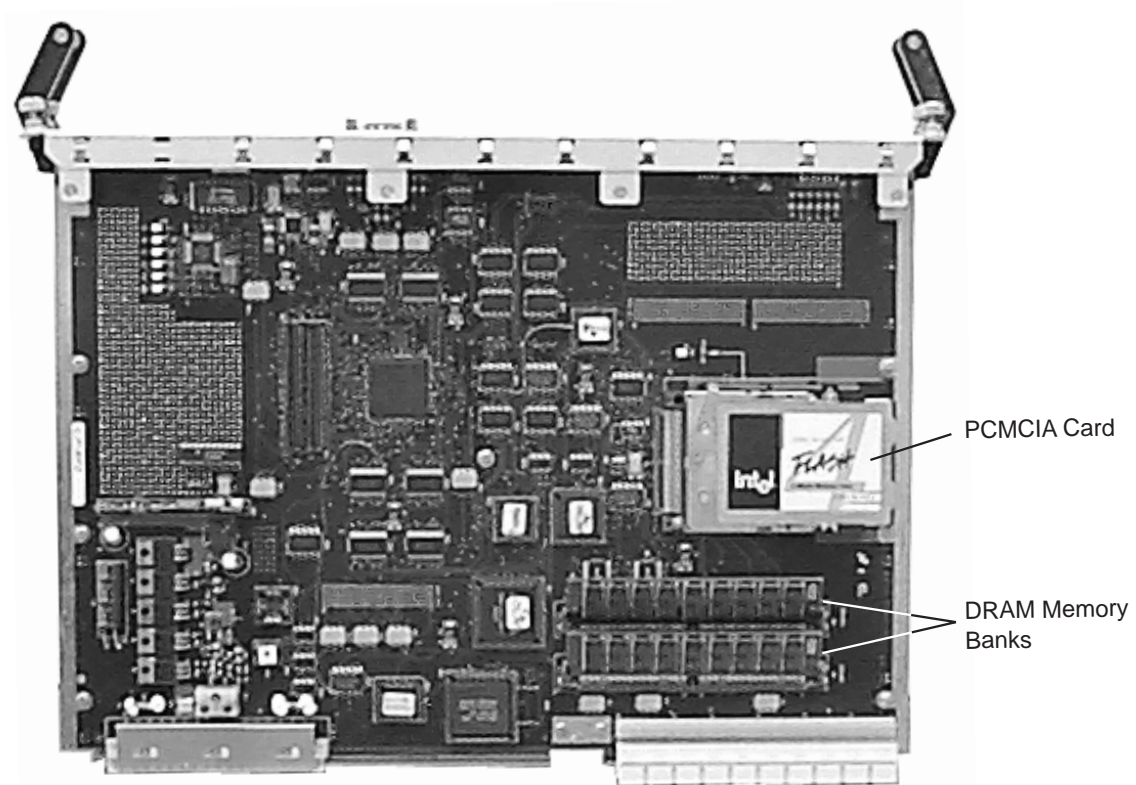


Figure 17. 8265 CPSW Module

Installing the PCMCIA Card

To install a PCMCIA card:

1. Remove the card from its packaging.
1. Position the card so that it is just above the slot on the CPSW module, making sure that the edge with the connectors is inserted first.
2. Slide the card into the slot.
3. Push gently downward until the card clicks into place. If the card does not seat properly, turn the card over and try again. The card will not click into place when inserted back-to-front.

To remove a PCMCIA card, simply press down on the small lever on the left of the slot.

Installing the Memory Upgrade

To install the memory upgrade:

1. Remove the memory module from its packaging.
2. Locate the end of the module that has a small notch.
3. Position the module above the vacant socket on the CPSW module, making sure that the end with the notch is facing to the rear of the module.
4. Gently insert the module into the socket at 45 degrees.
5. Push gently downwards on the module until it clips into place.

To remove a memory module, release the clips at either end of the module, then slide the module upwards gently and lift out.

Installing the CPSW Module

To install a CPSW module:

1. Insert the CPSW module into slots 9 and 10, or 11 and 12 of the switch by matching the top and bottom board guides as you slide the module cleanly into place (by pressing evenly on the top and bottom of the faceplate).
2. Check that the module is plugged into the connectors on the ATM backplane.
3. Fasten the spring-loaded screws on the top and bottom of the front panel of the module to the chassis using your finger. Do not over-tighten.
4. If the switch is already powered on, press the LED Test button to ensure that all LEDs are functional (optional).
5. Repeat the above steps for the second module if you are installing two.

Guidelines for Installing 8265 Media Modules

Before installing a media module, refer to the module-specific installation instructions that accompany your module (See the Media Module Reference Guide). Some media modules require the installation of daughter cards before the module is installed in the switch)

Note: It is not necessary to power down the switch when installing or removing media modules. You can install or remove all media modules without disrupting switch operation.

This section describes guidelines for installing media modules. This section contains the following topics:

- Cautionary Guidelines
- Installation Guidelines.
- Guidelines for Installing 8260 ATM media modules.

Observe the following guidelines when handling, installing, or removing an ATM module

Cautionary Guidelines

Before you begin to install a module, review the following guidelines when handling a module:

- Electrostatic discharge (ESD) can damage static-sensitive devices on circuit boards.
 - Do not remove the module from its anti-static shielding bag until you are ready to inspect it.
 - To ensure that static charge is removed, touch any installed module's fastener screw before installing the module. This dissipates charge energy through the chassis to the grounded power cord.
 - Handle the module by the faceplate only.
- Do not twist or otherwise force modules into the switch.

Installation Guidelines

This section describes guidelines to follow when installing media modules.

- Check which slots are available for the particular module. Some modules can only be installed in slots 1, 3, 5, and 7. Slots 9, 10, and 11, are reserved for Control Point and Switch modules. Slot 12 can not be used if an CPSW module is installed in slot 11.

Table 3 details which media modules can be installed in which slots.

Module	Feature Code	Part Number	Slot Width	Data Speed (Mbps)	Slots
4-port 155Mbps (MMF)	6540	02L2414	1	768 (non-blocking)	1-8, 12-17 (Note 1)
4-port 155Mbps	6543	13J8738	1		
1-port 622Mbps (MMF)	6511	02L2412	1		
1-port 622Mbps (SMF)	6512	02L2413	1		
4-port 100Mbps	5104	13J8722	1	256	1, 3, 5, 7 (Note 2)
12-port 25Mbps	5012	13J8713	1		
WAN 2	6502	13J8734	1		
Video Distribution	5008	38H7225	2		
MSS Server (8210)	5300	42H1350	2		
ATM/Ethernet (8271)	5212	13J8723	2		
ATM/Ethernet (8271)	5312	13J8724	3 (Note 3)		
ATM/Token-Ring (8272)	5208	13J8725	2		
ATM/Token-Ring (8272)	5308	13J8726	3 (Note 3)		
ATM Carrier	5102	13J8730	1		
Notes:					
1. Slot 12 cannot be used if a CPSW module is installed in slot 11.					
2. Equivalent 8260 modules may also be used..					
3. Slot 7 cannot be used if a CPSW module is installed in slot 9.					

- When installing a media module on which submodules are installed, take special care to insert the host module straight into the slot. This ensures that submodules attached to the host module are not damaged during host module installation.
- If you are installing an 8260 ATM media module, check that the FPGA level of the module is at the required FPGA level **before** installing the module (see Table 4).
- To assure proper installation, match the top and bottom board guides as you slide the module cleanly into place. Do not attempt to push the module all the way into the switch until you verify that module ejectors are open.

Note: If the 8265 is powered on, the Error LED on the 4-port 155Mbps and 1-port 622Mbps modules will illuminate when the module is installed. This is because the module detects that there is no signal present, as there is no cable connection to the module's port(s) at this time. The LED will extinguish once a connection is made.

Guidelines for Installing 8260 ATM Media Modules

Some 8260 ATM modules must have a minimum FPGA level in order to operate in the 8265.

Table 4 lists the modules and the minimum FPGA levels required. **The modules must have this FPGA level, or higher, before being installed in the 8265.**

If your 8260 ATM module does not have the specified FPGA level (or higher), upgrade the module **before** removing it from the 8260, using MES 5099. For information on how to upgrade FPGA code, refer to *IBM 8260 Nways Multiprotocol Switching Hub, ATM Control Point and Switch Module Installation and User's Guide*, SA33-0326.

Module	Faceplate Marking	Required FPGA Level
4-Port 100Mbps	A4-SC100	B50
4-Port 100Mbps	A4-FB100	B50
12-Port 25Mbps	A12-TP25	C30
2-Port 155Mbps	A2-MB155	B50
3-Port 155Mbps	A2-MB155	C31
ATM WAN	A2-WAN	B50
ATM Carrier	A-CMU1	B50
ATM Carrier	A-CMU2	B50
8210 MSS Server	A-MSS	B50
8281 ATM LAN Bridge	A04MB-BRG	B50

Other supported 8260 ATM modules (8271/8272 LAN Switch modules, for example), are fully compatible with the 8265, and have no minimum FPGA level requirement.

Chapter 6. Attaching a Configuration Console

If you want to use a local console to configure (out-of-band) the ATM system, you must attach an ASCII-type terminal to the RS-232 console port on the active CPSW module. The connection can either be local or via modem.

If you use the modem cable delivered with the 8265 (Part Number 59G0278), you must also use the supplied null modem adapter (Part Number 58F2861).

When the EIA-232 terminal attachment has a male connector, the gender changer (Part Number 58G4422) must be used.

Verify that the console and modem (if used) meet the factory defaults of the CPSW module. If they are not compatible, you will not be able to communicate with the module. The default settings are:

- 9600 baud rate
 - 8 data bits
 - No parity
 - 1 stop bit.
1. Attach one end of an RS-232 cable to the 9-pin RS-232 console port (the topmost RS-232 port on the front panel of the CPSW module). Loop the cable through the Cable Management Tray (if installed) and attach the other end (9-pin or 25-pin) into the appropriate port on the device.
 2. After attaching a console to the CPSW RS-232 console port, make sure that the console is set up for asynchronous serial communication.

How to set up the configuration console and enter command is described in the *IBM 8265 Nways ATM Switch User's Guide*, SA33-0456.

3. After connecting a modem to the console port, configure the modem by following the steps given in the next section.

Configuring the Modem

The CPSW module supports the use of dial-in modems with the following requirements:

- The modem must be 100% Hayes-compatible
- any valid baud rate (300, 1200, 2400, 9600, 19200) may be used. 2400 and 9600 are recommended.
- the modem must be set to Dumb/Auto Answer mode.

To configure a modem, enter the following commands from the console to which the modem is attached:

1. Type `at&F` and press Enter (to restore the factory default settings)
2. Type `at&d0` and press Enter (to ignore changes in DTR status)

If you have enabled automatic modem hangup with the SET TERMINAL HANGUP ENABLE command and want to keep this setting, enter `at&d2` and press Enter. This sets the DTR parameter so that hangup remains enabled when DTR switches from ON to OFF.

3. Type `ats0=1` and press Enter (to auto-answer on the first ring).
4. Type `ats0?` and press Enter (to verify the auto-answer if 001 is returned).

5. Type `atq1` and press Enter (to ignore the result codes).
6. Type `at&W` and press Enter (to save the configuration changes).
7. Type `at&Y` and press Enter (to define the configuration as the new default).
8. Set the modem to Dumb mode (with command recognition disabled) by following the instructions in the modem's user guide.

Example Parameter Settings

Table 5 and Table 6 show examples of EIA-232 xMM parameter settings for certain emulated ASCII terminals.

Field Name	3163	3164	3101
Operating Mode	ECHO	ECHO	ECHO
Interface	RS-232C	RS-232C	RS-232C
Line Control	IPRTS	IPRTS	IPRTS
Speed (bps)	9600	9600	9600
Parity	No	No	No
Return Character	CR	CR	CR
Stop Bit	1	1	1
Word Length (bits)	8	8	—
Response Time (ms)	100	100	—
Interruption Signal (ms)	500	500	—

A modem can also be used at lower speeds by using the appropriate xMM commands.

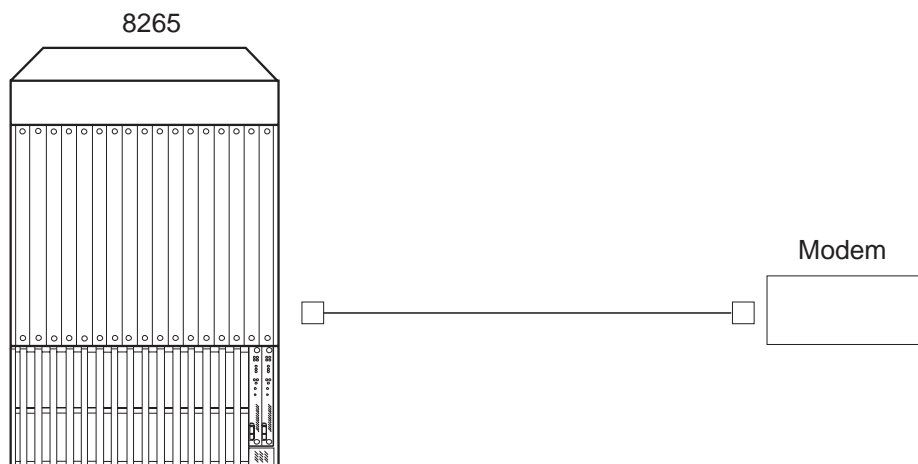


Figure 18. Modem Cable Attachment (Part Number 59G0278)

<i>Table 6. Entries for the IBM 3151</i>		
Menu	Field Name	Field Input
1: General	Machine Mode	3151
	Screen	NORMAL
	Row and Column	24 x 80
	Scroll	JUMP
	Auto LF	OFF
	CRT Saver	OFF
	Line Wrap	OFF
	Forcing Insert	OFF
	Tab	FIELD
2: Communication	Operating Mode	NOECHO
	Line Speed (bps)	9600
	Word Length (bits)	8
	Parity	NO
	Stop Bit	1
	Turnaround Character	CR
	Line Control	IPRTS
	Break Signal (ms)	170
	Send Null Suppress	OFF
3: Keyboard	Enter	RETURN
	Return	NEW LINE
	New Line	CR/LF
	Send	LINE
	Insert Character	MODE

ASCII Terminal Cabling

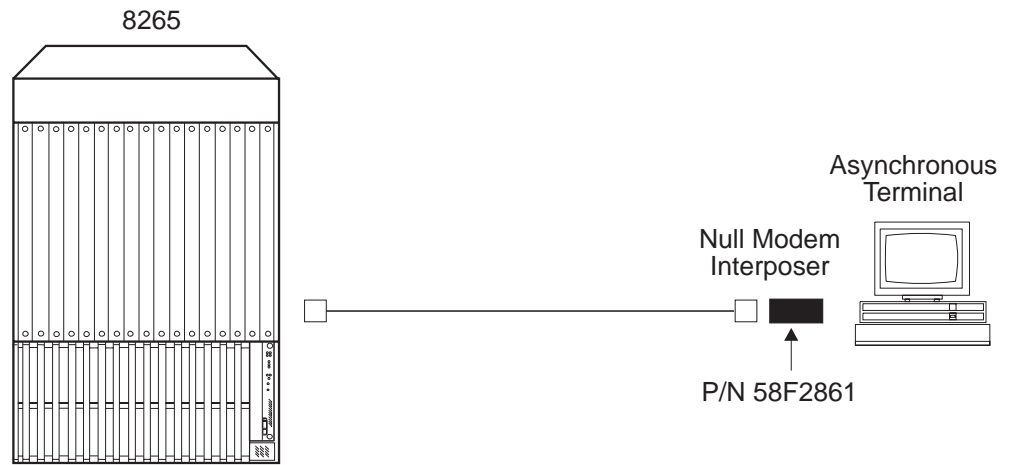


Figure 19. ASCII Terminal Cabling

The interposer is described in “DTE Direct Attachment Interposer and Wiring” on page 103.

VT100 Emulation on PS/2

Use emulation VT100 of communication manager to emulate an ASCII terminal. Re-map the keyboard for an AZERTY keyboard in a US-English configuration.

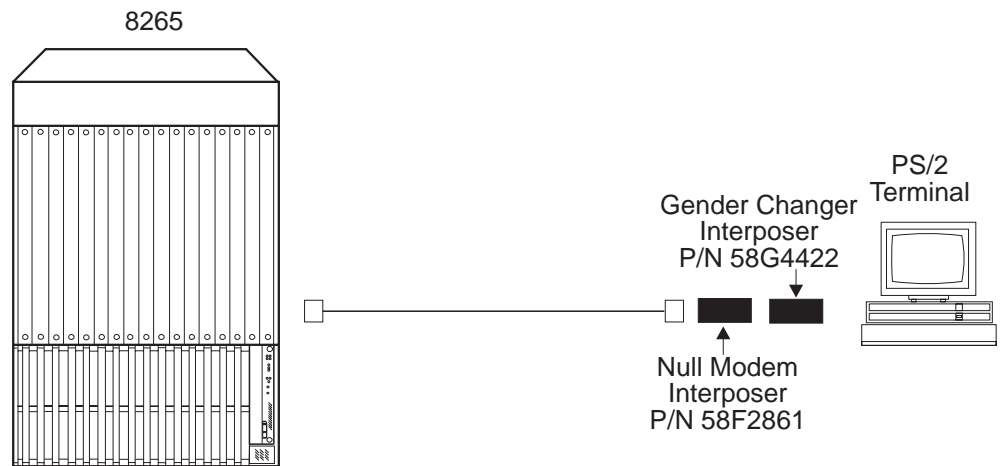


Figure 20. PC or PS/2 Cabling

Chapter 7. Completing the Installation

This chapter describes the following:

- Checking that you have installed all required components.
- Powering on the 8265.
- Verifying that components are operating correctly.

Checking Your Installation

Use the following table to check that you have installed all the required components. Refer to the relevant page if you have omitted a component.

Table 7 lists the items to have been installed.

Item	Required/optional	See
Cable Management Tray (optional)	optional	page 8
AC or DC power supplies	2 minimum required	page 18 or 20
AC or DC power supply power cords	required	page 19 or 24
Power supply bay grille	required	page 25
Controller module(s)	1 minimum required	page 29
Control Point and Switch module(s).	1 minimum required	page 31
PCMCIA card for CPSW module	required	page 32
Memory Upgrade for CPSW module (optional)	optional	page 32
Configuration console	required	page 37

Note: You should also have switched each power supply unit to ON.

Powering on the 8265

Caution: When one or more power supplies are active, module and power supply slots carry electric current. To avoid possible electric shock and damage to switch components, do not place hands, tools, or other objects (other than properly installed modules and power supplies) into exposed module or power supply slots. Do not allow liquids of any kind to contact exposed slots.

DC Power Source

Caution: Connect the -48 Volt DC power supply to Safety Extra Low Voltage (SELV) *only*. Carefully read the safety label attached to the power supply cord you received.

Make certain that the building power source is turned OFF (circuit breaker is in the OFF position).

1. Ensure that the -48 Volt building power source is turned OFF.
2. Plug the power cord for each power supply unit into the wall outlets.
3. Turn on the -48 Volt building power source.

The power supplies should now be fully operational.

AC Power Source

1. Plug the power cord for each power supply unit into the wall outlets.

The power supplies should now be fully operational.

Verifying Your Installation

This section explains how to check that each component of the 8265 is correctly installed:

- Controller module
- Power supply units
- Fan units
- Control Point and Switch module
- Configuration console.

Refer to the Media Module Reference Guide for information on media modules.

Verifying Controller Module Operation

To verify Controller module operation:

1. Press the LED test button and check that all LEDs are illuminated. Then release the LED test button. Repeat for the second Controller module if two are installed.
2. Check the STBY (Standby) and Active LEDs.
 - If one Controller module is installed, check:
 - a. that the STBY LED is OFF.
 - b. that the Active LED is ON.
 - If two Controller modules are installed, check:
 - a. that the Active LED on the active Controller module is ON.
 - b. that the STBY LED on the active Controller module is OFF.
 - c. that the Active LED on the standby Controller module is OFF.
 - d. that the STBY LED on the standby Controller module is ON.

Figure 21 shows the location of the LEDs on the Controller module front panel.

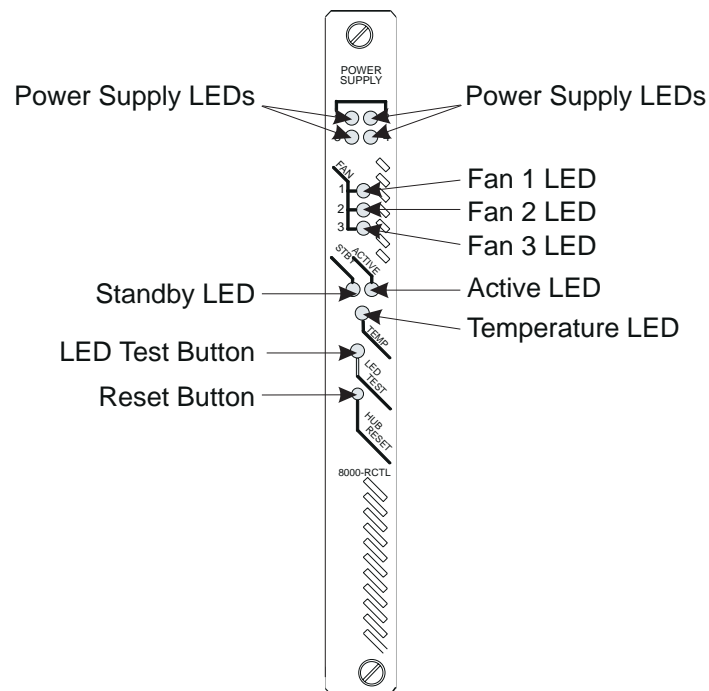


Figure 21. 8265 Controller Module Front Panel LEDs

For troubleshooting information, refer to page 49.

Verifying Power Supply Operation

To verify normal operation of an installed power supply or supplies, confirm that the active Controller module does not indicate a power supply fault.

There are four Power Supply LEDs on the Controller module front panel, one for each power supply. The LEDs are numbered 1 through 4, with 1 indicating the left-most power supply bay, and 4 indicating the right-most power supply bay.

The LED for each unit installed should be lit. If any of the LEDs blinks or does not light for each installed power supply when the 8265 is powered up, refer to Troubleshooting on page 49.

Verifying Fan Operation

To verify that all fan units are operating normally:

- Check to be sure that the active Controller module does not indicate a fan fault. Each FAN LED on the Controller module front panel should be ON. If the LED is OFF or Blinking, refer to Troubleshooting on page 49.

Note: Fan LEDs on a standby Controller module do not operate.

- Check that the Temp LED on the active Controller module is OFF, indicating normal 8265 internal operating temperature. If the LED is blinking, it indicates excessive internal operating temperature.
- Visually inspect all fans, making sure that each is turning without interruption.
- Make sure the Controller module is not indicating an overheat condition. An overheat condition may mean that:
 - One or more fans are not functioning normally
 - Ventilation holes are blocked
 - Fan exhaust temperature (internal 8265 operating temperature) is above 60 °C (140 °F).

Fan exhaust temperature is the temperature of air inside the 8265 as it passes out the back of each exhaust fan. Heat produced by circuit boards and power supplies accounts for most of this warm air. Fan exhaust temperature is measured by a temperature sensor located at the rear of each fan unit.

Verifying CPSW Module Installation

You can verify that the CPSW module is correctly installed by checking the front panel:

- The CPU Stop LED should be OFF.
- When the 8265 is powered on (or reset), the CPSW module is initialized and the System Status LCD displays the various steps of the initialization:
 1. INIT - initialization process is running.
 2. If diagnostics are enabled, the following steps are shown while testing the first bank of DRAM memory:
 - SET1, RFW1, RBW1, BRST.
 3. CLR1 - first DRAM memory bank is being cleared.
 4. If diagnostics are enabled, the following steps are shown while testing the second bank of DRAM memory (if installed):
 - SET2, RFW2, RBW2, BRST.
 5. CLR2 - second DRAM memory bank is being cleared (if installed).
 6. LOAD - operational code is being copied from the PCMCIA card into the DRAM.

Once the initialization has completed successfully, the System Status LCD will show either *ACTV* (on the active CPSW module) or *STBY* (on the standby CPSW module when two are installed). If neither are displayed, an error was encountered during initialization process:

- If the error was not critical, the code goes in Maintenance Mode and an error code and description of the error is displayed.
- If the error was critical, ---> is displayed. Press the Display Control button to view an explanation of the error.

Verifying Configuration Console Installation

Once the RS-232 connection is made to the CPSW module:

1. Check that "Press Enter" is displayed at the terminal.
2. After you press Enter, the following message should be displayed:

```
ATM Control Point and Switch Module
(c) Copyright IBM Corp. 1997. All rights reserved.
```

Appendix A. Troubleshooting

This chapter offers suggestions for detecting and troubleshooting typical fault conditions in the switch and for verifying Controller Module operation.

For information concerning the maintenance of power supplies and fans, see *IBM 8265 Nways ATM Switch User's Guide*, SA33-0456.

Troubleshooting Fault Conditions

Table 8 lists possible troubleshooting you can perform using Controller module LEDs. If you cannot correct a fault condition using any of the suggestions provided in Table 8, contact your local service representative for assistance.

Table 8 outlines possible causes and several solutions for problems indicated by the Status LEDs.

<i>Table 8. Troubleshooting Using the Controller Module Indicators</i>			
LED	State	Possible Cause	Corrective Action
POWER SUPPLY (1 through 4)	OFF	Power supply not installed.	(NONE)
		Power supply LED has failed.	Press the LED Test button on the Controller module to verify LED operation.
	Blinking	Power supply is installed but faulty.	<ol style="list-style-type: none"> 1. Verify that the outlet is supplying power. 2. Verify that the power cord is plugged in at both ends and that the cord is appropriate for your country's line voltage. 3. Verify that the power switch on the power supply is set to the ON position. 4. Verify that the power supply is fully seated in the backplane connectors. 5. Verify that the power supply is not overloaded. Set the power supply switch to the OFF position, wait a few moments, then set the power supply switch to the ON position. 6. Check that the power supply connectors on the backplane are not damaged. 7. Replace the power supply if the suggestions presented above do not correct the problem (see page 55).
FAN LED (1 through 3)	OFF	Fan is not installed or Fan LED is faulty.	Install fan unit or press the LED Test button to determine if this Fan LED is functional.
	Blinking	Fan unit is malfunctioning or not operational.	Replace the fan unit (see page 59).

Table 8. Troubleshooting Using the Controller Module Indicators

LED	State	Possible Cause	Corrective Action
TEMP LED	OFF	Switch temperature is normal, or the TEMP LED is faulty.	Press the LED Test button to determine if the TEMP LED is functional.
	Blinking	Temperature in the switch is higher than the allowable limit.	<ol style="list-style-type: none"> 1. Verify that all fan units are operating normally and that nothing is blocking air flow through the front of the switch. If air flow is blocked, heat build-up may cause an overheat condition. 2. Verify that the required number of fan units has been installed (never operate the switch with fewer than two installed and functioning fan units). 3. Verify that there is at least 3 inches (8 cm) of space behind the switch for proper air flow. If air flow is blocked, heat build-up may cause an overheat condition. 4. Verify that all empty slots contain a blank faceplate. 5. Lower the room temperature. Even if all installed fan units are functioning normally, excessively warm room air circulated by installed fans may fail to adequately cool the switch and installed modules.
ACTIVE	ON	Controller module is in Active mode.	None.
	OFF	Controller module is in Standby mode.	Verify that the Standby LED is illuminated.
		Controller module LED is faulty.	Press the LED Test button to determine if the Active LED is functional.
STBY	ON	Controller module is in Standby mode.	None.
	OFF	Controller module LED is faulty.	Press the LED Test button to determine if the STBY LED is functional.
		Controller module fuse has blown.	Replace the Standby Controller Module.
	Blinking	Controller module is faulty.	Reset the Standby Controller Module. If a reset does not correct the problem, replace the Standby Controller module.

Appendix B. Maintenance

This appendix describes the routine maintenance you should perform to keep your 8265 working at its best. This appendix also provides instructions for replacing defective power supplies and fan units.

The following maintenance procedures are discussed:

- Routine Maintenance
- Replacing a Defective AC Power Supply
- Replacing a Defective -48 Volt DC Power Supply
- Replacing a Defective Fan Unit
- Replacing a Defective Controller module.

Note: There are no user-serviceable parts on either the load-sharing power supplies or the fan units. If these components fail, remove them as described in this Appendix and return them to your supplier. Keep replacement power supply units and fan units at your site so they are available if needed.

Routine Maintenance

On a regular basis, inspect your 8265 to verify that:

- All blank 8265 faceplates are securely attached to the chassis.
- At least two fans are running.

Warning: If only two fans are operational, system operation is not affected. However, you should schedule the defective fan for prompt replacement. If *fewer than two fans are operational*, power off the 8265 immediately. Do not attempt to power on again until at least two operational fans have been installed. You should normally run the 8265 with a full complement of three fans.

- Ventilation to the 8265 is unobstructed.
- Controller module and media Module LEDs are functioning normally and show normal readings.
- Power requirements for all installed modules are met by the power supplies.
- Power cords from each power supply are not frayed or damaged.
- Cables running from each installed module are in good condition.
- If rack mounted, the 8265 and the cable tray are securely attached to your rack.
- All modules are securely seated in the backplane and firmly attached to the chassis.

Replacing a Defective Power Supply

This section describes how to replace the following:

- AC Power Supply
- -48 Volt DC Power Supply.

The 8265 can accommodate up to four modular load-sharing AC or DC power supplies. All power supplies are installed and removed in the same manner, using the same steps, except when removing the -48 Volt DC power supply and power cord.

Note: When replacing a power supply, you must leave enough supplies running at all times to satisfy the requirements of installed modules. If removal of a defective, but still functioning, power supply will not cause a power deficit in the 8265, you can remove the faulty supply without losing power to a module or modules. Before attempting to remove a power supply from the chassis, enter the SHOW POWER BUDGET command to display current power conditions for the 8265.

Replacing an AC Power Supply

To replace a defective AC power supply:

Caution: To avoid electric shock, be sure to set the faulty power supply's ON/OFF switch (| / O) to the OFF (O) position, and to disconnect the power cord from both the power supply and the wall outlet *before* attempting to remove the power supply from the chassis.

1. To gain access to the power supply bay, remove the power supply bay grille (if installed).
2. Set the defective power supply's ON/OFF switch (| / O) located on the front of the supply to the OFF (O) position.
3. Remove the power cord from the wall outlet.
4. Remove the power cord from the power supply socket.
5. Loosen the spring-loaded screws that secure the power supply to the front of the 8265.
6. Pull the power supply straight out from the chassis, making certain you do not damage the connectors on the rear of the supply or those on the power switching board.
7. Remove the replacement power supply from its shipping box and set the power supply's ON/OFF (| / O) switch to the OFF (O) position.
8. Carefully slide the power supply into the selected power supply slot (the same slot from which the defective supply was removed, or any other available power supply slot).

Warning: Be sure to use the same power type (AC) as the removed power supply.

Figure 22 shows how to install the power supply.

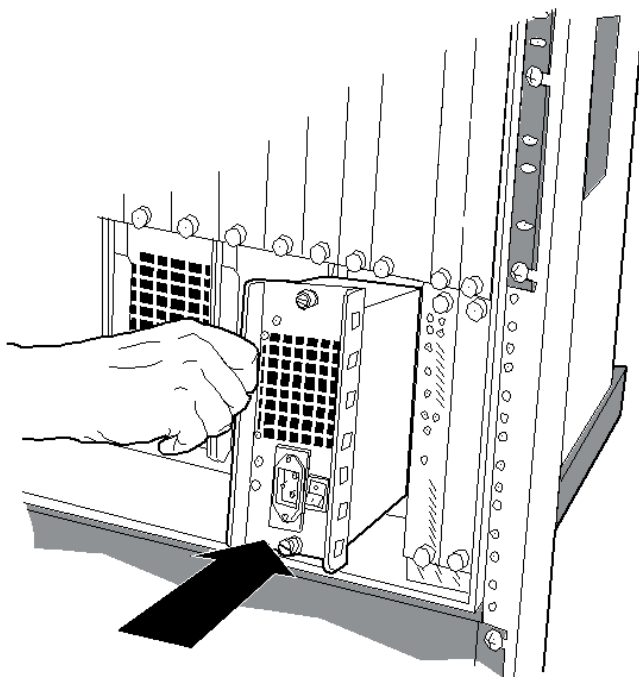


Figure 22. Replacing a Defective Load-Sharing Power Supply

9. Hand-tighten the spring-loaded screws that secure the power supply to the front of the 8265.
10. Plug the power cord into the socket on the power supply.
11. Plug the power cord into the wall outlet.
12. Set the power supply's ON/OFF switch (| / O) to the ON (|) position.
The replacement power supply is now fully operational.
13. Optionally, install the power supply bay grille (for installation instructions, refer to page 25).
14. Check the POWER SUPPLY LEDs on the Active Controller module to verify that the replacement power supply is functioning normally. All LEDs for installed power supplies should be illuminated to indicate normal operation.

Replacing a -48 Volt DC Power Supply

Follow these steps when removing the -48 Volt DC power supply without disconnecting the power cord. See page 58 for information on replacing the -48 Volt DC power cable.

Warning: Only trained electrical service personnel must make disconnections to the -48 Volt DC power source.

1. Remove the power supply bay grille (if installed).
2. Set the power supply ON/STANDBY switch to the STANDBY position.
3. Turn off the power source circuit breaker, protecting the power supply you want to remove.
4. Unplug and remove the keyed cable connector from the power supply socket.
5. Loosen the spring-loaded screws on the power supply faceplate.
6. Carefully pull out the power supply from the slot of the chassis.
7. Remove the replacement power supply from its shipping box and set the power supply's ON/STANDBY switch to the STANDBY position.
8. Plug the keyed-connector into the power supply socket.
9. Carefully slide the power supply into the selected power supply slot (the same slot from which the defective supply was removed, or any other available power supply slot).

Warning: Be sure to use the same power type as the removed power supply. Do not mix AC and DC power supplies.

10. Hand-tighten the spring-loaded screws that secure the power supply to the front of the hub.
11. Set the power supply's ON/STANDBY switch to the ON (|) position.
The replacement power supply is now fully operational.
12. Optionally, install the power supply bay grille (for installation instructions, refer to page 25).
13. Check the POWER SUPPLY LEDs on the Active Controller module to verify that the replacement power supply is functioning normally. All LEDs for installed power supplies should be illuminated to indicate normal operation.

Replacing a -48 Volt DC Power Supply Cable

Follow these steps when replacing a -48 Volt DC power cord.

Warning: *Only* trained electrical service personnel must make disconnections to the -48 Volt DC power source.

1. Remove the power supply bay grille (if installed).
2. Set the power supply ON/STANDBY switch to the STANDBY position.
3. Turn off the power source circuit breaker, protecting the power supply whose cable you are replacing.
4. Unplug and remove the keyed cable connector from the power supply socket.
5. Disconnect the 2 red wires from the -48 Volts (- symbol).
6. Disconnect the 2 black wires from the 0 Volt (zero Volt) return (+ symbol).
7. Disconnect the cable ground wire from the terminal ground lugs.
8. Remove the cable.
9. Prepare a new cable as described in "Preparing and Installing the DC Input Power Cords" on page 22.
10. Plug the keyed-connector into the power supply socket.
11. Set the power supply's ON/STANDBY switch to the STANDBY position.
12. Turn on the power source circuit breaker.

Replacing a Defective Fan Unit

This section describes how to replace defective fans for the 8265.

The 8265s are shipped with three installed fan units (Part Number 25H1798). For normal operation, at least *two* of these dedicated fan units must be running at all times. Power supply fans help to ventilate the 8265, but they are not designed to act as a substitute for dedicated fan units.

Warning: If more than one fan unit malfunctions, power off the 8265 immediately and do not attempt to power up again until you have installed at least two fully functional fan units. To ensure optimal 8265 operation, always run the 8265 with a full complement of three fan units.

To replace a defective fan unit:

Note: If only one fan unit malfunctions, you do *not* need to power off the 8265 before removing and replacing the defective unit.

1. Remove and save the four corner screws that attach the fan unit to the rear of the 8265.
2. Carefully pull the fan unit straight out from the 8265 fan bay and, before completely removing the fan, grasp the four-position fan connector cable and disconnect it from the 8265 (see Figure 23).
3. Remove the replacement fan unit from its shipping box and carefully slide the fan into the slot formerly occupied by the faulty unit. Connectors on the installed fan must be firmly seated in the corresponding 8265 connectors.

Figure 23 shows how to install a fan unit.

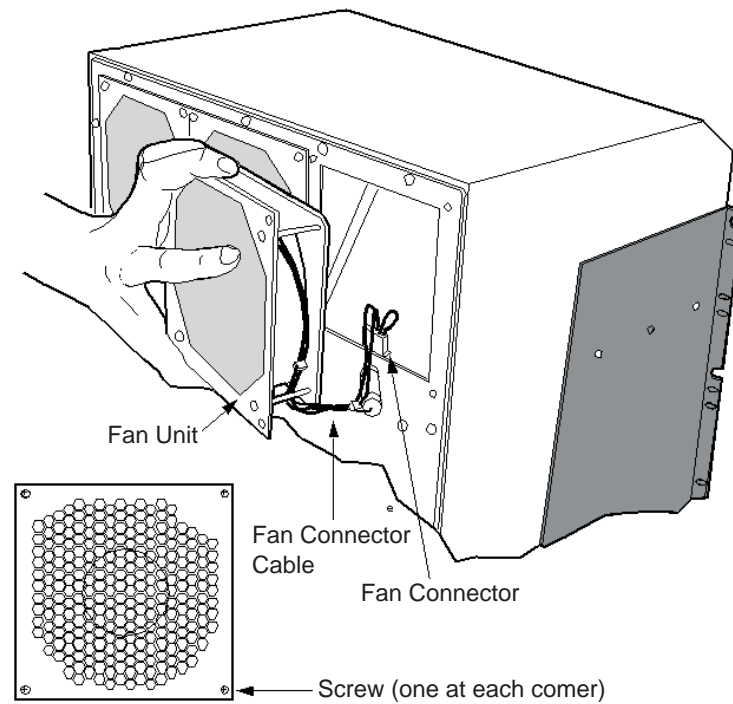


Figure 23. Replacing a Defective Fan Unit

4. Verify that the replacement fan is flush with the back of the 8265.
Note: The fan begins rotating the moment the unit is plugged in.
5. Replace the four screws that secure the fan unit to the rear of the 8265.
6. Visually inspect all installed fans to verify that each is turning without interruption.
7. Check the Fan LEDs on the Active Controller module to confirm that all fan units are indeed functioning normally. LEDs for installed fans should be illuminated to indicate normal operation.

Replacing a Defective Controller Module

Note: In a switch with two installed Controller modules, removal of the active Controller module causes a fast reset (the standby Controller module becomes the active Controller module). In a switch with one installed Controller module, removal of the Controller module causes the switch to go down.

To remove a Controller Module:

1. Loosen the screws at the top and bottom of the module faceplate until the screws disconnect from the switch.
2. Grasp the end of the module ejector at the lower left corner of the faceplate, and pull it down. This action causes the ejector to exert pressure on the switch, forcing the Controller Module out of the slot so its faceplate can then be grasped.
3. Grasp the faceplate and pull the Controller module straight out of the slot.

Note: If you have a standby Controller module installed, make sure the Standby LED (STBY) is ON before attempting to remove the active Controller module.

4. To insert a replacement module, see page 29.

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Machine – 8265 Switch

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Denmark	45	45 96 50 50	80 31 10 10
Finland	358	94 591	98 00 42 60
France	33	23 85 57 777	08 01 63 12 13
Germany	49	70 31 15 27 20	01 80 52 53 553
Greece	30	16 88 12 20	16 80 17 00
Ireland	353	16 60 37 44	01 66 03 744
Israel	972	36 97 85 00	17 70 22 38 88
Italy	39	39 60 07 666	16 78 20 094
Japan	81	12 00 35 555	01 20 03 55 55
Korea	82	82 27 84 08 04	
Netherlands	31	20 51 35 151	02 05 13 51 51
New Zealand	64	45 76 59 99	08 00 73 32 22
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When calling for service of this machine, you will be required to provide the following information:

- Machine Type: 8265
- Models: 17S
- Serial Number: Located on the 8265 chassis label.

Bibliography

IBM 8265 Publications Packaged with the Product

The publications packaged with the IBM 8265 are:

Title	Form Number
<i>8265 Nways ATM Switch, Planning and Site Preparation Guide</i>	GA33-0460
<i>8265 Nways ATM Switch, Product Description</i>	GA33-0449
<i>8265 Nways ATM Switch, User's Guide</i>	SA33-0456
<i>8265 Nways ATM Switch, Command Reference Guide</i>	SA33-0458
<i>8265 Nways ATM Switch, Media Module Reference Guide</i>	SA33-0459
<i>Multiprotocol Switched Services (MSS) Server, Introduction and Planning Guide</i>	GC30-3820
<i>Nways Multiprotocol Switched Services Server, Interface Configuration and Software User's Guide</i>	SC30-3818
<i>Nways Multiprotocol Switched Services (MSS), Configuring Protocols and Features</i>	SC30-3819
<i>Multiprotocol Switched Services (MSS) Server, Service Manual</i>	GY27-0354
<i>Multiprotocol Switched Services (MSS) Server, Setup and Problem Determination Guide</i>	GA27-4140
<i>Nways Multiprotocol Switched Services (MSS) Server Module Setup and Problem Determination Guide</i>	GA27-4141
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<i>IBM Video Distribution Module, User's Guide</i>	GA27-4173
<i>The 8260 Nways ATM Kit Development Program, We Carry Your Creativity to ATM</i>	GA33-0371

These publications are included on the *IBM 8265 ATM Switch Documentation Library* CD, SA33-0454.

The above documentation is also available via the Internet: www.networking.ibm.com/did/8265bks.html.

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