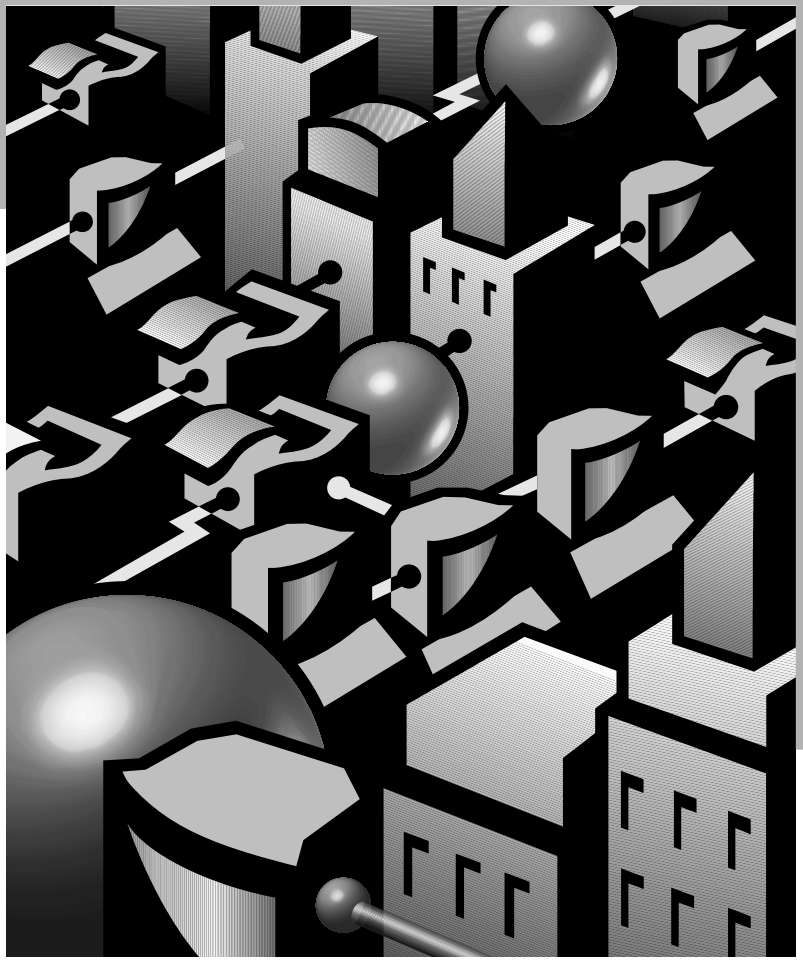
HEWLETT® PACKARD



Installation Guide

HP J3102A

HP AdvanceStack Switch Ethernet Module

HP Customer Support Services
How to get the latest software

You can download a compressed file (j3100a.exe) containing the latest version of the HP Switch 2000 software, proprietary MIB, and a software download utility file (update.exe) from the HP BBS, HP FTP Library Service, CompuServe, and the World Wide Web. After you download the file, extract the file by typing *filename* /x and pressing Enter. For example: j3100a.exe /x Enter.

HP BBS

Set your modem to N-8-1, set speed up to 14400 bps, and with your telecommunication program (e.g., Windows Terminal) dial (208) 344-1691 to get the latest software for your HP networking product.

HP FTP Library Service

1) FTP to Internet IP Address ftp ftp.hp.com
2) Log in as anonymous and press Enter at the password prompt.
3) Enter bin to set the transfer type to binary.
4) Enter cd /pub/networking/software
5) Enter get *filename* to transfer the file to your computer, then quit.

CompuServe

1) Login to CompuServe.
2) Go to the "hp" service.
3) Select "HP Systems, Disks, Tapes, etc".
4) Select "Networking Products" library.
5) Download the compressed file named J3100.exe, and then quit.

World Wide Web

http://www.hp.com/go/network_city
Select the Support section, then "Software Downloads and Patches".
Download the file you need and extract it by typing: *filename* /x

Do you have questions about designing your expanding network? From this web site, you can also download the *Designing HP AdvanceStack Workgroup Networks Guide* which addresses capacity planning, or dial 1-800-752-0900 to receive a copy through the mail.

!

(over for more services)

HEWLETT® PACKARD

Obtain the latest console code (j3100a.exe) from:

HP FTP Library:	ftp ftp.hp.com
World Wide Web:	http://www.hp.com/go/network_city
HP BBS:	(208) 344-1691

(over)

HP NETWORK CONNECTIVITY

HP FIRST Fax Retrieval Service

HP FIRST is an automated fax retrieval service that is available 24 hours a day, seven days a week. HP FIRST provides information on the following topics:

- Product information
- Troubleshooting instructions
- Technical reviews and articles
- Configuration information

To access HP FIRST, dial one of the following phone numbers:

Location	Phone Number
U.S. and Canada Only	Dial 1 (800) 333-1917 with your fax machine or touch-tone phone and press 1.
Outside the U.S. and Canada	Dial 1 (208) 344-4809 from your fax machine and press 9.

To receive a list of currently available documents, enter document number 19941. The information you requested will be sent to you by return fax.

Additional HP Support Services

In addition to the above services, you can purchase various HP telephone support services which provide you expert HP technical assistance:

- Network Phone-In Support provides you support at an hourly rate. In the USA, call 1-800-790-5544. In other countries, please contact your local HP Response Center to see if this service is available in your country.
- HP SupportPack Comprehensive Network Support provides complete problem resolution for medium to large interconnected local and wide area networks. Contact your HP Authorized Reseller or the nearest HP Sales and Support Office for more information.

CompuServe:	Go to the hp service Select HP Systems, etc Select Networking Products Download the file named J3100.exe
Network Phone-In Support (Hourly):	1-800-790-5544

HP AdvanceStack Switch Ethernet Module

Installation Guide

Publication Number

5966-5118
Edition 1
September 1996

Applicable Product

HP J3102A

Warranty

The information contained in this document is subject to change without notice.

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Hewlett-Packard assumes no responsibility for the use or reliability of its software on equipment that is not furnished by Hewlett-Packard.

See the warranty card included with the product.

A copy of the specific warranty terms applicable to your Hewlett-Packard product and replacement parts can be obtained from your HP sales and service office or HP-authorized reseller.

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http: //www.hp.com/go/network_city

HP AdvanceStack Switch Ethernet Module

For the HP AdvanceStack Switch 2000

At A Glance

The HP AdvanceStack Switch Ethernet Module (HP J3102A) is an optional component that you can add to an HP AdvanceStack Switch 2000 to provide either of the following:

- Four 10Base-T ports
- Three 10Base-T ports and one (optional) 802.3-compatible transceiver port for other media types (such as ThinLAN, or fiber-optic)

For information on transceiver types and availability, contact your Hewlett-Packard networking representative.

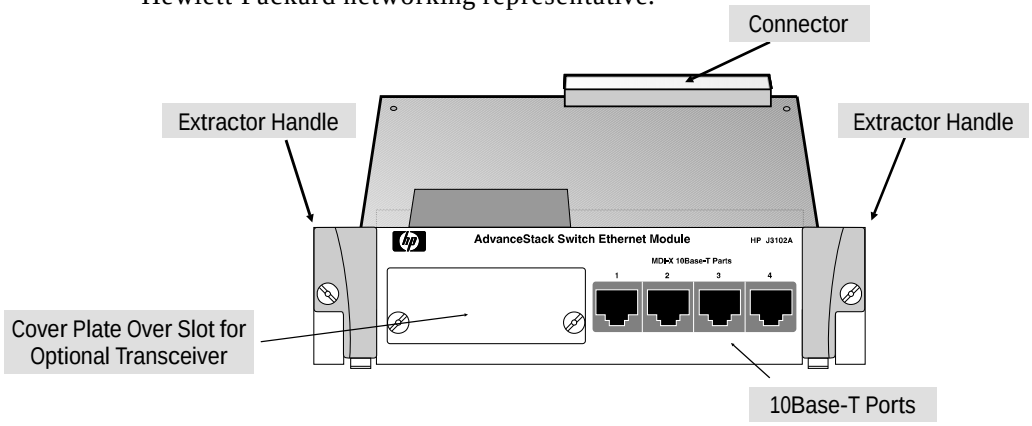

Figure 1. The HP AdvanceStack Switch Ethernet Module

Features: The HP AdvanceStack Switch Ethernet Module can enhance your Switch 2000 in the following ways:

- You can use the module to connect different 802.3 media types to your Switch 2000.
- You can add, change, or remove a module without shutting down the entire switch.
- You can install up to six Ethernet modules in your Switch 2000, enabling you to “fully load” the switch with up to 24 Ethernet/IEEE 802.3 ports.

Contents

Overview

Note

Before you install the HP AdvanceStack Switch Ethernet Module into the Switch 2000, you may want to install an optional HP 802.3-compatible transceiver in the transceiver slot in the module. (Refer to the instructions you received with the transceiver.)

If a transceiver is installed, it replaces the first 10Base-T port as port 1, as long as no active network is connected to the built-in RJ-45 port 1. If the Switch 2000 detects the link beat signal on the built-in RJ-45 port 1, it automatically selects that connector to use for port 1.

You can install an Ethernet Module into the Switch 2000 in any one of the six module slots, as follows:

1. Insert the Ethernet Module in a Switch 2000 slot (page 2).
2. Customize the configuration for the module ports (unless the default port configuration is satisfactory for your network application - see page 8).
3. Reboot the switch (page 9).

Other, optional procedures include:

- Hot-Swapping one module for another; that is, replacing one module with another without turning off power to the switch (page 10)
- Using the hot-swap process to install a transceiver into a module that has already been installed in the switch (page 12)

Caution

Static electricity can severely damage the sensitive electronic components on the HP AdvanceStack Switch Ethernet Module. When handling and installing the module in your switch, follow these procedures to avoid damage from static electricity:

- Handle the module by its edges and avoid touching the components and the circuitry on the board.
- Equalize any static charge difference between your body and the switch by wearing a wrist strap and attaching it to the switch's metal body, or by continually touching the switch's metal body while you are installing the module.

For proper cooling and reduction of electromagnetic emissions, ensure that a slot cover (provided with your Switch 2000) is installed on any unused port or transceiver slot.

Installing a Module in an Unused Slot

This procedure assumes that you have either already installed an optional transceiver in the module or do not plan to install a transceiver at this time. (The module operates properly with or without a transceiver installed.)

1. Slide out the blank LED label strip from the label slot corresponding to the physical slot in which you will install the module. The LED label strips have a small loop on the left end. Use your fingernail or a small implement to catch the loop and slide the label to the left and out of the label slot. Then insert the LED label strip you received with the Ethernet Module. For example, if you are going to install the module in slot "A", you would replace the blank LED label strip in label slot "A" with the new LED label strip for the Ethernet Module. (Refer to Figure 1, on the next page.)

   Save the blank LED label strip in case you ever want to remove the module and its LED label strip.

2. Using a Torx T-10 or slotted screw driver, unscrew the screws in the cover plate over the slot you want to use, and remove the cover. Store the cover plate with its screws for possible future use. For example, to install a module in slot A, see Figure 1.

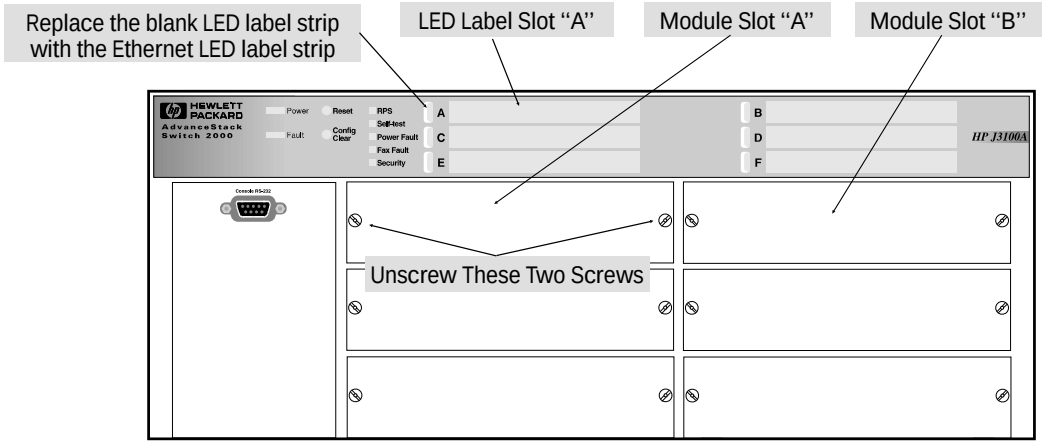

Figure 1. Remove the Cover Plate from an Unused Switch Port

3. Holding the module by its edges—taking care not to touch the metal connectors—position the module in front of an open slot on the switch by aligning the edges of the module with the small grooves near the bottom of the module slot, as shown in the next illustration.

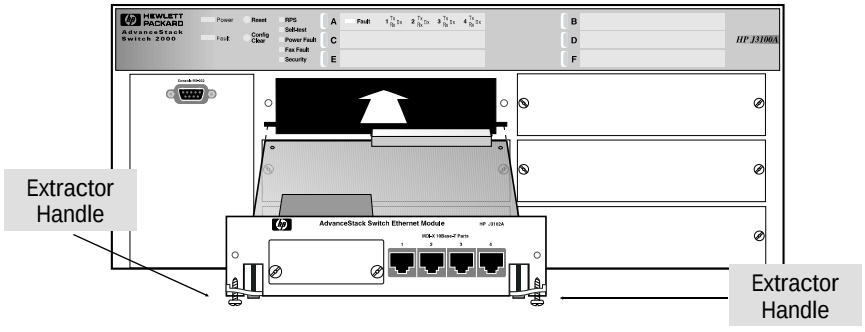

Figure 2. Extractor Handles in the Open Position

4. Make sure the extractor handles on each side of the module are in the open position (rotated away from the face plate), then push the module into the slot until you feel the extractor handles contact the switch chassis. (The handles will move slightly upwards when they contact the chassis.)

5. Seat the module in the slot by simultaneously pushing in on both extractor handles until they are firmly seated against the front panel of the module (in the closed position).

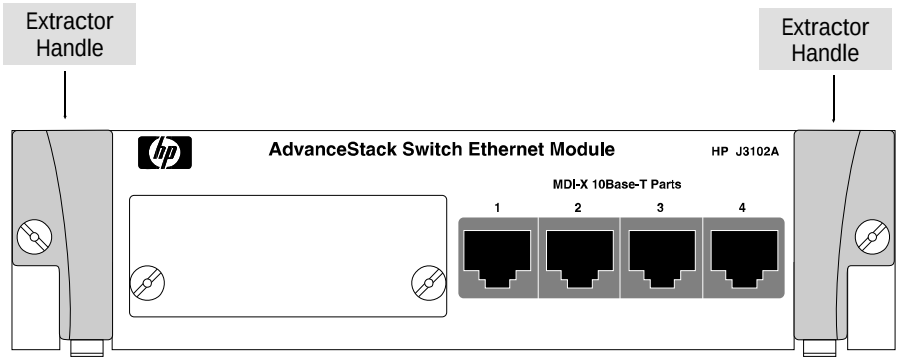

Figure 3. Extractor Handles in the Closed Position

If the switch has power during module installation, the LEDs will behave as described below. (If you have not already done so, install the LED label strip as described in step 1.)

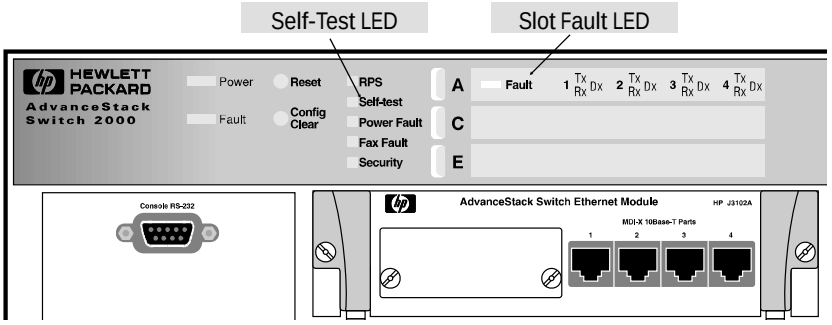

Figure 4. Self-Test and Fault LEDs

Slot and Port LED Behavior

LED	Pattern
Slot Fault (for the slot in which you are installing the module)	1 FLASHING RAPIDLY if the module is not properly seated 2 ON for less than 1 second after the module has been properly seated 3 OFF during normal switching operation 4 Flashing slowly if there is a self-test failure. Check the switch event log through the console interface for more information. **Note:** If the Fault LED for the module slot continues flashing rapidly, the module may not be completely seated in the slot. Ensure that the handles on the module are fully in the "closed" position and the screws in the handles are tightened. If the module slot Fault LED continues flashing, unscrew the screws, open the handles, remove the module, and re-install it. If the Fault LED continues flashing, remove the module and contact your HP-authorized LAN dealer or HP networking support representative. If a module is not installed properly, and the module slot Fault LED continues rapid flashing, normal switch operation halts until the module is removed or properly installed (the other modules in the switch do continue to forward packets normally).
Self-test (for the Switch 2000)	1 ON for up to 40 seconds after the module has been properly seated 2 OFF during normal switching operation 3 FLASHING simultaneously with slot Fault LED if the slot has failed self-test. Check the event log by selecting "Event Log" from the switch's console in the Main Menu.

6. Tighten the captured screw in each handle by using a flat-blade or Torx-10 screwdriver. *Be careful not to overtighten the screws.*

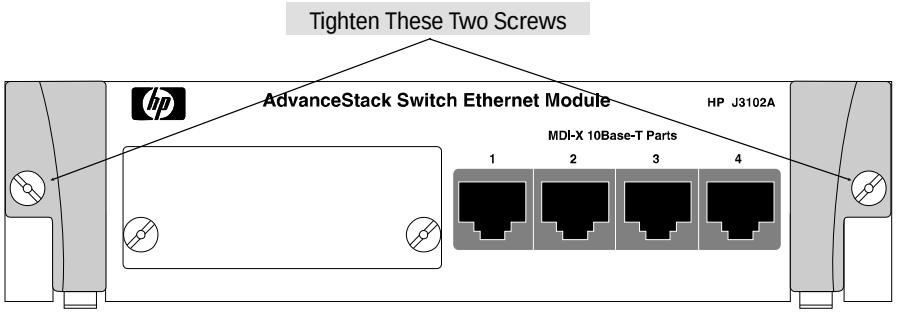

Figure 5. Securing the Module in the Slot

7. Connect the appropriate network cables to the module's 10Base-T ports (and to the optional transceiver, if installed).

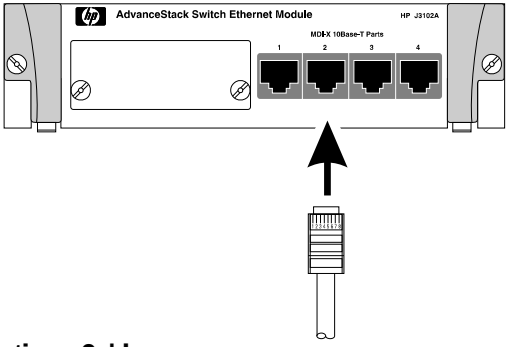

Figure 6. Connecting a Cable

Note

Use either the built-in RJ-45 connector or a transceiver for port 1—both will not work simultaneously. The active port 1 connector is automatically selected based on the following conditions:

- If a cable carrying a link beat signal is connected to the first built-in RJ-45 port on the module, then that port is the active port 1, regardless of whether there is a transceiver installed.
- If no link beat is detected on the first built-in RJ-45 port on the module, then a transceiver, if installed, becomes the active port 1.

Note

MDI-X Operation: The four 10Base-T ports built into the module are designed for MDI-X operation (that is, for connecting end nodes to the switch). Thus, if you connect any of these ports to an MDI-X port on another device, use a "crossover" cable. But if the connection is to an MDI port, use a "straight-through" cable.

MDI Operation: An optional twisted-pair transceiver in the transceiver slot operates in MDI mode (that is, for connecting hubs or other switches to the Switch 2000). In this case, use a "straight-through" cable to connect the transceiver to an MDI-X port on another device, or a "cross-over cable" to connect the transceiver to another transceiver or other MDI port on another device. See the *Connectivity Quick Reference* that is included with your module for more information on connecting the module to network devices.

For more on straight-through and crossover cables, see appendix A, "Cables and Connectors", in the *HP AdvanceStack Switch 2000 Installation Guide* that is shipped with the Switch 2000.

8. Check the port LEDs for the newly-installed module to ensure that the port(s) connected in the preceding step are up. (If you have not already done so, install the LED label strip as described in step 1.) The "port-enabled" LED (**1**, **2**, **3**, **4**) will be lit for each port that is up. The transmit (Tx) and/or receive (Rx) LEDs for each port that is transmitting and/or receiving packets will flash when traffic is detected on the port.

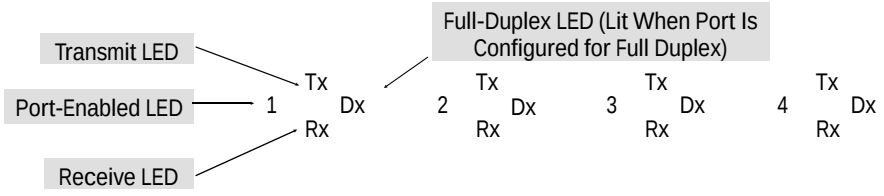

Figure 7. Port LEDs for the Switch Ethernet Module

9. Customize the port configuration, if necessary. (See “Customizing the Port Configuration”, below.)

10. Reboot the switch, since this is a new module being installed. (See “Rebooting the Switch” on page 9 for more information on when the switch must be rebooted.)

Customizing the Port Configuration

If the slot in which you installed the Switch Ethernet Module was empty the last time the switch was either rebooted or reset (or the power to the switch was cycled), then the module will use preconfigured default parameter values that will work for most networks.

The default 10Base-T port configuration is:

- Enabled: Yes
- Mode: Half Duplex
  (Full Duplex can be set on any of the built-in RJ-45 ports, but not a transceiver that is installed and used as port 1.)
- Trunk (port trunking): None
- Broadcast Limit: 0

If necessary, configure the port(s) in the module by using the switch console interface. (See the *Console User's Guide*—HP part number 5964-4644—shipped with the Switch 2000, and the online Help provided in the console interface itself.)

If the default port configuration, shown above, is correct for your network, then skip this process.

Rebooting the Switch

You can reboot the switch by using the Reboot Switch command in the console Main menu, or by pressing the recessed Reset button located to the right of the Power LED.

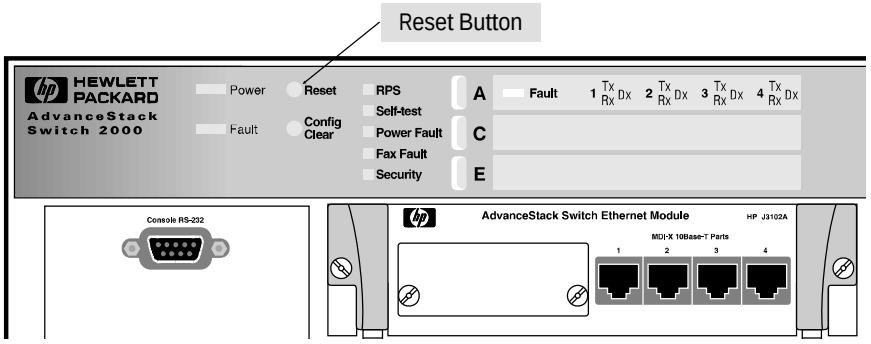

Figure 8. Location of the Reset Button

Generally, you only need to reboot the switch when it needs to recognize a change in its hardware or software (console) configuration. Some circumstances under which you will need to reboot the switch are:

- Adding new modules or moving modules to unused slots (page 2)
- Installing a module in a slot that was previously occupied by a different type of module (for example, installing a 100VG module in a slot that was previously used for an Ethernet module—page 10)
- Changing certain switch configuration parameters through the console interface—in this case, the console provides messages indicating when the switch must be rebooted for the configuration change to be activated

You do not need to reboot the switch when:

- Replacing a module with the same type of module, or moving a module to a slot that was previously occupied by the same type of module (page 10)
- Adding or changing a transceiver in the switch module—in this case, you must remove the module from the switch, and when it is reinstalled, the switch recognizes the transceiver change (page 12)

Removing or Replacing a Module

Use this section to do either of the following:

- Replace one module with another
- Remove a module without replacing it

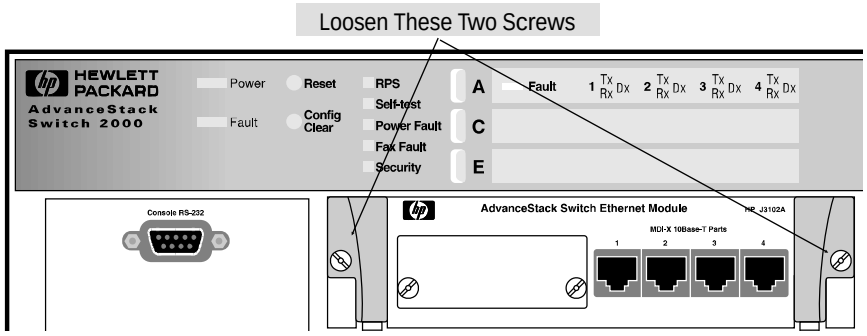

Figure 9. Removing the Module from the Slot

1. Remove any network cables from the ports on the module.

2. Loosen the screws in the extractor handles of the module you want to remove from the switch. (Refer to figure 5 on page 6.)

3. Simultaneously pull both extractor handles toward you until the module releases from the slot and the Fault and status LEDs for that slot are off.

Note

During removal (or installation) the module and switch connectors will momentarily be only partially connected. The fault LED for the slot flashes rapidly to indicate this state, and normal switch operation is temporarily suspended until the module connector is completely separated from the switch connector. The other switch modules do continue to forward packets, though.

4. Slide the module out of the slot.

5. Do one of the following:

   - If you will be installing another module in the slot, go to "Installing a Module in an Unused Slot" on page 2 and begin with step 3.

     Make sure that you install the proper LED strip for the new module you are installing, as described in step 1 on page 2. If you do not install the correct LED strip for the module you have installed, the LED display will be incorrect for that module.

   - If you will not install another module in the slot (that is, leave it empty), then re-attach a slot cover plate over the empty slot opening, and replace the LED strip for that slot with a blank LED strip.

6. If you are removing a module, or replacing a module with a different type (for example, replacing an Ethernet module with a 100VG module), then reboot the switch as described under "Rebooting the Switch" on page 9.

Caution

For proper cooling and reduction of electromagnetic emissions, ensure that a slot cover (provided with your Switch 2000) is installed on any unused port or transceiver slot.

Adding, Replacing, or Removing a Transceiver

Caution

When adding, removing, or replacing a transceiver from a module, always remove the module from the Switch 2000 first. Otherwise, you might interrupt proper switch operation and/or damage the module or transceiver circuitry.

For proper cooling and for reduction of electromagnetic emissions, ensure that a slot cover (provided with your Switch 2000) is installed on any unused port or transceiver slot.

1. Disconnect any network cables attached to the module for which you will add, replace, or remove a transceiver.

2. Remove the module from the Switch 2000.

   a. Loosen the screws in the extractor handles of the module.

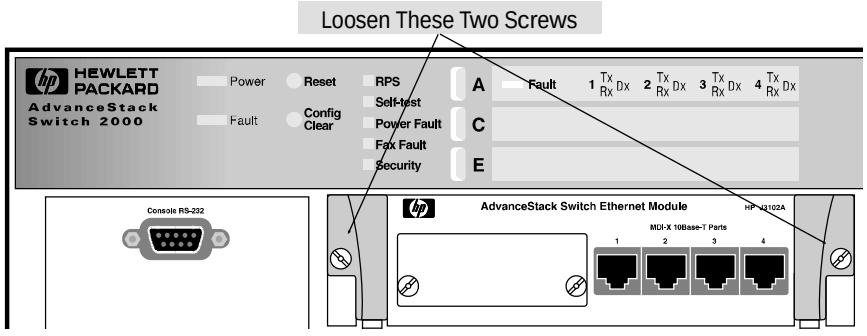

Figure 10. Removing the Module from the Slot

   b. Simultaneously pull both extractor handles toward you until the module releases from the slot and the Fault and status LEDs for that slot are off.

   c. Slide the module out of the slot.

3. Do one of the following:

   - **If you are adding a transceiver**: Loosen the captured screws on the cover plate over the transceiver slot until they disengage from the module, then remove the cover plate and store it for possible future use.
   - **If you are removing a previously installed transceiver:**

     1) Use a flat-bladed or Torx T-10 screwdriver to loosen the spring-loaded retaining screws on the transceiver bulkhead.

     2) Slide the transceiver out of the module and place it in an antistatic container for protection from electrostatic discharge (ESD).

4. Do one of the following:

   - **If you are adding a new transceiver or replacing one transceiver with another:**

     1) Use the instructions provided with the transceiver to install it in the module.

     2) Re-Install the module in the Switch 2000 using the instructions under “Installing a Module in an Unused Slot” on page 2 and begin with step 3.

   - **If you are removing a transceiver without replacing it with another transceiver:**

     1) Use a flat-bladed or Torx T-10 screwdriver to install an HP 10Base-T transceiver cover plate over the transceiver slot in the module.

     2) Re-Install the module in the Switch 2000 using the instructions under “Installing a Module in an Unused Slot” on page 2 and begin with step 3.

Troubleshooting

The primary tools for troubleshooting the Switch Ethernet Module are the LEDs on the front of the Switch 2000. Refer to “Slot and Port LED Behavior” on page 5. Also, refer to the installation guide shipped with the Switch 2000, for more detailed troubleshooting information.

Customer Support Services

Hewlett-Packard offers support 24 hours a day, seven days a week through the use of automated electronic services including:

- Hewlett-Packard BBS and World Wide Web
- Hewlett-Packard FTP Library Service on the Internet
- CompuServ
- HP Network Phone-In Support (NPS)
- HP FIRST FAX Retrieval Service

Specifications

Physical

Dimensions

Width:	16.5 cm (6.5 in)
Depth:	25.0 cm (9.9 in)
Height:	4.3 cm (1.7 in)
Weight:	0.62 lbs (0.28 kilos)

Environmental

Operating temperature:	0°C to 55°C (32°F to 131°)
Relative humidity:	15% to 95% at 40°C (104°F) non-condensing
Maximum altitude:	4.6 km (15,000 feet)

Connectors

The RJ-45 twisted-pair ports are compatible with the IEEE 802.3 Type 10Base-T standard.

Electromagnetic

Emissions
FCC part 15 Class A
CISPR-22 (1985) Class A EN55022 (1988) Class A
VCCI Class 1
Complies with Canadian EMC Class A requirements.

Immunity
See the Declaration of Conformity in the installation guide for the HP J3100A AdvanceStack Switch 2000.

Regulatory Statements

FCC Statement (U.S.A.)

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

VCCI Class 1 (Japan)

注意

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準に基づく第一種情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

注意

この装置は、第一種情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI-1

European Community

This equipment complies with CISPR22/EN55022 Class A.

Note

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Declaration of Conformity

This product is designed for operation with the J3100A HP AdvanceStack Switch 2000 and is listed in the Declaration of Conformity included in the *HP AdvanceStack Switch 2000 Installation Guide*.

DOC Statement (Canada)

Complies with Canadian EMC Class A requirements.

Technical information in this document is subject to change without notice.

Printed in USA 9/96

Manual Part Number
5966-5118