Installation Guide

**HP J2435A
4-Port Ethernet/802.3 Interface
for the HP Router 650**

Product Numbers

This guide provides installation instructions for the following Hewlett-Packard Company product:
J2435A

Warranty

The information contained in this guide is entirely unwarranted.

Introduction

The 4-Port Ethernet/802.3 Interface lets you connect Ethernet 1.0 and 2.0 networks and IEEE 802.3 networks to the HP Router 650.

The interface card is provided with four HP J2608A Recessed ThinLAN Transceivers preinstalled. You can replace any of these transceivers with other HP recessed transceivers or with an AUI port—for example:

- HP J2606A Recessed Fiber-Optic Transceiver
- HP J2607A Recessed Twisted-Pair Transceiver
- HP J2609A Recessed AUI Port

For a list of all recessed transceivers that can be installed in the Ethernet/802.3 interface and all transceivers that can be connected to the AUI port, refer to the *HP Network Connectivity Product Catalog* (HP part number 5962-9489E).

Installation

Ensure that you have the following items.

- 1 LED label strip (J2435-80013)
- 5 Interface card labels (5182-3315)
- 1 Cable tie (5182-1723)
- 1 Grounding wrist strap (9300-1408)
- 1 *Installation Guide* (this manual, 5962-8321)
- 1 *Caution: Static-Sensitive Devices* (5962-8318)

Replace transceivers (optional).

The Ethernet/802.3 interface card is provided with four HP J2608A Recessed ThinLAN Transceivers preinstalled, which let you connect to a ThinLAN (10Base2) coaxial network. To use the interface card with other types of cabling, you can replace any of these transceivers with other HP recessed transceivers—for example:

■   HP J2606A Recessed Fiber-Optic Transceiver
■   HP J2607A Recessed Twisted-Pair Transceiver

To use the interface card with any IEEE 802.3 transceiver of any media type, you can replace any of the preinstalled transceivers with an HP J2609A Recessed AUI Port, which is compatible with the IEEE 802.3 standard for the Attachment Unit Interface (AUI).

For information about replacing a preinstalled ThinLAN transceiver with another transceiver or with an AUI port, refer to the *HP Recessed Transceivers Installation Guide*.

Notes   While replacing a transceiver, connect a grounding wrist strap (one is provided with the interface card) to your wrist and to the the back of the router.

If you want to replace a preinstalled ThinLAN transceiver with another transceiver and you have not yet installed the interface card in the router, replace the transceiver *before* installing the interface card.

If you want to replace a preinstalled ThinLAN transceiver with another transceiver and you have already installed the interface card in the router: use steps 1–6 of the procedure "Installing the Interface Card (System Online)," page 10, to remove the card; replace the transceiver; then reinstall the card using steps 7–10 of that procedure.

Install interface card.

Notes
You can install the interface card without taking the system offline (that is, without switching the router off and taking all networks down)—refer to "Installing the Interface Card (System Online)," page 10. (Installing an interface card without taking the system offline is often called "hot swapping.")

If you are installing the interface card in a slot that formerly was empty, or if you are installing the interface card in a slot that formerly held a different type of interface card (such as a WAN interface card), you must specify the new card in the configuration. (Refer to "Configure and boot the router" in chapter 1 of the router's *Installation Guide*.)

Installing the Interface Card (System Offline)

Note
If you will be installing the new interface card in a slot where another interface card is *not* currently installed, begin with step 2; otherwise, begin with step 1.

1. Disconnect all cables from the interface card you will be removing, and save them for reconnection when you later install that card again.

Install interface card.

2. Open the front door of the router by pulling its lock—the round post at the upper right—to the right.
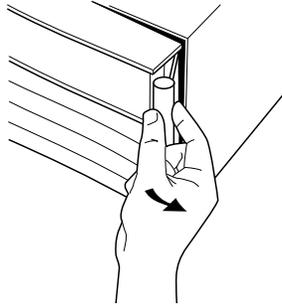

Figure 1. Opening Router Door

3. Switch the power supply off by pressing the bottom of its switch (marked with "❍"). If two power supplies are installed, switch both off.

4. Connect a grounding wrist strap (one is provided with the interface card) to your wrist and to the back of the router.

5. Press down slightly on the insides of both locks on the old card's bezel (see figure 2), then swing them outward until the bezel disengages (see figure 3).
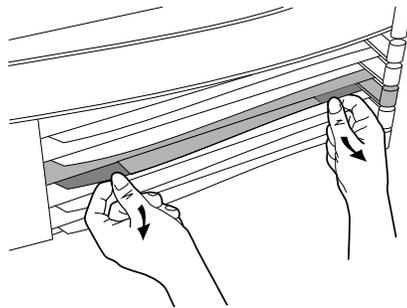

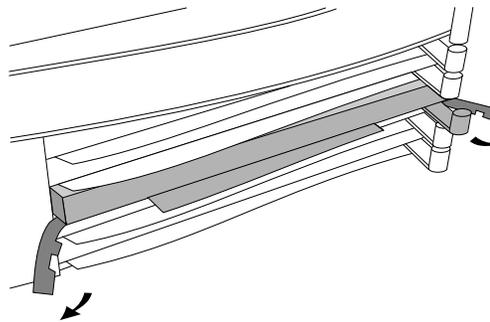**Figure 2. Unlocking Card Bezel**

Figure 3. Disengaging Card Bezel

6. Grasping the left and right edges of the bezel, pull out until the tray is about half exposed.

7. Grasping the sides of the tray, remove the card from the router.

8. Holding the new interface card by the sides of its tray, slide the back of the tray about half-way into the router.

Install interface card.

9. Pull the locks on the bezel outward, then push evenly on both ends until the card engages fully and the locks swing inward to about 45°.
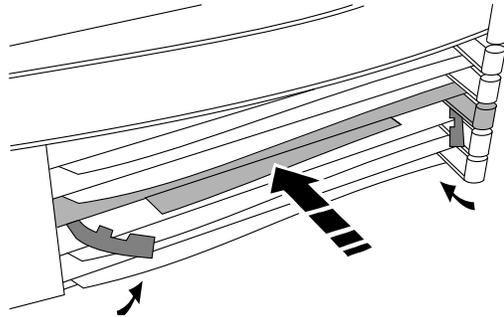

Figure 4. Installing Interface Card

10. Push the two locks evenly to close them, pressing downward slightly to secure them in place.

11. Remove the old card's LED label strip in the router door from the position corresponding to the slot where you have installed the interface card, then insert the LED label strip provided with the new card as far as it will go.

12. Bend the end of the label strip toward the back of the router, creating a 90° fold.

13. Close the router door.

14. To replace the label at the left of the slot that identifies the depart-
ment or site served by the interface card, slide it out from the right.
Position the new label with its shiny side facing the router, and slide
it in from the right. (Additional labels are provided in the router's
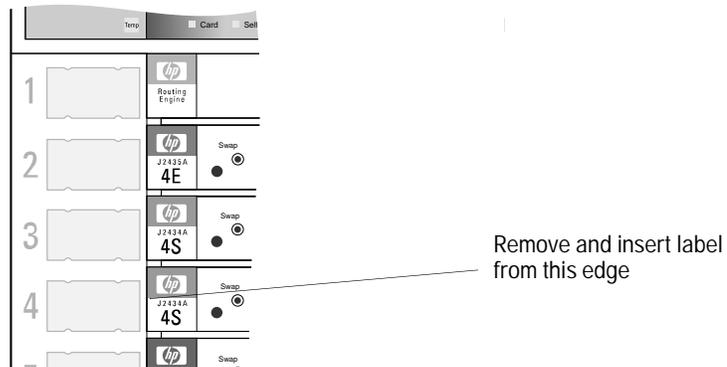accessories kit and also with each interface card.)

Figure 5. Interface Card Label Location

Installation
Install interface card.

Installing the Interface Card (System Online)

N o t e   If you will be installing the new interface card in a slot where another interface card is *not* currently installed, skip steps 1 and 3.

1. Disconnect all cables from the interface card you will be removing, and save them for reconnection when you later install that card again.

2. Connect a grounding wrist strap (one is provided with the interface card) to your wrist and to the back of the router.

3. If the Swap LED on the interface card you will be removing is not on (see figure 6), press the adjacent Swap button, and hold it until the Swap LED turns on (about 1–5 seconds).
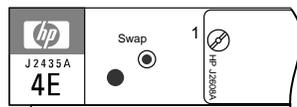

Figure 6. Swap Button and LED

10

4. Press down slightly on the insides of both locks on the old card's bezel (see figure 7), then swing them outward until the bezel disengages (see figure 8).
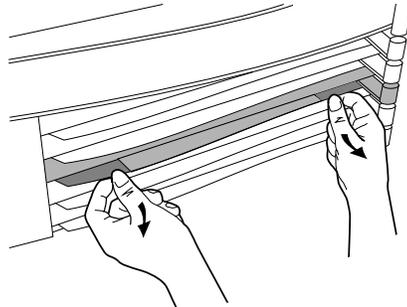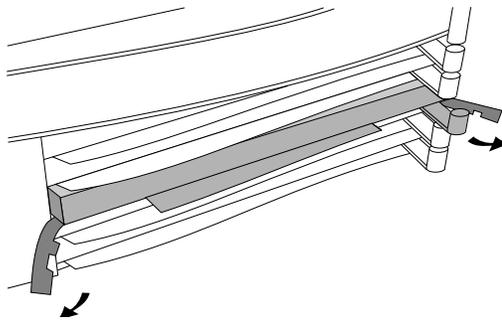

Figure 7. Unlocking Card Bezel

Figure 8. Disengaging Card Bezel

5. Grasping the left and right ends of the bezel, pull out until the tray is about half exposed.

6. Grasping the sides of the tray, remove the card from the router.

7. Holding the new interface card by the sides of its tray, slide the back of the tray about half-way into the router.

8. Pull the locks on the bezel outward, then push evenly on both ends until the card fully engages and the locks swing inward to about 45°.
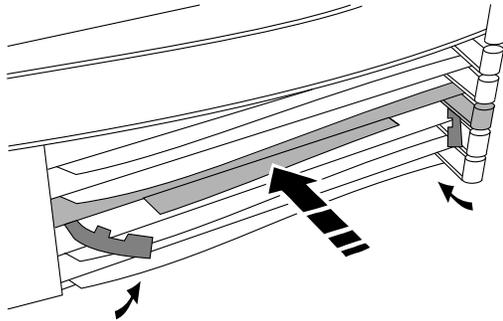

Figure 9. Installing Interface Card

9. Push the two locks evenly to close them, pressing downward slightly to secure them in place. A self-test of the new interface card begins.

10. When the self-test is complete (after about 5 seconds), check that the new interface card's Card LED (the first LED in the row of LEDs in the router door) has turned green, and the Self-test LED (the second LED in the row) has turned off.

   • If these LEDs continue flashing, the card is not seated properly. Adjust the position of the card by pushing evenly on both ends, and adjust the positions of the locks evenly.

   • If the Card LED remains orange and the Self-test LED remains on, the card has failed the self-test. Refer to "Interface Card Self-Test Failure During Hot Swap" in table 3-2, "LED Error Patterns During Router Operation."

   • If the Card LED remains orange but the Self-test LED has turned off, look in the event log (which can be displayed from the Main menu) for the entry "Slot *x* HWID and Line configuration mismatch" (where *x* is the number of the slot). If that entry appears in the event log, specify the new card for that slot in the configuration (refer to "Configure and boot the router" in chapter 1 of the router's *Installation Guide*). If that entry does not appear in the event log, call for service from your HP dealer or service provider.

11. Open the front door of the router by pulling its lock—the round post at the upper right—to the right.
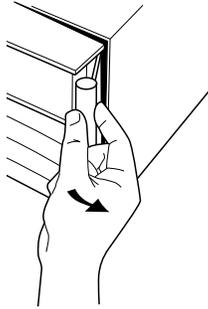

Figure 10. Opening Router Door

12. Remove the old card's LED label strip from the position corresponding to the slot where you have installed the new interface card, then insert the LED label strip provided with the new card as far as it will go.

13. Bend the end of the label strip toward the back of the router, creating a 90° fold.

14. Close the router door.

15. To replace the label at the left of the slot that identifies the depart-
ment or site served by the interface card, slide it out from the right.
Position the new label with its shiny side facing the router, and slide
it in from the right. (Additional labels are provided with the interface
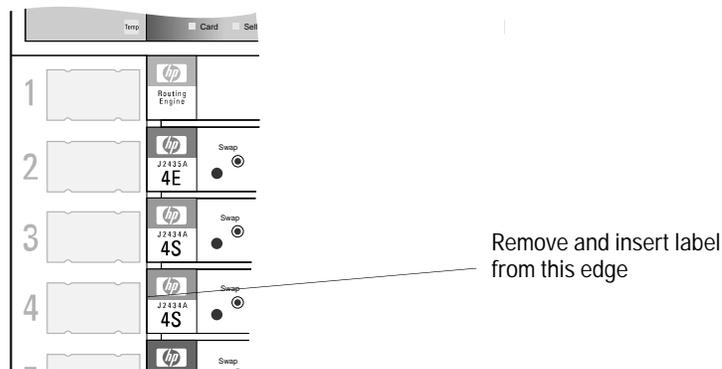card, as well as in the router's accessories kit.)

Remove and insert label
from this edge

Figure 11. Interface Card Label Location

Connect network cables.

With the power to the router still off, connect the network cables. To
connect network cables to a preinstalled ThinLAN transceiver, refer to
"Connecting a ThinLAN Cable," page 15. To connect network cables to
an HP J2606A Recessed Fiber-Optic Transceiver or HP J2607A Recessed
Twisted-Pair Transceiver, or to connect an AUI cable or external trans-
ceiver to an HP J2609A Recessed AUI Port, refer to the *HP Recessed
Transceivers Installation Guide*.

You should also make sure that all network equipment and links are
ready.

Caution   Static discharge may damage equipment. Do not touch the transceiver
connector pins or the cable connector pins.

Connecting a ThinLAN Cable

To connect a ThinLAN cable to a ThinLAN transceiver:

1. Attach a ThinLAN cable segment to one side of a BNC "T" connector.

2. Attach another ThinLAN cable segment or a 50-ohm terminator to the other side of the "T" connector.
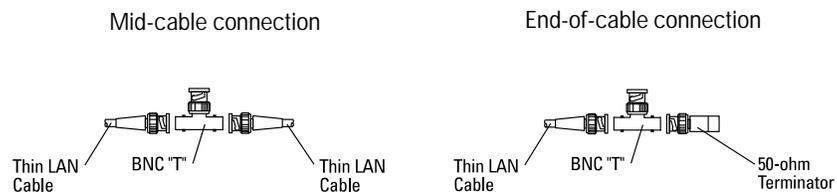
Mid-cable connection   End-of-cable connection

Thin LAN   BNC "T"   Thin LAN   Thin LAN   BNC "T"   50-ohm
Cable   Cable   Cable   Terminator

Figure 12. BNC Connector Options

C a u t i o n   Each ThinLAN cable segment must be terminated with a 50-ohm termina-
tor at each end. (In figure 12, showing the ThinLAN port at the end of a
cable segment, the 50-ohm terminator is attached to one side of the BNC
"T" connector.) Failure to properly terminate a ThinLAN cable segment
will result in a continuous collision condition on that segment.

Installation
Connect network cables.

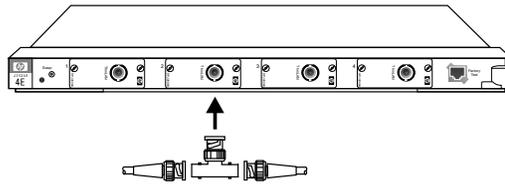3. Attach the "T" connector to the BNC port on the router.

Figure 13. LAN BNC Connection

Warning | **To avoid an electrical shock hazard due to an ungrounded or improperly grounded LAN cable, ensure that the LAN cable is properly grounded.**

Arrange network cables.

To help keep the network cables orderly—and out of the way when interface cards are being removed or installed—arrange the cables over the bars at the right of the router.

These cable-management bars have slots in them that you can use for tie-wrapping the network cables. Included with each interface card is a tie-wrap that you can use to wrap the cables and then attach the bundle to the cable management bar, as shown in figure 14.
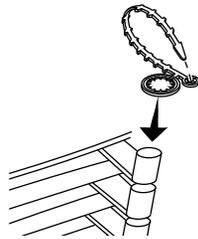

Figure 14. Cable-Management Bar and Tie-Wrap

Some cables (such as WAN cables) will not fit inside the cable management bars. You can use the tie-wraps to bundle the extra cables and hang them on the outside of the bar.

Prepare the router.

To prepare the router after installing the new interface card, you should do the following procedures, all of which are described in chapter 1 of the router's *Installation Guide*:

■ Connect a console.

■ Plug in and verify router hardware.

■ Configure and boot the router.

■ Verify router initialization and configuration.

Note   If you are installing the interface card in place of a different type of interface card (for example, if the slot in which you are installing the interface card formerly held a token ring card), or if you are installing the interface card in a slot that formerly was empty, you must specify the new card in the configuration.

If any port has no network attached, the port's Net Fail LED is lit after the router starts. To avoid unnecessary event log messages, disable that port when you configure the router. (For information on interpreting the Net Fail LED and other LED error indications, refer to "Interpreting LED Error Patterns" in chapter 3 of the router's *Installation Guide*.)

Troubleshooting

For general information about troubleshooting problems using any inter-face card in the Router 650, refer to chapter 3 of the router's *Installation Guide*. The following troubleshooting information is specific to the Ethernet/802.3 interface card.

If the Net Fail LED for any *(but not all)* of the ports on the interface card is lit during router operation, this may mean one of the following:

■ A LAN has not been connected, or the signal from the LAN or trans-ceiver has been lost and the router software has disabled the circuit. The broken connection can be detected if transceiver signal polling is enabled in the configuration or if a protocol is running on this port. The circuit will be enabled again when the connection is restored.

■ There are excessive collisions or excessive deferrals detected at the port. Either the LAN or the LAN cable has a problem.

■ The transceiver is faulty.

Note   If you determine that the interface card is faulty and need to return it to HP, and you have replaced any of the preinstalled ThinLAN transceivers with another transceiver or with an AUI port, be sure to reinstall the original transceiver(s) before sending the interface card back to HP.

If you call for service from your HP dealer or service provider, you may be asked to do a test requiring a loopback connector. Table 1 lists loop-back connectors available from HP.

Table 1. HP Loopback Connectors

For Use With	HP Product or Part Number
HP J2606A Recessed Fiber-Optic Transceiver	5041-3738
HP J2607A Recessed Twisted-Pair Transceiver	5061-4977
HP J2608A Recessed ThinLAN Transceiver	92227Q
HP J2609A Recessed AUI Port	28663-63001

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