

A5230A & A5506B PCI 10/100Base-TX/9000 Installation Guide

HP-UX & OpenVMS Networking



**Manufacturing Part Number: 5971-4260
E0305**

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Legal Notices

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Localized Documentation

This Installation Guide has been translated to:

日本語 <http://www.docs.hp.com/ja/index.html>

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1 HP-UX Installation

This chapter provides instructions for installing the A5230A and A5506B PCI 10/100Base-TX/9000 card and the following sections:

- “Installation”
- “Network Card Configuration Worksheet”

Thank you for purchasing HP I/O Cards

If you are installing an HP I/O card as an add-in device, please review this document before attempting installation.

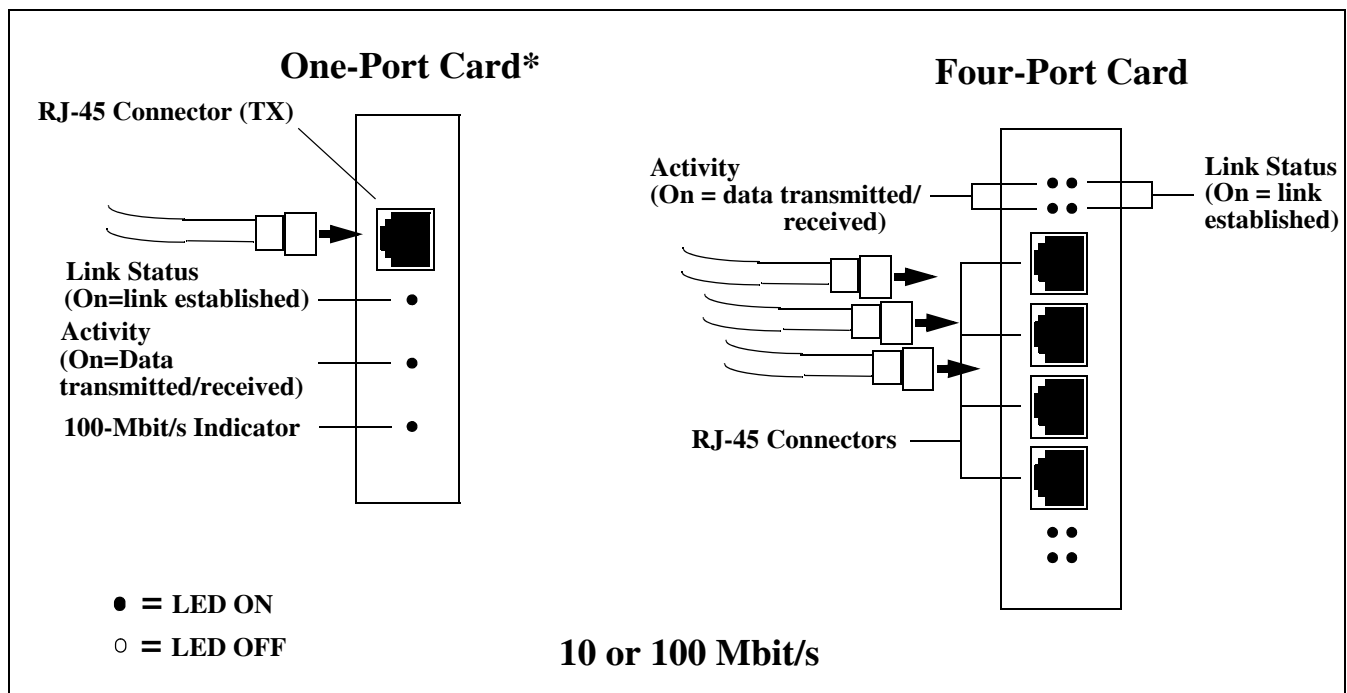
If an HP I/O card was factory installed in your server, you can skip to “Step 7: Verify the installation” on page 8 to verify the installation.

HP welcomes your input. Please email us at: netinfo_feedback@cup.hp.com with comments or suggestions on HP I/O Cards or related documentation.

All product documentation, including a comprehensive support guide, installation guide, release notes, as well as information on supported servers, HP-UX versions, drivers, and patches, is available online at: <http://docs.hp.com>

1. Click on “browse by topic”.
2. Click on “networking and communications”.
3. Click on the *10/100Base-TX/9000* product category.

PCI 10 Mbit/s or 100-Mbit/s LAN Cards



Installation

These instructions apply to the A5230A and A5506B PCI 10/100Base-TX /9000 cards. The Base-T cards operate at 10 or 100 Mbit/s in either full- or half-duplex modes and at 1000 Mbps only in full-duplex mode. The 1000Base-SX cards operate only at 1000 Mbps and in full-duplex mode. Ensure that your switch is set to autonegotiation or the same speed and duplex mode as the card.

For information on online addition and replacement or for advanced troubleshooting, refer to the online *Ethernet Support Guide*. The Support Guide, Support Matrix, and Release Notes are available at <http://docs.hp.com> and, if you have a support contract, on the Instant Information CD.

Step 1: Prepare to install the 10/100Base-TX software

- Log in as `root`.
- Check that the `/usr/bin`, `/usr/sbin`, and `/sbin` directories are in your `PATH` using the command:

```
echo $PATH
```

- Check the HP-UX version by executing:

```
uname -a
```

The version should be HP-UX 10.20 or HP-UX 11.x.

Check the Information Sheet accompanying this product or the online Release Notes to see if there are any required patches. The online Release Notes file is `/opt/networkdocs/PCI100bt_relno.pdf`. Install the appropriate patches for your system.

- For each card you are installing, fill out the configuration worksheet, located in “Network Card Configuration Worksheet” on page 9.

Step 2: Install the 10/100Base-TX software

- Load the software CDROM into the appropriate drive.
 - Run the `swinstall` program to install the software using the command:
- ```
swinstall
```
- Change the host name after “Source Host Name,” if necessary.
  - Click on the Source Depot Path to identify the registered depot for the appropriate source depot path and activate the **OK** button to return to the Software Selection Window.
  - Highlight the 10/100BaseTX software for your card:

— **One-port**

— **A6792A** and **A5230A** (for servers) *or*

— **B5509BA** (for workstations)

— **Four-port—A5506A or A5506B.**

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**NOTE** The A6792A card only runs in HP Itanium-based computers.

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- Choose Mark for Install from the “Actions” menu to choose the product to be installed.

- Choose Install from the “Actions” menu to begin product installation and open the Install Analysis Window.
- Activate the **OK** button in the Install Analysis Window when the Status field displays a Ready message.
- Activate the **YES** button at the Confirmation Window to confirm that you want to install the software. *swinstall* loads the fileset, runs the control scripts for the filesets, and builds the kernel. This should take about 3 to 5 minutes. Activate the **OK** button on the Note Window to reboot the system.

### Step 3: Access the system card bay

- After the system reboots, log in as `root`.
- Execute the command:  

```
shutdown -h
```

Make sure the system is halted before you continue.
- Wait for the system to shutdown completely, and then power it off by pressing the system off button. Ensure the system is grounded.
- Open the system to gain access to the PCI backplane, if applicable.
- Select the next empty PCI slot and remove the slot cover.

### Step 4: Install the PCI 10/100Base-TX card

- Observe the antistatic precautions.
- Record the card serial number from the card.
- Grasp the card by its edges or faceplate with both hands, insert the card into the slot, and firmly but gently press the card in until it is fully seated.
- Secure the card and reassemble the system.

### Step 5: Attach the system to the network

- Attach the 8-pin (RJ-45) plug on your twisted-pair LAN cable into the RJ-45 connector on the card. The same RJ-45 connector is used for either 10 or 100 Mbit/s operation. On the A5506A/B card, connect a cable for each of the 4 ports.
- Attach the free end of each cable to any unused port on the appropriate hub or switch (or into a wall jack that is connected to a hub or switch). Connect power cable to system. Set the hub or switch speed and duplex mode. The PCI 10/100Base-TX card operates at either 10 or 100Mbits/s and in either full-duplex or half-duplex mode. Ensure that the speed, duplex, and autonegotiation of the associated switch match the settings on this card.
- Power up the system. Any error messages will appear on the terminal display or system console. You can also use the `dmesg` command to retrieve startup messages later.
- Verify that the connector’s Link LED is on.
- When the system is up, log in as `root` and verify that the card and its hardware path are displayed by executing the command:

```
ioscan
```

## Step 6: Configure the card using SAM

- Run the System Administration Manager:  
`sam`
- Double-click **Networking and Communications**.
- Double-click **Network Interface Cards**.
- Highlight the PCI 10/100Base-TX card and choose **Configure** from the **Actions** menu.
- Fill in the form according to the instructions using the Network Card Configuration Worksheet on page 9.
- Activate the **OK** button to activate the card and then select exit from the **File** menu until you exit SAM.

## Step 7: Verify the installation

- Obtain the PPA (prior to HP-UX 11.0, get the NMID) and the station address of your card by executing the command:

```
lanscan
```

- Verify that no errors have occurred during installation by running the following command:

```
linkloop -i <PPA> <station address>
```

(for HP-UX 11.0 and above) *or*

```
linkloop -i <NMID> <station address>
```

(for HP-UX 10.20)

- Verify connectivity with a remote system by executing the command:

```
ping <Remote_IP_Address>
```

```
netstat -in
```

PCI 10/100Base-TX installation is complete when you have successfully run `linkloop` and `ping`.

To configure remote systems, see the online *Using PCI 10/100Base-TX/9000*. Do this step only if remote systems have not been previously configured.

## Network Card Configuration Worksheet

Fill out one worksheet for each card you are installing.

**Table 1-1 Network Card Configuration Worksheet**

| Data Type                                               | Required/<br>Optional                                              | Default                    | Where to<br>Configure | Example              | Your System |
|---------------------------------------------------------|--------------------------------------------------------------------|----------------------------|-----------------------|----------------------|-------------|
| Internet address                                        | Required                                                           | None                       | SAM or<br>ifconfig    | 196.6.20.2           |             |
| Subnet mask                                             | Required if<br>using<br>subnetting                                 | Subnet<br>mask not<br>used | SAM or<br>ifconfig    | 255.255.248.0        |             |
| Station address                                         | Required                                                           | As shown<br>on card        | lanadmin -A<br>or SAM | 0x08000978537C       |             |
| Host name alias<br>for this network<br>interface (card) | Required if<br>system is<br>connected to<br>more than 1<br>network | None                       | SAM                   | abcde                |             |
| Link speed                                              | Required                                                           | None                       | Hub or<br>switch*     | 100-MBit/s<br>switch |             |

\*The speed configuration of the 10/100Base-TX card can be determined by the speed setting of the hub or switch port to which the card is connected. The card automatically senses this speed. The card only runs at one speed at a time. To verify the speed selection, run `lanadmin` and check the link speed and duplex mode at the LAN Interface Status Display.



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## 2 OpenVMS Installation

This chapter contains the following sections that describe how to install the A5230A or A5506B adapter on an OpenVMS system:

- “Preparing for Installation”
- “Installing the Adapter”

### Thank you for purchasing HP I/O Cards

If you are installing an HP I/O card as an add-in device, please review this document before attempting installation.

HP welcomes your input. Please email us at: [netinfo\\_feedback@cup.hp.com](mailto:netinfo_feedback@cup.hp.com) with comments or suggestions on HP I/O Cards or related documentation.

All product documentation, including a comprehensive support guide, installation guide, release notes, as well as information on supported servers, OpenVMS versions, drivers, and patches, is available online at: <http://docs.hp.com>

1. Click on “browse by topic”.
2. Click on “networking and communications”.
3. Click on the *10/100Base-TX/9000* product category.

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**NOTE** Installing the adapter requires proficiency in both hardware configuration and software administration.

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### Preparing for Installation

Installation of an adapter requires disassembly of a few system components. Before beginning the installation, see the OpenVMS system documentation for detailed instructions on installing host bus adapters in the PCI slots.

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**NOTE** The maximum number of A5230A NIC you can install in any OpenVMS system is equal to the maximum number of corresponding card slots in the system. For example, if a system has four PCI card slots, you can install four A5230A NICs in that system, assuming that all the PCI card slots are empty. The A5506B quad NIC is similar except that the maximum number of cards supported is five.

Check the latest support matrix for systems that support these adapters. The support matrix is available at <http://docs.hp.com> under "Networking and Communications."

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## Installing the Adapter

This section contains information on installing the A5230A or A5506B adapter in an OpenVMS system.

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**WARNING**    **The installation procedures in this section require opening the computer cabinet, which might expose you to high-energy (high-amperage) circuits and sharp edges in the equipment chassis. Ensure to remove all rings, watches, and other jewelry before opening the cabinet.**

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**CAUTION**    The adapter contains electronic components that can easily be damaged by small amount of static electricity. To avoid damage, use the following guidelines:

- Store the adapter in its antistatic plastic bag until you are ready to install it.
  - Work in a static-free area, if possible.
  - Handle the adapter by the edges only. Do not touch electronic components or electrical traces.
  - If you must lay the adapter down, place it on a non-conductive mat or surface.
  - Use the ESD kit that is provided with the adapter. Follow the instructions included with the kit.
  - Use a suitable ground—any exposed metal surface on the system chassis.
- 

Before beginning the installation, and without removing the adapter from its antistatic bag, inspect the adapter for any sign of obvious damage, such as chipped or loose components. Contact Hewlett-Packard if the adapter is damaged.

### Install the Card

To physically insert the card into your system, perform these steps:

1. Shut down the system.
2. Insert the card into an empty PCI slot.
3. Connect the card to the network.
4. Power up the system. When the system is up, any error messages will appear on the terminal display or system console.

See the hardware documentation for the card for details.

### Boot the system

1. Log in as SYSTEM.
2. Check the OpenVMS version by executing SHOW SYSTEM. The version must be V8.2 (or later).

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**NOTE**    The LAN driver for this card is included in the OpenVMS installation.

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## Configure the Card Using LANCP

1. Log in as SYSTEM and verify that the card and its hardware path are displayed by executing

```
MC LANCP SHOW CONFIG
```

The LAN device characteristics that can be set include speed, duplex mode, and whether autonegotiation is enabled. The MC LANCP SET DEVICE and LANCP DEFINE DEVICE commands modify these settings.

2. Set the desired characteristics according to the Network Configuration worksheet (see Table 2-1). For example, use this command:

```
MC LANCP DEFINE DEVICE devname /SPEED=100 /FULL /AUTONEGOTIATE
```

**Table 2-1 Network Card Configuration Worksheet**

| Data Type              | Required/Optional | Default          | Where to Configure                  | Example                                    | Your System |
|------------------------|-------------------|------------------|-------------------------------------|--------------------------------------------|-------------|
| Station address        | Required          | As shown on card | not configurable                    | 0x08000978537C                             |             |
| Link configuration     | Optional          | Autonegotiating  | LANCP                               | MC LANCP SET DEVICE/AUTO                   |             |
| Link speed/duplex mode | Optional          | Autonegotiating  | Hub or switch <sup>a</sup> or LANCP | MC LANCP SET DEVICE/<br>SPEED=100<br>/FULL |             |

- a. The speed configuration of the 10/100Base-SX-TX card is determined by the speed setting of the hub or switch port to which the card is connected if autonegotiation is enabled. The card automatically senses this speed. The card only runs at one speed at a time.



This appendix contains regulatory statements for the United States, Canada, Australia/New Zealand, Japan, and the European community.

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**FCC Statement (For U.S.A.)****Federal Communications Commission Radio Frequency Interference Statement**

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**WARNING**

**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 might cause undesired operation.**

**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.**

**Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.**

**Hewlett-Packard's system certification tests were conducted with HP-supported peripheral devices and cables, such as those received with your system. Changes or modifications to this equipment not expressly approved by Hewlett-Packard could void the user's authority to operate the equipment.**

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**Canada**

**Warning: This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.**

**Cet appareil numérique de la classe A respecte toutes les exigences du règlement sur le matériel brouilleur du Canada.**

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## EMI (Australia and New Zealand)

This product meets the applicable requirements of the Australia and New Zealand EMC Framework.



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## VCCI (Japan) (PCI Card Only)

This equipment complies with the Class A category for information technology equipment based on the rules of Voluntary Control Council for Interference by Information Technology Equipment. When used in a residential area, radio interference may be caused. In this case, the user may be required to take appropriate corrective actions.

**Figure A-1** VCCI Regulatory Statement

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA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。

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## EMI Statement (European Community)

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**NOTE**

This is a Class A product. In a domestic environment, this product may cause radio interference, in which case you may be required to take adequate measures.

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## Laser Safety Statements

### Laser Safety Statements - U.S. FDA/CDRH - Optical (laser) Transceiver

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**CAUTION**

The optical transceiver provided on the network interface card contains a laser system and is classified as a “Class-I Laser Product” under a U.S. Department of Health and Human Services (DHHS) Radiation Performance standard according to the Radiation Control for Health and Safety Act of 1968. The Class I label and compliance statement are located on the optical transceiver.

To ensure proper use of this product, please read this instruction manual carefully and retain for future reference. Should the unit ever require maintenance, contact an authorized service location.

---

**CAUTION**

Use of controls, adjustments or the performance procedures other than those specified herein may result in hazardous radiation exposure. To prevent direct exposure to laser beam, do not try to open the enclosure.

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### Laser Safety - European Union - Optical Transceiver Only

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**CAUTION**

The optical transceiver provided on the network interface card contains a laser system and is classified as a “Class 1 Laser Product” per EN 60825-1, Safety of Laser products. Class 1 laser products are considered safe and do not pose a biological hazard if used within the data sheet limits and instructions.

To ensure proper use of this product, please read this instruction manual carefully and retain for future reference. Should the unit ever require maintenance, contact an authorized service location.

---

**CAUTION**

Use of controls, adjustments or the performance procedures other than those specified herein may result in hazardous radiation exposure. To prevent direct exposure to laser beam, do not try to open the enclosure.

There are no user serviceable parts nor any maintenance required for the optical transceiver. All adjustments are made at the factory before shipment to customers. Tampering with or any attempt to modify the optical transceiver will result in voided product warranty. It may also result in improper operation of the network card circuitry and possible overstress of the laser source. Device degradation or product failure may result.

## A5506 Declaration of Conformity

**DECLARATION OF CONFORMITY**  
according to ISO/IEC Guide 22 and EN 45014

**Manufacturer's Name:** Hewlett-Packard Company

**Manufacturer's Address:** 8000 Foothills Blvd.  
Roseville, CA 95747  
USA

**declares, that the product**

**Product Name:** 4-Port 100Base-TX PCI LAN Adapter

**Model Number(s):** A5506-60001 (HP Product Number A5506A)

**Product Options:** All

**conforms to the following Product Specifications:**

**Safety:** IEC 950:1991 + A1, A2, A3, A4 / EN 60950:1992 + A1, A2, A3, A4, A11

**EMC:** CISPR 22:1993 / EN 55022:1994 - Class A<sup>1</sup>  
EN 50082-1:1992, Generic Immunity, including:  
IEC 801-2:1991, 4 kV CD, 8 kV AD  
IEC 801-3:1984, 3 V/m  
IEC 801-4:1988, 1 kV Power Lines  
0.5 kV Signal Lines

**Supplementary Information:**

The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC and carries the CE marking accordingly.

- 1) The product was tested in a typical configuration with Hewlett-Packard information technology equipment.

Roseville, CA, October 8, 1998



Frank D. Dembski Jr., Quality Manager

European Contact: Your local Hewlett-Packard Sales and Service Office or Hewlett-Packard GmbH, Department TRE, Herrenberger Straße 130, D-71034 Böblingen (FAX: + 49-7031-14-3143)