

# HEWLETT-PACKARD



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## HP 27240A StarLAN 10 PC Card II Installation Guide

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# HP 27240A StarLAN 10 PC Card II Installation Guide



**HEWLETT  
PACKARD**

**Manual Part Number: 27240-90001**

**Printed in U.S.A., March 1989**

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## Caution

The Caution sign denotes a hazard. It calls attention to an operating procedure or practice that, if not correctly performed or adhered to, could result in damage to or destruction of part or all of the product. Do not proceed beyond a Caution sign until the indicated conditions are fully understood and met.

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## Handling

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### Caution

**This product contains static-sensitive devices.**

When any two materials make contact, their surfaces are crushed on the atomic level and electrons pass back and forth between the objects. On separation, one surface comes away with excess electrons (negatively charged) while the other is electron deficient (positively charged). The level of charge that is developed depends on the type of material. Insulators can easily build up charges in excess of 20,000 volts. A person working at a bench or walking across a floor can build up a charge of many thousands of volts. If the discharge happens to go through a semiconductor device and the transient current pulse is not effectively diverted by protection circuitry, the resulting current flow through the device can raise the temperature of internal junctions to their melting points. MOS (metal-oxide semiconductor) structures are also susceptible to dielectric damage due to high fields.

The resulting damage can range from complete destruction to latent degradation. Small geometry semiconductor devices are especially susceptible to damage by static discharge.

Transport or store printed circuit board assemblies in an antistatic container. When installing or removing the assemblies, do not touch any components and make sure you are properly grounded. Hold each board by its edges.

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# FCC Statement

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## Federal Communications Commission Radio Frequency Interference Statement

**Warning:** This equipment generates, uses, and can radiate radio frequency energy. If it is not installed and used in accordance with the instruction manual, it may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. 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.

If this equipment does cause interference to radio reception (which can be determined by turning the equipment off and on), the user is encouraged to try to correct the interference by one or more of the following measures:

1. Re-orient the receiving antenna.
2. Relocate the computer with respect to the receiver.
3. Move the computer away from the receiver.
4. Plug the computer into a different outlet so that computer and receiver are on different branch circuits.
5. If necessary, consult the dealer or an experienced radio/television technician for additional suggestions.

# **German EMI Compliance**

## **Electromagnetic Interference Regulations Germany**

### **Manufacturer's Declaration**

This is to certify that the equipment 27240A is in accordance with the Radio Interference Requirements of Directive FTZ 1046/1984. The German Bundespost was notified that this equipment was put into circulation, the right to check the series for compliance with the requirements was granted.

### **Funkentstörung Deutschland**

#### **Herstellerbescheinigung**

Hiermit wird bescheinigt, daß das Gerät 27240A in Übereinstimmung mit den Bestimmungen von Postverfügung 1046/84 funkentstört ist.

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf inhaltung der Bestimmungen eingeräumt.

# VCCI Statement

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## FOR JAPAN ONLY

### VCCI Radio Frequency Interference Statement

This device is a Class 1 ITE (data processing equipment for use in industrial and commercial areas), and meets the VCCI standards for prevention of radio interference in industrial and commercial areas. The operation of this device in residential or adjacent areas may interfere with radio and television reception.

Use this device in accordance with its operating manuals.

この装置は、第一種情報装置（商工業地域において使用されるべき情報装置）で商工業地域での電波障害防止を目的とした情報処理装置等電波障害自主規制協議会（VCCI）基準に適合しております。

従って、住宅地域またはその隣接した地域で使用すると、ラジオ、テレビジョン受信機等に受信障害を与えることがあります。

取扱説明書に従って正しい取り扱いをして下さい。

## **Additional References**

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For further information about HP StarLAN 10 networks, refer to the following documents:

*Welcome Guide for LANs – HP OfficeShare Network (50929-90003)*

*Planning Guide for LANs – HP OfficeShare Network (50929-90000)*

*PC Workstation Configuration Guide for LANs – HP OfficeShare Network (50929-90001)*

*PC Server Guide for LANs – HP OfficeShare Network (50925-90000)*

*User's Guide for LANs – HP OfficeShare Network (50923-90000)*

*Troubleshooting Guide for LANs – HP OfficeShare Network (50929-90002)*

*HP SiteWire Twisted-pair Cabling Installation Guide (5959-2208)*

*HP 28663A StarLAN 10 Hub Installation Guide (28663-90001)*

*HP 28664A Twisted-pair MAU Installation Guide (28664-90001)*

*HP StarLAN 10 Hardware Troubleshooting Guide (5959-2258)*

All of these documents are available individually. To order, contact a Hewlett-Packard Sales and Support Office (see listing at end of the manual) or an HP Authorized Dealer.



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# Quick Notes for Experienced Users

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The HP StarLAN 10 PC Card II is used in a PC workstation that is connected to an HP StarLAN 10 network. These Quick Notes will help an experienced user quickly install and configure the card. If you want more detailed information about a topic, see the manual pages listed.

Step	Notes	Manual Pages
Set Up	<ul style="list-style-type: none"><li>• Use this card in an HP Vectra PC or IBM PC XT/AT.</li></ul>	1-2
	<ul style="list-style-type: none"><li>• In an HP Vectra PC, you need ROM BIOS, version A.01.05 or later.</li></ul>	1-3
	<ul style="list-style-type: none"><li>• Have at least 512 Kbytes of memory.</li></ul>	1-3
Set I/O Base Address on Card	<ul style="list-style-type: none"><li>• The default setting is 300h.</li><li>• Change the default setting only if it conflicts with the I/O address range of another card in the computer.</li><li>• To set, use switches 1–3 of SW2.</li><li>• For switch settings, see the table at the top of page 3 of these notes.</li><li>• Be sure the I/O base address in your network software matches the setting on the card.</li></ul>	A-3 to A-5

Step	Notes	Manual Pages
Set Loopback Mode on Card	<ul style="list-style-type: none"> <li>• The default is NORM.</li> <li>• For normal operation, set to NORM.</li> <li>• For troubleshooting and diagnosis, set to TEST.</li> <li>• To set, use switch 3 of SW1.</li> </ul>	A-6 to A-8
Install Card	<p><b>CAUTION:</b> Handle the card carefully following anti-static handling procedures. Before moving the computer, prepare the heads of the hard disk if necessary and turn it off. <b>Turn off the computer</b> before installing the card.</p> <p><b>WARNING:</b> To prevent electrical shock, unplug the power cord before</p>	Chapter 1
Install Cable	<ul style="list-style-type: none"> <li>• Use unshielded twisted-pair cable.</li> <li>• Do not stress cables.</li> <li>• Cable length should be no more than 100 meters (328 feet) total between the card and the hub.</li> <li>• Attach cable to lower receptacle of card.</li> <li>• Attach the other end of the cable to the hub.</li> </ul>	Chapter 2

Step	Notes	Manual Pages
Install Network Software	<ul style="list-style-type: none"> <li>• Be sure the I/O base address setting in the software matches the hardware setting on the card.</li> <li>• Set the interrupt channel in the software. Be sure it does not conflict with the interrupt channel of another card.</li> <li>• For interrupt channel settings, see the table on page 3 of these notes.</li> <li>• In HP OfficeShare software, the default interrupt channel setting is 3.</li> </ul>	Appendix B
Part Numbers	<ul style="list-style-type: none"> <li>• Interface card = 27240-60001.</li> <li>• Manual = 27240-90001.</li> <li>• Loopback connector = 5061-4977.</li> </ul>	<p style="text-align: center;">1-2</p> <p style="text-align: center;">1-2</p> <p style="text-align: center;">A-7</p>



# HP StarLAN 10 PC Card II Installation

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## Introduction

### Definitions

A *PC workstation* is a personal computer that is attached to a network. It can run network software and use the network for accomplishing tasks.

A *PC server* is a personal computer that is attached to a network and is also running network software. The network software allows the PC server to manage disks, printers, and plotters shared by PC workstation users. The PC server controls and monitors the sharing of these resources.

Peripherals are attached to PC workstations and PC servers just as they would be to standalone personal computers. Refer to the peripheral's documentation for information about how to attach each peripheral to your personal computer.

## **Product Description**

The HP StarLAN 10 PC Card II is installed in the PC servers and PC workstations that are attached to an HP StarLAN 10 network. This card can be used in the following computers:

- An HP Vectra PC, CS, ES, ES/12, RS/16, RS/20, or QS/16 personal computer.
- An IBM PC, PC XT, PC AT, or PS/2 Model 30 personal computer.

## **What's Included**

You should have the following items:

- HP StarLAN 10 PC Card II, part number 27240-60001.
- HP 27240A StarLAN 10 PC Card II Installation Guide, part number 27240-90001.

If the shipment is incomplete or if an incorrect component was shipped, notify the nearest Hewlett-Packard Sales and Support Office or an HP Authorized Dealer.



## What You Need

Before you install the card in a PC workstation or a PC server, set up the personal computer as you would a standalone computer.

Make sure your computer has at least 512 Kbytes of memory. On many computers, the total amount of memory is displayed in the left corner of the screen when you turn on the computer. Or, you can run "chkdsk" from DOS and check your screen display for the total bytes of memory. (Each 1024 bytes is equal to 1 Kbyte so you need at least 524,288 bytes of memory.)

The HP Vectra computers must have ROM BIOS version A.01.05 or later. When you turn on your computer, a message is displayed showing what ROM BIOS version you have. If the version is earlier than A.01.05 (such as A.01.02), purchase an upgrade kit. An HP Vectra Upgrade Kit (45938A) is available from Hewlett-Packard. Contact your nearest HP Sales and Support office for ordering information.

Have the following at hand:

- A medium flat-blade non-magnetic screwdriver.
- A #2 Phillips non-magnetic screwdriver.
- A pointed, nonconductive object (such as a toothpick) to move option switches if necessary.

## Handling the HP StarLAN 10 PC Card II

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### Caution

Handle the HP StarLAN 10 PC Card II carefully. Protect the card from static electricity. Accessory cards contain electrical components that are easily damaged by small amounts of static electricity.

**Turn off the computer before installing the card.** You can damage the computer and HP StarLAN 10 PC Card II if you install the card while the computer is on.

---

When you handle an HP StarLAN 10 PC Card II, follow these guidelines:

- Make sure the computer is **OFF**.
- Leave the card in its antistatic bag until you are ready to install it.
- Use an antistatic wrist strap and a grounding mat such as those in the Portable Grounding Kit (HP part number 9300-0794). If you don't have a grounding kit, touch the metal surface on the back panel of the personal computer. Maintain the contact while removing the card from the antistatic bag and while installing the card.
- After you remove the card from the antistatic bag, handle it by its edges only. Avoid touching the components.

## Installation Steps

To install the HP StarLAN 10 PC Card II, follow these steps:

1. Install the card into the computer. For instructions, go to one of the following sections in this chapter:

- HP Vectra Personal Computer
- HP Vectra RS/16 or RS/20 Personal Computer
- IBM Personal Computer

You may need to refer to appendix A to set option switches on the card.

2. Install an unshielded twisted-pair cable. See chapter 2, “Attaching the Cable”.

3. Install your network software and set the interrupt channel for the card. The interrupt channel is set with software. Refer to appendix B in this manual for software information related to this card. See your server and PC workstation documentation to help you complete the installation and configuration of your network software.

# HP Vectra Personal Computer

This section describes how to install an HP StarLAN 10 PC Card II in an HP Vectra PC, CS, ES, ES/12, or QS/16 personal computer. For information about installing the interface card in an HP Vectra RS/16 or RS/20 personal computer, go to the next section.

## Preparing the HP Vectra Personal Computer

1. If you have an internal hard disk, prepare (park) the heads for moving the computer. To prepare the heads, run the SETUP program (see your HP Vectra personal computer documentation for information about the SETUP program).

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### Caution

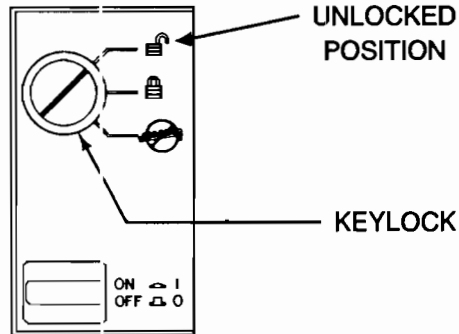
If you don't prepare the hard disk heads, you could damage the computer.

Move your HP Vectra personal computer carefully so that you don't damage the hard disk.

---

2. Turn **OFF** the computer, monitor, and any peripherals attached to the computer.

3. If you have a keylock, make sure it is in the unlocked position. The keylock is on the front center of the computer.



**Figure 1-1. Keylock Unlocked (HP Vectra PC/CS/ES/QS)**

4. Unplug the power cord from the back of the computer.

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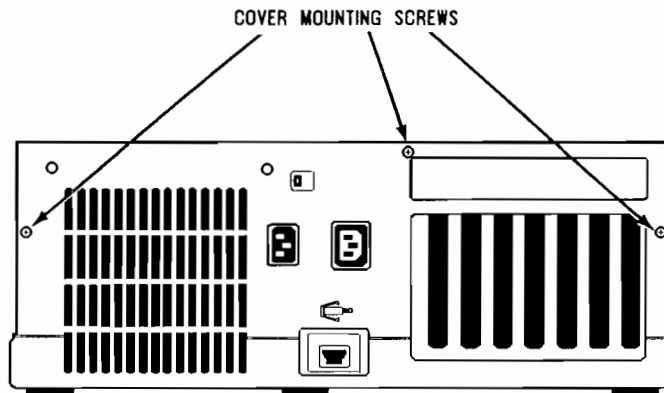
**Warning**

**To prevent electrical shock to you and damage to the interface card, be sure the power cord is unplugged before you install the card.**

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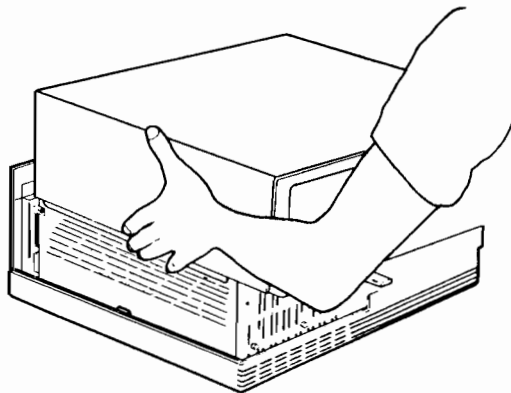
5. Move the monitor, keyboard, external disk drives, printers and plotters out of the way of the system unit.
6. Turn the computer so that you have access to the rear panel.

7. Remove the three mounting screws from the rear panel of the computer.



**Figure 1-2. Remove Mounting Screws (HP Vectra PC/CS/ES/QS)**

8. Turn the computer so that its front panel is facing you.
9. Remove the cover by pulling it forward as far as possible and then lifting it up.



**Figure 1-3. Remove Cover (HP Vectra PC/CS/ES/QS)**

## Setting the Options

The HP StarLAN 10 PC Card II has two switch options that you can set on the card:

- I/O base address
- loopback mode

These options are set to default values at the factory and may not need to be changed. Change a setting under these conditions:

- There is another interface card in your computer whose I/O address range conflicts with the I/O address range of your HP StarLAN 10 PC Card II (refer to the documentation for your other cards to determine I/O address settings). The default base address on the HP StarLAN 10 PC Card II is 300h (hexadecimal). The range extends through the next 31 addresses.
- You are troubleshooting or performing diagnostic testing on your network (refer to the *HP StarLAN 10 Hardware Troubleshooting Guide* for information about network troubleshooting and diagnostics).

To change the default settings, refer to appendix A, “Selecting HP StarLAN 10 PC Card II Options”, before you install the card.

## Installing the Card

The accessory slots are on the left side of the computer as you face its front. You can install the card in any of the short or long slots (If you have a Vectra QS, the pattern of short and long slots will be slightly different from the picture). **It doesn't matter which accessory slot you use.**

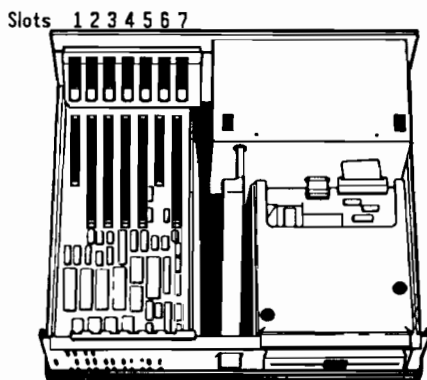


Figure 1-4. Accessory Slots (HP Vectra PC/CS/ES/QS)

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### Caution

Hold the HP StarLAN 10 PC Card II by its edges only and avoid touching the components. Make sure you are properly grounded. See page 1-4 for more information.

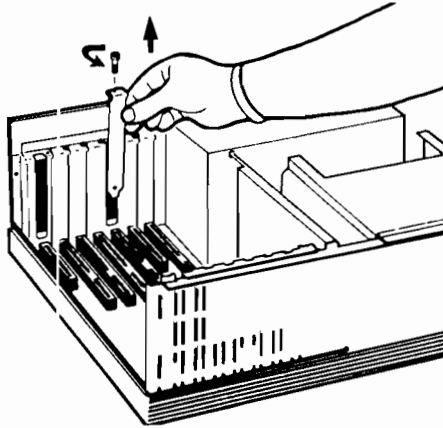
When you remove the interface card from the antistatic bag, place the card on top of the antistatic bag until you are ready to install it.

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Follow these steps to install the card in the computer:

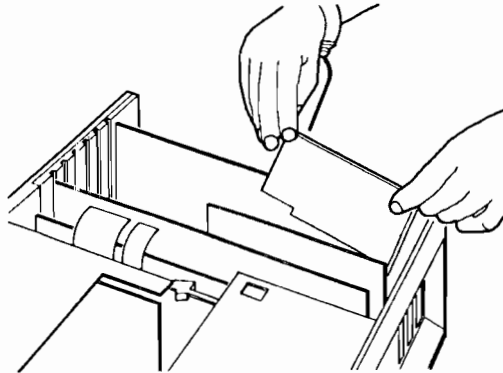
1. Remove the screw and cover plate of an available short or long accessory slot. Save the screw.



**Figure 1-5. Remove Screw and Cover Plate (HP Vectra PC/CS/ES/QS)**

2. Take the card out of the antistatic bag. Save the bag for storing the card if you ever need to remove it from the computer.

3. Hold the card by its top corners so the components face toward the center of the computer. Align the edge connector on the card with the socket on the bottom of the computer. Push the card firmly down into the socket until the top of the card is even with the top of the accessory card slot.



**Figure 1-6. Install Card (HP Vectra PC/CS/ES/QS)**

4. To attach the card, use the screw that you took out of the cover plate.
5. Save the cover plate.

## Reassembling the HP Vectra Personal Computer

1. Face the front of the computer.
2. Hold the computer cover with the front panel toward you and align the cover over the base of the computer. Push the cover down, then toward the back until the cover is flush with the rear panel of the computer.
3. Turn the computer so its rear panel is facing you.
4. Replace the screws in the rear panel.
5. Move the monitor, keyboard, any external disk drives, printers and plotters back to their original positions.
6. Reconnect the power cord.

## Where to Go from Here

After you have installed the HP StarLAN 10 PC Card II in your computer, do the following:

- Install an unshielded twisted-pair cable. Go to chapter 2, “Attaching the Cable”.
- Install your network software and set the interrupt channel for the card. Refer to appendix B in this manual for software information related to this card. See your server and PC workstation documentation to help you complete the installation and configuration of your network software.

# HP Vectra RS/16 or RS/20 Personal Computer

This section describes how to install an HP StarLAN 10 PC Card II in an HP Vectra RS/16 or RS/20 personal computer.

## Preparing the HP Vectra RS

1. If you have an internal hard disk, prepare (park) the heads for moving the computer. To prepare the heads, run the SETUP program (see your computer documentation for information about the SETUP program).

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### Caution

If you don't prepare the hard disk heads, you could damage the computer.

Move the computer carefully so you don't damage the hard disk.

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2. Turn **OFF** the computer, monitor, and any peripherals attached to the computer.
3. Unplug the computer power cord from the back of the computer.

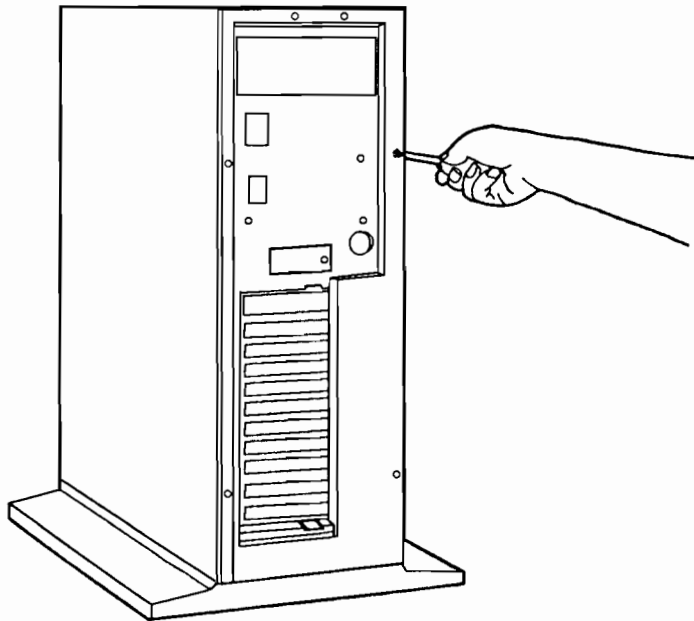
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**Warning**

To prevent electrical shock to you and damage to the card, be sure the power cord is unplugged before you install the card.

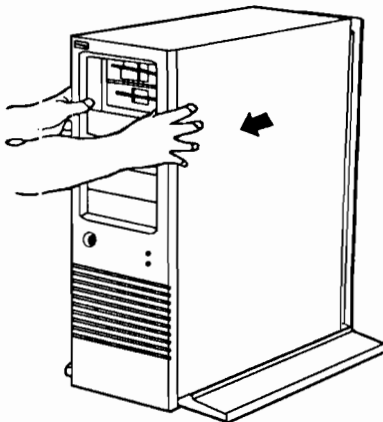
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4. Unplug the display power cord from the wall outlet.
5. Turn the back security lock key counterclockwise as far as possible and remove the key.
6. Loosen the cover mounting screws on the back of the computer. The screws will stay connected even when they are loose, so they won't get lost.



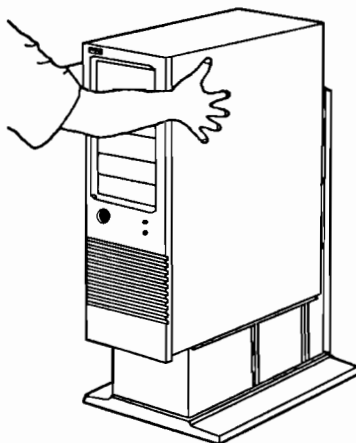
**Figure 1-7. Loosening Cover Mounting Screws (HP Vectra RS)**

7. Slide the computer cover toward the front panel until it stops (3 to 5 cm).



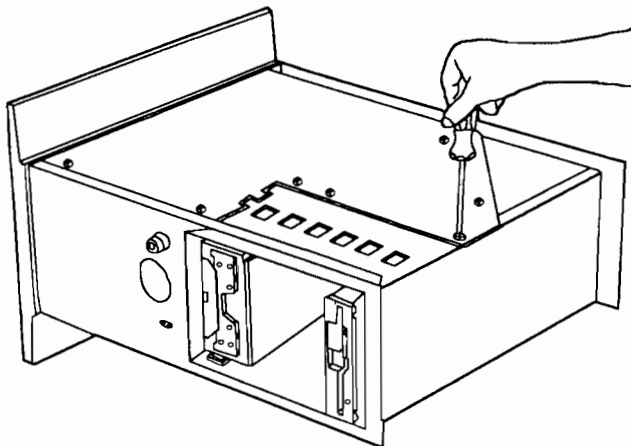
**Figure 1-8. Sliding Cover Forward (HP Vectra RS)**

8. Lift the cover straight up and off the unit.



**Figure 1-9. Lifting Cover Off (HP Vectra RS)**

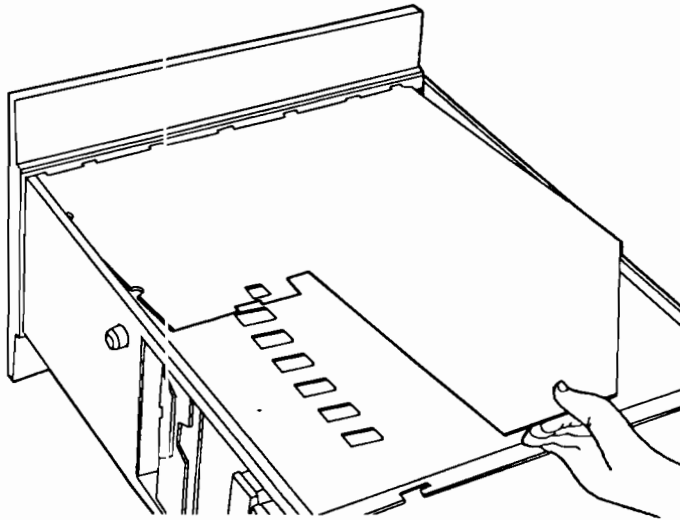
- Carefully tip the computer on its side on a flat, sturdy work surface or on the floor, with the label side up.



**Figure 1-10. Tipping the Computer on its Side (HP Vectra RS)**



10. Loosen the fasteners on the metal plate by turning each fastener one-quarter turn counterclockwise. The fasteners will stay attached to the metal plate even when loose. Lift the metal plate off as shown.



**Figure 1-11. Removing Metal Plate (HP Vectra RS)**

## Setting the Options

The HP StarLAN 10 PC Card II has two switch options that you can set on the card:

- I/O base address
- loopback mode

These are set to default values at the factory and may not need to be changed. Change a setting only under these conditions:

- There is another interface card in your computer whose I/O address range conflicts with the I/O address range of your HP StarLAN 10 PC Card II (refer to the documentation for your other cards to determine I/O address settings). The default base address on the HP StarLAN 10 PC Card II is 300h (hexadecimal). The range extends through the next 31 addresses.
- You are troubleshooting or performing diagnostic testing on your network (refer to the *HP StarLAN 10 Hardware Troubleshooting Guide* for information about network troubleshooting and diagnostics).

To change the default settings, refer to appendix A, “Selecting HP StarLAN 10 PC Card II Options”, before you install the card.

## Installing the Card

The accessory slots are inside the computer. Slots 1 and 7 (the short connector slots) are for 8-bit cards only. Slots 2 through 6 (the long connector slots) can hold either 16-bit or 8-bit cards, as long as the card does not interfere with the connector sockets. The two slots labeled A and B **will not** accept the HP StarLAN 10 PC Card II. The card can go in any free slot (except A or B), but try to leave an empty slot between cards so that cables can be connected. Figure 1-12 shows the RS computer with the slots labeled.

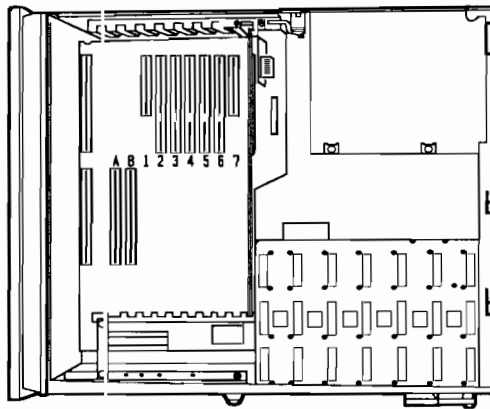


Figure 1-12. Accessory Card Slots Inside the Computer  
(HP Vectra RS)

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## Caution

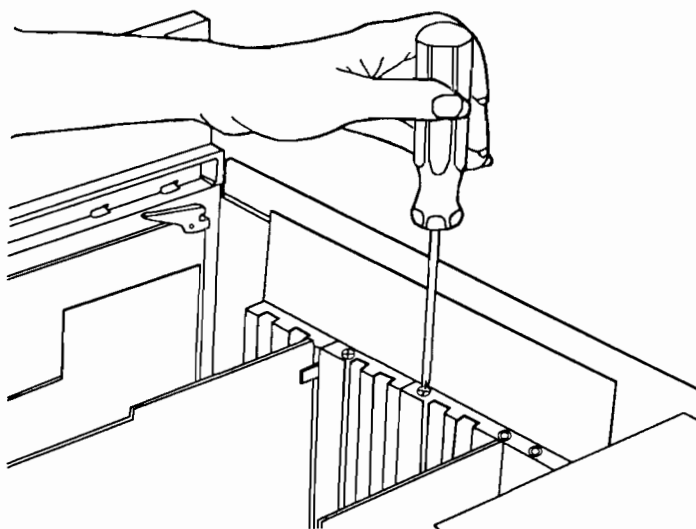
Hold the HP StarLAN 10 PC Card II by its edges only and avoid touching the components. Make sure you are properly grounded when handling the card. See page 1-4 for more information.

When you remove the interface card from the antistatic bag, place the card on top of the antistatic bag until you are ready to install it.

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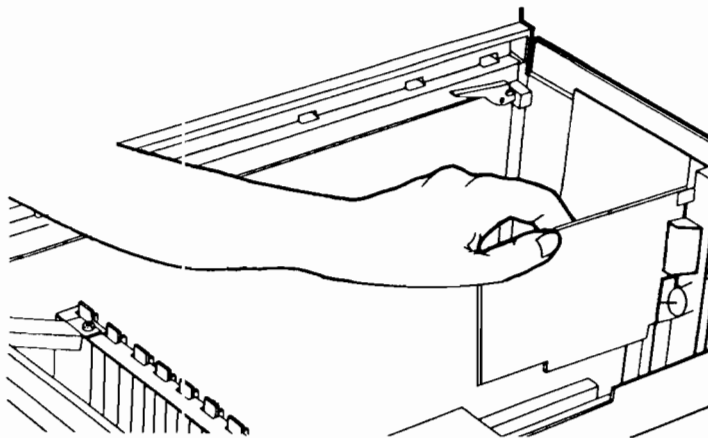
Follow these steps to install the card:

1. Remove the screw and cover plate from the slot where the card will be installed. Save the screw.



**Figure 1-13. Removing the Slot Cover (HP Vectra RS)**

2. Take the card out of the antistatic bag. Save the bag for storing the card if you ever need to remove it from the computer.
3. Align the edge connector on the card with the computer's socket. Push the card firmly down into the socket until the top of the card is even with the top of the accessory card slot on the rear panel.

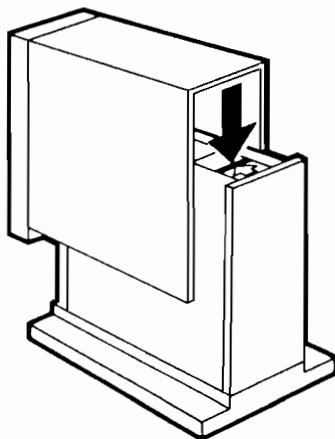


**Figure 1-14. Installing the Card (HP Vectra RS)**

4. To attach the card, use the screw that you took out of the cover plate.
5. Save the cover plate.

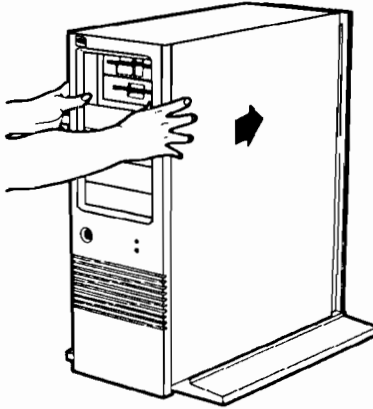
## Reassembling the HP Vectra RS

1. Slide the bottom tabs of the metal plate into the notches near the base of the computer. Lay the metal plate down on the computer frame and tighten the fasteners by turning each one-quarter clockwise.
2. Turn the computer upright so that it is standing on its floorstand.
3. Align the back of the cover with the alignment marker on top of the computer frame 4 or 5 cm (1 or 2 in.) from the rear. Lower the cover straight down over the unit.



**Figure 1-15. Aligning Cover (HP Vectra RS)**

4. Slide the cover back into its closed position.



**Figure 1-16. Closing Cover (HP Vectra RS)**

5. Tighten the cover mounting screws.
6. Lock the cover by turning the key in the back lock clockwise.  
Remove the key and keep it in a safe place.
7. Reconnect the power cord.

## Where to Go from Here

After you have installed the card in your computer, do the following:

- Install an unshielded twisted-pair cable. Go to chapter 2, “Attaching the Cable”.
- Install your network software and set the interrupt channel for the card. Refer to appendix B in this manual for software information related to this card. See your server and PC workstation documentation to help you complete the installation and configuration of your network software.



# IBM Personal Computer

This section describes how to install an HP StarLAN 10 PC Card II in an IBM PC, PC XT, and PC AT. For information about installing an interface card in an IBM PS/2 Model 30, refer to the documentation that came with the computer.

## Preparing the IBM Personal Computer

1. Prepare the computer for moving. Refer to the appropriate IBM manual for information about moving your computer.
2. Turn **OFF** the computer, monitor, and any peripherals attached to the computer.
3. If you have an IBM PC AT and you have a keylock, **make sure it is in the unlocked position.** The keylock is on the front center of the IBM PC AT.

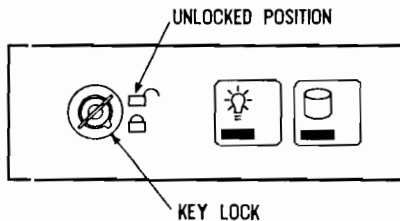


Figure 1-17. Keylock Unlocked (IBM PC AT)

4. Unplug the power cord from the back of the computer.

---

**Warning**

To prevent electrical shock to you and damage to the card, be sure the power cord is unplugged before you install the card.

---

5. Move the monitor, keyboard, external disk drives, printers and plotters out of the way of the system unit.

---

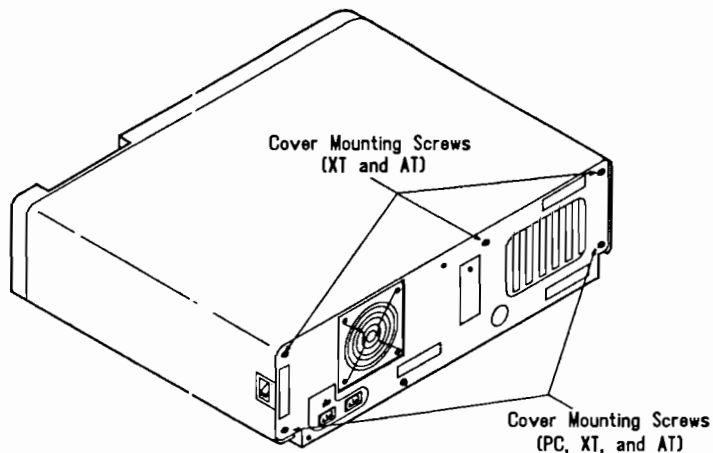
**Caution**

Move the computer carefully so that you don't damage the hard disk.

---

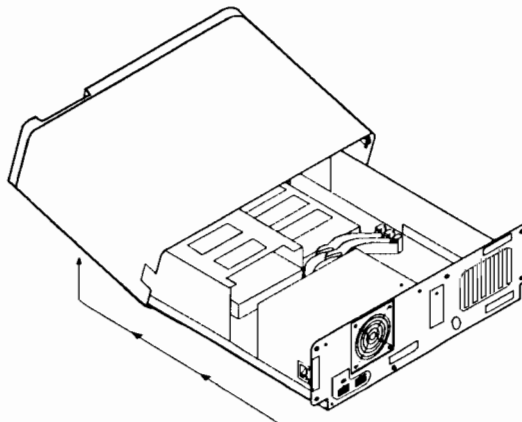
6. Turn the computer so that you have access to its rear panel.
7. If you have an IBM PC AT, pull the plastic panel off the back of the computer. It is attached with four plastic fastener strips which are inside the panel.

8. Remove the mounting screws from the rear panel of the computer.
  - If you have an IBM PC, remove the two screws in the bottom corners of the computer.
  - If you have an IBM PC XT or PC AT, remove the three screws along the top and the two screws in the bottom corners of the computer.



**Figure 1-18. Remove Mounting Screws (IBM PC/XT/AT)**

9. Turn the computer so its front panel is facing you.
10. Remove the cover by pulling the cover forward as far as possible and then lifting it up.



**Figure 1-19. Remove Cover (IBM PC/XT/AT)**

## Setting the Options

- The HP StarLAN 10 PC Card II has two switch options that you can set on the card:
- I/O base address
- loopback mode

These are set to default values at the factory and may not need to be changed. Change a setting only under these conditions:

- There is another interface card in your computer whose I/O address range conflicts with the I/O address range of your HP StarLAN 10 PC Card II (refer to the documentation for your other cards to determine I/O address settings). The default base address on the HP StarLAN 10 PC Card II is 300h (hexadecimal). The range extends through the next 31 addresses.
- You are troubleshooting or performing diagnostic testing on your network (refer to the *HP StarLAN 10 Hardware Troubleshooting Guide* for information about network troubleshooting and diagnostics).

To change the default settings, refer to appendix A, “Selecting HP StarLAN 10 PC Card II Options”, before you install the card.

## Installing the card

The accessory slots are on the left side of the computer as you face its front. You can install the card in any short or long slot. **It doesn't matter which accessory slot you use.** Figure 1-20 shows the accessory slots in an IBM PC AT. If you have an IBM PC or an IBM PC XT, there will only be short slots.

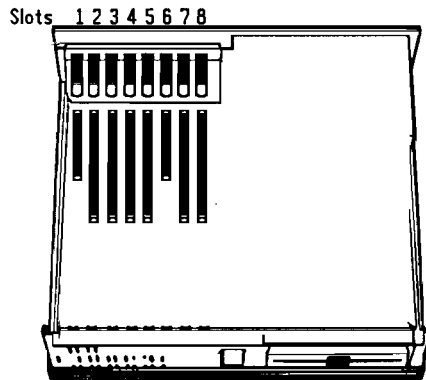


Figure 1-20. Accessory Slots (IBM PC AT)

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### Caution

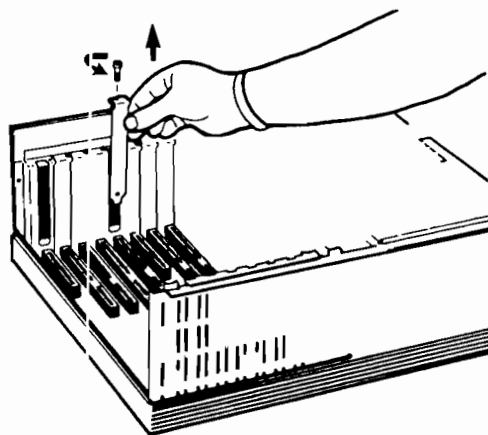
Hold the HP StarLAN 10 PC Card II by its edges only and avoid touching the components. Make sure you are properly grounded when handling the card. See page 1-4 for more information.

When you remove the interface card from the antistatic bag, place the card on top of the antistatic bag until you are ready to install it.

---

Follow these steps to install the card:

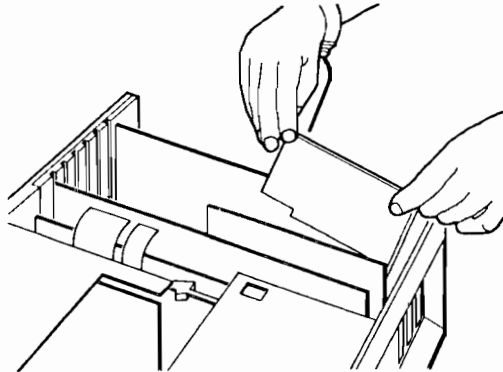
1. Remove the screw and cover plate from an available short or long accessory slot. Save the screw.



**Figure 1-21. Remove Screw and Cover Plate (IBM PC AT)**

2. Take the card out of the antistatic bag. Save the bag for storing the card if you ever need to remove it from the computer.

3. Hold the card by its top corners so the components face toward the center of the computer. Align the edge connector on the card with the socket on the bottom of the computer. Push the card firmly down into the socket until the top of the interface card is even with the top of the accessory card slot.



**Figure 1-22. Install Card (IBM PC/XT/AT)**

4. To attach the card, use the screw that you removed from the cover plate.
5. Save the cover plate.



## Reassembling the IBM Personal Computer

1. Face the front of the computer.
2. Hold the computer cover with the front panel toward you. Position the back edges of the cover under the runners on the sides of the base. Slide the cover until the end is flush with the back panel of the computer.
3. Turn the computer so that the rear panel is facing you.
4. Replace the screws in the rear panel.
5. If you have an IBM PC AT, replace the plastic panel on the back of the computer.
6. Move the monitor, keyboard, any external disk drives, printers and plotters back to their original positions.
7. Reconnect the power cord.

## Where to Go from Here

After you have installed the HP StarLAN 10 PC Card II in your computer, do the following:

- Install an unshielded twisted-pair cable. Go to chapter 2, “Attaching the Cable”.
- Install your network software and set the interrupt channel for the card. Refer to appendix B in this manual for software information related to this card. See your server and PC workstation documentation to help you complete the installation and configuration of your network software.

# Attaching the Cable

---

## Chapter Overview

Once each personal computer on the network has the HP StarLAN 10 PC Card II installed, connect an unshielded, twisted-pair cable between each card and an HP StarLAN 10 hub.

This chapter does not contain information about attaching 8-pin modular connectors to unshielded twisted-pair cable. If you purchased prepared cable, you do not have to attach 8-pin modular connectors. If you purchased unconnected, unshielded twisted-pair cable, refer to the *HP SiteWire Twisted-pair Cabling Installation Guide* for information about how to prepare the cable.

Also, this chapter does not contain information about attaching unshielded twisted-pair cable to the HP StarLAN 10 Hub. Refer to the *HP 28663A StarLAN 10 Hub Installation Guide* for information.



# Cable Rules

---

## Caution

Do not stress the cable. Cable stress may cause damage to cables and connectors, and it may cause data loss.

---

1. Use unshielded twisted-pair cable.

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## Note

Flat, untwisted cable must not be used.

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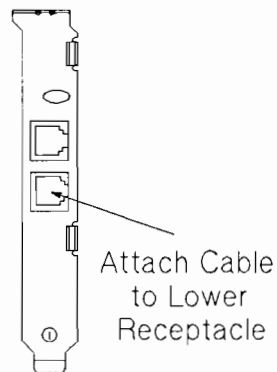
2. Make sure the cable is not more than 100 meters long (328 feet) between the card and the hub.
3. To disconnect a cable, grasp the connector between the thumb and forefinger of your hand, squeeze the tab toward the connector and pull the connector out of the receptacle.

For further information about installing unshielded twisted-pair cable, refer to the *HP SiteWire Twisted-pair Cabling Installation Guide*.

## Attaching the Cable

1. Prepare the necessary lengths of cable. Install the cable sections so that each personal computer can be connected to an HP StarLAN 10 Hub.

2. To attach a cable to the interface card, turn the computer to expose the back panel. Hold the cable connector so the tab is facing to the right. Push the connector into the **lower receptacle** on the backplate of the card until the tab on the connector clicks into place. The computer can be either on or off when attaching the cable.



---

### Note

Use the upper receptacle on the card only if there are telephone signals integrated with the HP StarLAN 10 signals on your unshielded twisted-pair cable. You can plug your 4-pin or 6-pin connector from your telephone into the upper receptacle on the card. See appendix C, "Telephone Attachment", for more information.

---

3. Make sure the other end of the cable is attached to a hub. If you are not connected to a StarLAN 10 hub, your computer will not work on the network. Refer to the *HP 28663A StarLAN 10 Hub Installation Guide* for information about connecting to the HP StarLAN 10 Hub.

# Where to Go from Here

Before you use your computer on a network, install your network software.

During software configuration, do the following:

- Make sure the I/O base address selection in the software matches the I/O base address of the card.
- Set the interrupt channel for the card. The interrupt channel is set only with software.

Refer to appendix B in this manual for software information related to this card. See your server and PC workstation documentation to help you complete the installation and configuration of your network software.

## Selecting HP StarLAN 10 PC Card II Options

---

The HP StarLAN 10 PC Card II has two switch options that you can set on the card:

- I/O base address
- loopback mode

All the switches are set to default settings at the factory, but you may change them. Change default settings for these reasons:

- There is another interface card in your computer whose I/O address range conflicts with the I/O address range of your HP StarLAN 10 PC Card II (refer to the documentation for your other cards to determine I/O address settings). The default base address on the HP StarLAN 10 PC Card II is 300h (hexadecimal). The range extends through the next 31 addresses.
- You are troubleshooting or performing diagnostic testing of your network (refer to the *HP StarLAN 10 Hardware Troubleshooting Guide* for information about network troubleshooting and diagnostics).

---

### Note

The interrupt channel for this card is set with software. See appendix B for more information.

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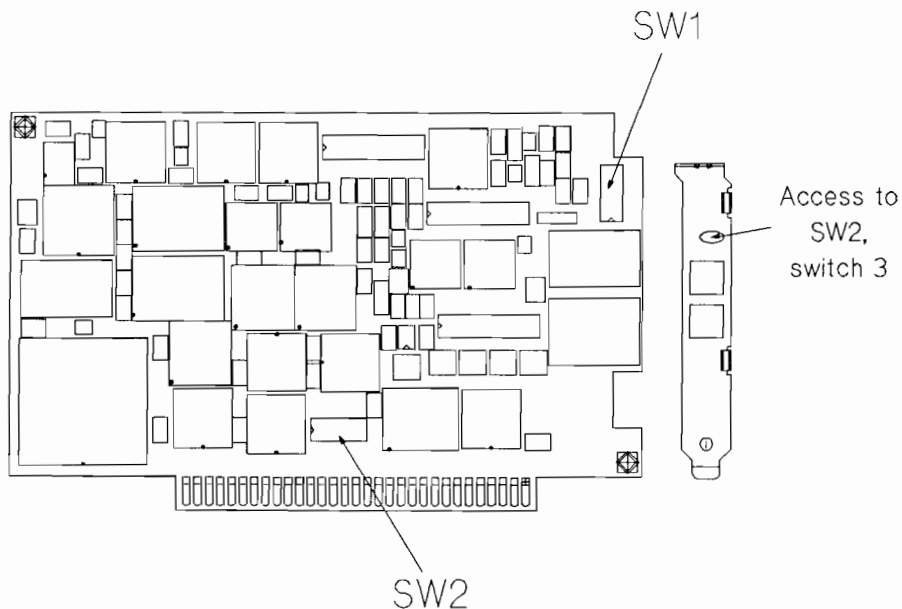
## Caution

Avoid touching the components on the card when you change a switch position.

If you remove the interface card from the personal computer, follow antistatic handling procedures. See page 1-4 for more information.

---

Select card options by changing one or more switches. These are located in the switch packs marked SW1 and SW2 on the card. To set switches, use a pointed, nonconductive object such as a toothpick.



**Figure A-1. HP StarLAN 10 PC Card II Switch Locations**



## I/O Base Address

The HP StarLAN 10 PC Card II will occupy all the I/O addresses from the base address through the next 31 addresses. For example, a card with base address set to the default of 300h (hexadecimal) occupies addresses 300h through 31Fh. In this case, you could not have any other interface card with I/O addresses in this range.

The default I/O base address for the HP StarLAN 10 PC Card II is 300h.

The I/O base address uses switches 1 through 3 of switch pack SW2 (see figure A-1 for switch pack location). Table A-1 shows the settings to use when changing the default setting. You can choose any I/O base address shown in table A-1 as long as the base address and the next 31 consecutive addresses do not conflict with the I/O address of any other card.

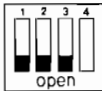
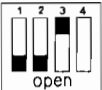
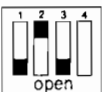
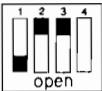

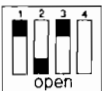
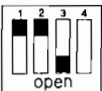
---

### Note

If you change the I/O base address, make sure the I/O base address selection in your network software matches the I/O base address of the card.

---

**Table A-1. I/O Base Address Switch Settings**

I/O Base Address	Switch Settings (SW2)
200h	
240h	
280h	
2C0h	
300h factory default	
320h do not use on HP Vectra CS computer	
340h	

## Changing the I/O Base Address

1. Find switches 1 through 3 in switch pack SW2 on the card (see figure A-1 for switch pack location). Note that one side of the row of switches is labeled “OPEN”. When a switch is **down** on the OPEN side, that switch is **open**.
2. Refer to table A-1 for I/O base addresses and corresponding switch settings that may be used. The dark color shows the **down** end of the switch.
3. Using a toothpick or other pointed, nonconductive object, push the switches into the proper positions so that the switch settings correspond to the desired I/O base address setting. To change a switch position, push down on the raised end of the switch until it clicks into its new position.
4. Write down the I/O base address setting. You will need it when you configure your network software.

# Loopback Mode

---

## Caution

Change the default setting of the loopback mode switch (switch 3 on SW1) only for network troubleshooting or diagnosis. **During normal operation, the loopback mode switch must always be set to the NORMAL mode.**

---

The loopback mode switch on the card allows you to select from two options:

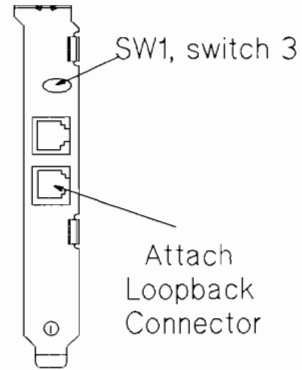
- **NORMAL** mode when the interface card and the network are operating normally.
- **TEST** mode when you want to perform network diagnostic testing and troubleshooting.

The default setting for the loopback mode switch is **NORMAL**. Change this switch setting **only** when you want to test the circuitry on the interface card, the cable attached to the card, or external devices attached to the card.

## Changing the Loopback Mode

To change the loopback mode switch setting on the HP StarLAN 10 PC Card II, do the following:

1. Find switch 3 on SW1 on the backplate of the card (accessible at the back of the computer).
2. Using a toothpick or other pointed, nonconductive object, move switch 3 to the TEST (labeled “T”) position.
3. Using diagnostic or troubleshooting software, run desired loopback tests.
4. When you finish diagnosis and troubleshooting, change the loopback mode switch back to the NORMAL (labeled “N”) position.



### Example: Testing the Card



1. Set the loopback mode switch to TEST (“T”).
2. Attach an 8-pin loopback connector (HP part number 5061-4977) to the lower receptacle on the backplate of the card. Figure A-2 shows a picture of the loopback connector.

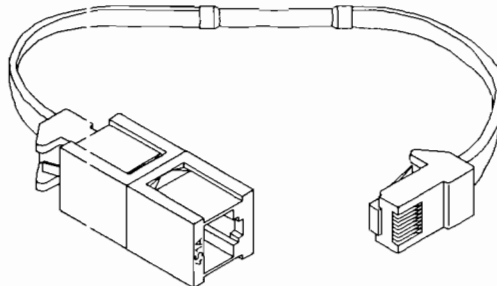


Figure A-2. 8-Pin Loopback Connector

3. Use a loopback diagnostic program, such as the HP DIAGLINK utility, to test the card.
4. Set the loopback mode back to the NORMAL (“N”) position.

Table A-2 summarizes the differences between normal mode and test mode with regard to this example.

**Table A-2. Loopback Switch Modes**

<b>Normal Mode (Default Setting)</b>	<b>Test Mode</b>
Normal network operation	Used for diagnosis and troubleshooting only
Collision detection enabled	Collision detection disabled
Card connected to external devices (via cable)	Card connected to external loopback hood
Uses network workstation or server software	Uses network diagnostic and/or troubleshooting software

Refer to the *HP StarLAN 10 Hardware Troubleshooting Guide* and the *Troubleshooting Guide for LANs – HP OfficeShare Network* for more troubleshooting information.

# Software Configuration Information

---

Before you use your computer on a network with the HP StarLAN 10 PC Card II, install and configure your network software.

During software configuration, do the following:

- Make sure the I/O base address selection in the software matches the I/O base address of the card.
- Set the interrupt channel for the card. Be sure that you don't choose a channel that is already used by another card in your computer.

## Matching the I/O Base Address

If you are using HP OfficeShare network software, the default I/O base address of the software will match the default I/O base address of the card. If you change either one, be sure to change the other so that they still match. Refer to the *PC Workstation Configuration Guide for LANs*, part number 50929-90001.

If you are **not** using HP OfficeShare network software, check the I/O base address selection in the software to make sure it matches the I/O base address of the card. Refer to your network software documentation.

---

### Note

Appendix A in this manual describes how to set the I/O base address on the HP StarLAN 10 PC Card II.

The default I/O base address on the HP StarLAN 10 PC Card II is 300h (hexadecimal).

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## Setting the Interrupt Channel

An interrupt channel allows the card to signal your computer that it needs the computer's attention. In response to a signal from the interface card, the personal computer stops what it's doing and responds to the request. Each interface card installed in a personal computer must use a different interrupt channel.

---

### Caution

If the HP StarLAN 10 PC Card II uses the same interrupt channel as another interface card, the personal computer may not work properly and the card could be damaged.

---

The interrupt channel on the HP StarLAN 10 PC Card II is set with software. For directions about how to set the interrupt channel, see your network software manual. If you are using HP OfficeShare network software, use the *PC Workstation Configuration Guide for LANs* (50929-90001).

Table B-1 gives guidelines for choosing an interrupt channel for the HP StarLAN 10 PC Card II. If you are using HP OfficeShare network software, the default interrupt channel is 3.

**Table B-1. Interrupt Channel Settings**

<b>Interrupt Channel</b>	<b>When Used</b>
2	DO NOT USE.
3	Used for serial port 2 configured as COM2, the IBM SDLC interface, or by HP-IB. Should not be used if you are going to use GW BASIC or IBM's Fixed Disk Organizer.
4	Used for serial port 1 configured as COM1 and for the IBM bisynchronous and SDLC Interfaces.
5	Used for parallel port 2 configured as LPT2, and for the 10 Mbyte fixed disk on an IBM PC XT. Channel 5 is available on the HP Vectra PC and the IBM PC and IBM PC AT unless LPT2 is configured. DO NOT USE on an HP Vectra CS.
6	DO NOT USE.
7	Used for parallel port 1 configured as LPT1 (PRN).

# Telephone Attachment

The upper receptacle on the HP StarLAN 10 PC Card II is for telephone attachment. You can use this receptacle if there are telephone signals integrated with the HP StarLAN 10 signals on your unshielded twisted-pair cable. The phone connector can be either a 4-pin or a 6-pin RJ-11 connector. Figure C-1 shows the pin connections for the receptacles on the card. For more information, refer to the *HP Sitewire Twisted-pair Cabling Installation Guide*.

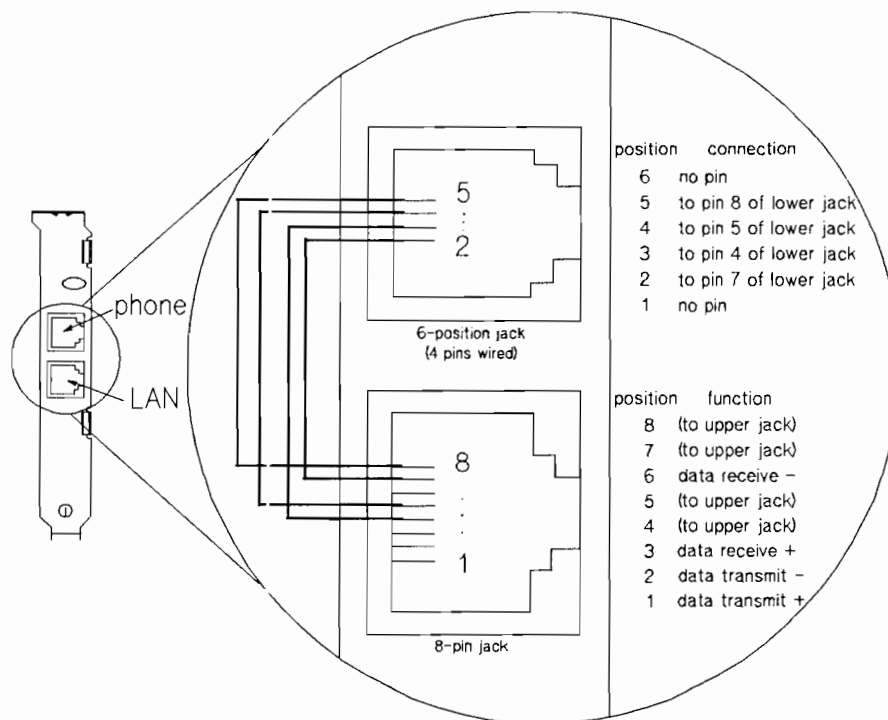


Figure C-1. Pin Connections



# One-year Limited Hardware Warranty

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Hewlett-Packard warrants the HP 27240A StarLAN 10 PC Card II against defects in materials and workmanship for a period of one year from receipt by the end user, except when used as part of an HP system. If HP receives notice of such defects during the warranty period, HP will either, at its option, repair or replace products which prove to be defective.

Should HP be unable to repair or replace the product within a reasonable amount of time, Customer's alternate exclusive remedy shall be a refund of the purchase price upon return of the product.

If this product was purchased as part of an HP system in a coordinated shipment, it is warranted against defects in material and workmanship during the same period as the HP system.

## Exclusions

The above warranty shall not apply to defects resulting from improper or inadequate maintenance by Customer; customer-supplied software or interfacing; unauthorized modification or misuse; operation outside of the environmental specifications for the product; or improper site preparation and maintenance.

The selection and use of media, supplies, and consumables is the customer's responsibility. Hewlett-Packard reserves the right to exclude from the warranty or service agreement any repairs for damage to HP products which HP reasonably determines or believes were caused by use of non-HP media or cleaning supplies. Hewlett-Packard will, upon request, repair such damage on a time and material basis.

## Obtaining Warranty Service

To obtain warranty service, products must be returned to a service facility designated by HP. HP may repair on-site at the option of the customer. Customer is responsible for travel charges when on-site repair is requested.

Warranty service for products purchased as part of a system will be subject to service in accordance with the system support services.

Customer shall prepay shipping charges for products returned to HP for warranty service and HP shall pay for return of the products to Customer. However, Customer shall pay all shipping charges, duties, and taxes for products returned to HP from another country.

### **Warranty Limitations**

HP makes no other warranty, either expressed or implied with respect to this product. HP specifically disclaims the implied warranties of merchantability and fitness for a particular purpose. Some states or provinces do not allow limitations on the duration of an implied warranty, so the above limitation or exclusion may not apply to you. However, any implied warranty of merchantability or fitness is limited to the one-year duration of this written warranty.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state, or province to province.

### **Exclusive Remedies**

The remedies provided herein are Customer's sole and exclusive remedies. In no event shall HP be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any other legal theory. Some states or provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

HP offers complete service and maintenance worldwide. Maintenance agreements are available for HP peripheral products. Advantages of these agreements to the customer include a fixed annual cost, individualized cost-effective contracts, and a choice of response time. Current rates can be determined by contacting your local HP Sales and Support Office.

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