



ThinkPad Port Replicator with Advanced EtherJet Feature

User's Guide

OPTIONS
by **IBM**

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Contents

Part 1. Using the Port Replicator with Advanced EtherJet Feature	1-1
Identifying the Hardware Features	1-2
Docking and Undocking Your Computer	1-5
Cold Undocking	1-7
Warm Docking and Undocking for Windows 98 or Windows 95	1-8
Installing the Software	1-9
Connecting the Network Cable	1-17
Using a PC Card	1-18

Part 2. Troubleshooting	2-1
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Part 3. Appendixes	3-1
Appendix A. Help and Service Information	3-1
Step 1. Problem Solving	3-1
Step 2. Preparing for the Call	3-2
Step 3. Placing the Call to IBM	3-2
Appendix B. Product Warranty	3-3
Appendix C. Notices	3-5

Part 1. Using the Port Replicator with Advanced EtherJet Feature

The *ThinkPad Port Replicator with Advanced EtherJet Feature* (hereafter called the *port replicator*) is distinguish from other port replicator in that it includes a LAN adapter with the Wake-on-LAN function. When you use this port replicator with your computer, you need to install the driver for the LAN adapter.

After you dock your computer to the port replicator, you can use its connectors in place of the computer's, plus the following extra features:

- A MIDI/joystick port
- An additional line-in jack
- An additional line-out jack
- Two additional PC Card slots
- A keyboard connector
- An external diskette drive connector
- An RJ45 Ethernet LAN connector

Important

You need to use ac power when you dock your computer; the port replicator doesn't work with battery power from the computer.

The port replicator supports the ThinkPad 380Z and 560Z computer. It doesn't support the following ThinkPad computers:

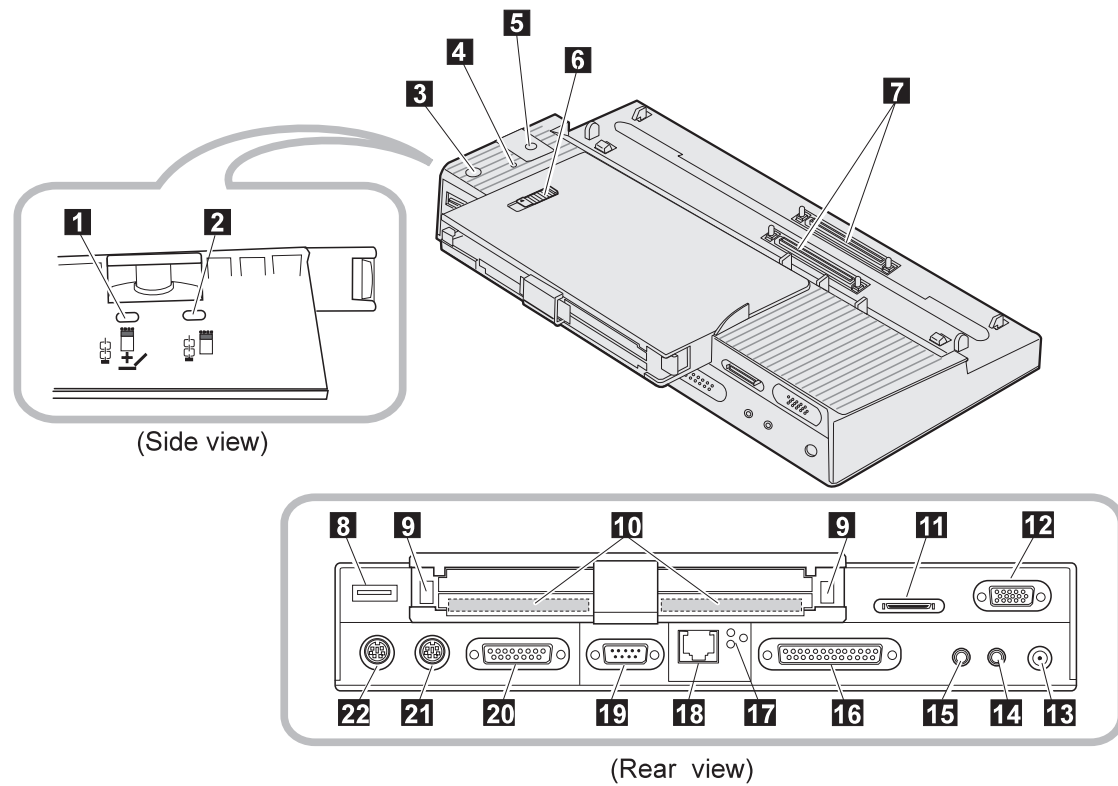
- ThinkPad 380, 380D, 380E, 380ED, 380X, and 380XD
- ThinkPad 385, 385D, 385E, 385ED, and 385XD
- ThinkPad 560, 560E, and 560X

Note: In the Windows 95, Windows NT, Windows 3.1, or DOS environment, you need to install PC Card support software *after* docking your computer to the port replicator. If you have already installed the PC Card support software, uninstall it and then reinstall it after you dock your computer.

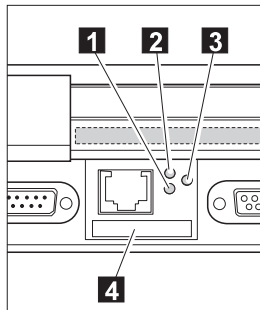
Before using the port replicator for the first time, make sure to have the following diskettes on hand:

- The Advanced EtherJet Feature Diskette for setting up the port replicator
- The Advanced EtherJet Feature Flash Utility Diskette for updating the Ethernet ROM if necessary

Identifying the Hardware Features



- 1 When you attach a security lock to the first **security system lock hole**, you can secure both the PC Card lock 6 and the release button 5 .
- 2 When you attach a security lock to the second **security system lock hole**, you can secure the PC Card lock 6 .
- 3 With the **eject request button**, you can request the operating system to undock your computer from the port replicator. Pushing this button is the same as clicking on **Eject PC** from **Start**.
- 4 The **docking indicator** turns on when the port replicator is in use. When the indicator is on, you cannot detach your computer with the release button.
- 5 The **release button** releases the computer from the port replicator when pressed. The button cannot be pressed when the docking indicator 4 is on.
- 6 The **PC Card lock** prevents PC Cards from being removed from the PC Card slots.
- 7 The **expansion connectors** are where you attach your ThinkPad computer.
- 8 The **universal serial bus (USB)** connector allows you to connect a device that conforms to this new interface.
- 9 The **PC Card eject buttons** eject the PC Cards from the slots.
- 1 Each **PC Card slot** accepts one Type I, II, or III PC Card. The slot supports a CardBus card, but not the Zoomed Video card.
- 11 The **external-diskette-drive connector** is for connecting an external diskette drive.
Note: The ThinkPad 380Z computer does not support this connector.
- 12 The **external-monitor connector** is for connecting an external monitor.
- 13 The **power jack** is for connecting the AC Adapter cable.
- 14 The **line-out jack** is for connecting a stereo headphone or an external speaker.
- 15 The **line-in jack** is for connecting a stereo microphone or an external audio device.
- 16 The **parallel connector** is for connecting a parallel device.
- 17 The **Network LEDs** indicate the condition of the network. (See the detail on next page.)
- 18 The **RJ45 (Ethernet) LAN connector** is for network communication.
- 19 The **serial connector** is for connecting a serial device.
- 2 The **MIDI/joystick port** is for connecting MIDI (musical instrument digital interface) equipment or a joystick for playing games.
- 21 The **mouse connector** is for connecting a mouse.
- 22 The **keyboard connector** is for connecting a keyboard.



(Rear center view, detail)

LED	Indication	Meaning
1 Link LED	On	The port replicator and the hub are receiving power. The cable connection between the port replicator and the hub is good.
	Off	The port replicator and the hub are not receiving power. The cable connection between the port replicator and the hub is faulty, or you have a driver configuration problem.
2 Activity LED	On or flashing	The port replicator is sending or receiving direct packets or broadcast packets for this specific adapter. (When packets are being sent, this LED is active due to the network acknowledgments that are received.)
	Off	The port replicator is not receiving direct packets or broadcast packets.
3 100 Mbps LED	On	Operating at 100 Mbps.
	Off	Operating at 10 Mbps.

4 The **Media Access Control (MAC) address** for the integrated EtherJet feature.

Docking and Undocking Your Computer

The system-expansion connectors at the bottom of your computer allow you to dock it to the port replicator. This section describes how to dock or undock your computer to the port replicator.

For the Windows 98 and Windows 95 user, there are two modes when you dock or undock your computer to the port replicator.

Cold docking or undocking:

Docking or undocking the port replicator while the computer is powered off.

Warm docking or undocking:

Docking or undocking the port replicator while the computer is in suspend mode.

If you are using another operating system, you must cold dock your computer to the port replicator.

Note: You must cold dock your computer to the port replicator for the first time. This operation enables warm docking or undocking for subsequent times.

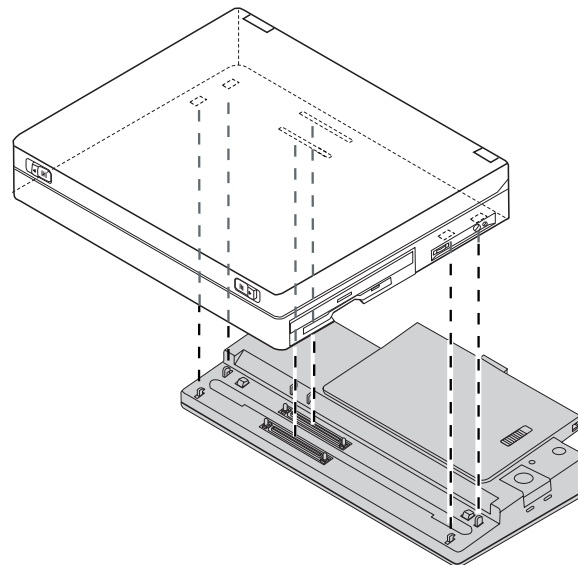
Cold Docking Your Computer to the Port Replicator

To dock your computer to the port replicator in cold mode, do as follows:

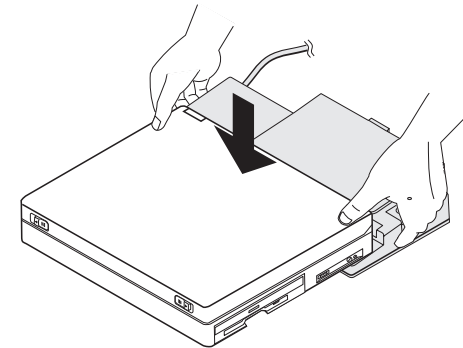
- 1** Turn off your computer.
- 2** Disconnect all peripheral devices cables and the AC adapter from your computer.
- 3** Connect all peripheral devices cables and the AC adapter to the port replicator.

4 Dock your computer to the port replicator.

Align the guide holes and connectors on the bottom of the computer with the guide hooks and connectors on the port replicator.



5 Press the top of the computer so that the connectors and guide pins are firmly connected to the port replicator.



6 To prevent your computer from being removed from the port replicator, attach a security system lock to the security system lock hole on the port replicator.

7 Power on your computer, using its power switch. The computer starts to boot.

Note: If the power-on indicator of your computer or the docking indicator of the port replicator does not turn on, press **Fn**.

You have completed docking your computer to the port replicator.

For the **Windows 98** or **Windows 95 user**, continue with this procedure.

The operating system checks the status of the port replicator and restarts a couple of times.

- 8** Follow the instructions that appear on the screen.

The operating system creates a configuration profile for the port replicator named **Dock x**.

Notes:

1. **x** can be any number.
2. The message “Version Conflict” might appear on the screen. Answer **Yes** to the prompt “Do you want to keep this file?”

- 9** Double-click on **My Computer**, **Control Panel**, and **System**.

- 10** Click on the **Hardware Profile** tab.

- 11** Make sure the profile **Dock x** has been created. Select the **Device Manager** tab and make sure that the new devices are displayed in the device list.

If **Dock x** has not been created, repeat from step 1.

Note: If the symbol “!” or “X” appears next to a device symbol, a resource conflict might have occurred.

Once **Dock x** has been created, you can dock or undock your computer in warm mode.

Cold Undocking

Important

Do not remove the AC Adapter while your computer is docked to the port replicator.

This procedure describes how to undock your computer from the port replicator when the computer power is turned off.

- 1** Turn off your computer.
- 2** Remove all security system locks from the port replicator.
- 3** Turn the security key to the eject position to eject the computer.
- 4** Grasp the computer and lift it out.

You have completed cold undocking.

Warm Docking and Undocking for Windows 98 or Windows 95

Warm Docking

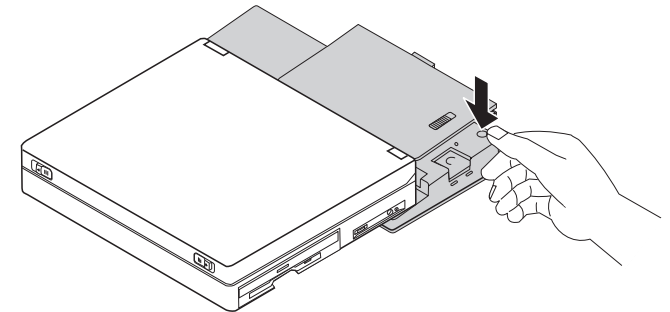
In the boot process after cold docking, the operating system sets a configuration including the devices installed in the port replicator. After the configuration has been set up, you can dock your computer in warm mode. The port replicator devices immediately become available to your computer.

Warm Undocking

To warm-undock computer (with Windows 98 or Windows 95), do the following:

- I** Request the ejection of the computer in either of the following ways:

Press the eject request button.



or

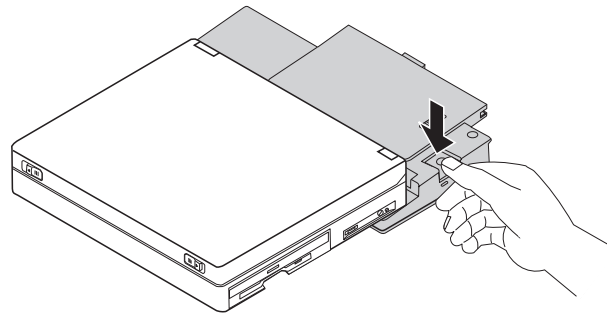
Select **Eject PC** in the **Start** menu.

An ejection request is made to the operating system. Considerable time might be required to complete the ejection.

Note: To see if the ejection process has completed, click on **Start**. If **Eject PC** appears, undocking is still in progress. If not, the ejection process has completed.

Note: If the operating system rejects the request, messages appear on the screen explaining the reason. In this case, use cold undocking.

- 2 Make sure the power-on indicator on the port replicator is off.
The release latch cannot be pressed and the computer cannot be removed from the port replicator while this indicator is on.
- 3 Press the release latch on the port replicator.



- 4 Remove the computer.
- 5 Unplug the AC Adapter from the port replicator and plug it into your computer.

Installing the Software

This section describes how to install the device driver and the PROSet program for Windows 98, Windows 95, or Windows NT. After docking your computer to the port replicator, go to the appropriate section according to the operating system you are using.

Note: You might be prompted to install the display driver during the device driver installation. Exit the window by clicking on **OK** and then **Cancel**. You need to customize the display setting after you have installed the device driver.

For Windows 98, go to the following section.

For Windows 95, go to “Installing the Device Driver for Windows 95” on page 1-11.

For Windows NT, go to “Installing the Device Driver for Windows NT 4.0” on page 1-15.

For any other operating system, see the README file in the Advanced EtherJet Feature Diskette.

Installing the Device Driver for Windows 98

Note: The computer might recognize a **82557-based PCI Ethernet** device driver. You need to install the device driver supplied on the Advanced EtherJet Feature Diskette, nonetheless.

When you dock your computer to the port replicator for the first time and power on, the message “Add New Hardware Wizard” appears. To install the device driver for Windows 98, do as follows:

- 1** If the “Add New Hardware Wizard” appears, go to the next step.
If the “Add New Hardware Wizard” message does not appear, go to “Installing the Driver If the Message Does Not Appear” on page 1-13.
- 2** When the message “This wizard searches for new drivers for: Intel 8255x-based PCI Ethernet Adapter (10/100)” appears, click on **Next**.
- 3** Click on **Search for the best driver for your device**.
- 4** Click on **Next**.
- 5** Click on **Floppy disk drivers**.
- 6** Insert the Advanced EtherJet Feature Diskette into the diskette drive.
- 7** Click on **Next**.
- 8** Click on **One of the other drivers**.
- 9** Click on **View List...**
- 10** Click on **Intel EtherExpress PRO PCI Adapter**.
- 11** Click on **OK**.
- 12** Click on **Next**.
- 13** When the message “Windows driver file search for new device: Intel EtherExpress PRO PCI Adapter” appears, click on **Next**.
- 14** Follow the instructions on the screen.
- 15** When the computer prompts you to specify the drive that the adapter device driver is in, type **A:** and click on **OK**.
- 16** Click on **Finish**.
- 17** Remove the diskette from the diskette drive, and then reboot your computer to make the changes effective.

Installing the Device Driver for Windows 95

If you are using Windows 95 OSR0 or OSR1, go to “For Windows 95 OSR0 or OSR1” on page 1-12.

If you are using Windows 95 OSR2.1, go to the “For Windows 95 OSR2.1” on page 1-12.

Your Version of Windows 95

You can check which version of Windows 95 you are using by doing the following:

1. Click on **Start**, move the cursor to **Settings**, and then click on **Control Panel**.
2. Double-click on **System**.

The following window appears:



You can check the version in this window. Read the numbers under “System.”

4.00.950 means that it is Windows 95 OSR0.

4.00.950a means that it is Windows 95 OSR1.

4.00.950B means that it is Windows 95 OSR2.1.

For Windows 95 OSR0 or OSR1: When you dock your computer to the port replicator and power it on for the first time, the message “New Hardware Found” appears.

- 1** If the message “New Hardware Found” appears, go to the next step.
If the message does not appear, go to “Installing the Driver If the Message Does Not Appear” on page 1-13.
- 2** Click on **Driver from disk provided hardware manufacturer**, and click on **OK**.
The “Install From Disk” window appears.
- 3** Insert the Advanced EtherJet Feature Diskette into the diskette drive.
- 4** When the computer prompts you to specify the drive that the device driver is in, type A:\
- 5** Click on **OK**.
- 6** Follow the instructions on the screen.
- 7** When the computer prompts you to specify the drive that the adapter device driver is in, type A:\
- 8** Follow the instructions on the screen.
- 9** Remove the diskette from the diskette drive, and then reboot your computer to make the changes effective.

For Windows 95 OSR2.1: When you dock your computer to the port replicator and power it on for the first time, the message “New Hardware Found” appears.

- 1** If the message “New Hardware Found” appears, go to the next step.
If the message does not appear, go to “Installing the Driver If the Message Does Not Appear” on page 1-13.
- 2** When the “This wizard will complete the installation of: PCI Ethernet Controller” message appears, insert the Advanced EtherJet Feature Diskette into the diskette drive.
- 3** Click on **Next**.
- 4** When the “Windows found the following updated driver for this device: Intel EtherExpress PRO PCI Adapter” message appears, click on **Finish**.
- 5** When the computer prompts you to specify the drive that the device driver is in, type A:\
- 6** Click on **OK**.
- 7** Follow the instructions on the screen.
- 8** Remove the Advanced EtherJet Feature Diskette from the diskette drive, and then reboot your computer to make the changes effective.

Installing the Driver If the Message Does Not Appear: If the “New Hardware Found” message does not appear and you cannot connect to the network, make sure that the new adapter is set up correctly as follows:

- 1** Click on **Start**, move the cursor to **Setting**, and then click on **Control Panel**.
- 2** Double-click on **System**.
- 3** Click on the **Device Manager** tab.
- 4** Make sure the new adapter is present in the list. If it is, skip the remaining steps.
If the new adapter is not in the list, go to the next step.
- 5** Double-click on **Other Devices** in the area.
- 6** Double-click on **PCI Ethernet Controller**.
- 7** Click on the **Driver** tab; then click on **Update Driver...**
If you are using Windows 95 OSR0, go to the next step.
If you are using Windows 95 OSR2, go to step 2 on page 1-12.
If you are using Windows 98, go to step 2 on page 1-10
- 8** Click on **Network Adapter**, and then click on **OK**.
- 9** Click on **Have Disk..**

10 Insert the Advanced EtherJet Feature Diskette into the diskette drive, and click on **OK**.

11 Follow the instructions on the screen.

The PROSet Program: The PROSet program allows you to test the LAN adapter in the port replicator. It can also display the computer resources that are assigned to the LAN adapter in the port replicator. To install the program, do as follows:

- 1** Insert the Advanced EtherJet Feature Diskette into the diskette drive.
- 2** From the **My Computer** or the Windows Explorer, double-click on the **3½ Floppy [A]** icon.
- 3** Locate the cursor on the **PROSet** icon in the root directory of the diskette, and click the right mouse button.
- 4** Click on **Install**.
- 5** Follow the instructions on the screen.
- 6** After the installation of the adapter's device driver has finished, run PROSet:
 - a** Click on **Start**, move the cursor to **Settings**, and then click on **Control Panel**.
 - b** Double-click on the **PROSet** icon.

The PROSet program examines your computer and displays the PROSet window. This window shows the I/O address, interrupt, and Ethernet address.

C To run the test, click on **Test**.

Changing the Card Parameters: To change the card parameters, do as follows:

- 1** Click on **Start**, move the cursor to **Settings**, and then click on **Control Panel**.
- 2** Double-click on **Network**.
- 3** Click on **Intel EtherExpress PRO PCI Adapter**.
- 4** Click on the **Properties** button.
- 5** Change any parameter you wish.

For information on the parameters, see “Advanced Configuration Parameters” on page 1-16.

Installing the Device Driver for Windows NT 4.0

- 1** Insert the Advanced EtherJet Feature Diskette into the diskette drive.
- 2** Click on **Start**, move the cursor to **Settings**, and then click on **Control Panel**.
- 3** Double-click on **Network**.
- 4** Click on the **Adapter** tab.
- 5** Click on **Add...**
Attention: *Do not select any adapter in the list that appears.*
- 6** Click on **Have Disk**.
- 7** Type **A:** and click on **OK**.
Follow the instructions on the screen. When the installation finishes, the new network adapter name appears in the list.
- 8** Select the adapter you installed by clicking on it.
- 9** Click on **OK**.
- 10** Click on the **Properties** button to run the PROSet program.
You can see the the adapter configuration or test the diagnostics.

11 Click on **OK** in the main PROSet window to return to Windows NT.

12 Click on **Close**.

If you have installed TCP/IP, its configuration window appears.

13 Reboot your computer to make the new setting effective.

The PROSet Program: The PROSet program allows you to test the LAN adapter in the port replicator. It can also resolve some issues that result from changing or updating a LAN adapter. To run the PROSet program, do as follows:

1 Click on **Start**, move the cursor to **Settings**, and then click on **Control Panel**.

2 Double-click on the **PROSet** icon.

If you want to change the parameters of the card, click on the **Change** button and change the parameters.

For more information on the parameters, see “Advanced Configuration Parameters” on page 1-16.

Advanced Configuration Parameters

DUPLEX MODE	<p>Enables you to select how the LAN adapter sends and receives packets over the network. An ordinary LAN adapter can perform only one operation at a time (half-duplexing), whereas the LAN adapter in the port replicator can send and receive packets at the same time (full-duplexing).</p> <p>Full duplexing requires a full duplex switch. The port replicator supports auto-negotiate, full duplex, and half duplex at 10 Mbps or 100 Mbps.</p> <p>Auto duplex: The LAN adapter negotiates with the hub how to send or receive packets, either full or half duplex. You need to use a hub that supports auto-negotiation (known as Nway).</p> <p>Full duplex: The LAN adapter sends and receive packets at the same time. This improves the performance of your LAN adapter. Set duplex mode to full duplex only if you have a duplex hub.</p> <p>Half duplex: The LAN adapter performs one operation at a time, either send or receive.</p>
ADVANCED TECHNOLOGY	<p>Customizes the LAN adapter to the respective operating system by downloading microcode to the controller. This improves performance and minimizes CPU utilization.</p>

SPEED	<p>Sets the speed that you use the LAN adapter on the Ethernet wire: 10 Mbps, 100 Mbps, or auto detect. In the auto detect mode, the LAN adapter detects the speed as 100 Mbps if it is possible. If it is not possible, it detects 10 Mbps.</p> <p>If you are using a crossover cable connected to another LAN adapter, set the speed to either 10 Mbps or 100 Mbps.</p>
COALESCE BUFFERS	<p>Specifies number of memory buffers available to the driver in case the driver runs out of available map registers. This area is also used when a packet consists of many fragments.</p>
RECEIVE BUFFERS	<p>Specifies the number of buffers used by the driver when copying data to the protocol memory.</p>
MAP REGISTERS	<p>Specifies how many map registers (system resources used in physical-to-virtual address conversion with bus mastering cards) should be allocated to the driver.</p>
TRANSMIT CONTROL BLOCKS	<p>Specifies how many transmit control buffers the driver allocates for card use. This corresponds to how many outstanding packets the driver can have in its <i>send</i> queue.</p>
ADAPTIVE TRANSMIT THRESHOLD	<p>Dynamically optimizes the point at which early transmit cycles are run. This results in higher performance but may generate an occasional underrun. To eliminate underrun, set this parameter to OFF.</p>

For more details, see the README file in the Advanced EtherJet Feature Diskette.

Notes for Using the Port Replicator with Advanced EtherJet Feature

The LAN adapter in this port replicator has a built-in on-board ROM.

The Advanced EtherJet Feature Flash Utility Diskette is a DOS-bootable diskette.

To change or update the Flash module, do the following:

1. Insert the Flash Utility Diskette into the diskette drive.
2. Shut down and reboot the system.
3. When you are prompted to type the action, type **E** to erase the current code.
4. Press **Enter** to reboot the system.
5. When you are prompted to type the action, type **D** for DHCP, **R** for RIPL, **E** for erase, or **C** for cancel.

For more details, see the README file in the Advanced EtherJet Feature Diskette.

The Advanced EtherJet Feature Diskette includes information on the LAN adapter. This information is applicable for the Port Replicator with Advanced EtherJet Feature except for the information on OS/2 ODI and AFT. The port replicator does not support OS/2 ODI or AFT.

If you are using OS/2, do not enter suspend or hibernation mode when you are loading the network driver.

Connecting the Network Cable

Connect a single network cable to the RJ45 connector of the embedded Ethernet adapter.

For 100BASE-TX, your network cable must be Category 5, twisted-pair wiring. If you plan on running the adapter at 100Mbps, it must be connected to a 100BASE-TX hub.

For 10BASE-T, use Category 3,4, or 5 twisted-pair wiring.

Using a PC Card

The port replicator supports the following types of PC Cards:

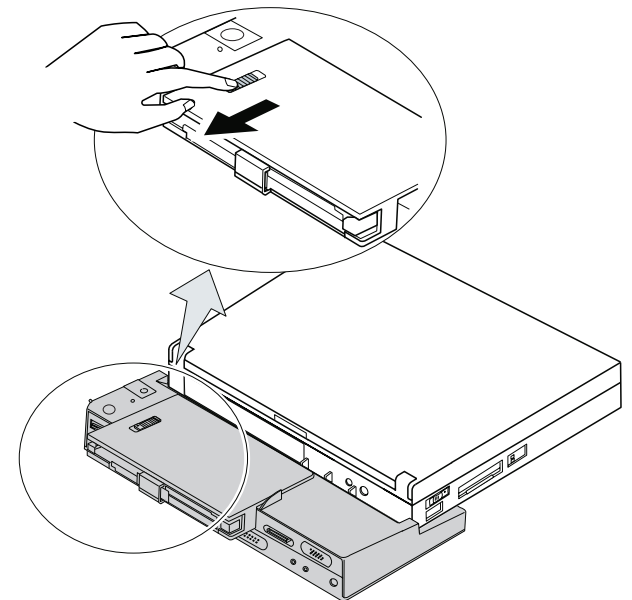
16-bit PC Card

CardBus card (which supports a 32-bit high-speed PC Card bus)

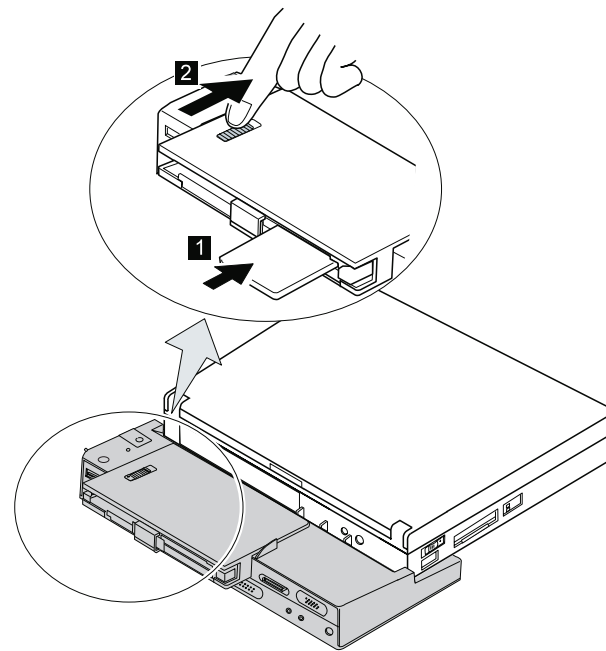
Note: The port replicator does not support the ZV card.

Installing a PC Card

1 Release the PC Card lock to the unlock position.

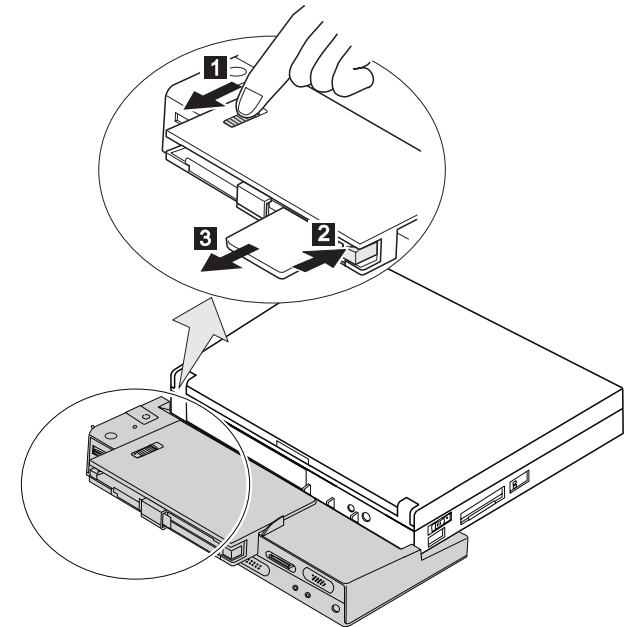


2 Insert a PC Card into either PC Card slot 1 ; then slide the PC Card lock to the lock position 2 .



Removing a PC Card

Unlock the PC Card lock 1, and push the eject button 2; then remove the PC Card 3.



Notes:

1. Each slot can accept any type of PC Card.
2. The PC Card lock does not work if you are using the following PC Cards:
 - A PC Card with a wide connector on the rear side.
 - A PC Card longer than the slot.

Part 2. Troubleshooting

Status	Action
A connected USB device does not work.	<p>Make sure that:</p> <ol style="list-style-type: none">1. The USB device is connected correctly.2. The USB device is set up correctly, including the computer resource assignment and the device driver installation. <p>Open the System Properties window to see if there are any resource conflicts.</p> <p>Note: To open this window, do as follows:</p> <ol style="list-style-type: none">a. Click on Start, move the cursor to Settings and then click on Control Panel.b. Double-click on System.c. Click on the Device Manager tab. <p>Run the diagnostic test for the USB port by referring to the section on the internal drive test in your ThinkPad computer's user's guide.</p>
The computer hangs when you power on or when you resume normal operation.	<p>Make sure that:</p> <ul style="list-style-type: none">The AC Adapter is connected to the port replicator.The docking indicator of the port replicator is on.The computer is securely docked to the port replicator. <p>Undock your computer from the port replicator and power on the computer. If you still have a problem, have the computer serviced.</p>

Status	Action
<p>The PC Card slots are unusable.</p>	<p>Make sure that:</p> <ul style="list-style-type: none"> The AC Adapter is connected to the port replicator. The docking indicator of the port replicator is on. The computer is securely docked to the port replicator. The PC Card slots of the port replicator are recognized in your computer by doing the following: <ol style="list-style-type: none"> 1. Power off the computer. 2. Press and hold F1, then power on the computer. Hold the F1 until the Easy-Setup menu appears. 3. Click on the Test icon. 4. Click on the PCMCIA-2 icon to run the diagnostic test. If the test detects no error, reinstall the device driver. <p>If you still have a problem, have the port replicator serviced.</p>
<p>Booting the system takes a long time.</p>	<p>If the Ethernet driver is loaded, even when you are not connected to the network, booting the system takes a long time. If you are using the port replicator and do not connect to the network, disable the Ethernet driver as follows:</p> <ol style="list-style-type: none"> 1. Click on Start. 2. Move the cursor to Settings, and click on Control Panel. 3. Double-click on System 4. Click on the Device Manager tab. 5. Double-click on the name of the adapter in the list. 6. Put a check mark in the Disable in this hardware profile check box by clicking on it. 7. Click on OK.

Status	Action
An Ethernet function does not work	<p>Make sure of the following:</p> <ul style="list-style-type: none"> The Ethernet cable is installed properly. The network cable must be securely attached at both RJ45 connections. If you're directly connecting two systems (no hub), use a crossover cable. Make sure the correct driver is installed. For Windows 98 or Windows 95 Make sure the driver is loaded and the protocols are bound. Check the list in the "Device Properties" window for trouble indicators (an X or ! symbol). For Windows NT Make sure the driver is loaded and the protocols are bound. Check the "Network Bindings" dialog box. Check the Event viewer for error messages. If you are attaching to a NetWare network, check your frame type and verify that NetWare client software has been installed. For DOS or Windows 3.1 for Novell NetWare If you're replacing an existing adapter, make sure the LINK statement in your configuration NET.CFG is correct for the net adapter. Verify that the frame type in your NET.CFG file matches your network. If setting up a server, check your LOAD and BIND statements. Make sure the switch port and the adapter have the same duplex setting. If you configured the adapter for full duplex, make sure the switch port is also configured for full duplex. Setting the wrong duplex mode can degrade performance, cause data loss, or result in lost connections. Test the Ethernet function under the condition that the driver of the adapter sending or receiving a packet. Test the adapter by running diagnostics. For DOS or Windows 3.1, run Setup on the Advanced EtherJet Feature Diskette. For Windows NT, Windows 95 and Windows 98, run PROSet by double-clicking the PROSet Icon in the Control Panel. Click on Help from the main PROSet window to get complete diagnostics information and instructions.

Refer to the troubleshooting section of your ThinkPad computer's *User's Reference* for actions to take for other problems.

Appendix A. Help and Service Information

If you have questions about your new Options by IBM product, or require technical assistance, visit the IBM Personal Computing Support Web site at <http://www.pc.ibm.com/support>. For information about IBM, IBM PC products, or Options by IBM visit the IBM Personal Computing Web site at <http://www.pc.ibm.com>. Additionally, you can receive information from the IBM Automated Fax system at 1-800-426-3395 (in Canada, 1-800-465-3299), or from the Personal Systems Group Bulletin Board System (PSG BBS) at 1-919-517-0001. You can also get help and information through the IBM PC HelpCenter, 24 hours a day, seven days a week. Response time may vary depending on the number and nature of the calls received.

Marketing, installation, and configuration support through the HelpCenter will be withdrawn or made available for a fee, at IBM's discretion, 90 days after the option has been withdrawn from marketing. Additional support offerings, including step-by-step installation assistance, are available for a nominal fee.

During the warranty period, assistance for replacement or exchange of defective components is available. In addition, if your IBM option is installed in an IBM computer, you might be entitled to service at your

location. Your technical support representative can help you determine the best alternative.

Step 1. Problem Solving

You may be able to solve the problem yourself. Before calling the HelpCenter, please prepare for the call by following these steps:

1. If you are having installation or configuration problems, refer to the detailed sections on installation found in this manual, and review any README.TXT files found on the installation diskettes.
2. Visit the Personal Computing Support Web site specific to the model of option you have purchased. Updated installation instructions, hints and tips, or updated system-specific notes are often published in this section. You might find that later device drivers are available that will improve the performance and compatibility for your new option.

If you are installing this option in an IBM computer, also visit the applicable support Web page for that computer model. These pages might also contain useful hints and tips related to installation of this option and might refer to BIOS or device-driver updates required for your computer model. If you are installing the option in a non-IBM computer, refer to the manufacturer's Web site.

3. Uninstall and then reinstall the option. During the uninstallation process, be sure to remove any files that were installed during the previous installation. Many IBM options include uninstallation programs.
4. Check all cabling to be sure that it is correct as shown in this manual. When you connect a cable to a cable connector, pay close attention to the colored stripes along the edge of the cable, and ensure that they are matched with PIN 1 on both the computer connector and the option connector.
5. If your option contains jumpers or switches, be sure their positions and orientation match the instructions in this manual.

Step 2. Preparing for the Call

To assist the technical support representative, have available as much of the following information as possible:

1. Option name
2. Option number
3. Proof of purchase
4. Computer manufacturer, model, serial number (if IBM), and manual
5. Exact wording of the error message (if any)
6. Description of the problem
7. Hardware and software configuration information for your system

If possible, be at your computer. Your technical support representative might want to walk you through the problem during the call.

Step 3. Placing the Call to IBM

If you call 90 days or more after the date of withdrawal or after your warranty has expired, you might be charged a fee.

For the support telephone number and support hours by country, refer to the following table or to the enclosed technical support insert. If the number is not provided, contact your IBM reseller or IBM marketing representative.

<i>Support 24 hours a day, 7 days a week</i>	
Canada	1-800-565-3344
U.S.A. or Puerto Rico	1-800-772-2227

Additional Technical Support Resources

Online technical support is available during the life of your product. Online assistance can be obtained through the Personal Computing Support Web site, the PSG Electronic Bulletin Board System, and the IBM Automated Fax System.

<i>Online Technical Support</i>	
IBM Personal Computing Support Web Site	http://www.pc.ibm.com/support
IBM PSG BBS	1-919-517-0001
IBM Automated Fax System	1-800-426-3395 1-800-465-3299 (in Canada)

Appendix B. Product Warranty

The following warranty information applies to products purchased in the United States, Canada, and Puerto Rico. For warranty terms and conditions for products purchased in other countries, see the enclosed warranty insert, or contact your IBM reseller or IBM marketing representative.

International Business Machines Corporation

Armonk, New York 10504

Statement of Limited Warranty

The warranties provided by IBM in this Statement of Limited Warranty apply only to Machines you originally purchase for your use, and not for resale, from IBM or your reseller. The term "Machine" means an IBM machine, its features, conversions, upgrades, elements, or accessories, or any combination of them. Unless IBM specifies otherwise, the following warranties apply only in the country where you acquire the Machine. If you have any questions, contact IBM or your reseller.

Machine: Port Replicator with Advanced EtherJet Feature

Warranty Period*: One year

**Contact your place of purchase for warranty service information.*

Production Status

Each Machine is manufactured from new parts, or new and used parts. In some cases, the Machine may not be new and may have been previously installed. Regardless of the Machine's production status, IBM's warranty terms apply.

The IBM Warranty for Machines

IBM warrants that each Machine 1) is free from defects in materials and workmanship and 2) conforms to IBM's Official Published Specifications. The warranty period for a Machine is a specified, fixed period commencing on its Date of Installation. The date on your receipt is the Date of Installation, unless IBM or your reseller informs you otherwise.

During the warranty period IBM or your reseller, if authorized by IBM, will provide warranty service under the type of service designated for the Machine and will manage and install engineering changes that apply to the Machine.

For IBM or your reseller to provide warranty service for a feature, conversion, or upgrade, IBM or your reseller may require that the Machine on which it is installed be 1) for certain Machines, the designated, serial-numbered Machine and 2) at an engineering-change level compatible with the feature, conversion, or upgrade. Many of these transactions involve the removal of parts and their return to IBM. You represent that all removed parts are genuine and unaltered. A part that replaces a removed part will assume the warranty service status of the replaced part.

If a Machine does not function as warranted during the warranty period, IBM or your reseller will repair it or replace it with one that is at least functionally equivalent, without charge. The replacement may not be new, but will be in good working order. If IBM or your reseller is unable to repair or replace the Machine, you may return it to your place of purchase and your money will be refunded.

If you transfer a Machine to another user, warranty service is available to that user for the remainder of the warranty period. You should give your proof of purchase and this Statement to that user. However, for Machines which have a lifetime warranty, this warranty is not transferable.

Warranty Service

To obtain warranty service for the Machine, you should contact your reseller or call IBM. In the United States, call IBM at **1-800-772-2227**. In Canada, call IBM at **1-800-565-3344**. You may be required to present proof of purchase.

IBM or your reseller will provide certain types of repair and exchange service, either at your location or at IBM's or your reseller's service center, to restore a Machine to good working order.

When a type of service involves the exchange of a Machine or part, the item IBM or your reseller replaces becomes its property, and the replacement becomes yours. You represent that all removed items are genuine and unaltered. The replacement may not be new, but will be in good working order and at least functionally equivalent to the item replaced. The replacement assumes the warranty service status of the replaced item. Before IBM or your reseller exchanges a Machine or part, you agree to remove all features, parts, options, alterations, and attachments not under warranty service. You also agree to ensure that the Machine is free of any legal obligations or restrictions that prevent its exchange.

You agree to:

1. obtain authorization from the owner to have IBM or your reseller service a Machine that you do not own; and
2. where applicable, before service is provided —
 - a. follow the problem determination, problem analysis, and service request procedures that IBM or your reseller provide,
 - b. secure all programs, data, and funds contained in a Machine, and
 - c. inform IBM or your reseller of changes in a Machine's location.

IBM is responsible for loss of, or damage to, your Machine while it is 1) in IBM's possession or 2) in transit in those cases where IBM is responsible for the transportation charges.

Extent of Warranty

IBM does not warrant uninterrupted or error-free operation of a Machine.

The warranties may be voided by misuse, accident, modification, unsuitable physical or operating environment, improper maintenance by you, removal or alteration of Machine or parts identification labels, or failure caused by a product for which IBM is not responsible.

THESE WARRANTIES REPLACE ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THESE WARRANTIES GIVE YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM JURISDICTION TO JURISDICTION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF EXPRESS OR IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU. IN THAT EVENT SUCH WARRANTIES ARE LIMITED IN DURATION TO THE WARRANTY PERIOD. NO WARRANTIES APPLY AFTER THAT PERIOD.

Limitation of Liability

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1. damages for bodily injury (including death) and damage to real property and tangible personal property; and

2. the amount of any other actual direct damages or loss, up to the greater of U.S. \$100,000 or the charges (if recurring, 12 months' charges apply) for the Machine that is the subject of the claim.

UNDER NO CIRCUMSTANCES IS IBM LIABLE FOR ANY OF THE FOLLOWING:

1. THIRD-PARTY CLAIMS AGAINST YOU FOR LOSSES OR DAMAGES (OTHER THAN THOSE UNDER THE FIRST ITEM LISTED ABOVE);
2. LOSS OF, OR DAMAGE TO, YOUR RECORDS OR DATA; OR
3. SPECIAL, INCIDENTAL, OR INDIRECT DAMAGES OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES (INCLUDING LOST PROFITS OR SAVINGS), EVEN IF IBM OR YOUR RESELLER IS INFORMED OF THEIR POSSIBILITY. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU.

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Electronic Emission Notices

Federal Communications Commission (FCC) Statement

IBM ThinkPad Port Replicator with Advanced EtherJet Feature (05K4873)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television 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:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an IBM authorized dealer or service representative for help.

IBM is not responsible for any radio or television interference caused by unauthorized changes or modifications to this equipment. Unauthorized

changes or modifications could void the user's authority to operate the equipment.

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

Responsible Party:

International Business Machines Corporation
New Orchard Road
Armonk, NY 10504
Telephone 1-919-543-2193

Industry Canada Class B Emission Compliance Statement

This Class B digital apparatus complies with Canadian ICES-003.

Avis de conformité à la réglementation d'Industrie Canada

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Deutsche EMV-Direktive (electromagnetische Verträglichkeit)

Dieses Gerät ist berechtigt in Übereinstimmung mit dem deutschen EMVG vom 9.Nov.92 das EG-Konformitätszeichen zu führen.

Der Aussteller der Konformitätserklärung ist die IBM UK, Greenock.

Dieses Gerät erfüllt die Bedingungen der EN 55022 Klasse B.

European Union - Emission Directive

This product is in conformity with the protection requirements of EU Council Directive 89/366/ECC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

IBM can not accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-IBM option cards.

This product has been tested and found to comply with the limits for Class B Information Technology Equipment according to CISPR 22 / European Standard EN 55022. The limits for Class B equipment were derived for typical residential environments to provide reasonable protection against interference with licensed communication devices.

Union Européenne - Directive Conformité électromagnétique

Ce produit est conforme aux exigences de protection de la Directive 89/336/EEC du Conseil de l'UE sur le rapprochement des lois des États membres en matière de compatibilité électromagnétique.

IBM ne peut accepter aucune responsabilité pour le manquement aux exigences de protection résultant d'une modification non recommandée du produit, y compris l'installation de cartes autres que les cartes IBM.

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Este producto satisface los requisitos de protección del Consejo de la UE, Directiva 89/336/CEE en lo que a la legislatura de los Estados Miembros sobre compatibilidad electromagnética se refiere.

IBM no puede aceptar responsabilidad alguna si este producto deja de satisfacer dichos requisitos de protección como resultado de una modificación no recomendada del producto, incluyendo el ajuste de tarjetas de opción que no sean IBM.

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