



Serial HIPPI PCI Adapter Installation Guide

Note

Before using this information and the product it supports, be sure to read the general information under "Product Warranties and Notices" included with your system unit.

First Edition (June 1999)

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Safety Information

DANGER

An electrical outlet that is not correctly wired could place hazardous voltage on metal parts of the system or the devices that attach to the system. It is the responsibility of the customer to ensure that the outlet is correctly wired and grounded to prevent an electrical shock.

Before installing or removing signal cables, ensure that the power cables for the system unit and all attached devices are unplugged.

When adding or removing any additional devices to or from the system, ensure that the power cables for those devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.

Use one hand, when possible, to connect or disconnect signal cables to prevent a possible shock from touching two surfaces with different electrical potentials.

During an electrical storm, do not connect cables for display stations, printers, telephones, or station protectors for communication lines.

Handling Static Sensitive Devices

Attention: Static electricity can damage this device and your system unit. To avoid damage, keep this device in its static protective bag until you are ready to install it. To reduce the possibility of electrostatic discharge, follow the precautions listed below:

- Limit your movement. Movement can cause static electricity to build up around you.
- Handle the device carefully, holding it by its edges or its frame.
- Do not touch solder joints, pins, or exposed printed circuitry.
- Do not leave the device where others can handle and possibly damage the device.
- While the device is still in its anti-static package, touch it to an unpainted metal part of the system unit for at least two seconds. (This drains static electricity from the package and from your body.)
- Remove the device from its package and install it directly into your system unit without setting it down. If it is necessary to set the device down, place it on its static-protective package. (If your device is an adapter, place it component-side up.) Do not place the device on your system unit cover or on a metal table.
- Take additional care when handling devices during cold weather, as heating reduces indoor humidity and increases static electricity.

About This Book

Use this book with your system unit documentation to install a Serial HIPPI PCI Adapter in a system unit with a PCI-compatible bus.

ISO 9000

ISO 9000 registered quality systems were used in the development and manufacturing of this product.

Related Publications

- Refer to the documentation that came with your system unit.
- Refer to the documentation that came with your operating system.
- Refer to PCI Adapter Placement Reference (SA38-0538).
- AIX Version 4.3 Serial HIPPI User's Guide (SC23-4312-00).

Trademarks

AIX is a registered trademark of International Business Machines Corporation.

Chapter 1. Overview

Use a Serial High Performance Parallel Interface (HIPPI) PCI Adapter to make high speed connections between stand alone system units on a Serial HIPPI Network.

Adapter Features:

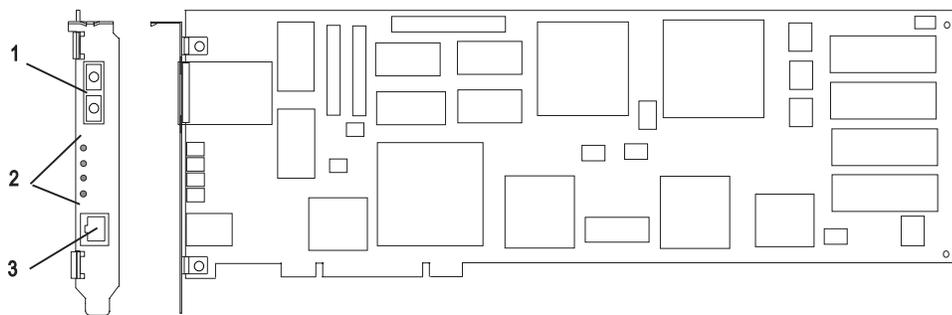
- 2 MB on-board Transmit and Receive RAM
- PCI Initiator and Slave Device
- Intel 960 Processor
- Conforms to PCI Local Bus specification 2.1 (32-bit)
- Supports Long Wave or Short Wave Optics
- Refer to Appendix A for more Information.

There are two types of Serial HIPPI PCI Adapters. One type supports long wave optics (9-X) and the other type supports short wave optics (9-W).

The long wave adapter must use the long wave cable, (9-125 Micron Single Mode optical cable with Dual SC connector).

The short wave adapter must use the short wave cable, (50-125 Micron Multi-mode optical cable with Dual SC connector).

If you don't have these cables, contact your Marketing Representative.



1. Multimode Fiber SC Connector.
2. LED's, Status.
3. RJ-45 Connector.

Software Requirements

The Serial HIPPI PCI Adapter is supported on AIX Version 4.2.1, 4.3.2 and later.

Chapter 2. Preparing for Installation

This section outlines the installation procedures for the Serial HIPPI PCI Adapter device driver and adapter.

The process includes:

- An inventory of installation materials.
- The installation of your device driver software.
- The installation of your adapter.

Inventory

To install the Serial HIPPI PCI Adapter, you need:

- The adapter.
- This document, *Serial HIPPI PCI Adapter Installation Guide*.
- The system unit User's Guide.
- The operating system documentation.
- A flat-blade screw driver.
- Media containing device driver software.
- RJ45 Wrap Plug Part Number 43G0928.

Chapter 3. Installing Device Driver Software

This section explains how to install the device driver software.

If you are installing into a SP System, proceed to Chapter 4.

Device Driver Software Installation

1. Be sure you have read Chapter 2, "Preparing for Installation" on page 2-1.
 - You should install your device driver software first.
 - Install your adapter hardware second.
2. Turn the system unit power on.
3. Log in as **root**.
4. Insert the media containing the device driver software (example: CD-ROM) into the appropriate media device.
5. Type the following
smitty devinst
6. Press Enter.
7. Install Additional Device Software screen highlights the "**INPUT device/directory for software**" option.
8. Select or type *your input device*:
 - Press **F4** to display the input device list. Select the *name of the device* (example: CD-ROM) that you are using and Press Enter.
-- or --
 - In the Entry Field, type the *name of the input device* you are using and Press Enter.
9. The Install Additional Device Software window highlights the **SOFTWARE to install** option.
10. Press **F4** to display the SOFTWARE to install window.

11. Type the following to display the Find window:

/

12. Type the following

devices.pci.1410ca00

Press Enter. (The system finds and highlights this device driver software.)

devices.pci.1410ca00 ALL

13. Press **PF7** to select the highlighted device driver software.

14. Press Enter.

15. The Install Additional Device Software screen displays.

16. Press Enter

17. The ARE YOU SURE window displays. Press Enter to accept the data.

18. The **COMMAND STATUS** screen appears.

- The term RUNNING is highlighted to indicate that the install and configure command is in progress.
- When RUNNING changes to OK, scroll down to the bottom of the page and locate the Installation Summary.
- After a successful installation, SUCCESS appears in the Result column of the summary at the bottom of the page.

19. Remove the installation media from the drive.

20. Press **F10** to exit SMIT.

21. Go to the adapter installation procedure, Chapter 5, "Installing Hardware" on page 5-1.

Chapter 4. Installing the Device Driver on the RS/6000 SP System

In an SP System, you need to do on each node what you normally do on a stand alone system. You must make the installation files available and then install them on all the relevant sp system nodes.

Perform the following tasks on the Control Workstation. You should not need to **telnet** or **rlogin** to the individual SP System nodes. You need to be familiar with the **dsh** command. If not, refer to the *Parallel System Support Program for AIX: Administration Guide* or *Parallel System Support Program for AIX: Command and Technical Reference*.

If you are unable to utilize the "dsh" command because of the setup at your site, then you have to telnet to each node and perform the steps below, omitting the "dsh" prefix.

Check System Pre-Requisites

___ 1. Log into the Control Workstation as **root**.

___ 2. Go to a temporary directory by typing:

```
cd /tmp
```

then press Enter.

___ 3. Make a "working collective" file containing a list of the relevant sp system nodes on which you want to perform the update in preparation for the dsh command. Type the following and press Enter after each line:

```
cat >group1
nodename1
nodename2
nodename3.....
CTRL-D
export WCOLL=/tmp/group1
```

___ 4. Test the working collective by typing:

```
dsh date
```

then Press Enter. The results should look similar to:

```
nodename1:  Wed Apr 10 10:37:46 EDT 1996
nodename2:  Wed Apr 10 10:37:46 EDT 1996
nodename3:  Wed Apr 10 10:37:47 EDT 1996
nodename4:  Wed Apr 10 10:37:48 EDT 1996
```

If not, examine your nodelist file `./group1` and also ensure that the Kerberos ticket is current to permit "dsh" to be performed. If not, you need to refresh it. The System Administrator should also be able to assist you with Kerberos initialization. If not, consult your support center.

If you only need to do a few nodes, use the `dsh -w host1,host2,host3...` command format to explicitly exercise groups of nodes rather than using the working collective.

- ___ 5. Determine if the AIX operating system on each relevant sp system node is at the required level by typing:

```
dsh oslevel
```

-OR -

```
dsh -w <host1,host2> oslevel
```

at the prompt, then Press Enter. `<host1,host2>` is a list of the hostnames for the sp system nodes which the adapter is installed on.

- ___ 6. The required AIX Level is 4.3.x and higher.

If the sp system nodes are NOT at a supported AIX level, upgrade the AIX level on the nodes. Contact the System Administrator for assistance

- ___ 7. Determine if the PSSP level on each sp system node is at the required level by typing:

```
/usr/lpp/ssp/bin/sp1stdata -G -b
```

then Press Enter. The results are in a form similar to the following:

```
node#      hostname  hdw_enet_addr  srvr      response  install_disk
last_install_image  last_install_time  next_install_image  lppsource_name
                                                    pssp_ver
-----
1 eion01.ppd.pok.i  08005A75A6D4    0          disk      hdisk0
                        default Thu_Dec__4_09:07:23      default <lppsource>
                                                    <pssp level>
```

`<lppsource>` is the lppsource name for the node. `<pssp level>` is the pssp level installed on the node.

- ___ 8. The required PSSP level is 2.4 and higher.

If the sp system nodes are not at a supported PSSP level, upgrade the PSSP level on the sp system nodes. Contact the System Administrator for assistance.

- ___ 9. Record label lppsource that appears below

```
<lppsource_name>
```

for each sp system node on which the adapters are being installed; you need this later.

-
- ___ 10. Check if the device driver is installed in the lppsource directory by typing:
- ```
cd /spdata/sys1/install/<lppsource_name>/lppsource
```
- <lppsource\_name> was recorded in the previous step. Once in this directory, type:
- ```
ls devices.pci.1410ca00*
```
- to see if the fileset is in lppsource directory.
- ___ 11. If the device driver is not in the lppsource directory, proceed to section “Installing Device Driver on the Control Workstation” on page 4-4 to install the software.
- ___ 12. Update the SPOT (Shared Product Object Tree) by doing the following:
- ___ a. Type

```
smitty nim_res_op
```

The **Resource Name** panel displays with

```
boot          resources    boot
```

highlighted.
 - ___ b. Move the cursor down until the *SPOT resource* is highlighted. The *SPOT resource* should look like:

```
spot_AIX432    resources    spot
```

The format of the spot name is spot_<lppsource_name>. <lppsource_name> was recorded in a previous step.
 - ___ c. When the *SPOT resource* is highlighted, Press Enter to select this option. The **Network Install Operation to Perform** panel displays with the **reset** option highlighted for selection.
 - ___ d. Move the cursor until the **cust** option is highlighted and Press Enter to select this option. The **Customize a SPOT panel** displays with the **Source of Install Images** highlighted for selection.
 - ___ e. Press F4 to display the list of install images and select the appropriate lppsource.
 - ___ f. Move the cursor until the appropriate lppsource is displayed Press Enter. For example:

```
lppsource_AIX432    resources    lpp_source
```

- ___ g. Move the cursor to **fileset names** and type:
 `devices.pci.1410ca00`
- ___ h. Press Enter to start the SPOT update. A warning message comes up.
- ___ i. The ARE YOU SURE window displays. Press Enter to accept the data. s operation can take This operation can take up to 15 minutes.
- ___ 13. Check if the software is already installed by typing:
 `dsh "lslpp -l devices.pci.1410ca00* 2>&1 | more"`
- ___ 14. If the device driver is already installed on the sp system Node, contact your service provider to have the adapter installed.
- ___ 15. If the device driver is not installed on the sp system Node, proceed to section "Install Device Driver on the SP System Nodes" on page 4-6.

Installing Device Driver on the Control Workstation

Note: If your system is "partitioned" (i.e. there are more than one operating system among the nodes), you may **only** install this adapter in nodes that have **4.2.1, 4.3.2 and higher.**

- ___ 1. If you are not logged into the Control Workstation System as **root user**, log in now. You may also need to export the working collective. Refer to section "Check System Pre-Requisites" on page 4-1.
- ___ 2. Select AIX 4.3.2 Base AIX Operating System.
- ___ 3. Insert the installation media into the Control Workstation drive.
- ___ 4. Transfer the files to the Control Workstation system's lppsource, as follows:
 - ___ a. Type
 `smitty bffcreate`
 - ___ b. Press Enter.
 - ___ c. Select the input device/directory. Press F4 then move the cursor to the appropriate input device.
 - ___ d. Press Enter.

- ___ e. Move the cursor to the "SOFTWARE package to copy" option and press F4 to select the software to be installed. Use the F7 key to select the following device driver
 - devices.pci.1410ca00
- ___ f. Press Enter.
- ___ g. Move the cursor down to **DIRECTORY for storing software package** and enter the appropriate lppsource destination directory:
 - /spdata/sys1/install/<lppsource_name>/lppsource
 using the <lppsource_name> you recorded earlier.
- ___ h. Press Enter to begin copying the files.
 - Note:** This step may take several minutes as the directory table of contents is updated.
- ___ 5. Update the SPOT (Shared Product Object Tree) by:
 - ___ a. Type
 - smitty nim_res_op
 The **Resource Name** panel displays with
 - boot resources boot
 highlighted.
 - ___ b. Move the cursor down until the *SPOT resource* is highlighted. The *SPOT resource* should look like:
 - spot_AIX432 resources spot
 The format of the spot name is: spot_<lppsource_name>. <lppsource_name> was recorded in a previous step.
 - ___ c. When the *SPOT resource* is highlighted.
 - ___ d. Press Enter to select this option. The **Network Install Operation to Perform** panel displays with the **reset** option highlighted for selection.
 - ___ e. Move the cursor until the **cust** option is highlighted and Press Enter to select this option. The **Customize a SPOT panel** displays with the **Source of Install Images** highlighted for selection.
 - ___ f. Press F4 to display the list of Install Images and select the appropriate lppsource.
 - ___ g. Move the cursor until the appropriate **lppsource** is displayed and Press Enter. For example:

```
lppsource_AIX432    resources    lpp_source
```

- ___ h. Move the cursor until the **fileset names** and type:
 `devices.pci.1410ca00`
- ___ i. Press Enter to start the SPOT update.
- ___ j. The ARE YOU SURE window display. Press Enter to accept the data. This operation can take up to 15 minutes.

Install Device Driver on the SP System Nodes

- ___ 1. Make sure that the lppsource directory is exported to the Nodes by typing:
 `showmount -e`
 The result should be something of the form:
 `/spdata/sys1/install/AIX432/lppsource (everyone)`
- ___ 2. If the directory is not exported, you may temporarily export the directory by typing:
 `exportfs -i /spdata/sys1/install/<lppsource_name>/lppsource`
- ___ 3. NFS Mount the lppsource directory by typing:
 `dsh mount <controlwks>:/spdata/sys1/install/<lppsource_name>/lppsource /mnt`
 <controlwks> is the name of the Control Workstation known for the Nodes.
 <lppsource_name> is the name you recorded earlier in section "Check System Pre-Requisites" on page 4-1.
- ___ 4. Perform a preview of the files to be installed on the nodes by typing:
 `dsh "installp -p -acqXd /mnt device driver 2>&1 | more"`
 device driver is the filesets that must be installed for the adapter. The list includes:
 - `devices.pci.1410ca00`
- ___ 5. Then perform the device driver installation by typing:
 `dsh "installp -acqXd /mnt device driver 2>&1 | more"`
 device driver is defined in the previous step.
- ___ 6. If the device driver is already installed on the node, contact your service provider to have the adapter installed.

Chapter 5. Installing Hardware

This section provides the guidance necessary to install an adapter. Before you begin, be sure you have read “Handling Static Sensitive Devices” on page vii.

Attention: Do not remove the Serial HIPPI PCI Adapter from its anti-static package at this time.

Installing the Adapter

1. Be sure you have read Chapter 2, “Preparing for Installation” on page 2-1.
2. Install your device driver software first, go back to Chapter 3, “Installing Device Driver Software” on page 3-1. Return here to install your hardware.
3. Refer to the User's Guide that shipped with your system unit to Shutdown your system unit, and install Serial HIPPI PCI Adapter.
4. Refer to PCI Adapter Placement Reference for information on slot locations
5. For performance reasons place the adapter into a 64 bit slot. If the 64 bit slot is not available, place adapter in a 32 bit slot.
6. Install RJ45 wrap plug, part number 43G0928 in RJ45 port on adapter.
7. After the installation is complete, connect the cable to the adapter.
8. Turn on your system unit. Go to “Verify the Installation” on page 5-2.

Verify the Installation

Initial installation is verified using the following procedures:

- Verify Hardware Installation using the **lsdev** command
- Verify Software Installation using the **lspp** command

There are two hardware verification procedures and two software verification procedures:

- If your system is a standalone system, go to “Verify Hardware Installation on a Standalone System.”
- If your system is a SP system, go to “Verify Hardware Installation on a SP System” on page 5-3.

Verify Hardware Installation on a Standalone System

To verify your system unit recognizes the Serial HIPPI PCI Adapter

1. If necessary, login as **root**
2. Type:

```
lsdev -C | grep hipp
```

3. Press Enter.

Possible Results:

- If the Serial HIPPI PCI Adapter did install, the following is an example of the data that appears on your screen:

```
hippi0 Available 20-60
```

- If the message on your screen indicates your adapter is `Defined` instead of `Available`, shut down your machine. Check the Serial HIPPI PCI Adapter to insure it is installed correctly. Go to Chapter 5, “Installing Hardware” on page 5-1, and return to “Verify the Installation” and repeat step 1.

Note: If the message on your screen indicates your adapter is `Defined` a second time, it may be necessary to contact your service representative.

- If no data appears on your screen, two possible problems exist:
 - Device drivers did not install. Go to “Verify AIX Software Installation on a Standalone System” on page 5-4.
 - Adapter did not install correctly. Go to Chapter 5, “Installing Hardware” on page 5-1, and return to “Verify the Installation” and repeat step 1.

Verify Hardware Installation on a SP System

To verify your system unit recognizes the Serial HIPPI PCI Adapter see page 4-1 steps 1-3.

1. If necessary, login as **root**
2. Type:

```
dsh lsdev -C | grep hipp
```

3. Press Enter.

Possible Results:

- If the Serial HIPPI PCI Adapter did install, the following is an example of the data that appears on your screen:

```
hippi0 Available 20-60
```

- If the message on your screen indicates your adapter is Defined instead of Available, shut down your machine. Check the Serial HIPPI PCI Adapter to insure it is installed correctly. Go to Chapter 5, "Installing Hardware" on page 5-1, and return to "Verify Hardware Installation on a SP System" and repeat these steps again.

Note: If the message on your screen indicates your adapter is Defined a second time, it may be necessary to contact your service representative.

- If no data appears on your screen, two possible problems exist:
 - Device drivers did not install. Go to "Verify AIX Software Installation on a SP System" on page 5-4.
 - Adapter did not install correctly. Go to Chapter 5, "Installing Hardware" on page 5-1, and return to "Verify Hardware Installation on a SP System" and repeat these steps again.

Verify AIX Software Installation on a Standalone System

Verify the devices.PCI.1410ca00 device driver for the Serial HIPPI PCI Adapter is installed.

1. If necessary, login as **root**.
2. Type:

```
lslpp -h | grep -p 1410ca00
```

3. Press Enter.

Possible Results:

If the device driver is installed, the following is an example of the data that appears.

```
devices.pci.1410ca00.rte 2.0.0.0 COMMIT  
devices.pci.1410ca00.unicode 2.0.0.0 COMMIT
```

- If this appears but you continue to have problems, go to Chapter 5, “Installing Hardware” on page 5-1.
- If no data appears on your screen, the Serial HIPPI PCI Adapter device driver did not install, return to Chapter 3, “Installing Device Driver Software” on page 3-1.

Verify AIX Software Installation on a SP System

Verify the devices.PCI.1410ca00 device driver for the Serial HIPPI PCI Adapter is installed. Page 4-1 Steps 1 through 3.

1. If necessary, login as **root**.
2. Type:

```
dsh "lslpp -h | grep -p 1410ca00"
```

3. Press Enter.

Possible Results:

If the other device driver is installed, the following is an example of the data that appears.

```
devices.pci.1410ca00.rte 2.0.0.0 COMMIT  
devices.pci.1410ca00.unicode 2.0.0.0 COMMIT
```

- If this appears but you continue to have problems, go to Chapter 5, “Installing Hardware” on page 5-1.

- If no data appears on your screen, the Serial HIPPI PCI Adapter device driver did not install, return to Chapter 3, “Installing Device Driver Software” on page 3-1.

Appendix A. Technical Specifications

Technical Data

- Conforms to PCI Local Bus specification 2.1(32-bit)
- INTEL 960 HD Processor
- 2 MB of SRAM
- 2 MB Transmit and Receive SRAM
- PCI Initiator and Slave DMA
- Long Wave or Short Wave Optics

Hardware Installation

- Automatic configuration of interrupt request level setting and memory address

Supported System Slot Configuration.

- 64 Bit PCI Slots.
- Primary Bus PCI Slots.

Performance

- 100 MB/s full duplex.

Power Requirements.

- 1.43 A @ +5V
- 2.19 A @ 3.3V
- .04A @ -12V
- .03A @ +12V

Environmental Requirements

- Operating temperature: 5DEGC to 55DEGC
- Operating humidity: 0 to 90% (non-condensing)
- Barometric operating pressure: 86 to 106k Pascals
- Maximum tolerance in power supply variation: +5% to -5%

Appendix B. Communications Statements

The following statement applies to this product. The statement for other products intended for use with this product appears in their accompanying documentation.

Federal Communications Commission (FCC) Statement

Note: The Serial HIPPI PCI Adapter 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 authorized dealer or service representative for help.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Proper cables and connectors are available from authorized dealers. Neither the provider nor the manufacturer are responsible for any radio or television interference caused by using other than recommended cables and connectors or 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, New York 10504
Telephone: (919) 543-2193



Tested to Comply
With FCC Standards

FOR HOME OR OFFICE USE

European Union (EU) Statement

This product is in conformity with the protection requirements of EU Council Directive 89/336/EEC on the approximation of the laws of the Member States relating to electromagnetic compatibility. The manufacturer cannot accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of option cards supplied by third parties. Consult with your dealer or sales representative for details on your specific hardware.

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.

International Electrotechnical Commission (IEC) Statement

This product has been designed and built to comply with IEC Standard 950.

United Kingdom Telecommunications Safety Requirements

This equipment is manufactured to the International Safety Standard EN60950 and as such is approved in the UK under the General Approval Number NS/G/1234/J/100003 for indirect connection to the public telecommunication network.

The network adapter interfaces housed within this equipment are approved separately, each one having its own independent approval number. These interface adapters, supplied by the manufacturer, do not use or contain excessive voltages. An excessive voltage is one which exceeds 70.7 V peak ac or 120 V dc. They interface with this equipment using Safe Extra Low Voltages only. In order to

maintain the separate (independent) approval of the manufacturer's adapters, it is essential that other optional cards, not supplied by the manufacturer, do not use main voltages or any other excessive voltages. Seek advice from a competent engineer before installing other adapters not supplied by the manufacturer.

Avis de conformité aux normes du ministère des Communications du Canada

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

Canadian Department of Communications Compliance Statement

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

VCCI Statement

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づきクラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。
取扱説明書に従って正しい取り扱いをして下さい。

The following is a summary of the VCCI Japanese statement in the box above.

This product is a Class B Information Technology Equipment and conforms to the standards set by the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). This product is aimed to be used in a domestic environment. When used near a radio or TV receiver, it may become the cause of radio interference. Read the instructions for correct handling.

Radio Protection for Germany

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 Germany.

Dieses Gerät erfüllt die Bedingungen der EN 55022 Klasse B.

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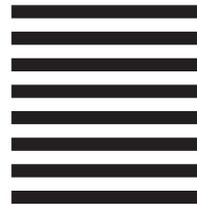
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