

SCSI-to-IDE Interface Bridge for Optical Devices

Installation and Using Guide

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Note

Before you install this product and use this information, be sure to read the product warranties and notices information included with the system unit into which you are installing the product.

Second Edition (May 2004)

Before using this information and the product it supports, read the information in "Safety Information" on page v and Appendix B, "Notices," on page 15.

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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 communications lines.

D05

Handling Static-Sensitive Devices

Attention: Static electricity can damage the device and your system unit. To avoid damage, keep this device in its anti-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 interface bridge card 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, 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

This book provides information about the SCSI-to-IDE Interface Bridge for Optical Devices, also referred to throughout this document as the interface bridge card. Use this book along with your specific system unit and operating system documentation.

ISO 9000

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

Related Publications

The following publications contain related information:

- System unit documentation for information specific to your hardware configuration.
- AIX operating system documentation for information specific to your software configuration.

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- IBM

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Chapter 1. Overview

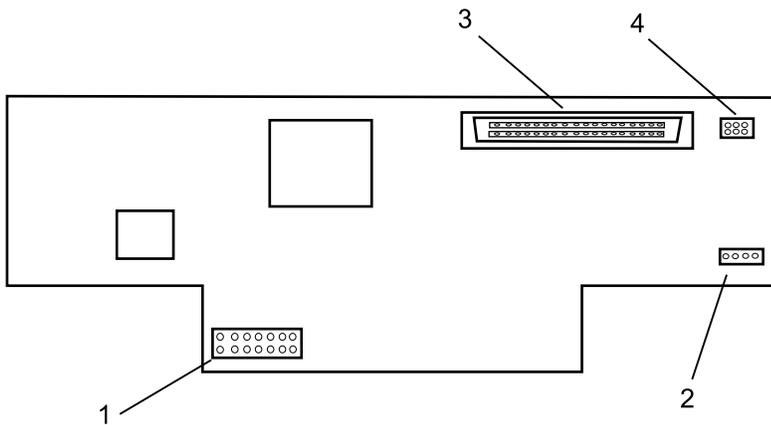
This chapter describes the features and handling instructions related to the SCSI-to-IDE Interface Bridge for Optical Devices.

The SCSI-to-IDE Interface Bridge for Optical Devices is a general-purpose bridge card that adapts a native IDE DVD drive to run as a SCSI-enabled device. The interface bridge card features an LVD (low-voltage differential) SCSI interface for host linking and a UMDA (ultra direct memory access) IDE interface for high-performance ATAPI (AT attachment with packet interface) devices. The SCSI-to-IDE Interface Bridge for Optical Devices supports the IDE DVD-ROM and DVD-RAM drives and can be attached to any SCSI bus.

Other features include:

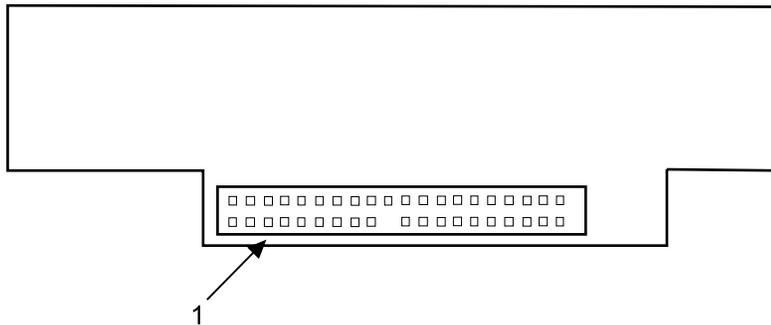
- On-chip, high-speed RISC microcontroller, SCSI controller, and IDE controller.
- SCSI host interface synchronous transfer rate up to 80 MB per second for LVD SCSI
- Programmable IDE access modes, including:
 - PIO (programmed input/output) modes 0 through 4
 - Multiword DMA (direct memory access) modes 0 through 2
 - UDMA modes 0 through 4 (with transfer rates up to 66 MB)
- Onboard flash ROM for firmware upgrades

Front View of the SCSI-to-IDE Interface Bridge for Optical Devices



- 1 SCSI ID jumper block
- 2 Power connector
- 3 68-pin SCSI connector
- 4 Jumper block (not used)

Rear View of the SCSI-to-IDE Interface Bridge for Optical Devices



- 1 40-pin IDE connector

Handling Considerations

Be sure to take the following precautions when you handle the interface bridge card:

- Do not place the card where any of the following conditions exist:
 - High temperature
 - High humidity
 - Excessive dust
 - Excessive vibration or sudden shock
 - Inclined surface
 - Direct sunlight
- Do not stack objects on the interface bridge card.
- Do not attempt to service the interface bridge card yourself.

Chapter 2. Preparing to Install the SCSI-to-IDE Interface Bridge Card

This chapter covers how to prepare to install your SCSI-to-IDE Interface Bridge Card. Preparing to install the card involves the following tasks:

- Verifying your hardware requirements
- Verifying your software requirements
- Checking your package
- Gathering documentation

Verifying Your Hardware Requirements

The SCSI-to-IDE Interface Bridge for Optical Devices requires either the IDE DVD-ROM (feature code 2634) or IDE DVD-RAM (feature code 5752). Do not attempt to attach the interface bridge card to any other drive or device.

Verifying Your Software Requirements

The SCSI-to-IDE Interface Bridge Card is supported on AIX 5.1 or later. If your operating system is not at the minimum level, contact your service representative for assistance.

Checking Your Package

Make sure that your package contains the following:

- SCSI-to-IDE Interface Bridge Card
- Bottom clip with adhesive backing
- Power cable
- Registration card
- 4 jumpers (included on the jumper block)

If an item is missing or damaged, contact the place of purchase. Retain proof of purchase; it might be required to receive warranty service.

Chapter 3. Installing the SCSI-to-IDE Interface Bridge Card

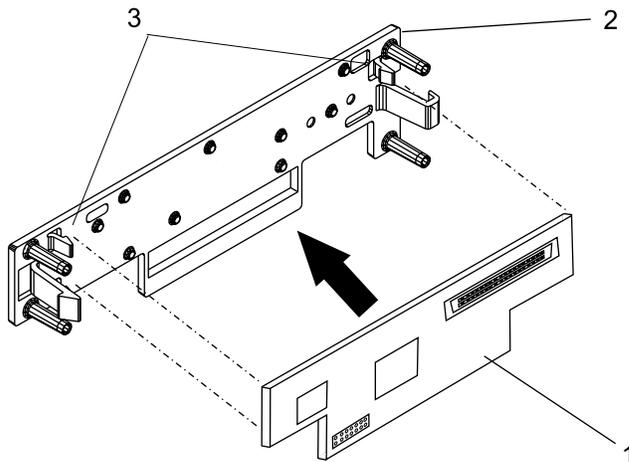
This chapter describes the steps necessary to install the SCSI-to-IDE Interface Bridge Card, including:

- Attaching and connecting the card to the rear of your DVD drive
- Configuring the DVD drive
- Verifying the installation

Attaching and Connecting the Card

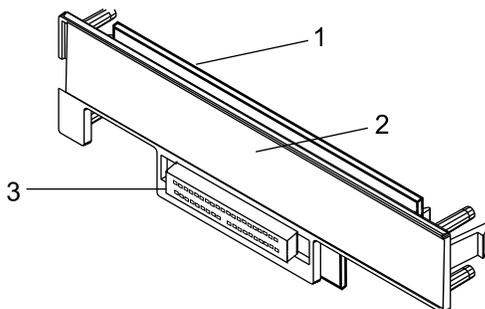
The SCSI-to-IDE Interface Bridge Card attaches to the rear of your DVD drive. To install the adapter:

1. Place the interface bridge card into the bottom clip and press down on the side of the adapter until it snaps into the card retainers.



- 1 Interface bridge card
- 2 Bottom clip
- 3 Card retainers

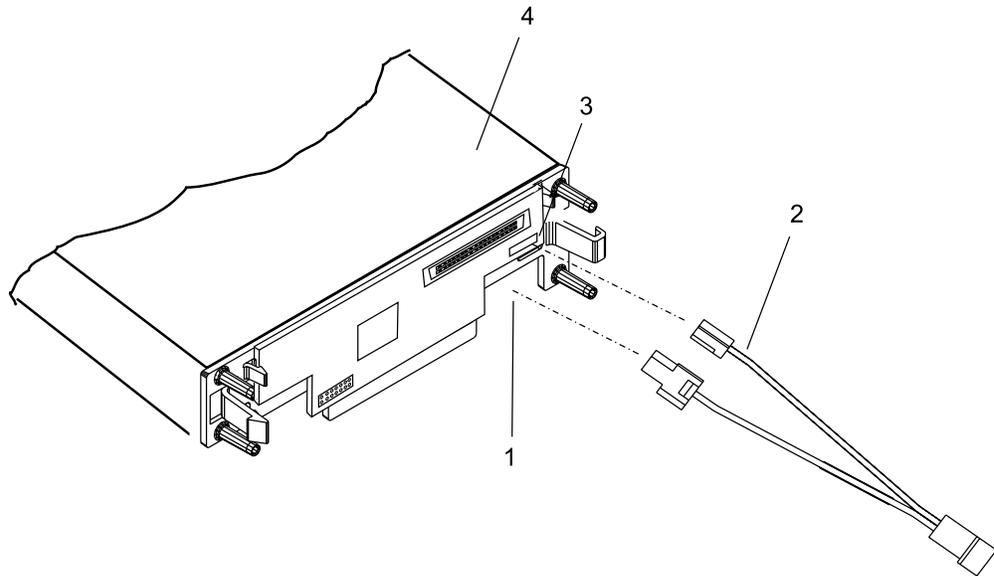
2. Remove the adhesive backing from the bottom clip.



- 1 Interface bridge card
- 2 Adhesive backing
- 3 40-pin IDE connector

3. Connect the IDE connector on the interface bridge card to the IDE connector on the DVD drive. Gently press the sides of the bottom clip to ensure that it is securely attached to the back of the drive.

4. Attach the two-pronged power cable to both the DVD drive and the interface bridge card as shown in the following illustration.



- 1 Drive power connector
- 2 Interface card power cable
- 3 Interface bridge card power connector
- 4 DVD-ROM drive

Chapter 4. Preparing to Install the DVD Drive

This chapter describes how to prepare your DVD drive for installation, including:

- Verifying your hardware requirements
- Verifying your software requirements
- Checking your package
- Gathering tools and documentation
- Planning your SCSI device layout
- Determining your SCSI device address

Verifying Your Hardware Requirements

The DVD drive requires the following hardware:

- An available bay large enough to hold a 5-1/4 inch half-high device
- A SCSI interface cable

Verifying Your Software Requirements

This DVD drive is supported on AIX 5.1 or later. Ensure that your operating system supports this drive before you install it. Contact your service representative for assistance.

Checking Your Package

Make sure that you have the following parts available to complete the installation of your drive:

- Mounting screws
- CD-ROM test disc
- DVD-ROM test disc
- Registration card
- 4 jumpers (included on the jumper block)

If an item is missing or damaged, contact the place of purchase. Retain your proof of purchase, as it might be required to receive warranty service.

Gathering Tools and Documentation

To install the drive, you will need the following items:

- Flat-blade screwdriver
- Your system unit installation documentation
- Your operating system documentation

Note: If you are installing the auto-docking version of this device on your system, the remainder of this chapter does not apply to your system. For information about the auto-docking feature, see your system documentation.

Planning Your SCSI Layout

Although the drive you are installing is a native IDE device, it will operate as a SCSI drive via the required interface bridge card. SCSI devices, which can include disk drives, tape drives, CD-ROM drives, DVD-ROM drives, scanners, and printers, are attached in a daisy-chain configuration to a SCSI adapter installed inside the system unit.

Each device in the chain has a unique SCSI address, or *SCSI ID*. When you connect more than one SCSI device, it is important that you plan the location and address of each device in the chain. You must also be

sure to connect a terminator at each end of the chain. If you are using an internally connected device, the SCSI adapter serves as the termination for that end of the chain. The last internally installed SCSI device must terminate the other end of the chain.

If your configuration includes both internal *and* external devices, you must connect a terminator to the last external device as well as terminate the internal SCSI cable. The internal SCSI adapter terminates one end of the chain, and the last external SCSI device terminates the other end.

Determining Your SCSI Device Address

Before you install the DVD-ROM drive, you must set the SCSI address on the interface bridge card attached to the rear of the DVD-ROM drive. There are three main steps to setting the SCSI address:

- determining which SCSI addresses are available
- choosing an address
- installing jumpers on the interface bridge card to set the selected address

You can use any available SCSI address as long as no two SCSI devices on the same chain use the same address. No device can use address 7, which is reserved for the SCSI adapter.

SCSI addresses are in sequential order from highest to lowest priority. Refer to Table 1 for the priority associated with each SCSI address. For the optimum performance, choose the highest unused SCSI address between 6 through 0.

Note: Use only SCSI addresses 6 through 0 for this device.

Table 1. Data Access Priorities for SCSI Addresses

Priority	SCSI Address	SCSI Device Name
Highest Priority	7	Interface bridge card
↓	6	
↓	5	
↓	4	
↓	3	
↓	2	
↓	1	
↓	0	
↓	15	
↓	14	
↓	13	
↓	12	
↓	11	
↓	10	
↓	9	
Lowest Priority	8	

To find an available SCSI address on an AIX system, do the following:

1. At a system prompt, type:

```
lsdev -Cs scsi
```

Press Enter. Information similar to the following displays:

hdisk1 Available 00-01-00-1,0 1.0 GB SCSI Disk Drive

The example is interpreted as:

hdisk1 = device name

Available = device status

00-01-00-1,0 = SCSI information

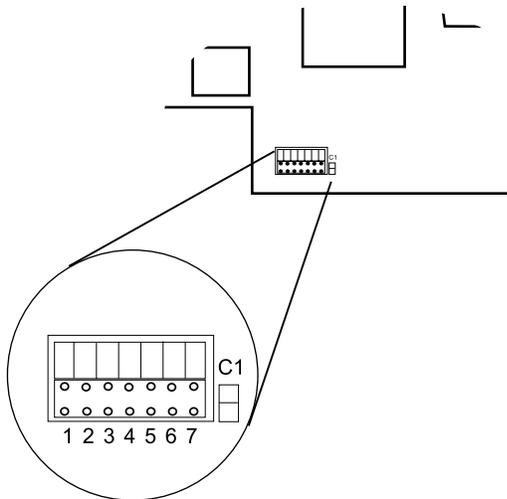
1.0 GB SCSI Disk Drive = device type

In this example, the SCSI address for the device name (*hdisk1*) is 1 as shown in the 1,0 portion of the string in column 3. The 0 in the 1,0 portion of the string is the SCSI bus number for that device.

2. Find an available SCSI address for the interface bridge card (attached to the DVD-ROM drive) and choose the highest-priority unused address. On Table 1 on page 8, record the address you selected and the names and addresses of any other installed SCSI devices. Save this information for future reference.

Setting the SCSI Address on the Interface Bridge Card

After you choose an available SCSI address, you must install the jumpers on the interface bridge card attached to the rear of the DVD-ROM drive to match the selected address. Although your DVD-ROM drive may be shipped with a default jumper configuration already set, the drive uses the jumper configuration on the required SCSI-to-IDE Interface Bridge Card. Any jumper configuration in place on the DVD-RAM drive itself will have no effect on the operation of the drive.



To set a SCSI address, you must install jumpers onto pin positions 1, 2, 3 or 4 on the jumper block of the interface bridge card. Table 2 on page 10 shows the jumper placement necessary to set each position to On or Off. To set a position to On, insert a jumper onto both the top and bottom pins. To set a position to Off, insert the jumper onto the top pin only.

To set the jumpers on the interface bridge card:

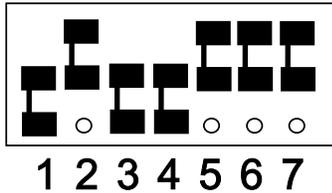
1. Place the drive securely on a flat surface.
2. Locate the jumper block on the lower left of the interface bridge card. It has seven different jumper "positions," 1 through 7, as shown in the previous illustration. Each position is a vertical pair of jumper pins.
3. Using Table 2 on page 10 as your guide, install jumpers in the correct positions to set the SCSI address you selected.

Table 2. SCSI Address Setting

SCSI Address	Position 1	Position 2	Position 3	Position 4
0	Off	Off	Off	Off
1	On	Off	Off	Off
2	Off	On	Off	Off
3	On	On	Off	Off
4	Off	On	On	Off
5	On	On	On	Off
8	Off	Off	Off	On
9	On	Off	Off	On
10	Off	On	Off	On
11	On	On	Off	On
12	Off	Off	On	On
13	On	Off	On	On
14	Off	On	On	On
15	On	On	On	On

- Set jumper positions **5**, **6**, and **7** to Off. These jumper positions do not enable or disable any function and can be used to hold spare jumpers.

When complete, the jumper configuration on the interface bridge card should look similar to this:



- Remove spare jumpers and store them in a safe place, or install them in the Off position on any unused pin position.

Appendix A. 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: 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 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



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 conforme 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

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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.

Appendix B. Notices

This information was developed for products and services offered in the U.S.A.

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Part Number: 80P4547

Printed in USA

SA23-1294-01



(1P) P/N: 80P4547

