

# SCSI Adapter

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*A device-independent interface for attaching tape drives*

*Documentation Edition 2*

## Editor

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# Preface

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The SCSI adapter comes with the BARR/TAPE product. The adapter allows you to attach up to seven tape drives to the computer running BARR/TAPE.

This manual tells you how to install the SCSI adapter and includes this information:

- Chapter 1 lists computer requirements and package contents to ensure you have everything you need before you begin the installation.
- Chapter 2 tells you how to install and configure the adapter.
- Chapter 3 describes how to connect the SCSI cable.

## **Barr Technical Support**

Contact Barr Technical Support at 800-BARR-SYS between 9 a.m. and 8 p.m. eastern time if you have questions or problems with Barr hardware or software. Technical Support will ask for your adapter serial number and software version number. When you contact Technical Support via fax, e-mail, or the Web site support page, include the adapter serial number and software version number in your correspondence.

You can obtain the adapter serial number from the following places:

- Adapter box
- Sticker on the back of the adapter
- Handwritten label on the back of the adapter
- Advanced, Diagnostics, Hardware, Queries, Show Serial Numbers screen in the BARR/TAPE software

See the *BARR/TAPE* software manual for software version locations.

*Notes:*

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*Notes:*

# 1. Introduction

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The small computer system interface (SCSI) is a device-independent interface for computer peripherals and system components. Device independent means you can use the interface with different types of devices. You can equip most computer peripheral devices available today (including disk drives, tape drives, printers, processors, and optical disks) with a SCSI interface.

## 1.1 Features

The SCSI adapter includes these features:

- BARR/TAPE products implement the SCSI single-ended driver and receiver configuration, which supports cable lengths up to 1.8 meters (6 feet).
- You can attach up to seven SCSI tape drives to the SCSI interface.

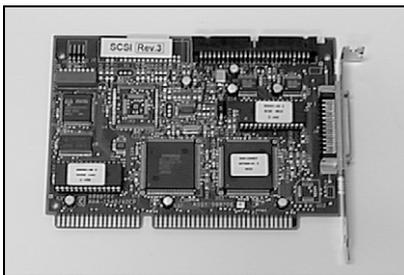
## 1.2 Computer Requirements

You can install the SCSI adapter (an Adaptec model AHA-1540CP) in a computer that meets these requirements:

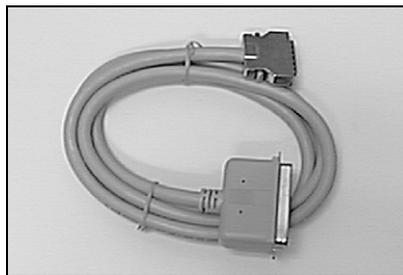
- ISA or EISA bus
- A 16-bit slot

## 1.3 Package Contents

The SCSI adapter package includes these items:



SCSI adapter



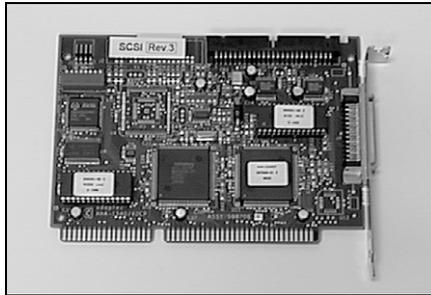
1.8-meter (6-foot) SCSI cable

*Notes:*

## 2. Install and Configure the SCSI Adapter

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If you indicated you had a computer with an ISA or ISA-compatible bus when you ordered TAPE3490, TAPE3490E, or TAPE6250, your BARR/TAPE package contains the SCSI adapter shown here.



SCSI adapter for computer with ISA bus

This chapter tells you how to install and configure your SCSI adapter.

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**Note:**

Adapters purchased from Barr Systems have correct default settings to work with BARR/TAPE, but adapters purchased from other vendors probably will not.

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### 2.1 Set Hardware-Configurable Adapter Settings

You can change some adapter settings through hardware, as described in this section, or through software, as described in section 2.3.

The SCSI adapter included with BARR/TAPE comes preset to address 330-333h. You can set the adapter I/O port address by using the switch block on the adapter's top edge.

The following tables list possible adapter settings. An asterisk (\*) indicates default adapter settings.

Switch 1	Plug and Play
*On	Disabled
Off	Enabled

Switch 2	Switch 3	Switch 4	Address
*Off	Off	Off	330-333h
On	Off	Off	334-337h
Off	On	Off	230-233h
On	On	Off	234-237h
Off	Off	On	130-137h
On	Off	On	134-137h
Off	On	On	Reserved
On	On	On	Reserved

Switch 5	Floppy Enabled
*On	Disable Floppy
Off	Enable Floppy

Switch 6	Switch 7	Switch 8	BIOS Address
*On	On	On	BIOS Disabled
Off	Off	Off	BIOS Enabled at DC00h

You must enable the Basic Input/Output System (BIOS) to run the SCSISelect utility. This utility allows you to view or change adapter settings. See section 2.3 for more information.

BARR/TAPE software does not use BIOS; therefore, disable it during software operation. When you disable BIOS, you reduce computer start up time by as much as 60 seconds and reduce the possibility of hardware conflicts in the computer. The previous tables do not show selections that enable BIOS at other addresses.

## 2.2 Install the SCSI Adapter

Your computer owner's manual tells you how to install an adapter in your computer. To avoid damaging the SCSI adapter or harming yourself during adapter installation, remember these steps:

1. Before you begin, turn off the computer power switch and all other external switches (including the printer and monitor).
2. Unplug the computer and all connected devices from electrical outlets.
3. Before you handle the adapter, discharge the static electricity in your body by touching the inside frame of the computer.

After you install the adapter, start the computer. Do not replace the computer cover because you might need to access the adapter again.

If the computer does not start after you install the adapter, you probably have a conflict with an address setting. If an address conflict occurs, make sure your settings match the settings listed in section 2.1, then restart your computer.

If you cannot start the computer because of an Interrupt Request (IRQ) or Direct Memory Access (DMA) conflict, temporarily remove the conflicting adapter so you can start the computer. Then change the setting with the SCSISelect utility. You can also reconfigure the SCSI adapter in another machine and reinstall it in the production computer. The computer should then start correctly.

## 2.3 Configure the Adapter

You must enable BIOS before you can run the SCSISelect utility. If you do not enable BIOS, you will not see the prompt that allows you to run the utility. If you need to run SCSISelect, enable BIOS temporarily. Remember to disable BIOS when you finish using the utility.

When you start the computer with BIOS enabled, the following prompt displays for only a few seconds:

**Press <Ctrl> <A> for SCSISelect Utility!**

The SCSISelect utility lets you view or change the adapter settings and perform a diagnostic test. To run the utility, hold  $\circ$  and press A. If you do not press these keys, the computer continues booting.

The utility displays documentation on the screen.

## Set Host Adapter Port Address

To set the host adapter port address, use the arrow keys to scroll to **Host Adapter Port Address 330** and press e.

## Set Options

You can select the following three options from the **Option** screen, but only two apply to tape applications:

- **Configure/View Host Adapter Settings** – Select this option to view or change the SCSI adapter settings.
- **SCSI Disk Utilities** – This option does not apply to BARR/TAPE.
- **Host Adapter Diagnostics** – Select this option to perform a bus master DMA test of memory. The test continues looping until you press ‘. The computer restarts when you exit the test.

If you select the first menu option, the **Configuration** screen displays a list of the software-selectable adapter settings. The SCSI adapter included with BARR/TAPE comes preconfigured with Barr defaults. Select the **SCSI Device Configuration Option** and press e.

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### *Warning:*

Do not alter the software default settings unless you verify a conflict with another adapter setting.

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If you make any changes, you can restore the default factory settings, not the Barr defaults, by pressing ^. Pressing ^ also restores settings on the **SCSI Device Configuration** and **Advanced Configuration Options** submenus.

The adapter’s software settings come preset as follows:

Default Software Settings	
Host Adapter IRQ	11
Host Adapter DMA	5
Host Adapter SCSI ID	7
SCSI Parity Checking	Enabled
DMA Transfer Rate	5.0 megabytes per second
SCSI Termination	Enabled

SCSI Device Configuration Options	
Enable Sync Negotiation*	No (for all adapters)
Enable Disconnection	Yes (for all adapters)

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**\*Warning:**

You must set **Enable sync negotiation** to **No** for all adapters. If you select **Yes**, a SCSI adapter error occurs, the tape rewinds and unloads, and your computer could lock up.

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Advanced Configuration Options	
Host Adapter BIOS	Disabled
Extended BIOS Translation for DOS Drives	Disabled
Support Removable Disks Under BIOS as Fixed Disks	Disabled
Dynamically Scan SCSI Bus for BIOS Devices	Disabled
BIOS Support for More Than 2 Drives	Disabled
BIOS Support for INT 13h Extensions	Disabled
Immediate Return On Seek Command	Enabled

*Notes:*

# 3. Connect the SCSI Cable

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This chapter tells you how to make the physical connection between your computer and the TAPE3490, TAPE3490E, or TAPE6250 tape drive. The SCSI adapter package includes a 1.8-meter (6-foot) SCSI shielded cable.

You can add up to six more tape drives by daisy chaining them with SCSI cables. (You can purchase additional cables from Barr Systems.) When you attach multiple tape drives to the computer SCSI adapter, you must assign each tape drive a unique SCSI ID.

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**Note:**

Do not change the default SCSI ID (set to **6** for the tape drive) except when you attach multiple tape drives to the Barr SCSI adapter.

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To connect the cable, follow the steps below.

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**WARNING:**

Before you plug in or unplug the SCSI cable, power off the tape drive. If you connect the cable with the tape drive powered on, the interface circuit board fuse might blow.

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1. Insert one of the SCSI cable plugs into the computer's SCSI adapter. Push the connector locks toward the cable to secure it.
2. Attach the other end of the SCSI cable to one of the connectors on the tape drive. Push the connector locks toward the cable to secure it.
3. If you want to attach only one drive, skip to step 4. To attach more than one tape drive, use SCSI cables to daisy chain the tape drives together as follows:
  - a. Remove the terminating plug on the second SCSI connector at the rear of tape drive 1.
  - b. Attach one end of the SCSI cable to the second SCSI connector. Attach the other end of the cable to either connector on tape drive 2.
  - c. Attach the terminating plug to the second SCSI connector on tape drive 2.

When you daisy chain tape drives, the maximum distance between the computer and the last tape drive should be 8 meters.
4. Attach the power cord to the tape drive and plug it into the power source.

*Notes:*

# Federal Communications Commission Statement

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This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, might cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference. If this happens, users must correct the interference at their own expense.

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***Note:***

A shielded and grounded cable is required.

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The FCC certifications are accepted by the Canadian CSA agency.

*Notes:*

# European Community Statement

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This product meets Class A emissions limits and lower level immunity requirements. It is not intended to be used in a residential environment.



*Notes:*

# Glossary

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## **adapter**

Add-on equipment you can plug into a computer to allow the computer to connect to another device.

## **BIOS**

Abbreviation for Basic Input/Output System. Code that controls basic hardware operations, such as interactions with 3.5-inch disk drives, hard drives, and the keyboard. One level below the computer operating system. All computers come with BIOS.

## **daisy chain**

A way to interconnect a series of devices such as printers.

## **DMA**

Direct memory access. A way to move data directly between main storage and peripheral equipment without requiring the processing unit to process the data.

## **EISA**

Extended Industry Standard Architecture developed by Compaq Computer Corp. and other computer manufacturers. A 32-bit extension of the 8- and 16-bit internal bus structure developed by IBM.

## **host computer**

A computer that controls the communications network, stores databases, and has a large computing and memory capacity. Other computers can connect to the host to share its resources.

## **I/O**

Abbreviation for Input/Output. Represents data transfer between a mainframe and peripheral equipment.

## **IRQ**

Interrupt request. A request for processing on a particular priority level.

## **ISA**

Industry Standard Architecture, a standard for the computer's expansion bus (where you plug in add-on adapters).

## **parity**

A bit appended to a group of binary digits to ensure that the sum of bits is either even or odd, which serves as an error-detection scheme for data communications.

## **SCSI**

Small computer system interface. An input and output bus that provides a standard interface between a computer multimedia system and peripheral devices.

*Notes:*