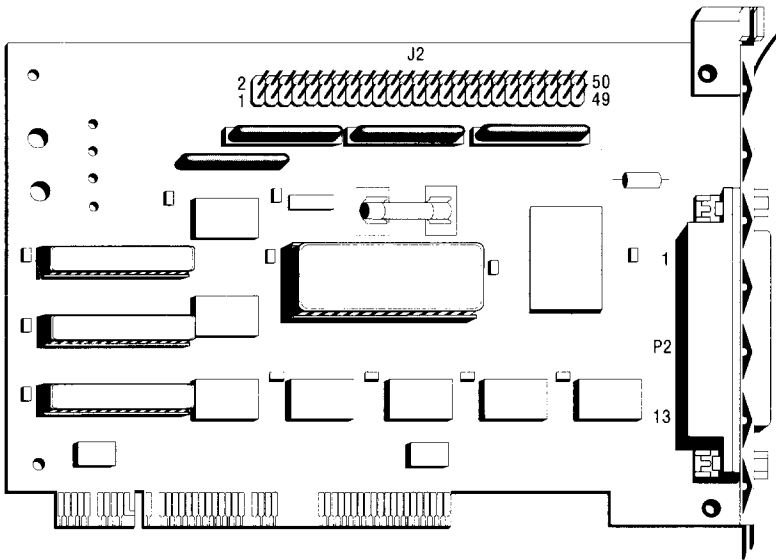


T260 SCSI Host Adapter



Hardware Installation Guide

NOTE

If you're like many users, you'll want to get started using your new equipment as soon as possible. But, before you attempt to install and use your Trantor SCSI host adapter, please read this guide. It will save you time in the long run, and make you aware of many options you might otherwise miss. Remember, you can always change your system configuration at a later time.

For technical support of this product, please see your dealer first for assistance, as he/she is most likely to understand your specific needs and equipment setup. To be eligible for any Trantor factory technical support which may be necessary, your Product Registration Card **must** be on file with us.

Please fill out and mail in your Product Registration Card within 10 days of purchase!

1.0 Introduction

This guide describes installation and operation of the Trantor™ T260 SCSI host adapter (hereafter referred to as "host adapter") for IBM® PS/2® and other Micro Channel® compatible computer systems.

1.1 Hardware

Your Trantor SCSI (Small Computer System Interface) host adapter has been designed to provide high-performance control of any SCSI device. Some of the important features include:

- Standardized SCSI interface, permitting the use of any SCSI-compatible device.
- Both internal and external connectors, for use with SCSI devices mounted inside or outside the computer. The external connector is compatible with Apple® Macintosh® SCSI interface pinouts for ease of cabling (see below for details).
- Supports any one of 8 addresses.
- Compatible with any Micro Channel compatible computer.

1.2 Checklist

You should have received the following items in your Trantor host adapter kit:

- T260 SCSI host adapter card
- Software distribution diskette(s)
- Hardware Installation Guide* (this document)
- User Guide* for the included software
- Product Registration card

If you find that anything is missing, please contact your dealer immediately.

1.3 Software Overview

The distribution diskette packaged with your host adapter contains a number of files which are of interest. These are fully described in the software *User Guide*, but there are two files to be aware of when installing the hardware:

@508E.ADF

Reference file, used to logically "install" the host adapter using the Reference Diskette included with your computer.

READ.ME

A text file which **may** be included, containing up-to-date information since this guide was printed. It is important that you look for this file and, if it exists, read it carefully.

2.0 Hardware Installation

The Trantor T260 SCSI host adapter will fit into any available adapter slot in your IBM PS/2 Micro Channel or compatible computer.

Before beginning installation, please read through this procedure thoroughly. Also review your computer system's manual for the procedures covering adapter card installation and cover removal and replacement. Have the appropriate hand tools available so that you can remove your computer's cover and install the card.

2.1 Preliminary Steps

1. If you are not familiar with installing adapter cards in your computer, please read the following sections in your IBM PS/2 Quick Reference Manual or equivalent documentation for your system:
 - What Happens When the Computer Starts?*
 - What is the Reference Diskette?*
 - How to Start the Reference Diskette*
 - How to Install an Option*
 - Removing the System Unit Cover*
 - Installing the System Unit Cover*
 - Installing an Adapter*
2. Your computer should be completely set up and working. If necessary, turn it on.
3. If you have not already done so, make a backup copy of your Reference Diskette. Refer to your owner's manual if necessary.
4. Place your Reference Diskette backup copy in drive A: and press the <Ctrl><Alt><Delete> keys at the same time to reboot the computer. Refer to your computer's manual, and follow the on-screen instructions for copying Option Files from an option diskette (the T260 software diskette) to the backup copy of your Reference Diskette. Copy the option file from your T260 host adapter diskette now.

2.2 Installing Your SCSI Host Adapter

1. Turn OFF your computer, its monitor, and any other external devices such as a printer or plotter. Unplug your computer and accessories.
2. Remove your computer's cover. Refer to your Quick Reference Manual.
3. Remove the contents of your host adapter kit from the packaging material. You must guard against electrostatic discharges (ESD). Carefully remove the card from its antistatic bag. **Handle it by its edges only**, making sure not to touch any of its contacts on the bottom side or any of its components. If you need to set it down, set it on a clean, flat surface, component side up. Save the box and packing material in case you need to ship your host adapter later.
4. If you plan to use the host adapter with internally-mounted SCSI devices, connect your SCSI interface ribbon cable to the host adapter's internal connector (on the top edge of the card). Note that the cable may be hooked up one of two ways; make sure that line 1 of the cable is oriented toward the Pin 1 end of the connector (Pin 1 is at the lower left corner of the T260 connector). Normally, line 1 of the cable should have a colored stripe for easy identification.
5. Following the instructions in your Quick Reference Manual, install your host adapter card in any empty adapter slot. **Note:** the T260 card has one or more empty chip sockets for future expansion; this is the standard configuration.
If you installed an internal-device ribbon cable for SCSI devices (Step 4), make sure that the cable does not rub against any sharp points on adjacently-mounted cards in your computer, and that it is positioned so that it will not snag your computer's top cover when it is slid back into place.
6. If you plan to connect more than one SCSI device to your adapter card simultaneously, make sure that the each device's "address" (device number) is different (numbers between 0 and 6; a bootable device **must** be set to address number 0-2). This is essential to prevent conflicts when the host adapter communicates with the devices. Also note, on the SCSI connector of each device, which end of the connector is the "pin 1" end. SCSI devices have a 50-pin connector, and it is possible to connect a cable backwards if you don't identify the correct end. Most devices should have a label on the circuit board near the connector, indicating either the pin-1 end or the pin-50 end; consult the device's manual if you can't identify the correct end yourself. The cable which connects the device(s) to the host adapter card should have a colored stripe on one edge; the stripe indicates pin 1 of the cable.
7. If you are using an externally-mounted SCSI device, connect your SCSI interface cable to the 25-pin connector at the rear of the host adapter card. **Be careful to avoid connecting the SCSI cable to one of the parallel printer ports on the back of the computer. These use the same type of connector, and are easily confused. Conversely, never plug a parallel printer (or other parallel device) into a SCSI host adapter.**
8. If you are using an internally-mounted SCSI device, install it into an available drive bay per the manufacturer's instructions. Connect the power and SCSI interface cables, being careful to route both cables around any sharp edges or protrusions, and keeping the cables out of the way of the cover.
9. Replace your computer's cover. Refer to your Quick Reference Manual.

2.3 Configuring Your T260 Host Adapter Card

1. Place your Reference Diskette backup copy in drive A: and turn your computer on. Because it senses that your configuration has changed, your computer will beep and briefly display the error code "165."
2. At the opening *IBM...* screen, press the <Enter> key as instructed.
3. You will now receive more information about the "165" error. Automatically configure the system by pressing the <y> key. Follow the on-screen instructions.

BIOS ROM

A ROM chip installed on your T260 host adapter which permits you to boot up your computer from a SCSI drive. T260 will work at 7 software configurable ROM addresses as listed below:

ROM Address
None
C8000H
CA000H
CE000H
D0000H
D4000H
D8000H
DC000H

BIOS ROM Enable

BIOS ROM enable is selectable through the software configuration screen, shown in Figure 1. Standard factory configuration is disabled.

I/O Address Selection

Eight I/O addresses are selectable through the software configuration screen shown in Figure 1. These addresses are listed below:

I/O Address Selection
360H
350H
340H
330H
260H
250H
240H
230H

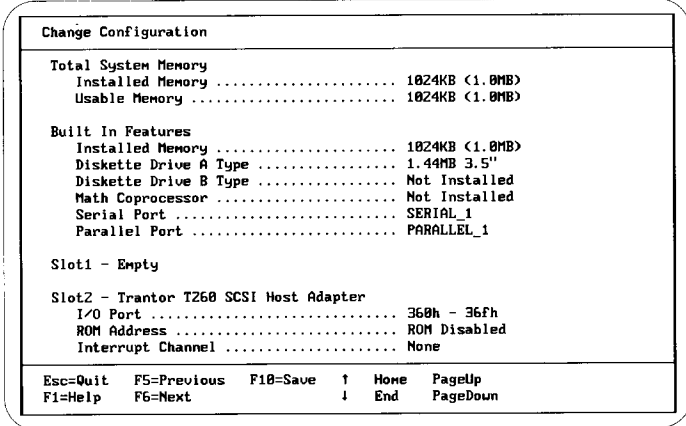


Figure 1 Change Configuration Screen

Interrupt Channel

For most installations this should be left set to *None*. Channels 3,5,7,10,12,14 and 15 are available if necessary.

- Suggestion:** Since you have changed your system's configuration, it is a good idea to record the changes on your backup Reference Diskette. From the Set Configuration menu, select BACKUP CONFIGURATION.
- Follow the on-screen instructions, but this time remove your backup Reference Diskette before restarting your system.
- Proceed with software installation and system checkout, following the instructions in your software User Guide.

Note: see the reverse side for connector pinout details.

Disclaimer of Warranty

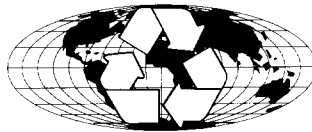
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3.0 SCSI Connector Pinouts

This section documents both the SCSI interface connectors on the T260 host adapter as well as typical connectors found on SCSI devices such as hard disk and CD-ROM drives. Your host adapter has been designed with ease of connection in mind, therefore the internal SCSI connector requires only a standard ribbon cable, and the external connector is completely compatible with that used on Apple's Macintosh line of computers. Any commonly-available Macintosh cable designed to interface to external SCSI devices will work with your Trantor host adapter.

But, for those who are making their own cable assembly or who need the connector details for other reasons, the following provides the necessary information. *Figure 2* illustrates the pin arrangement of the host adapter's external DB-25F connector.

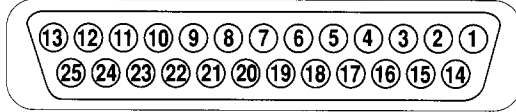


Figure 2 T260 External Connector Pinouts

Internal SCSI devices (as well as the internal connector of your Trantor host adapter) commonly use a 50-pin header connector (*SCSI specification Alternative 1*), consisting of two rows of 25 male contacts with adjacent contacts 2.54 mm (0.1 inch) apart, as shown in *Figure 3*.

A typical single-ended shielded SCSI device 50-pin connector (*SCSI specification Alternative 2*) is shown in *Figure 4*; this connector is most often used with an external SCSI device.

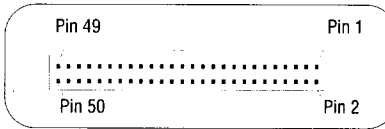


Figure 3 Internal Connector

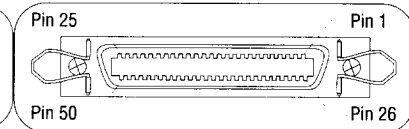


Figure 4 Device Connector

Table 1 lists the pin assignments for each connector type. Definitions of the various signals may be found in any SCSI design reference book. The SCSI interface is fully defined in **ANSI X3.131-1986**; this document is available from Global Engineering Documents, 2805 McGaw Ave, Irvine, CA 92713-9539 USA, telephone (714) 261-1455.

Alt. 1 (Fig. 3)	Pin	Alt. 2 (Fig. 4)	Function	Function	External (Fig. 2)	Pin	Alt. 1 (Fig. 3)	Alt. 2 (Fig. 4)
	3		Gnd			-DB0	8	26
	5		Gnd			-DB1	2	27
	7		Gnd	3		-DB2	22	6
	9		Gnd	4		-DB3	10	8
	11		Gnd	5		-DB4	23	10
	12		Gnd	6		-DB5	11	12
	15		Gnd	7		-DB6	12	14
	17		Gnd	8		-DB7	13	16
	19		Gnd	9		-DBP	20	18
	21		Gnd	10		Gnd	7	20
	23		Gnd	11		Gnd	9	22
	25		Open	12		Gnd	14	24
	27		Gnd	13		Tempwr	25	26
	29		Gnd	14		Gnd	16	28
	31		Gnd	15		Gnd	18	30
	33		Gnd	16		-ATN	17	32
	35		Gnd	17		Gnd	24	34
	37		Gnd	18		-BSY	6	36
	39		Gnd	19		-ACK	5	38
	41		Gnd	20		-RST	4	40
	43		Gnd	21		-MSG	2	42
	45		Gnd	22		-SEL	19	44
	47		Gnd	23		-C/D	15	46
	49		Gnd	24		-REQ	1	48
				25		-I/O	3	50

Table 1 SCSI Connector Pin Assignments

If you have technical questions not answered by this guide, contact your dealer first. If your dealer is unable to answer your questions, you may contact the Technical Support Department at (510) 770-1400.

TRANTOR PRODUCTS LIMITED WARRANTY

Trantor Systems Limited (hereafter Trantor) warrants this hardware product to be free from defects in material and workmanship under the following terms.

WARRANTY TERM

Labor is warranted for (1) One Year from the date of the first consumer purchase. Parts are warranted for (1) One Year from the date of the first consumer purchase. Magnetic media on which the software is supplied is warranted for (90) Ninety Days from the date of the first consumer purchase. Note that only the media itself is warranted, not the software; please refer to the License Agreement on the software package.

WHO IS PROTECTED

This warranty may be enforced only by the first consumer purchaser.

WHAT IS COVERED AND WHAT IS NOT COVERED

Except as specified below, this warranty covers all defects in material or workmanship in this product. The following are not covered by the warranty:

1. Any product which is not distributed by Trantor or an Authorized Distributor or which is not purchased from an authorized Trantor dealer. If you are uncertain as to whether a dealer is authorized please contact Trantor.
2. Any product on which the serial number (if applicable) has been defaced, modified or removed.
3. Damage, deterioration or malfunction resulting from:
 - a. Accident, misuse, abuse, neglect, fire, water, lightning or other acts of nature, commercial or industrial use, unauthorized product modification, or failure to follow instructions supplied with the product.
 - b. Repair or attempted repair by anyone not authorized by Trantor.
 - c. Any shipment of the product (claims must be presented to the carrier).
 - d. Removal or installation of the product.
 - e. Any other cause which does not relate to a product defect.
4. Cartrons, carrying cases, batteries, external cabinets, or any accessories used in conjunction with the product.

WHAT WE WILL PAY FOR AND WHAT WE WILL NOT PAY FOR

We will pay all labor and material expenses for covered items, but we will not pay for the following:

1. Removal or installation.
2. Costs of initial technical adjustments (set-up), including adjustment of user controls and software installation and configuration. These costs are the responsibility of the Trantor dealer from whom the product was purchased.
3. Shipping charges to or from Trantor.

HOW YOU CAN GET WARRANTY SERVICE

1. Call Technical Support to verify the product is not functioning properly at (510) 770-1400.
2. Call us for a Return Merchandise Authorization (RMA) at (510) 770-1400.
3. Ship product prepaid with RMA number clearly marked on the outside of the package to Trantor Systems Limited 5415 Randall Place Fremont, CA 94538-3151 USA.
4. Whenever warranty service is required, the original dated sales slip (or a copy) must be presented as proof of warranty coverage, and should be included in any shipment of the product. Please also include in any mailing, your name, address, and a description of the problem(s).

TECHNICAL SUPPORT BBS

Trantor Systems maintains a Technical Support Bulletin Board System at our Fremont offices for use by our registered customers with modems. You are welcome to contact us via the BBS with questions and suggestions, and share these with other users. Update notifications, new product announcements and technical tips will be available online. The telephone number is 510-656-5159, and the BBS is available 24 hours per day. When you call, set your modem and communications software to 8 data bits, 1 stop bit, no parity and V.32 bis operation.

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2. ANY OTHER DAMAGES, WHETHER INCIDENTAL, CONSEQUENTIAL OR OTHERWISE.

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HOW STATE LAW RELATES TO THE WARRANTY

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

TRANTOR SOFTWARE LICENSE AND WARRANTY

Please refer to the separate Trantor Software License and Warranty which came with your Trantor distribution diskette.

FCC NOTICE

Your Trantor SCSI host adapter is covered by FCC rules for a Class B computing device.

The following information is provided for the information and guidance of the user. Use shielded cables to attach only peripherals (computer input/output devices, terminals, printers etc.) certified to comply with the Class B limits to your computer.

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. FCC regulations, Part 15 prescribed by the Federal Communications Commission (FCC) specify that we provide the following information:

WARNING

This equipment generates and uses radio frequency energy and, if not installed and used properly, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specification in Subpart J of Part 15 of FCC Rules, which are designed to provide a reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause interference to radio or television reception, (which you can determine 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 the receiving antenna.
- Relocate the computer with respect to the receiver.
- Move the computer away from the receiver.
- Plug the computer into a different outlet so that the computer and receiver are on different branch circuits.

If necessary, consult the dealer or an experienced radio/television technician for additional suggestions. You may find the booklet *How to Identify and Resolve Radio-TV Interference Problems* helpful. This booklet has been prepared by the FCC and is available from the U.S. Government Printing Office, Washington, D.C. 20402; Stock # 004-000-00345-4.