TDZ 2000 GT1

System Setup

October 1998

DHA029420

INTERGRAPH
COMPUTER SYSTEMS

Notes

This device is designed and manufactured to comply with approved safety standards for information processing and business equipment.

Read all operating instructions before using this device. Keep these instructions for future reference. Follow all warnings on the device or in the operating instructions.

Contents

Returned Goods Authorization (RGA) Form
Warranty Procedure
Repair Depot Address Labels

Preface

TDZ 2000 GT1 System Setup describes setting up and configuring your TDZ 2000 GT1 system for use. This document also provides information on operating the system, troubleshooting, and reinstalling system software.

About This Document

TDZ 2000 GT1 System Setup is organized as follows:

◆ Chapter 1, "Setting Up the Hardware," describes how to set up the system hardware.

◆ Chapter 2, "Setting Up the Software," describes how to set up the operating system and associated system software.

◆ Chapter 3, "Configuring the System," describes how to configure the system for use.

◆ Chapter 4, "Configuring the BIOS," describes how to use BIOS Setup to configure the system's basic input/output system (BIOS).

◆ Chapter 5, "Operating Notes," describes how to use essential system features and provides other important information.

◆ Chapter 6, "Troubleshooting," describes how to resolve common system problems.

◆ Chapter 7, "Installing System Software," describes how to install the operating system and associated system software, if required.

◆ Chapter 8, "Using System Resources," provides information on using system resources to configure the system for use with additional option boards.

Document Conventions

Bold	Commands, words, or characters that you key in literally.
Italic	Variable values that you supply, or cross-references.
Monospace	Output displayed on the screen.
SMALL CAPS	Key names on the keyboard, such as D, ALT or F3; names of files and directories. You can type filenames and directory names in the dialog boxes or the command line in lowercase unless directed otherwise.
CTRL+D	Press a key while simultaneously pressing another key; for example, press CTRL and D simultaneously.

Finding Operating System Information

For more detailed information on the operating system, see the printed and online Microsoft documentation delivered with the system.

See the *Late-Breaking News* shipped with your system for important software and hardware documentation information not covered in this document.

Finding System Hardware Information

An online introduction to your new system is provided in the *System Introduction*, which covers subjects such as the following:

◆ System features
◆ System controls and connections
◆ Intergraph customer support

You can display the *System Introduction* by using the InterSite Welcome dialog or by opening the SYSINTRO.HLP file on your system.

Detailed reference information for your new system is provided in the *System Reference*, which covers subjects such as the following:

◆ Opening and closing the unit
◆ Precautions against electrostatic discharges
◆ Replacing and upgrading system components
◆ Installing expansion cards
◆ System interrupt requests (IRQs)
◆ External port and system board connectors
◆ System board jumpers
◆ Power supply information

See the *Late-Breaking News* shipped with your system for important hardware and documentation details not covered in this document.

Learning About System Ergonomics

Please read the *Ergonomics Guide* included with your Intergraph computer system. This document provides valuable information on ways to minimize repetitive stress injuries for persons working with a computer.

Customer Support

Intergraph Computer Systems offers an assortment of customer support options.

Hardware and Software Support Services

Intergraph Computer Systems provides a variety of hardware services for Intergraph and third-party equipment. Services include warranty upgrades, repair depot service, on-site hardware maintenance, system administration, and network consulting. Hardware purchased from Intergraph Computer Systems includes a factory warranty ranging from 30 days to three years. A detailed warranty description is available on the World Wide Web; see the Support pages at **http://www.intergraph.com/ics**.

Intergraph Computer Systems provides complimentary software support for 30 or 90 days following shipment of a hardware or software product. This includes World Wide Web access, Intergraph Bulletin Board Service access, FAXLink service, and telephone (Help Desk) support. At the end of the complimentary support period, you can purchase other levels of software support.

World Wide Web

You can visit Intergraph Computer Systems on the World Wide Web at **http://www.intergraph.com/ics**. On these pages, you can get news and product information, technical support information, software updates and fixes, and more.

Intergraph Bulletin Board Service

On the Intergraph Bulletin Board Service (IBBS), you can get technical support information, software updates and fixes, and more.

To connect to the IBBS:

1. Set your system's communications protocol for eight (8) data bits, no parity, one (1) stop bit, and any baud rate up to 14,400.

2. Using a modem, call 1-256-730-8786. Outside the United States, call one of the mirror sites listed on World Wide Web; see the Software Support pages at **http://www.intergraph.com**.

3. At the login prompt, key in your user ID. If you have not connected before, key in **new** to create a user ID.

4. Follow the menus to find what you need. The IBBS provides clear choices and online help.

If you have trouble connecting to or using the IBBS, call the Customer Response Center at 1-800-633-7248 (product entry IBBS) or leave a message for the IBBS System Operator at 1-256-730-1413.

FAXLink

To use the FAXLink:

◆ Call 1-800-240-4300 for information on how to get technical support information using the FAXLink.

◆ Call 1-256-730-9000 to get documents (up to five per call).

Telephone

To get customer support by telephone:

◆ In the United States, call 1-800-633-7248 between the hours of 7:00 a.m. and 7:00 p.m. Central Time, Monday through Friday (except holidays).

◆ Outside the United States, contact your local Intergraph Computer Systems subsidiary or distributor.

Have the following information available when you call:

◆ Your service number, which identifies your site to Intergraph Computer Systems. You use your service number for warranty or maintenance calls.

◆ Your Customer Personal Identification Number (CPIN). You get a CPIN the first time you call the Customer Response Center; it is associated with your service number for future call logging.

◆ The product's name or model number.

◆ The product's serial number. Software product serial numbers are included in the product packaging. Hardware product serial numbers are on a sticker affixed to the hardware product.

◆ Your name and telephone number.

◆ A brief description of the question or problem.

More Support Options

To get information on more customer support options:

◆ Visit the Support pages on the World Wide Web at **http://www.intergraph.com/ics**.

◆ For hardware support questions in the United States, call 1-800-763-0242.

- For software support questions in the United States, call 1-800-345-4856.

- Outside the United States, contact your local Intergraph Computer Systems subsidiary or distributor.

1   Setting Up the Hardware

Follow the instructions in this chapter to set up the hardware for your TDZ 2000 GT1 workstation.

Unpacking the System

CAUTION   Do not use the bottom portion of the face panel or the lip at the top rear of the unit as a hand hold when moving the system. Equipment damage and personal injury can result.

CAUTION   Carefully remove items from packaging. Do not drop any items on a hard surface, or damage may result. You may need a helper to assist you in removing and placing heavy items.

Remove everything from the shipping cartons, then look for the following items:

- A monitor with video cable, power cord, and documentation (if purchased from Intergraph Computer Systems)

- Workstation and power cord

- Keyboard and mouse

- External SCSI terminator, located in the Accessories box

- Intergraph Computer Systems documentation

- Operating system software (CD-ROM and diskettes) and documentation

- InterSite software (CD-ROM)

NOTE   If any of these items were not delivered, call the Customer Response Center immediately at 1-800-633-7248.

Save the packaging materials. If you need to return equipment for repair, it must be in its original packaging for you to get warranty service.

If you have already unpacked and connected the peripherals to the system, review the rest of this chapter and then go to Chapter 2 to begin software setup.

Placing System Components

CAUTION   Do not use the bottom portion of the face panel or the lip at the top rear of the unit as a hand hold when moving the system. Equipment damage and personal injury can result.

When placing the system's components, remember these guidelines:

- Move and place the base unit and monitor carefully.

- Place the base unit in a location where air can circulate freely around it. The front and back panels should each have at least a 3-inch clearance.

- Avoid exposing the system to high levels of dust, smoke, or moisture.

- ◆ Maintain a temperature range of 10 °C to 26 °C (50 °F to 80 °F); the optimum operating temperature is 21 °C (70 °F).

- ◆ Maintain a humidity range from 20 percent to 80 percent (non-condensing); the optimum humidity level is 50 percent.

CAUTION   Do not move the base unit without first shutting down the system and turning off the power, or damage to internal components may result. See Chapter 5, "Operating Notes," for instructions on properly shutting down and powering off the system.

Setting Up the System

Before you connect any cables to the back of the TDZ 2000 GT1, note the connector locations in the following illustration.

Keyboard

Mouse

COM 1 (Serial)

Parallel

Ethernet

COM 2 (Serial)

Universal Serial Bus

External Wide Ultra2 SCSI (LVD)

Microphone

Line in

Line out

MIDI/Game

External Narrow Ultra SCSI
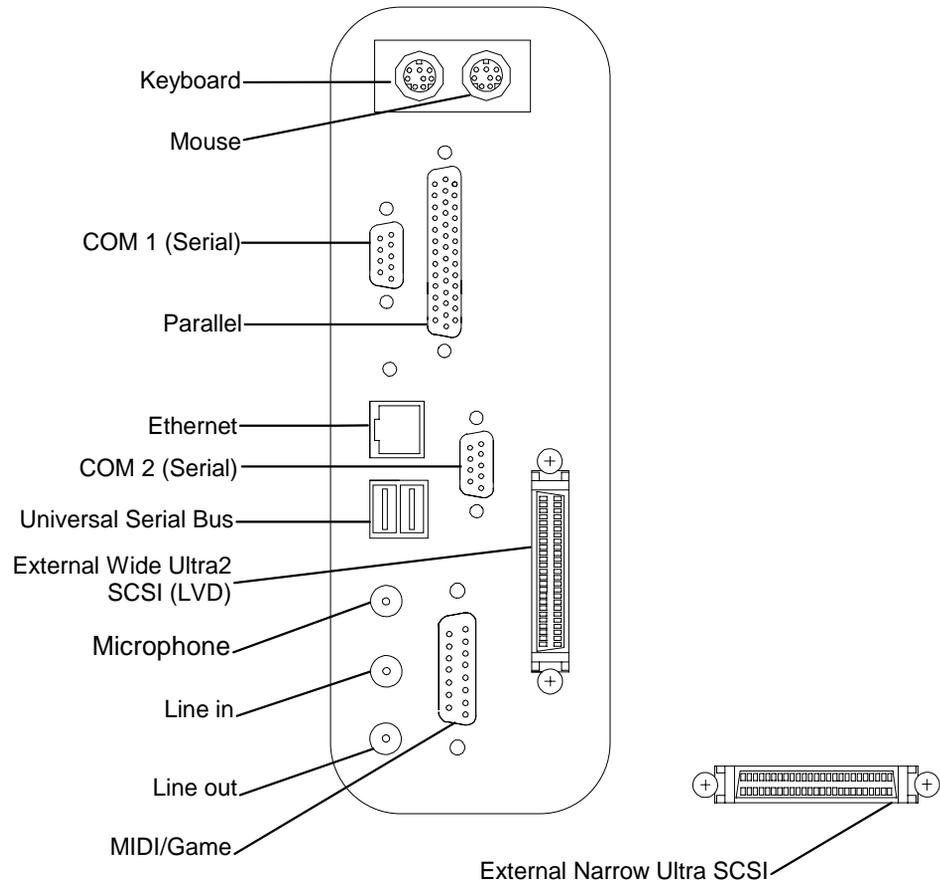
See the *System Reference* for technical details on each port.

To set up the system:

1. Arrange the system base unit, monitor, keyboard, and other peripherals in your workspace.

2. Connect the cables from the various peripherals to the ports on the back of the system.

Connect the cable from this....	To the port labeled....	For this connector....
Mouse		Mouse port
Keyboard		Keyboard port
Modem, printer, or other device	[OO][1] [OO][2]	Serial (COM) port 1 or 2
Printer or other device		Parallel port
Network		Ethernet port
Universal Serial Bus device		Universal Serial Bus port
Stereo speakers or headphones; Multimedia keyboard speaker		Audio Line out port
External stereo cassette or CD player; radio or other device		Audio Line in port
Multimedia keyboard microphone		Microphone port
Game joystick or MIDI device		MIDI/Game port
Monitor		Video Out port
External SCSI device		SCSI port

WARNING   **If you do not use cables supplied by Intergraph Computer Systems, you must use shielded cables to prevent excessive electromagnetic interference (EMI). Intergraph Computer Systems cables are designed to reduce the amount of EMI produced by the system.**

3. If the system includes a multimedia option, connect the speakers and microphone or the multimedia keyboard to the audio ports. See "Connecting Speakers and a Microphone" later in this chapter for details.

4. Connect external Wide SCSI devices to the Wide Ultra2 SCSI port on the I/O panel. Connect external Narrow Ultra SCSI devices to the Narrow Ultra SCSI port below the chassis fan.

NOTE   If you do not use the Wide Ultra2 SCSI port on the I/O panel, you must mount the SCSI terminator, located in the Accessories box.

5. Connect the power cords from the monitor, system, and any external optional peripherals to receptacles on a grounded, three-prong AC wall outlet.

6. Open and stow the door on the front of the computer by doing the following:

   − Grasp the lip at the bottom of the door, pull forward slightly, and lift up until the door is even with the top of the system

   − Push the door into the system until the door stops

Installing Expansion Cards

Expansion cards are installed in the Accelerated Graphics Port (AGP), Peripheral Component Interconnect (PCI), and Industry Standard Architecture (ISA) expansion slots in the base unit. If you purchased expansion cards from Intergraph Computer Systems, they are installed in specific slots as follows.

Slot	Type	Expansion Card
Top	AGP	Video display adapter
	PCI	Video display adapter (optional; for multi-screen)
	PCI	Video display adapter (optional; for multi-screen)
	PCI	Video display adapter (optional; for multi-screen)
	PCI	Video display adapter (optional; for multi-screen)
	PCI	Video display adapter (optional; for multi-screen)
	PCI	Video display adapter (optional; for multi-screen)
Bottom	PCI or ISA (shared)	PC Card adapter (optional; no external connection) 56K modem (optional)

Connecting Speakers and a Microphone

If the system includes separate powered speakers and a microphone, connect the speakers to the Line out port on the I/O panel, and connect the microphone to the Microphone port on the I/O panel. Connect the speaker power AC adapter to the appropriate speaker(s), and then to a grounded, three-prong AC wall outlet. See the audio documentation delivered with the system for more detailed connection information.

If the system includes a multimedia keyboard, see the multimedia keyboard documentation delivered with the system for connection information.

Connecting an External SCSI Device

You can add Wide Ultra2 (also referred to as Low Voltage Differential, or LVD) and single-ended external Narrow Ultra SCSI drives to the system by connecting them to a SCSI port on the back of the system. The TDZ 2000 GT1 features integrated Narrow Ultra SCSI and Wide Ultra2 (LVD) SCSI adapters, both with internal and external ports. See Chapter 5, "System Board," of the *System Reference* for a figure of port locations.

Before you connect external SCSI devices to your system, read the following sections carefully.

NOTE   Most SCSI adapters do not recognize a hard disk drive that was formatted using a different brand of adapter. For example, a hard disk drive formatted with an Adaptec SCSI adapter will not work with a Symbios SCSI adapter. You must use only Symbios-formatted hard disk drives with a Symbios SCSI adapter.

CAUTION   Using a non-compliant SCSI-1 device with your system may cause your system to stop working or lead to other unpredictable results.

CAUTION   Make sure you shut down the system and unplug the power cord from the AC wall receptacle before connecting or disconnecting any peripherals, including external SCSI devices.

NOTE   Remove the SCSI terminator from the Wide Ultra2 SCSI port before connecting a SCSI cable to the Wide Ultra2 SCSI port.

NOTE   See the *System Reference* for additional details on installing SCSI devices.

See "Configuring SCSI Peripherals," in Chapter 3, "Configuring the System," for details on using the SCSI Configuration Utility.

SCSI Cable Length Guidelines

The number of drives and length of the cables used to connect the drives is a factor when using SCSI-2, and Ultra SCSI drives. SCSI-2 and Ultra SCSI impose shorter cable restrictions than SCSI-1. The total length of the SCSI cabling must not exceed the following:

Drives	SCSI-1	SCSI-2	Ultra SCSI	Wide Ultra2 (LVD) SCSI
1 to 4	6 meters	3 meters	3 meters	12 meters
5 to 7	6 meters	3 meters	1.5 meters	12 meters
8 to 15	N/A	N/A	N/A	12 meters

NOTE   The SCSI controller (on the system board or an adapter card) counts as one device.

The total length of the SCSI cabling is the sum of the following:

- Ultra SCSI cable inside the system—14 inches (35.5 cm)

- SCSI cable inside each device—average 8 inches (20 cm)

- SCSI cable between the system and the first device

- SCSI cable between each device

SCSI Cable Quality Guidelines

To ensure data integrity and optimum performance, do the following:

- Use only Intergraph Computer Systems SCSI cables. Cables from other vendors may not provide adequate shielding.

- Use the shortest cables possible to connect SCSI devices to the system and to each other.

Make sure the last device on a chain of external SCSI devices has an active SCSI terminator connected to the open SCSI port. All other external SCSI devices must have SCSI termination disabled or removed.

Connecting the Device

To add an external SCSI device:

1. If necessary, connect one end of an external SCSI cable to one of the following external ports:

   − The integrated Narrow Ultra SCSI port

   − The integrated Wide Ultra2 SCSI port

NOTE   Remove the SCSI terminator from the Wide Ultra2 SCSI port, If necessary.

2. Connect the other end of the cable to the SCSI device.

3. Set the SCSI ID of the device to an unused number.

4. If the SCSI device is:

    – the *last* or *only* device on the SCSI chain, *enable* SCSI termination

    – NOT the *last* or *only* device on the SCSI chain, *disable* SCSI termination

5. Ensure that the power switch on the device is in the off position, and then connect the power cord to the device and then to an AC receptacle.

6. Turn on the power to the device and any other devices on the SCSI chain.

7. Start the system. If necessary, install the software drivers and configure the drive according to the vendor's instructions.

What's Next?

Intergraph Computer Systems installs the operating system through Phase I of the process. From here, you can do either of the following:

- Continue the installation. See Chapter 2, "Setting Up the Software," for instructions on setting up the operating system and associated system software.

- Reinstall the operating system. See Chapter 7, "Installing System Software," for instructions to install the software completely from CD-ROM.

NOTE   Before starting the system for the first time, you may want to learn more about system power, startup, and shutdown. See Chapter 5, "Operating Notes," for this information.

2 Setting Up the Software

Follow the instructions in this chapter to set up the operating system and associated system software on your TDZ 2000 GT1 workstation.

Preparing for Setup

Your system's primary system disk drive and any additional disk drives were formatted and partitioned before shipment. In Explorer or My Computer, you can right-click a disk drive and click Properties to display the drive's partition size and file system format. To view partition and format information for all disk drives, use Disk Administrator. See the operating system documentation and Help for more information on these tools.

Pre-Installed Software

The operating system and associated system software is pre-installed on the primary hard disk drive. Intergraph Computer Systems installed the following system software:

- Driver software for the mouse
- Driver software for the installed video display adapter
- Driver software for the on-board sound adapter
- Driver software for the installed SCSI adapter
- Driver software for the on-board networking adapter
- Core networking software and the NetBEUI protocol
- Service Pack software
- InterSite software

Before You Start Setup

Intergraph Computer Systems installs the operating system through Phase I of the process. You must follow the operating system Setup process to prepare Microsoft Windows NT for use. Before you go through Setup, have the following documents available:

- Microsoft's *Start Here*
- Documents delivered with any expansion cards or additional peripheral devices purchased from Intergraph Computer Systems

Get and record the following information:

◆ Your name, and the name of your
  company or organization:

◆ For a system running Windows NT, the
  CD key from the Windows NT CD
  case, or the Product ID Number from
  Start Here or the registration card:

◆ A username for setting up a user
  account:

If the system is connected to a network, get and record the following general information from
your network administrator:

◆ Computer name for your system:

◆ Workgroup name (if the system will be
  part of a workgroup):

◆ Domain name (if the system will be part
  of a Windows NT domain):

If the system is connected to a network that uses the Transmission Control Protocol/Internet
Protocol (TCP/IP), get and record the following TCP/IP information from your network
administrator:

◆ Internet Protocol (IP) address for your
  system:

◆ IP subnet mask for your system:

◆ IP domain name for your network:

◆ IP address for your network's default
  gateway:

◆ IP addresses for your network's
  Domain Name System (DNS) servers,
  if any:

◆ IP addresses for your network's
  Windows Internet Name Service
  (WINS) servers, if any:

Have several blank, formatted diskettes available to create backup diskettes containing drivers
and system software.

The Windows NT delivery media contain software and drivers for both Reduced Instruction Set Computing (RISC)- and Intel-based systems. When installing Windows NT distribution files, make sure you install them from the \I386 directory (the Intel software directory) on the delivery media.

Starting Operating System Setup

The first time you start the system, it boots to an End-User License Agreement screen. After reviewing and accepting the terms of the agreement, follow the instructions to continue operating system Setup. Take the default settings provided by Setup, except as noted in the following text. You can set up a user account and join a workgroup or domain after you configure the video display, the sound processor, and networking.

To start the computer and set up the operating system software:

1. Turn on the monitor by pressing its power switch.

2. Open the system's front panel door and press the power button. The system starts and the EULA screen displays.

3. Enter the Product Identification Number, found on the Certificate of Authenticity included with your operating system documentation.

NOTE   You must enter the Product Identification Number before you can continue Setup. You cannot complete Setup if you do not enter the number.

4. Follow the instructions displayed on-screen to complete the Setup process.

When setting up the operating system software, remember the following:

◆ Specify the SCSI drivers manually, instead of letting Setup automatically detect them. Have the appropriate driver diskettes ready for this purpose.

◆ Network adapter driver software is preinstalled. Operating system Setup does not prompt you to install networking.

◆ Core network software and the NetBEUI network protocol are preinstalled. If you want to connect the system to another type of network (such as TCP/IP), you must add the appropriate network protocol using the Network applet in the Control Panel. Be sure to reinstall Windows NT 4.0 Service Pack 3 software after making such changes, as recommended by Microsoft.

◆ When prompted to create an Emergency Repair Disk, do so.

◆ If you do not set up a user account during Setup, press ENTER or select OK at the logon dialog to log on to the operating system.

◆ On a system shipped from the factory without a CD-ROM drive, the system's hard disk drive contains Windows NT Setup files in the C:\i386 directory. When installing network or video display adapter drivers, you can see the i386 directory when prompted for the

location of Windows NT Setup files. If you delete the i386 directory from the system's hard disk, you must have access to a Windows NT CD-ROM to use Windows NT Setup files.

After you configure the video display, the sound processor, and networking, you can set up a user account and join a workgroup or domain. See Windows NT Help for details on setting up a user account and joining a workgroup or domain.

For more information on operating system Setup, and on using the interface features of the operating system, see the operating system documentation and Help.

Finishing System Setup

After operating system Setup is completed, a *Press to finish setup* icon displays on the operating system desktop. Double-click this icon to access InterSite Welcome, or select Programs/InterSite/Welcome from the operating system Start menu, to display InterSite Welcome.

InterSite Welcome helps you do the following:

◆ Create a repair disk for the operating system.

◆ Create backup diskettes of device driver software and other system software products.

◆ Get the latest driver and other system software from the World Wide Web.

◆ Display an online *System Introduction* for your system.

◆ Learn about Intergraph Computer Systems customer support.

You should take advantage of the tools provided by InterSite Welcome to ensure that your system is fully ready for use. See InterSite Welcome for more information. Also see the following sections for information on creating a repair disk and creating backup diskettes.

Creating a Repair Disk

If you did not create an Emergency Repair Disk during Setup, use the tools provided by InterSite Welcome to do so. The files on these diskettes can restore the original contents of a damaged operating system Registry (that is, at the time the operating system was installed), along with the standard operating system drivers. You should also update an Emergency Repair Disk after you finish configuring the system. See the operating system documentation and Help for more information.

Creating System Software Backup Diskettes

Backup diskettes for some device driver software and system software products are not delivered with the system. Use InterSite Version Manager, available through InterSite Welcome, to create system software backup diskettes.

Version Manager lets you create backup diskettes containing device driver software and system software products that were installed on the system before shipment, and which are not available on the operating system CD-ROM. You may need these backup diskettes later -- for example, if you have to reinstall a device driver or the operating system.

WARNING **You must create system software backup diskettes after you set up the system hardware and complete the operating system Setup program. If you do not do this, you may not be able to reinstall critical system software or the operating system if needed.**

NOTE You may not have to create backup diskettes for all system software. If Version Manager does not list drivers or other system software products, they are available on the operating system software CD-ROM or on backup diskettes delivered with expansion cards.

See Version Manager Help for information on creating system software backup diskettes. Visit the Intergraph Computer Systems site on the World Wide Web and vendor bulletin boards for new and updated drivers.

What's Next?

See the online information on system features and controls. See Chapter 3, "Configuring the System," for information on configuring the system for use.

3 Configuring the System

Follow the instructions in this chapter to configure your TDZ 2000 GT1 for use. This chapter covers items required for basic operation.

Configuring the Video Display Driver

The first time you start the system, your monitor displays at 1024 x 768 screen resolution. For the system to use the installed video adapter at other display resolutions, you must configure the video display driver as described in this section.

About RealiZm II Video Display Adapters

RealiZm II video display adapters are 3D graphics accelerators. These graphics accelerators provide a number of advanced graphics features, including hardware acceleration of OpenGL and Windows NT graphics features, texture processing, and geometry acceleration. For more information about RealiZm II graphics, see the video display adapter documentation delivered with the system.

Using the Display Properties Dialog Box

Open Display in the Control Panel to configure the video display driver. Use the Settings tab in the Display Properties dialog box to change the color depth, desktop size, font size, refresh rate, and display type. To determine which video display adapter is installed on your system, click the Display Type button. Use the controls on the Hardware Settings tab to change the monitor type, screen display, and preferences.

For detailed information on configuring the video display driver, see the video display adapter documentation and Help delivered with the system, and the README.TXT files delivered with the video display drivers.

3D Display Performance and Full Drag (RealiZm II)

If you use 3D applications with the RealiZm II video display driver, the video display may update slowly when you drag objects across it. To avoid this inconvenience, turn off full drag before using 3D applications with these video drivers.

To turn off full drag:

1. Open Display in Control Panel.
2. Click the Plus! tab.
3. Click to deselect the Show Window Contents While Dragging checkbox.
4. Click OK.

RenderGL Run-Time Library

The RenderGL run-time library is delivered with your TDZ 2000 GT1. This library is delivered as a Dynamic Link Library (DLL) file. If you run an application that requires or uses the RenderGL run-time library, you need to install the RenderGL DLL on your system.

The RenderGL DLL is delivered as follows:

- Your system may have been delivered with a diskette containing the RenderGL DLL. If so, see the README.TXT file on the diskette for installation instructions.

- If your system was not delivered with a diskette containing the RenderGL DLL, you can use the InterSite Version Manager to create the diskette. Run Version Manager from the Welcome dialog that displays after you set up the operating system. After you create the diskette, see the README.TXT file on the diskette for installation instructions.

For more information on the RenderGL run-time library, point your web browser to **http://www.intergraph.com** and follow the links to the Digital Media home page. See "Finding Intergraph Computer Systems on the Internet" in the Preface of this document for further details.

Configuring RealiZm II Support for Heidi Graphics

The RealiZm II graphics accelerators support Heidi graphics for 3D Studio MAX. The Heidi device driver, which operates in conjunction with the RealiZm II video display driver, provides the support.

The Heidi device driver is installed during installation of the RealiZm II video display driver. After you install 3D Studio MAX on your system, copy the Heidi device driver file GLZIHDD.HDI from the \SYSTEM32 directory to the \3DSMAX\DRIVER directory.

NOTE   Use the version of the Heidi device driver that matches the version of the RealiZm II video display driver.

See the README.TXT file delivered with the Heidi Device Driver for detailed instructions on the driver and any associated files.

Correcting Video Display Problems

If the system's video display is black, not synchronized, or distorted after you restart the system, you may have a video configuration problem. Do not press CTRL+ALT+DELETE to log on to the Windows NT operating system. Instead, try to correct the problem by using the Last Known Good option to return the system to the last know good configuration recorded by Windows NT.

To use the Last Known Good option:

1.   Restart the system.

2.   Press the space bar at the following prompt:

     `Press space bar NOW to invoke the Last Known Good Menu`

If using the Last Known Good option fails to correct the video display problems, you can obtain a functional video resolution by restarting the system in VGA mode.

To restart the system in VGA mode:

1.   Restart the system.

2.   At the boot screen, select the VGA mode option appropriate for your system.

After logging on to Windows NT in VGA mode, check for the following common configuration problems and solutions.

◆   A multi-sync monitor is connected to the system, but a multi-sync monitor type is not selected, and the display driver cannot determine this by querying the monitor. Select an appropriate multi-sync monitor type.

◆   A selected resolution, depth, or refresh rate is not supported by the multi-sync monitor. Try using different video display settings.

◆   The Dual Screen option is selected, but only one video board is detected. Deselect the Dual Screen option.

◆   A multi-sync monitor is selected, but a monitor with different video timing (such as an InterVue monitor) is connected to the system. Select the monitor that is connected to the system.

◆   The monitor selection is inappropriate for the multi-sync monitor attached to the system. Restart the system in VGA mode, then select a new monitor.

◆   A graphics resolution and color depth has been selected that exceeds installed display memory. Restart the system in VGA mode, then open Display in the Control Panel to reinstall and configure the display driver as described in the video display adapter documentation delivered with the system.

Restart the system to use the reconfigured video display driver. If problems persist, contact the Customer Response Center for help.

Configuring a Modem

If you purchased a modem with your system, you must ensure the BIOS settings and modem jumpers are set appropriately, depending on which operating system and COM port you want to use with the modem.

To configure the modem:

1. Set the COM port jumper pins on the modem to COM2. If that COM port is already in use, set the jumper to use a free COM port.

2. In the PCI/PnP menu in BIOS Setup, set the Boot to PnP Operating System parameter to No.

3. The modem requires a specific COM port. You must free system resources for use with the modem in BIOS Setup. Set one of the Onboard Serial Port parameters to Disabled in the Advanced menu in BIOS Setup, according to the following table:

COM Port	Disable Serial Port	COM Port	Disable Serial Port
COM1	COM1	COM3	COM1
COM2	COM2	COM4	COM2

4. Set the remaining Onboard Serial Port parameter to Auto and restart the system, saving your changes.

   Double-click the modem icon in Control Panel. Use the Install New Modem window to automatically detect the installed modem. Windows NT lists the name of the modem found.

   If the listed modem is incorrect, you must install the appropriate driver for your modem, located on the CD-ROM or floppy diskette media that accompanied the modem. Click the Change button, then click the Have Disk button, and insert the driver media into the appropriate drive. Follow the prompts to install the new driver.

Configuring Audio

The system is equipped with an on-board Ensoniq ES1371 AudioPCI sound controller. If the system has a multimedia keyboard or a microphone and speakers, you can use the Ensoniq AudioPCI Mixer to control the volume and to select the recording input device.

Alternatively, you can configure the microphone and speaker audio levels also by using the Volume Control utility, available as a speaker icon on the Taskbar. However, the Ensoniq AudioPCI Mixer has unique options. For the highest level of control use the Ensoniq AudioPCI Mixer utility. For more information on using the sound control programs, see the operating system documentation and Help.

Configuring Networking

The system is equipped with an on-board Ethernet network adapter. Before you configure networking, ensure that the system is connected to the network.

To configure Networking, open Network in the Control Panel. Follow the instructions in the dialog boxes to set up the system to use a network. Be sure to set up the appropriate network protocols, such as TCP/IP and NetBEUI, for the network to which the system is connected. After installing network protocols, reinstall the appropriate Windows NT Service Pack software as recommended by Microsoft.

See the operating system documentation and Help for detailed information on setting up the operating system to use a network.

Reassigning Hard Disk Drive Letters

If you have more than one hard disk drive, you may need to reassign system drive letters. You can also reassign the CD-ROM drive letter, if needed.

To change drive letters:

1. From the Start menu, click Programs, Administrative Tools, and then Disk Administrator.

2. Select a hard disk drive.

3. From the Tools menu, click Assign Drive Letter.

NOTE   If you select the current drive or an otherwise locked drive, you must restart the system to complete the drive letter reassignment.

4. Select a new drive letter to assign to the hard disk drive from the list. Click OK, and then click Yes to continue.

5. If necessary, click OK, and then click Yes.

6. Repeat steps 2 through 4 for each hard disk drive letter assignment that you want to change.

7. Click Partition, then click Exit. If necessary, restart the system to complete the drive letter reassignments.

Changing Virtual Memory Settings

If you have more than one hard disk drive, you may need to change size and location of your virtual memory page file. See Windows NT Help for more information.

Consider the following before changing page file settings:

◆ The size of the page file. If your system is equipped with a large amount of RAM, Setup might create a page file that is unnecessarily large.

◆ Drive letter reassignments. If you reassigned your drive letters, you may find it necessary to adjust your page file settings.

To change the size and location of the virtual memory page file:

1. From Start, click Settings, and then click Control Panel.

2. Double-click the System icon.

3. Click the Performance tab and then click Change.

4. Click a drive letter in the list, and then type new values in the Initial Size and Maximum Size text boxes.

5. Click Set.

6. Repeat steps 4 and 5 for any additional drives in the list.

7. Click Close, then click OK. An alert box displays.

8. Do one of the following:

   – Click Yes to restart the system with the new settings.

   – Click No to continue with other tasks and use the new settings the next time you restart the system.

Configuring SCSI Peripherals

You may need to use the SCSI Configuration Utility, delivered on the SYSUTIL diskette, to configure your SCSI peripherals under certain conditions. This software is also available from the Intergraph Bulletin Board Service (IBBS) or Intergraph Online. See "Using the Intergraph Bulletin Board Service" and "Finding Intergraph on the Internet" in the Preface of this document for details.

SCSI Configuration Utility Guidelines

The SCSI Configuration Utility allows you to configure the Symbios SCSI host adapters, perform a low-level format on a SCSI hard disk drive, select boot order, and verify media. You should change only the synchronous data transfer rate parameter. This parameter defines the rate at which data is transferred among SCSI devices; for example, 80 MB per second (default).

Change the SCSI host parameters on a per-device basis under the following conditions:

- If you are advised to do so by Intergraph technical support or instructed to do so by the vendor documentation supplied with the SCSI device.

- If the SCSI device does not negotiate properly with the controller. This is common on older drives.

- If you exceed the total cable length for connecting SCSI devices to the system, as specified in the section, "Understanding SCSI Guidelines," in Chapter 1.

- If you connect non-Ultra or non-Wide Ultra SCSI external devices to the system.

NOTE   Most SCSI adapters do not recognize a hard disk drive that was formatted using a different brand of adapter. For example, a hard disk drive formatted with an Adaptec SCSI adapter will not work with a Symbios SCSI adapter. You must use only Symbios-formatted hard disk drives with a Symbios SCSI adapter.

Using the SCSI Configuration Utility

NOTE   Change the synchronous data transfer rate or the data width parameters for an individual device only. Do not change the parameters for the SCSI host adapter itself. Changes to the SCSI host adapter affect all devices on its bus.

When using the SCSI Configuration Utility, remember the following keyboard tips:

- Press the up or down arrow keys to move about in the menus.

- Press ENTER to confirm a menu selection.

- Press ESC to cancel a selection.

- Select Help to display a Help screen with instructions and details.

To change the synchronous data transfer rate:

1. Insert the SYSUTIL diskette in the floppy drive.

2. From the Start menu, click Shut Down. The Shut Down Windows dialog box displays.

3. Click Restart and then click OK. The system restarts and the MS-DOS 6.22 Startup Menu displays.

4. Select SCSI Configuration Utility and press ENTER.

5. From the main menu, select the SCSI host adapter that you want to configure and press ENTER. Three host adapters are listed, as follows:

    –   Two SYMB53C896 Wide Ultra2 (LVD) SCSI host adapters, one for each channel, are listed. Port F800 is the primary channel; port F400 is the secondary channel.

    –   One SYMB53C860 Narrow Ultra SCSI host adapter is listed, at port F0000

6. From the Utilities menu, select Device Selections and press ENTER.

7. From the Device Selections menu, select the SCSI device that you want to configure and press ENTER.

NOTE   Only eight SCSI devices are listed at a time. Select Device Selections 8-15 to list the next eight SCSI devices.

NOTE   If the device that you want to configure is not listed, exit the menu, repeat step 5 and select the other host adapter. Then, continue with step 6.

8. Select Sync Rate (Megabytes/sec) and press ENTER.

9. Select the appropriate rate (Off, 10, 20, 40, or 80) and press ENTER.

NOTE   To select a rate of 80, the Width setting must be 16. If Width is set to 8, the maximum Sync Rate (Megabytes/sec) is 40.

10. Select Exit This Menu, and then press ENTER.

11. From the Device Selections menu, select Exit This Menu and press ENTER.

12. From the Utilities menu, select Exit This Menu and press ENTER. The Save/Cancel menu displays.

13. Select Save Changes and press ENTER.

14. Eject the diskette from the floppy drive and press any key to restart the system.

Getting Operating System Updates

Microsoft Service Packs contain the latest improvements and system fixes for Microsoft operating systems. Service Packs are created by Microsoft for post-release support. You can get Service Packs from the Microsoft World Wide Web and FTP sites free of charge.

CAUTION   If Intergraph Computer Systems provides a Service Pack through the IBBS or with a product or system, it has been certified against Intergraph Computer Systems hardware as described in the announcement of its availability. If you obtain a Service Pack from any other source, be aware that it may not be certified against your Intergraph Computer Systems hardware.

4   Configuring the BIOS

The BIOS Setup program is used to configure the system's basic input/output system (BIOS). The BIOS is responsible for configuring the system board and CPU, and for providing hardware information to the operating system. For the system to run properly, run BIOS Setup whenever you make a hardware change to the system.

Starting BIOS Setup

To start BIOS Setup:

1. Restart the system. When the system is started, an Intergraph Computer Systems logo displays.

2. Press the F2 key to start Phoenix BIOS Setup.

NOTE   You can only start BIOS Setup during the boot sequence.

NOTE   You can set a password to prevent unauthorized users from accessing BIOS Setup. See "Features Screen" in this chapter.

While using BIOS Setup, remember these tips:

◆   To move between screens in BIOS Setup, press the right and left arrow keys.

◆   To move between options on a screen, press the up and down arrow keys.

◆   To configure a BIOS setting, use one of the following methods:

–   Highlight the setting, and press ENTER to display a list of possible values. Use the up and down arrow keys to select a value, and then press ENTER again to select it.

–   Highlight the setting, and use the plus or minus keys to increase or decrease its value.

◆   When you are in a menu in BIOS Setup, press ESC to exit.

◆   When you are ready to exit BIOS Setup, use the Save Changes and Exit option to exit and save your BIOS settings.

BIOS Setup has five primary configuration screens (listed across the top of the screen):

◆   Main

◆   Advanced

◆   Boot

◆   Security

◆   Exit

Each of these screens is described in the remaining sections of this chapter.

Main Screen

To access the Main screen, use the arrow keys to highlight Main on the BIOS Setup main menu. The Main screen displays. This screen is used for configuring the following system information:

- ◆ System time and system date

- ◆ Legacy diskette A and B

- ◆ Primary/secondary master

- ◆ Disk access mode

- ◆ Keyboard features

- ◆ PS/2 mouse functionality

- ◆ System memory

This section explains how to configure each of these parameters. To move between the parameters, use the up and down arrow ($\uparrow$ and $\downarrow$) keys.

System Time

To set the system time, use TAB to move the prompt and select a field (hours, minutes, or seconds). Use the plus key (+) to increase the number; use the minus key (-) to decrease the number. To select a previous field, press SHIFT+TAB.

System Date

To set the system date, highlight the System Date field, and then use TAB to select a field. Use the plus and minus keys as described above to set the date. To select a previous field, press SHIFT+TAB.

Legacy Diskette A or B

To configure a floppy disk drive that has been added to or removed from your computer, highlight the desired drive. Use the plus or minus keys to change the setting until it matches the installed floppy drive. The BIOS supports 2.88 MB 3.5-inch, 1.44/1.25 MB 3.5-inch, 1.2 MB 5.25-inch, 720 KB 3.5-inch, and 360 KB 5.25-inch floppy drives. The default settings are 1.44 MB/1.25 MB 3.5-inch (for Diskette A) and Disabled (for Diskette B).

NOTE   The 1.25 MB setting uses a 1024 byte/sector Japanese media format.

Large Disk Access Mode

If you are using a DOS operating system (MS-DOS, Windows NT, Windows 95, Novell DOS or PC-DOS), set the disk access mode to DOS (default). If you are using a different operating system, set this parameter to Other. Different operating systems require different settings. If you are installing new software and the drive fails, change the selection and retry.

NOTE   Change this setting only prior to formatting the system disk. Erratic system behavior or file corruption can occur if this setting is changed during normal system drive use.

Keyboard Features

This parameter displays a submenu of options for configuring the features of the keyboard. Press ENTER to display the option menu.

Numlock

This option specifies the power-on state of the NUM LOCK key. The default setting is Auto. Other settings are On and Off.

Key Click

This option enables or disables key clicks. The default setting is Disabled.

Auto-repeat Rate

This option configures the key repeat rate. Select from a range of 2 - 30 repeats/second. The default setting is 30 repeats/second.

Auto-repeat Delay

This option configures the delay before keys start repeating. Select from a range of 1/4 to 1 second. The default setting is 1/2 second.

PS/2 Mouse

When disabled, this option prevents an installed PS/2 mouse from functioning, and releases IRQ 12. Set this paramter to Auto-Detect (default) to allow the system to determine whether or not to enable or disable the mouse.

System Memory

This option displays the amount of memory in the system. This option is not user-configurable.

Extended Memory

This option displays the amount of extended memory in the system. This option is not user-configurable.

Memory Cache

This option configures the state of the P6 memory cache. Enabling cache saves CPU time and can improve performance by storing the most recently accessed data in a special storage area of static RAM (SRAM). Before accessing regular memory, the CPU first accesses the cache. Select this option and press enter to display the Memory Cache submenu:

Cache System BIOS Area

This option controls caching of the system BIOS area. The available settings are Write Protect or Uncached. The default setting is Write Protect.

Cache Video BIOS Area

This option controls caching of the video BIOS area. The available settings are Write Protect or Uncached. The default setting is Write Protect.

Cache Base 0-512K, Cache Base 512K - 640K

This option controls caching of the specified block of base memory. The available settings are Write Back (caches data and writes it to memory), Write Through (writes data immediately to memory), or Write Protect (does not allow data to be written to memory). The default setting is Write Back.

Cache Extended Memory Area

This option controls caching of memory above 1MB. The available settings are Write Back, Write Through, or Write Protect. The default setting is Write Back.

Cache A000 - AFFF, Cache B000 - BFFF

These options determine how to configure the specified block of memory. The default setting is Disabled.

Cache C*xxx* - E*xxx*

These options control the caching of shadow memory in the specified region. The default setting is Disabled.

Advanced Screen

The Advanced screen is used to configure the system devices. Use the left and right arrow (←
and →) keys to highlight Advanced on the BIOS Setup main menu. The Advanced screen
displays.

Plug & Play O/S

When set to Yes, this setting allows your system to work with a Plug and Play operating
system, such as Windows 95 or Windows NT 5.0. The default setting is No.

NOTE   This option should be set to No when using Windows 3.1 or Windows NT 4.0.

Chipset Configuration

This option displays a submenu of options for configuring the chipset features. Press ENTER
to display the submenu.

AGP Configuration

This option displays a submenu of options for configuring the Advanced Graphics Port (AGP)
features. Press ENTER to display the submenu.

AGP Aperture Size

Select the size of the Graphics Aperture for the AGP video device. The aperture is a portion
of the PCI memory address range dedicated for graphics memory address space. Select a
value within a range from 32 MB to 2 GB. The default setting is 256 MB.

AGP GART Cache Trash Protection

When enabled, this option prevents cache entry trashing when there are more than 2 streams
being processed by the CPU bus. The default setting is Enabled.

AGP Grant Pipelining

When this option is disabled, the AGP Arbiter will not preform any pipelining of AGP write
grants. The default setting is Enabled.

Memory Synch CPU-to-AGP Writes

This option causes the chipset to flush the memory write buffers for writes to AGP non-
prefetchable regions. The default setting is Enabled.

AGP DRAM Priority

If set, this option sets the priority between the AGP and CPU bus to two (or three) CPU requests for one AGP request. The default setting is Dynamic.

Memory Options

This option displays a submenu of options for configuring the system memory features. Press ENTER to display the submenu.

ECC Mode

When this option is enabled, correction logic is used on data reads. When disabled, data reads from DRAM are supplied unaltered to the CPU bus. The default setting is Disabled.

Single Cache ECC

When this option is enabled (default), ECC operations are performed in one CPU bus clock. 2 clocks are used when disabled.

Enhanced Page Hit Timing

Enable this option to cause the chipset to drive the CAS# signal one clock earlier and reduce the lead time of a page hit read by one clock. The default setting is Enabled.

Memory Mapped I/O Reg Shadowing

This option enables shadowing of memory-mapped I/O registers between host bridges. The default setting is Enabled.

Memory Cycle First Address Decode

Disable this option to delay lead clock timing for all memory cycles by 1 clock. The default setting is Enabled.

System Error Options

This option displays a submenu that allows you to configure how system errors are handled. Press ENTER to display the submenu.

System Error Signal

This option causes system errors to halt the operating system. The default setting is Enabled.

Report Received Master Aborts

When this option is enabled, a system error is generated on receiving a Master Abort on the PCI bus. The default setting is Enabled.

Report Uncorrectable Errors

When this option is enabled, a system error is generated on detecting an ECC-uncorrectable memory error. The default setting is Enabled.

Report Bad Address Parity Errors

When this option is enabled, a system error is generated when bad address parity is detected. The default setting is Enabled.

Report Bad Received Data Parity

When this option is enabled, a system error is generated when parity errors are detected on CPU-to-PCI reads. The default setting is Enabled.

Report Bad Transmit Data Parity

When this option is enabled, a system error is generated when parity errors are detected on CPU-to-PCI writes. The default setting is Enabled.

Report Received Target Aborts

When this option is enabled, a system error is generated on receiving Target Abort on the PCI bus. The default setting is Enabled.

Parity Error Options

This option displays a submenu of options for configuring how the system handles parity errors. Press ENTER to display the submenu.

Parity Error Signal

When this option is enabled, parity errors halt the operating system. The default setting is Enabled.

Report Receive Data Parity Errors

Enable this option to cause the system to generate parity errors when bad receive data parity is detected. The default setting is Enabled.

L2 Cache ECC Mode

This option enables the use of correction logic on cache reads. If disabled, data read from cache is supplied unaltered to the CPU. The default setting is Disabled.

INIT # Upon Shutdown Cycle

When enabled, the chipset asserts INIT# upon receiving a shutdown command. The default setting is Enabled.

PCI Configuration

Use this option to display a submenu with options for configuring IRQs for legacy ISA devices:

PCI Device, Embedded SCSI A

This option displays choices for configuring the features of embedded SCSI device A.

Onboard LVD SCSI Controller	Controls whether or not the system activates the embedded PCI device. The default setting is Enabled.
Option ROM Scan	Initializes device expansion ROM. The default setting is Enabled.
Enable Master	Enables the selected device as a PCI bus master. The default setting is Enabled.
Latency Timer	Sets the minimum guaranteed time slice allotted for the bust master in units of PCI bus clocks. The default setting is 0040H.
PCI INTA IRQ Mapping	Devices can use hardware interrupts called IRQs. A PCI device cannot use IRQs that are already in use by ISA devices. Use Auto only if no ISA legacy cards are installed. The default setting is Auto-select.

PCI Device, Embedded SCSI B

This option displays choices for configuring the features of embedded SCSI device B.

Onboard Ultra SCSI Controller	Controls whether or not the system activates the embedded PCI device. The default setting is Enabled.
Option ROM Scan	Initializes device expansion ROM. The default setting is Enabled.
Enable Master	Enables the selected device as a PCI bus master. The default setting is Enabled.
Latency Timer	Sets the minimum guaranteed time slice allotted for the bust master in units of PCI bus clocks. The default setting is 0040H.

PCI INTA IRQ Mapping	Devices can use hardware interrupts called IRQs. A PCI device cannot use IRQs that are already in use by ISA devices. Use Auto only if no ISA legacy cards are installed. The default setting is Auto-select.

PCI Device, Embedded NIC

This option displays choices for configuring the features of the embedded Network Information Card (NIC).

Onboard Ethernet Controller	Controls whether or not the system activates the embedded PCI device. The default setting is Enabled.
Option ROM Scan	Initializes device expansion ROM. The default setting is Enabled.
Enable Master	Enables the selected device as a PCI bus master. The default setting is Enabled.
Latency Timer	Sets the minimum guaranteed time slice allotted for the bust master in units of PCI bus clocks. The default setting is 0040H.
PCI INTA IRQ Mapping	Devices can use hardware interrupts called IRQs. A PCI device cannot use IRQs that are already in use by ISA or EISA devices. Use Auto only if no ISA or EISA legacy cards are installed. The default setting is Auto-select.

PCI Device, Embedded Audio

This option displays choices for configuring the features of the embedded Audio device.

Onboard Sound Controller	Controls whether or not the system activates the embedded PCI device. The default setting is Enabled.
Enable Master	Enables the selected device as a PCI bus master. The default setting is Enabled.
Latency Timer	Sets the minimum guaranteed time slice allotted for the bust master in units of PCI bus clocks. The default setting is 0040H.
PCI INTA IRQ Mapping	Devices can use hardware interrupts called IRQs. A PCI device cannot use IRQs that are already in use by ISA devices. Use Auto only if no ISA legacy cards are installed. The default setting is Auto-select.

AGP Device

This option displays additional options for configuring the features of the AGP device.

AGP Controller	Controls whether or not the system activates the embedded PCI device. The default setting is Enabled.

Option ROM Scan	Initializes device expansion ROM. The default setting is Enabled.
Enable Master	Enables the selected device as a PCI bus master. The default setting is Enabled.
Latency Timer	Sets the minimum guaranteed time slice allotted for the bust master in units of PCI bus clocks. The default setting is 0040H.
PCI INTA IRQ Mapping	Devices can use hardware interrupts called IRQs. A PCI device cannot use IRQs that are already in use by ISA devices. Use Auto only if no ISA legacy cards are installed. The default setting is Auto-select.

PCI Device, Slot x

These options display additional options for configuring the features of the PCI slots.

Option ROM Scan	Initializes device expansion ROM. The default setting is Enabled.
Enable Master	Enables the selected device as a PCI bus master. The default setting is Enabled.
Latency Timer	Sets the minimum guaranteed time slice allotted for the bust master in units of PCI bus clocks. The default setting is 0040H.
PCI INTA IRQ Mapping	Devices can use hardware interrupts called IRQs. A PCI device cannot use IRQs that are already in use by ISA devices. Use Auto only if no ISA legacy cards are installed. The default setting is Auto-select.

USB

When this option is enabled BIOS Setup initializes USB resources. The default setting is Disabled.

ISA Graphics Device Installed

A PCI device may require information on whether ISA graphics are installed on the system in order to enable the device to function correctly. The default setting is No.

PCI/PnP ISA UMB Region Exclusion

This option reserves specific upper memory blocks for use by ISA devices. Press the up or down arrow keys to highlight the memory block, and then use the plus or minus keys to reserve it.

PCI/PnP IRQ Exclusion

This option reserves specific IRQs for use by ISA devices. Press the up or down arrow keys to select the IRQ, and then use the plus or minus keys to reserve it. Available IRQs are 3, 4, 5, 7, and 10.

I/O Device Configuration

Use this option to display additional setup menus for configuring peripheral devices. For example, you may want to configure a serial port for a specific modem. Press ENTER to display the Integrated Ports submenu. The submenu provides the following options:

Serial Port A/B

These options configure the operation of the serial ports. Select Disable (to disable the selected port), Enable (to allow user configuration of the selected port), Auto (to enable BIOS or OS configuration) or OS Controlled (displayed when the operating system controls the configuration). The default setting is Auto.

Parallel Port

This option configures the operation of the parallel port. Select Disable (to disable the selected port), Enable (to allow user configuration of the selected port), Auto (to enable BIOS or OS configuration) or OS Controlled (displayed when the operating system controls the configuration). The default setting is Auto.

Mode

The parallel port may be set for Output Only (AT), Bi-directional (PS/2), Extended Capabilities Port (ECP), or Enhanced Parallel Port (EPP). The default setting is Bi-directional.

Floppy Disk Controller

This option configures the operation of the floppy disk controller. Select Disabled (no configuration), Enabled (allows user configuration), Auto (to enable the BIOS or OS to set the configuration), or OS Controlled (displayed when the operating system controls the configuration). The default setting is Enabled.

Base I/O Address

When the floppy disk controller is enabled, this option selects the base I/O address for the controller. The available settings are Primary or Secondary. The default setting is Primary.

Boot

The Boot Screen allows you to configure the boot configuration. To access this screen, use the arrow keys to highlight Boot on the BIOS Setup main menu.

Floppy Check

This option verifies the floppy type when the system boots. Disable this option to speed up the boot process. The default setting is Disabled.

Summary Screen

This option displays the current system configuration when the system boots. The default setting is Enabled.

Boot Device Priority

This option specifies the search order for the different types of boot devices. Select a device from the list, and press the plus or minus keys to move the device up or down in the list. The default order is: Removable, Hard Drive, ATAPI CD-ROM Drive, Network Boot.

Hard Drive

This option causes the system to attempt to boot to the operating system from the first hard drive on the list. If no operating system is found, the system tries the next drive on the list until the operating system is located. The default setting is Bootable Add-in Card.

QuietBoot

When disabled, this selection displays the system diagnostics screen during boot up. When enabled, the system logo screen displays in place of the system diagnostics screen. The default setting is Enabled.

Multiboot

Use this option to display additional setup menus to configure system boot devices. Press ENTER to display the multiboot submenu. This submenu provides the following options:

Hard Drive

Selecting this option tells the system to boot from the system's hard disk drive only.

Removable Devices

Selecting this option causes the system to boot from the specified order. To change the order, highlight an option and use the plus or minus keys to move the option up or down in the list.

Security

Use this selection for additional setup menus to control the security functions of the system. To enable the security feature, highlight this option and press ENTER to display a submenu.

Set Supervisor Password

This selection controls access to the BIOS Setup utility. Press the ENTER key to display the Supervisor Password submenu. Type the password, and press the ENTER key. Retype the password and press the ENTER key again. The password may be disabled by setting the new password to nothing (pressing the ENTER key without first typing a password).

WARNING **If you forget the Supervisor Password, it cannot be disabled without clearing the CMOS.**

Set User Password

This setting controls access to the BIOS Setup utility. Follow the same procedure used to set the Supervisor Password.

NOTE When a password is entered, it is saved immediately. All other changes may still be discarded (see "Exit Screen" in this chapter).

Password on Boot

When this setting is enabled, the system requires a password upon starting up. Either the Supervisor or User Password may be entered. The default setting is Disabled.

Exit Screen

When you are finished configuring the BIOS, use the arrow keys to highlight the Exit option on the BIOS Setup main menu. The Exit screen displays.

Choose one of the following exit options. To move between the Exit options, use the up and down arrow keys ($\uparrow$ and $\downarrow$):

Exit Saving Changes	Saves the changes you have made, exits the BIOS, and restarts the system to make these changes take effect.
Exit Discarding Changes	Leaves the previous BIOS settings intact, exits the BIOS, and restarts the system.
Load Setup Defaults	Returns the BIOS parameters to their original default settings.
Discard Changes	Discards any changes you have made, but does not exit the BIOS.
Save Changes	Saves any changes you have made, but does not exit the BIOS.

To save your changes and restart the computer, choose **Exit Saving Changes**.

Updating the System BIOS

The system's BIOS can be reprogrammed using a BIOS file. You can update the BIOS by following the steps below:

1. Download the appropriate BIOS file from Intergraph's BBS, or from the Support pages on the World Wide Web (**http://www.intergraph.com/ics/**).

2. Extract the BIOS file to a bootable MS-DOS 6.X diskette.

3. Reboot your system with the MS-DOS 6.X diskette in the floppy drive. To make sure a clean DOS environment is loaded, press the F5 key while the message Starting MS-DOS is displayed. After the system has restarted, the cursor displays the A:> prompt.

4. Now you can run the FLASHPROG utility from the bootable floppy disk. Refer to the README.TXT file included with the BIOS update for detailed instructions.

5. After the update process has completed and the system reboots, verify that the new BIOS version appears onscreen.

5 Operating Notes

This chapter contains important, basic information on using the TDZ 2000 GT1. See the online *System Introduction* for details on system features and functions.

Moving the System

WARNING Do not use the bottom portion of the face panel or the lip at the top rear of the unit as a hand hold when moving the system. Equipment damage and personal injury can result.
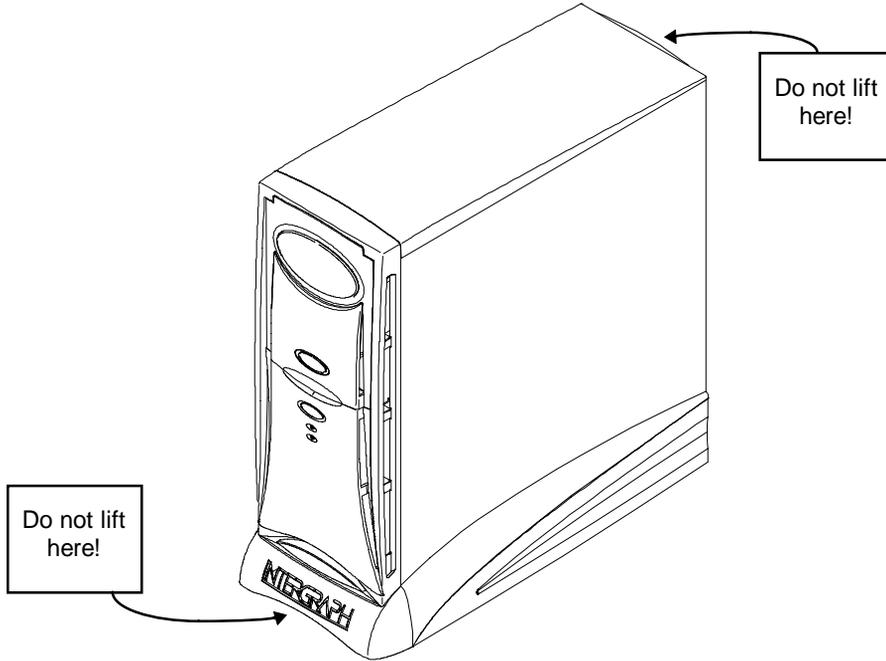
Opening and Closing the Door

Open the door on the face panel to access the floppy drive, CD-ROM, and any optional device installed in the external bay. You can use your system with the door in the open or in the closed position.

To open and stow the door:

1. Grasp the lip at the bottom of the door and lift up until the door is even with the top of the unit.

2. Push the door into the case until the door stops.

To close the door:

1. Grasp the door and pull it straight out of the case until it stops.

2. Lower the door until it stops and then press gently until the door clicks into the closed position.
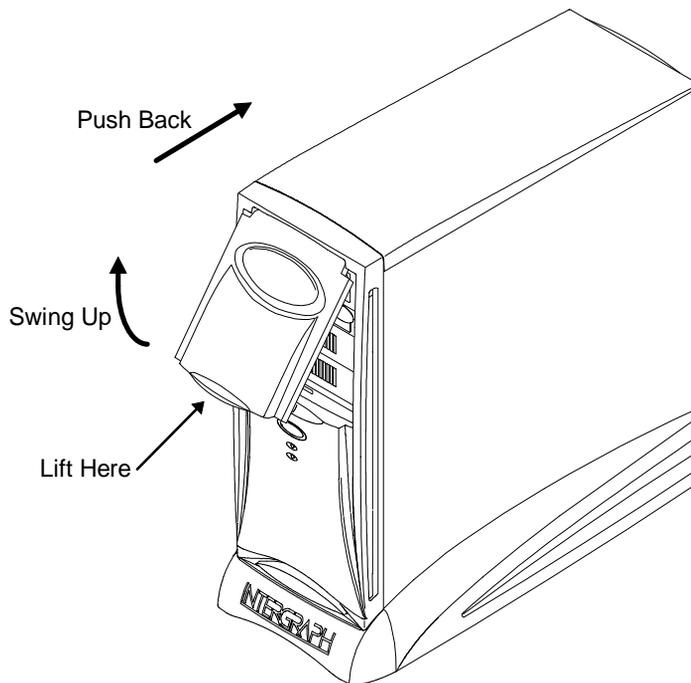
System Power, Startup, and Shutdown

When you connect the power cord from the system to an AC power outlet, auxiliary power is applied to the system. This auxiliary power is available for the system to monitor, among other things, the power button. The power LED lights amber to note the presence of auxiliary power.

Using the Power Button

The power button is on the front left side of the system, just below the external drive bay. Open the door to access the power button.

Standby button
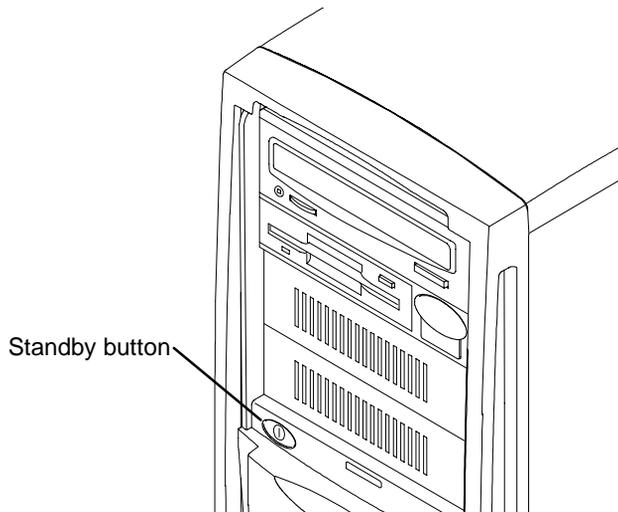
The power button is a momentary contact switch, changing system states each time the button is pressed.

Use the power button to:

◆ start the system from a powered-down state, by pressing and releasing the power button. The system powers on and loads the operating system.

◆ power down the system, by pressing and releasing the power button, after selecting the shutdown option from Shut Down on the Start menu. The system powers down all devices and shuts off the operating system.

CAUTION   Be sure to select Shut Down from the Start menu, and then select the shutdown option, before powering off the system with the power button. Powering off the system simply by using the power button can cause data loss and/or file corruption.

See the following table for details on using the power button.

If system is...	Press power button...	To...
Off (amber LED on)	Momentarily (< 1 sec)	Start the system
Shut down (Restart button visible)	Momentarily (< 1 sec)	Power down the system

Starting and Shutting Down the System

After you complete Setup and start the system for the first time, you can start and stop the system as needed.

To start the operating system:

1. Turn on power to the system. The boot menu displays.

2. Select Windows NT and then press ENTER. The power LED glows green.

To log on to the operating system:

1. If the logon dialog does not display, press CTRL+ALT+DELETE to display it.

2. Type a username and password into the appropriate boxes.

3. If appropriate, type a domain name.

4. Select OK or press ENTER.

To log off, restart, shut down, or power down the system:

1. Click the Start button, and then select Shut Down.

2. To log off the operating system, select the Close all programs and log in as a different user radio button.

    To restart the system, select the Restart the computer radio button.

    To shut down the system, select the Shut down the computer radio button.

3. Click the OK button; the chosen shutdown option activates.

    To power down the system with the Restart button visible, press the power button. The system powers down, and the power LED glows amber.

Booting the System from a CD-ROM

You can boot the system from a bootable CD-ROM if needed. However, you cannot set the system's SCSI CD-ROM drive to be the permanent boot device.

NOTE   You cannot install Windows NT 4.0 by booting from the Windows NT 4.0 CD-ROM, which contains the wrong SCSI controller driver. You must use the Setup diskettes to install Windows NT 4.0.

To boot the system from a bootable CD-ROM:

1. Insert the bootable CD-ROM in the system's CD-ROM drive.

2. Restart the system.

3. As the system boots -- for example, during the memory test or when the Intergraph Computer Systems logo displays -- press ESC.

NOTE   You must press ESC to ensure the system's CD-ROM drive displays as a boot device. The system's SCSI CD-ROM drive does not display in the BIOS Setup program as a boot device.

4. When a pop-up window displays a list of the system's boot devices, use the arrow keys to highlight the SCSI CD-ROM drive, and then press ENTER.

NOTE   Do not select the ATAPI CD-ROM drive.

Using InterSite Programs

Most TDZ 2000 GT1 systems ship with the following InterSite programs:

◆   InterSite Welcome, which displays an introductory guide to your Intergraph system and provides support information, such as phone numbers and web addresses. It also tells you how to create Emergency Repair or Startup disks, critical to restoring a failed system. From the Welcome Utility you can connect to the InterSite Manager to access the full line of InterSite products.

◆   InterSite Version Manager is a tool for creating system software backup diskettes, and for updating device drivers and other system software products installed on the system.

◆   InterSite Manager, the common starting point for all the InterSite products. This utility integrates InterSite components by centralizing them in an easy-to-use point-and-click display. You can familiarize yourself with an InterSite component before invoking it, by reading its description, conveniently placed by its launch button.

◆   InterSite Hardware Monitor is an easy-to-use interface to instrumentation data measured by sensors inside the computer. Event information is reported to the Windows NT Event Log and displayed graphically. For example, temperatures inside the system chassis display on color-coded temperature scales.

◆   InterSite DMI Console gives easy access to the system's status and configuration information. The Console is based on the Desktop Management Interface (DMI), through a window containing a graphical information tree view pane, a service provider component information pane, and a message pane. DMI Console works with the Desktop Management Interface (DMI), a technology standard that enables the effective management of personal computers (PCs).

◆ InterSite Watchdog is a system monitoring tool with remote monitoring capabilities. You can install Watchdog on a system running the Windows NT, and use it to monitor workstations and servers also running Windows NT.

◆ InterSite Diskeeper Lite, which manually defragments Windows NT file systems, thus restoring performance. By using InterSite Diskeeper Lite, disk fragmentation can be kept to a minimum, improving file creation and access times.

◆ InterSite SmartDrive, a kernel-level driver that supports self-monitoring, analysis, and reporting technology. SmartDrive system compliance is displayed via a tab on the Hardware Monitor. Each system disk is listed on the tab, along with its serial number and Smart System compliance information. For more information, refer to InterSite Hardware Monitor's online help.

From the operating system Start menu, go to Programs/InterSite to find the InterSite programs on your system. See the online Help for each InterSite program for more information on how to use the program.

Using Hardware Security Features

The TDZ 2000 GT1 provides you with several security features designed to help prevent unauthorized tampering with the internal components.

A security tab is located at the top left of the chassis under the top cover. You can place a small padlock or a security seal in the hole on the tab to prevent removal of the left side panel.

A tamper-indicating Factory Quality Seal is affixed to the main chassis and left side panel security tab. The seal is your assurance that the unit has not been opened since it left the factory. When removed, the word "VOID" appears on the seal. Removing the seal does not void your warranty.

InterSite Hardware Monitor provides a Chassis Intrusion Alert feature. When the left side panel is removed, Hardware Monitor reports the event. See Hardware Monitor Help for details.

See the *System Reference* for details on removing the top cover.

Ensuring PC Card Support and Operation

The optional PC Card adapter is used with devices based on standards developed by the Personal Computer Memory Card International Association (PCMCIA). See the operating system documentation and Help for more information on PC Card device support.

To ensure proper operation of PC Card devices with a system running Windows NT, make sure the device drivers that control PC Card device operation are set to start correctly. Do this before using the PC Card adapter, or anomalous behavior may result. Go to Devices in the Control Panel and do the following:

- Set the **Pcmcia** device to start as a Boot device.

- Set the **Atdisk** device to start as a System device.

Restart the system after making these changes.

Finding Serial and Model Numbers

The system's serial number is on a permanent label affixed under the top cover at the front left of the chassis.

The system's model number is on a permanent label affixed on the back panel near the top.

6 Troubleshooting

Use this chapter to help identify the causes of problems that can occur with your TDZ 2000 GT1.

See the *System Reference* for information on opening the case and working with internal components. If you cannot resolve the problem or if the instructions direct you to call the Customer Response Center, contact Intergraph Computer Systems. See the Preface of this document for details.

System Power

ERROR - Fails to power on.

Reason	Solution
Power cord not connected properly.	Verify that the power cord is properly connected to the power receptacle.
Power not available at the outlet.	Verify power to the outlet has not been interrupted. Test the outlet with a known working appliance.
Power not available from the UPS.	Verify the UPS is connected and operating properly.
Internal power cables not connected.	Open case and ensure all power cables are connected properly.
Faulty power cord.	Replace power cord.

System Boot

ERROR - Does not boot from the expected boot device.

Reason	Solution
Boot sequence not correctly set.	Change the boot sequence. See Chapter 4.
Operating system not on the system drive.	Install the operating system as described in Chapter 7.

ERROR - Does not boot from drive A.

Reason	Solution
Corrupt boot disk, or boot disk does not have correct boot utilities.	Replace the boot disk. See *System Reference*.
The boot sequence may be set to C, A, in which case the machine will not boot from A if there is an operating system on C.	Change the boot sequence. See Chapter 4.
Corrupt BIOS on the flash EPROM.	Reprogram the BIOS. See Chapter 4.

ERROR - Series of beeps and error message displays.

Message	Explanation and Solution
Refresh Failure	Bad memory refresh circuitry on the system board. Remove and reinstall DIMM(s). If error persists, replace the DIMM(s).
Parity Error	Parity error in the first 64 KB block of memory. Remove and reinstall DIMM(s). If error persists, replace DIMM(s).
Base 64 KB Memory Error	Memory failure in the first 64 KB. Remove and reinstall the DIMM(s). If error persists, replace the DIMM(s).
Timer Not Operational	Memory failure in the first 64 KB, or Timer 1 on the system board is not functioning. Call the Customer Response Center.
Processor Error	The CPU on the system board generated an error. Call the Customer Response Center.
8042 - Gate A20 Failure	The BIOS cannot switch to protected mode. Call the Customer Response Center.
Processor Exception Interrupt	The CPU generated an exception interrupt. Call the Customer Response Center.
Display Memory Read/Write Error	The sound controller is faulty. Call the Customer Response Center.
ROM Checksum Error	The ROM checksum value does not match the value encoded in the BIOS. Call the Customer Response Center.
CMOS Shutdown Register Read/Write Error	The shutdown register for CMOS RAM failed. Call the Customer Response Center.
Cache Error/External Cache Bad	The external cache is faulty. Call the Customer Response Center.

ERROR - CD-ROM drive is not recognized.

Reason	Solution
CD-ROM drive power cable not attached.	Open case and ensure power cable is properly attached. See *System Reference*.
CD-ROM drive cable not attached.	Open case and ensure cable is properly attached. See *System Reference.*

ERROR - System hard disk drive not recognized.

Reason	Solution
Hard disk drive power cable not attached.	Open the case and ensure power cable is properly attached. See *System Reference*.
Hard disk drive SCSI cable not attached.	Open the case. Ensure the SCSI cable is properly attached at both ends. See *System Reference*.
A SCSI address conflict exists between the hard disk drive you installed and another SCSI device.	Remove the hard disk drive and change SCSI ID to an unused setting. See the documentation shipped with the hard disk drive.
SCSI termination is enabled on the hard disk drive you installed.	Disable the SCSI termination. See the documentation shipped with the hard disk drive.
Some viruses cause the system to not recognize hard disk drives.	Run a virus scan program that checks the Master Boot Record. Clear any viruses detected by the program.

ERROR - "Invalid configuration information for SLOT XX" message displays.

Reason	Solution
System is not properly configured to recognize the new ISA option board.	Use the Chipset menu parameters in BIOS Setup to reserve system resources for the board. See Chapter 4.

ERROR - Total amount of memory does not display.

Reason	Solution
Faulty DIMM(s).	Identify faulty DIMM(s) by swapping DIMM(s) until the faulty one is found. See *System Reference*.
DIMM(s) not properly seated into socket(s).	Ensure DIMM(s) are properly installed. See *System Reference*.

ERROR - I/O card parity error message displays.

Reason	Solution
Faulty option board is installed in ISA slot.	Remove ISA board, then restart the system. See *System Reference*.

Sound

ERROR - Sound cannot be heard.

Reason	Solution
Volume of speakers on multimedia keyboard is low or off.	Adjust volume up, release Mute button or set slider switch to speaker position on multimedia keyboard.
Speaker cable is not properly connected.	Verify cable is properly connected.
Volume is turned off in the Volume Control program.	Double-click the speaker icon in the taskbar tray and increase the master volume.
Headphones are plugged into the multimedia keyboard.	Unplug the headphones.

Video

ERROR - System powered on, but screen remains blank.

Reason	Solution
Monitor not powered on.	Turn on power to the monitor.
Monitor power cord not connected.	Connect monitor power cord to AC outlet and monitor.
Video cable not properly installed.	Ensure video cable is connected to monitor and case.
Graphics card not seated properly.	Open case and re-seat graphics card. See *System Reference*.
Selected resolution is not supported by the monitor.	Select a supported resolution. See the video card documentation and README.TXT file for resolution details.
Improper video display driver installed.	Remove the driver and install a valid driver. See Chapter 3.

Miscellaneous Hardware

ERROR - CD-ROM drive LED does not light.

Reason	Solution
CD-ROM drive power cable not attached.	Open case and ensure power cable is properly attached. See *System Reference*.

ERROR - Floppy disk drive LED does not light.

Reason	Solution
Floppy disk drive power cable not attached.	Open case and ensure power cable is properly attached. See *System Reference*.

ERROR - Arrow keys or numbers do not work on keyboard number pad.

Reason	Solution
NUM LOCK disabled.	Press the NUM LOCK key.

Network

ERROR - Cannot connect to other systems on LAN.

Reason	Solution
Ethernet cable disconnected.	Reconnect Ethernet cable and ensure proper connection. If cable is properly connected, notify your System Administrator.
Incorrect software configuration.	Notify your System Administrator.

ERROR - Cannot plot to network plotter on LAN.

Reason	Solution
Ethernet cable disconnected.	Reconnect Ethernet cable, ensure proper connection.
Plotter not added to Print Manager on your system.	Notify your System Administrator.
Plot node does not recognize your system.	Notify your System Administrator.

7   Installing System Software

Follow the instructions in this chapter if you need to reinstall the operating system and associated system software on your TDZ 2000 GT1. Before you reinstall the software, ensure that you read and understand this entire chapter.

Before You Begin

Have the following items available:

◆ The information that you recorded in Chapter 2, "Setting Up the Software."

◆ Windows NT operating system software CD-ROM, Windows NT Service Pack CD-ROM, associated diskettes, and documentation. Make sure you have the Setup diskettes delivered with the operating system.

◆ Backup diskettes you created according to instructions in Chapter 2, "Setting Up the Software." You can also create backup diskettes by inserting the Intergraph System CD-ROM into any computer running Windows NT, Windows 95, or Windows 98 and running InterSite Version Manager. Create backup diskettes for the products listed under "System Software Products" in this chapter.

◆ Backup diskettes and documentation delivered with any expansion boards or additional peripheral devices purchased from Intergraph Computer Systems.

◆ The *Late-Breaking News* document delivered with the system.

You can find the system software on backup diskettes that you created, on the Intergraph System CD-ROM, on diskettes provided by Intergraph Computer Systems, or on the operating system CD-ROM. If you did not create backup diskettes of drivers or other system software products, you can create them from the Intergraph System CD-ROM as described above. System software is also probably available on the operating system CD-ROM or on backup diskettes delivered with expansion boards.

NOTE   You must install certain drivers from backup or other diskettes. The correct driver versions may not be on the operating system CD-ROM. If a driver version is delivered on backup diskette or in Version Manager, that version should be used instead of what is available on the operating system CD-ROM.

Driver software is routinely improved and updated. User InterSite Version Manager, or visit the Intergraph Computer Systems site on the World Wide Web and vendor bulletin boards for new and updated drivers.

Review the *Late-Breaking News* document delivered with your system for any additional tasks you may have to perform during reinstallation.

System Software Products

The following table lists drivers and other system software products installed on various configurations of TDZ 2000 GT1 systems. Products available for your system, but not listed here, are available on an operating system software CD-ROM or are delivered with an expansion card or additional peripheral device.

Product	Description
MILL2DRVNT	Matrox G200/Millennium II video driver
INTENSEDRV	Intense 3D Pro video driver
REALIZMDRV	Intergraph RealiZm II video driver
ENSQ1371WNT4	Ensoniq 1371 sound adapter driver
LMOUSE	Logitech mouse driver
MSMOUSEDRV	Intellimouse driver
3COM3C90X	3COM 3C905B network adapter driver
SYMSCSI	Symbios SCSI driver
SYMLVDSCSI	Symbios LVD SCSI driver
2940SCSIDRV	Adaptec SCSI driver
MEGARAID	InterRAID disk array driver
56KPCIMODEM	56KB modem driver
VTREERUN	VTREE runtime graphics library
DMI_BIOS_DRV	DMI BIOS driver
WELCOME	InterSite Welcome
VERMANAGER	InterSite Version Manager
DKLITE	InterSite Diskeeper Lite
DMI	InterSite DMI Console
ECCMEM_GT1	InterSite ECC Memory Diagnostic
HWMON_GT1	InterSite Hardware Monitor
IM	InterSite Manager
WATCHDOG	InterSite Watchdog
SMARTDRV	SMART Drive driver
USSP3	Windows NT 4.0 Service Pack 3
QFE_NTENG	Quick-Fix Engineering Update
DLESYSIN	*System Introduction*
SYSUTIL	SCSI Configuration Utility
FLASHPROG	BIOS and Flash Program Utility (from online services)

Installing Windows NT Workstation 4.0

System Software

Depending on your system's configuration, you will need some or all of the following system software during the installation process:

- SCSI driver

- Video display driver

- Network adapter driver

- Sound processor driver

- Mouse driver

- QFE update software

Installation Guidelines

Follow the instructions in *Start Here* to install Windows NT.

Do the following *during* installation of the operating system:

- When prompted, install the 3COM network driver for the on-board 3C918-based PCI adapter from backup diskette instead of from the operating system software CD-ROM.

- Select Custom Setup when prompted to select a Setup type.

- On a system with internal SCSI disk drives and a SCSI adapter(s), press the **S** key to install the SCSI adapter driver from backup diskette. Select Other (Requires disk provided by a hardware manufacturer) from the list and press ENTER. Insert the diskette with the SCSI adapter driver into the floppy disk drive, and then press ENTER. Repeat as necessary for each installed SCSI adapter.

- Do not select automatic detection of network driver. Allow Setup to configure the network only if the system is connected to the network.

- Create an Emergency Repair Disk when prompted to do so.

Do the following *after* installation of the operating system:

- Install drivers—including those for video, sound, and SCSI—and other system software from backup diskettes. System software on backup diskette is usually more current than system software on the operating system CD-ROM.

- Install the latest Windows NT Service Pack software from CD-ROM to update the operating system. See "Getting Operating System Updates" later in this chapter for details.

◆ Complete additional installation tasks in this chapter as necessary.

◆ Configure the system as described in Chapter 3, "Configuring the System."

Do the following *after* you install the Windows NT Service Pack:

◆ If you created a Quick-Fix Engineering (QFE) backup diskette from Version Manager during any previous initial system configuration, install the QFE update software. See the README.TXT file on the QFE diskette for more information.

Installing QFE Software

Quick-Fix Engineering (QFE) update software contains fixes for operating system problems or limitations. If a system requires QFE update software, it is installed on the system before it leaves the factory. If QFE update software is installed on the system, you can (and should) create a QFE backup diskette using InterSite Version Manager.

If you reinstall the Windows NT 4.0 operating system and the Service Pack software, be sure to reinstall the QFE update software as well. Install the QFE update software <u>after</u> you reinstall Service Pack software. QFE update software contains post-Service Pack fixes.

Reassigning Hard Disk Drive Letters

If you have more than one hard disk drive, you may need to reassign system drive letters. You can also reassign the CD-ROM drive letter, if needed.

To change drive letters:

1. From the Start menu, click Programs, Administrative Tools, and then Disk Administrator.

2. Select a hard disk drive.

3. From the Tools menu, click Assign Drive Letter.

NOTE   If you select the current drive or an otherwise locked drive, you must restart the system to complete the drive letter reassignment.

4. Select a new drive letter to assign to the hard disk drive from the list. Click OK, and then click Yes to continue.

5. If necessary, click OK, and then click Yes.

6. Repeat steps 2 through 4 for each hard disk drive letter assignment that you want to change.

7. Click Partition, the click Exit. If necessary, restart the system to complete the drive letter reassignments.

Changing Virtual Memory Settings

If you have more than one hard disk drive, you may need to change size and location of your virtual memory page file. See Windows NT Help for more information.

Consider the following before changing page file settings:

◆ The size of the page file. If your system is equipped with a large amount of RAM, Setup might create a page file that is unnecessarily large.

◆ Drive letter reassignments. If you reassigned your drive letters, you may find it necessary to adjust your page file settings.

To change the size and location of the virtual memory page file:

1. From Start, click Settings, and then click Control Panel.

2. Double-click the System icon.

3. Click the Performance tab and then click Change.

4. Click a drive letter in the list, and then type new values in the Initial Size and Maximum Size text boxes.

5. Click Set.

6. Repeat steps 4 and 5 for any additional drives in the list.

7. Click Close, then click OK. An alert box displays.

8. Do one of the following:

   – Click Yes to restart the system with the new settings

   – Click No to continue with other tasks and use the new settings the next time you restart the system

Configuring SCSI Host Adapter Settings

If you previously used the SCSI Configuration Utility on the SYSUTIL diskette to change SCSI host adapter settings, you must restore those settings after installing the Windows NT operating system and the Service Pack.

See Chapter 3, "Configuring the System," for information on configuring SCSI peripherals.

Restoring a Pre-configured Striped Disk Set

If your TDZ 2000 GT1 shipped with the striped disk option, you may need to restore the stripe set to return the disk subsystem to its original performance capabilities. Pre-configured striped disk set options consist of the following:

- ◆ Two SCSI disk drives of equal size. The system disk has a 1 GB partition that contains the operating system. The remainder of the system disk and an equivalent amount of the second disk are striped together. The remainder of the second disk is unformatted.

- ◆ Three SCSI disk drives of equal size. The system disk has a 1 GB partition that contains the operating system. The remainder of the system disk is free storage space. The other two disks are striped together.

Use Disk Administrator to restore the stripe set. See Disk Administrator Help for details on using the disk utility.

To restore a stripe set:

1. From the Start menu, click Programs, click Administrative Tools, then click Disk Administrator. Disk Administrator initializes and an alert displays.

2. Click OK.

NOTE The first time you run Disk Administrator or after the disk configuration changes, an alert box displays.

3. Right-click CD-ROM 0 and click Assign drive letter. Select a new drive letter; for example, H.

4. Click Disk 0, press CTRL, and click Disk 1. Disk 0 and Disk 1 are selected.

5. From Partition, click Create Stripe Set. The Create Stripe Set dialog box displays.

6. Click OK.

7. From Partition, click Commit Changes Now.

8. Click Yes to confirm.

9. If prompted, click Yes to confirm that you want to restart the computer. An alert box displays and states that the disks were updated successfully.

10. Click OK to dismiss the alert.

11. Click OK to restart the computer.

12. After the computer restarts, log on as the administrator.

13. Repeat steps 1 and 2 above.

14. Right-click the stripe set, click Format, and click NTFS as the file system type.

15. Click Quick Format.

16. Click Start to begin the format operation and click OK to confirm.

17. After the Format Complete alert box displays, click OK and then close the Format dialog box.

18. For any other optional disk drives, repeat the steps necessary to create a partition, assign the drive letter and format the partition as described in the Disk Administrator Help.

19. From Partition, click Exit.

Configuring the Sound Driver

If you reinstall Windows NT and the associated system software and have an MPU-401 device or a joystick, you must also install the appropriate drivers.

To install a compatible MPU-401 device driver:

1. Click Start, click Settings, and then click Control Panel.

2. Double-click Multimedia and click the Devices tab.

3. Click Add. The Add Driver dialog box displays.

4. In the list, click MPU-401 Compatible Driver and click OK. The Install Driver dialog box displays.

5. Insert the Windows NT operating system installation CD in the CD-ROM drive.

6. Change the drive letter, if needed, to the drive letter of your CD-ROM drive and click OK. The driver is installed and the Generic MPU-401 dialog box displays.

7. Click OK to accept the default values. An alert box displays.

8. Click Restart Now. The system restarts.

To install a compatible joystick driver:

1. Click Start, click Settings, and then click Control Panel.

2. Double-click Multimedia and click the Devices tab.

3. Click Add. The Add Driver dialog box displays.

4. In the list, click Unlisted or Updated Driver and click OK. The Install Driver dialog box displays.

5. Insert the Windows NT operating system installation CD in the CD-ROM drive.

6. Type \DRVLIB\MULTIMED\JOYSTICK\X86 in the Path text box and click OK. The driver is installed.

7. Restart the system.

Getting Operating System Updates

Microsoft Service Packs contain the latest improvements and system fixes for Microsoft operating systems. Service Packs are created by Microsoft for post-release support. You can get Service Packs from the Microsoft World Wide Web and FTP sites free of charge.

CAUTION   If Intergraph provides a Service Pack through its online services or with a product or system, it has been certified against Intergraph hardware as described in the announcement of its availability. If you obtain a Service Pack from any other source, be aware that it may not be certified against your Intergraph hardware.

8   Using System Resources

This chapter provides information on using system resources, such as interrupt requests (IRQs) and basic input/output system (BIOS) parameter settings, to configure the system to use additional option boards. The chapter covers specific Peripheral Component Interconnect (PCI) and Industry Standard Architecture (ISA) devices offered by Intergraph as system options. Intergraph Computer Systems has determined that the devices discussed in this chapter require specific resource settings to ensure proper system operation.

See Chapter 4, "Configuring the BIOS," for information on running the BIOS Setup program and changing BIOS parameter settings.

See the *System Reference* for additional information on system resources.

Available IRQs

IRQs 5 and 10 are available for assignment. If a non-Plug And Play compliant ISA card is installed, set it to use either IRQ 5 or IRQ 10. In BIOS Setup, the selected IRQ must be set to `reserved`.

Freeing IRQs

To free IRQs for use by an ISA device or a PCI device that uses drivers that do not comply with the PCI 2.l specification, you can use the system BIOS to disable unused system ports.

To disable an unused system port:

1. Restart the system and press DEL when prompted to enter Setup.

2. Select Setup, and then select Peripheral Setup.

3. Select the port you want to disable (OnBoard Serial Port 1, OnBoard Serial Port 2, or OnBoard Parallel Port).

4. Change the value of the setting to Disabled.

5. Save the changes and exit from BIOS Setup.

PCI Devices

The system's PCI expansion slots comply with the PCI 2.1 specification. Devices that comply with the PCI 2.1 specification are fully plug-and-play. You do not have to configure them after installation.

Some older PCI device drivers cannot share an interrupt, which is a violation of the PCI 2.1 specification. If you install a device that uses such a driver, you must free an IRQ for the device to work in the system.

Configuration Data

Interrupt Requests (IRQs)

System interrupt request (IRQ) assignments are defined below.

IRQ	Name	IRQ	Name
0	System Timer	8	Real Time Clock
1	Keyboard	9	SMBUS/ACPI
2	Cascade input for IRQ8 - IRQ15	10	Ensoniq ES1371 AudioPCI Processor
3	COM2, COM4	11	Spare
4	COM1, COM3	12	Mouse
5	MIDI port	13	Floating Point Unit
6	Floppy Controller	14	Spare
7	Parallel Port	15	Hardware Monitor

You can assign the spare interrupt listed above to an ISA device. When you add a PCI device to the system, the system BIOS automatically assigns the interrupt. However, at least one interrupt must be available for the PCI bus.

When you add an ISA board, you must reserve the interrupt using the BIOS Setup utility and jumpers on the expansion board. See the vendor documentation for the expansion board for jumper and related information.

DMA Channels

The system board uses Direct Memory Address (DMA) channels to exchange data without accessing the CPU. Some channels are assigned for specific use by the system, as defined below. Each DMA channel appropriates full 32-bit processing. For an ISA bus, channels 0 through 3 are 8-bit and channels 4 through 7 are 16-bit channels.

DMA	Assignment	DMA	Assignment
0	LPT1	4	Cascade input for 0-3
1	Ensoniq ES1371 AudioPCI	5	Spare
2	Floppy Controller	6	Spare
3	Ensoniq ES1371 AudioPCI	7	Spare

Input/Output Addresses

The following table lists a small subset of the reserved I/O addresses.

Address	Device
0278 - 027F	Parallel Port LPT2
02E8 - 02EF	Serial Port COM4
02F8 - 02FF	Serial Port COM2
0378 - 037F	Parallel Port LPT1
03B0 - 03BF	Monochrome Display/Printer Adapter
03C0 - 03CF	Enhanced Graphics Adapter (EGA/VGA)
03D0 - 03DF	Color/Graphics Monitor Adapter (CGA/MCGA)
03F0 - 03F7	Floppy Controller
03F8 - 03FF	Serial Port COM1

Memory Address Map

The following table lists the memory address map assignments.

Memory Address	Size	Assignment
00000000 - 0009FFFF	640K	System board memory
000A0000 - 000BFFFF	128K	Video memory
000C0000 - 000C7FFF	32K	Video ROM
000C8000 - 000DFFFF	96K	Available I/O Adapter ROM
000E0000 - 000EFFFF	64K	BIOS ROM and PCMCIA
000F0000 - 000FFFFF	64K	BIOS ROM
00100000 - 1FFFFFFF	511M	Expansion memory
20000000 - 3FFFFFFF	—	Reserved

Index

INTERGRAPH
COMPUTER SYSTEMS

Returned Goods Authorization (RGA) Form

Date Returned _____ **Base Serial No.** _____

(On white bar code ID plate on back of base unit)

RGA No. _____ (From Intergraph Customer Response Center)

From **Customer Name** _____

Customer Contact _____ **Phone** _____

Mail Address _____

_____

_____

_____

Reason for Return _____

_____

_____

_____

_____

_____

_____

NOTE All returned equipment MUST be shipped in original Intergraph packaging to obtain warranty service.

WARNING **Back up disk drives before returning equipment. Intergraph is not responsible for data lost in shipping or repair process.**

INTERGRAPH
COMPUTER SYSTEMS

Warranty Procedure

Some malfunctioning equipment cannot be repaired in the field, and you must return it to Intergraph for repair. Follow these steps to obtain a Returned Goods Authorization (RGA) log number and return the malfunctioning equipment.

1. Determine the serial number of the system. The serial number is located on the white bar code identification label on the back of the base unit.

2. Call the Intergraph Customer Response Center at 1-800-633-7248, and identify your call to the operator as a Warranty Call. After giving the operator the serial number of the system, you will be assigned a RGA log number.

3. Complete the RGA Form on the previous page, entering the RGA log number obtained from the Customer Response Center. Ensure that the address in the From section is the location to which you want the equipment to be returned.

4. Place the RGA form in the box containing the equipment. This form must accompany returned equipment.

5. Secure a Repair Depot address label from the next page to the box containing the equipment.

6. Ship the box containing the equipment to Intergraph.

When the service activity has been completed by Intergraph, the repaired or replaced equipment will be shipped to the address listed on the RGA Form.

NOTE   Parts damaged during shipping and parts not covered by the warranty are liable for repair charges.

TO   **Repair Depot RGA No. _____**

       Intergraph Corporation

       9805 Kellner Road

       Huntsville AL 35894

TO   **Repair Depot RGA No. _____**

       Intergraph Corporation

       9805 Kellner Road

       Huntsville AL 35894

TO   **Repair Depot RGA No. _____**

       Intergraph Corporation

       9805 Kellner Road

       Huntsville AL 35894