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AMIDiag performs specialized diagnostic tests on any IBM PC/AT®-compatible computer. AMIDiag provides comprehensive system configuration and environment information. AMIDiag can be executed in batch mode. You can run AMIDiag continuously, for a predetermined number of passes, or for a predetermined amount of time. All errors can be logged to disk, printer, or serial port.

Technical Support AMI only provides technical support for AMI products purchased directly from AMI or from an AMI-authorized reseller.

<table>
<thead>
<tr>
<th>If…</th>
<th>then…</th>
</tr>
</thead>
<tbody>
<tr>
<td>You purchased this product from AMI or from a certified AMI reseller,</td>
<td>Call AMI technical support at 770-246-8600. Please be prepared to specify the serial number of the product.</td>
</tr>
<tr>
<td>This AMI product was installed as part of a system manufactured by a company other than AMI or you purchased an AMI product from an unauthorized reseller.</td>
<td>Call the technical support department of the computer manufacturer or the unauthorized reseller. AMI does not provide direct technical support in this case.</td>
</tr>
</tbody>
</table>

Web Site http://www.ami.com
AMIDiag DOS Features

Test Control

- improved user interface,
- condensed scripted, scripted, and batch mode testing,
- interactive or non-interactive tests,
- quick test mode (abbreviated versions of the diagnostic tests) with additional tests,
- single or multi-cycle batch testing,
- network heart beat support,
- test progress reporting,
- test result logging on a file, COM port, or LPT port,
- customizable log file,
- supports external programs,
- configuration summary can be sent to a file,
- run from a RAM drive when booted from a floppy,
- multi-floppy support

CPU Tests

- virtually unlimited CPU speed support,
- specific tests for MMX, SSE and 3DNow! instruction sets,
- supports CPUs from:
  - Intel, AMD, VIA/Cyrix, TI, SGS Thompson,
- Supports most modern CPUs including AMD Athlon, AMD Duron and Intel Pentium 4
AMIDiag DOS Features, Continued

Memory Tests

- memory fault isolation,
- tests up to 64 GB of memory,
- chipset-specific tests for ECC,
- works even if a memory manager has been loaded,
- parity, pattern, and extended pattern tests
- walking 0’s and walking 1’s tests,
- random pattern test,
- refresh test,
- cache memory test,
- specific L2 cache test for Pentium II and above,
- quick cache test,
- quick data test,
- address bus test,
- memory interleave and bank failure reporting,
- ECC error monitoring,
- supports memory holes

BIOS ROM Test

- ROM read and write test,
- Year 2000 test.

Multiprocessor Test

- tests systems with up to 16 processors,
- supports Pentium, Pentium Pro, Pentium II, Pentium III, Pentium II Xeon, and Pentium III Xeon,
- tests CPU steppings,
- target speed and L2 cache tests,
- detects incompatible CPUs,
- provides multiprocessor system information.
System Board Tests

- serial and parallel port tests,
- IrDA test,
- CMOS RAM test,
- customizable speaker test,
- FPU test,
- DMA and interrupt controller tests,
- enhanced PCI bus test,
- Plug and Play (PnP) test,
- EISA bus test,
- PCI bus stress test (standard and master PCI cycles.)

SMBus Test

- SMBus controller test (checks Intel PIIX4/4E, SiS, ALI and VIA controllers)

SCSI Device Tests

- automatic SCSI device detection,
- enhanced boot sector test,
- supports up to eight SCSI channels and up to 120 SCSI devices,
- supports narrow, wide, and ultra wide SCSI,
- SCSI disk read, write, and format tests,
- SCSI disk self diagnostics,
- SCSI disk buffer test,
- bad block management and replacement,
- disk spin down,
- physical access to devices in a RAID configuration (AMI MegaRAID only)
- cluster support (AMI MegaRAID only)
- SCSI tape read, write, and rewind tests,
- SCSI tape self diagnostics,
- SCSI tape buffer test,
- SCSI CD-ROM read and play tests,
- SCSI CD-ROM self diagnostics,
- SCSI CD-ROM buffer test,
- SCSI CD-ROM tray test.
AMIDiag DOS Features, Continued

IDE Hard Disk Tests

- supports up to four IDE drives per system,
- performance and seek tests,
- data read test,
- verify test,
- enhanced boot sector test,
- write test,
- supports drives larger than 9 GB using the ATA interface,
- LBA support,
- sleep mode after testing,
- Ultra DMA support for up to and including UDMA 100

IDE CD-ROM Tests

- uses the ATAPI interface,
- no drivers required,
- data only, audio, multi-format, CD Plus, and multisession CDs supported,
- CD tray functionally test,
- CD data read and CD audio play tests,
- CD-ROM data integrity test,
- CD audio test through sound card.

IDE DVD-ROM Test

- DVD read test,
- DVD seek test,
- Supports encrypted DVDs
### ATAPI Tapes
- write test,
- read test,
- seek test,
- rewind test.

### ATAPI Removable drives
- write test,
- read test,
- seek test,
- soft eject test.

### Floppy Disk Test
- supports 360 KB to 2.88MB floppy drives,
- format and drive speed tests,
- random and sequential read/write test,
- elevator seek and disk change line test.

### Modem Test
- IRQ activation test,
- loopback test,
- dial tone test.

### ISA Sound Card Test
- automated sound card test,
- DMA and I/O transfer cycle test,
- FM synthesis test,
- Windows Sound System compatible mode test,
- stereo, volume, and pitch test,
- playback rate, frequency, and speaker test,
- basic functionality test (IRQ, DSP, and MPU) (new),
- DMA channel test,
- Sound Blaster, ESS, and Crystal compatible.

### PCI Sound Cards
- Ensoniq 1370, 1371, and 1373,
- ESS Maestro 2, Maestro 2E and Maestro 2EM.
### AMIDiag DOS Features, Continued

#### CardBUS Controller Tests
- TI 1311, TI 1220, and TI 1225 support,
- register test,
- PCI memory space test,
- power down test,
- Vcc power test,
- card detect pins test.

#### Network Tests
- tests IPX and NetBIOS,
- ping test,
- Intel 82557/8/9 hardware test.

#### PS/2 Keyboard Tests
- interactive and non-interactive tests,
- Scan/ASCII code test,
- LED test,
- clock line and data line tests.

#### Video Test
- video memory test,
- attribute test,
- page selection test,
- color test,
- video modes test,
- VESA memory and frame buffer tests,
- VESA video mode test,
- VESA monitor (DDC) test,
- AGP bridge test,
- LCD panel test.

#### Intel I740 based Graphic Cards
- register test,
- local memory test,
- hardware cursor test
AMIDiag DOS Features, Continued

Mouse Test
- single and double click tests,
- graphics and text mode tests.

Power Management (APM)
- supports APM v1.0, 1.1, and 1.2 specifications,
- APM functionally test,
- device APM test.

ACPI Tests
- ACPI tables test
- tests ACPI power button and sleep button status

DMI Tests
- DMI 1.2 and 2.0 test,
- SMBIOS 2.1, 2.2, and 2.3 test.

USB Tests
- UHCI and OHCI controller support,
- status and register test,
- interrupt on complete test,
- root hub port test,
- USB keyboard test,
- USB mouse test,
- USB hub test,
- USB floppy test,
- USB CDROM test,
- USB Zip/LS120 test,
- hot device plug-in test.
AMIDiag DOS Features, Continued

Displays Complete System Information

- creates MIF file,
- System Board information,
- System Memory Map,
- CPU stepping and patch level (P6),
- CPU Model Specific Registers (MSR) dump,
- L2 cache information,
- BIOS information (system, video, PnP, PCI, DMI),
- keyboard information,
- multiprocessor configuration and MP table data,
- SCSI and IDE devices (disks, tapes, CD-ROM drives, DVD drives, LS120 drives, and Zip drives),
- Power management information,
- ACPI support,
- sound card information,
- modem information,
- EISA, ISA, and PCI information,
- Plug and Play (PnP) (ISA PnP and onboard device),
- display details,
- complete DMI information,
- DMI event log,
- SDRAM details (SPD),
- Cardbus controller information,
- USB device details,
- Network configuration,
- devices drivers,
- software interrupts,
- DOS environment,
- List AUTOEXEC.BAT and CONFIG.SYS contents,
- list XMS and EMS environment,
- list physical and logical drives,
- system configuration information,
- memory information,
- hardware IRqs,
- DMA channel assignments,
- I/O port list.
1 Overview

AMIDiag is a DOS-based diagnostic program for IBM PC/AT®-compatible computers with Intel® x86-compatible CPUs. AMIDiag has many test routines that examine every system and subsystem in the computer, including all ISA, EISA, PCI, Plug and Play features. AMIDiag detects, diagnoses, and provides system information about PCI, EISA, ISA, PCMCIA, and Plug and Play adapter cards and devices. AMIDiag provides comprehensive system information about your computer, including PCI, EISA, ISA, PCMCIA, and Plug and Play information.

Detailed information about the network environment, sound cards, CD-ROM drives, SCSI devices, power management features, IDE drives, and all other system data can be displayed. AMIDiag actually tests the existing system memory and cache memory; it does not simply report the information found in the system BIOS. AMIDiag tests system memory up to 64 GB.

Use AMIDiag

AMIDiag can be run when the computer is not operating correctly. You can also run AMIDiag periodically to make sure that system components operate properly.

Requirements

To perform diagnostic tests with AMIDiag, your computer must:

- be an ISA, EISA, PCI, VL-Bus, or Plug and Play computer,
- with a Pentium CPU or newer,
- a monitor and keyboard,
- at least one 3½ floppy drive or bootable CD-ROM drive, and must be
- running DOS Version 5.0 or later.
AMIDiag Helps Many Types of Users

AMIDiag can be used effectively by:
- computer manufacturers,
- end users,
- technical support personnel,
- repair technicians, and
- design engineers.

Manufacturers AMIDiag is used by many computer manufacturers to test and validate new computers as they are built. AMIDiag diagnostic routines can be configured to run continuously, for a set number of passes, or for a set amount of time. The specific tests to be run can be customized. All results can be logged to disk, serial port, or printer. AMIDiag tests can be automated, reducing manpower costs.

End Users How do you know that you are actually getting what you paid for when you buy a computer? Run the AMIDiag system information option to determine your computer's exact specifications, which you can then compare to the manufacturer's marketing material. When you think your computer may have a problem, you may be able to save the money you would have spent on expensive repairs by running AMIDiag and fixing the problem yourself.

Technical Support If computer manufacturers provided AMIDiag with the computer, most support problems could be solved by the end user or by a single phone call.

Repair Technicians The most difficult repair problems are intermittent failures, which most often occur in system memory and cache memory. AMIDiag's memory test routines are the most sophisticated diagnostics available today. AMIDiag is the most comprehensive software diagnostic tool available for ISA and EISA computers.

Designers Design engineers need exact, detailed information about the performance of each subsystem of the new computer they are working on. AMIDiag provides the most detailed diagnostic and system information available. Most diagnostic product do not support the VL-Bus, PCI, PCMCIA, EISA, SCSI, Plug and Play technologies.
## AMIDiag’s Superiority

<table>
<thead>
<tr>
<th>Diagnostic Problem</th>
<th>Why AMIDiag is Superior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sets and tests cache memory</td>
<td>Many system BIOS do not provide this information. If your computer has 512 KB of L2 secondary cache memory and 256 KB are bad, the system BIOS uses the good cache memory and ignores the bad cache memory. You will never know that cache memory is bad unless you run AMIDiag. AMIDiag also finds intermittent problems when you run the AMIDiag Cache Memory Test.</td>
</tr>
<tr>
<td>Provides SCSI device information</td>
<td>If your computer has a SCSI hard disk drive and no IDE drives, the computer does not use IRQ 14. It uses a DMA channel instead. This information is reported in AMIDiag but not by most other diagnostic programs.</td>
</tr>
<tr>
<td>Detects and tests more than 64 MB of system memory</td>
<td>AMIDiag accurately reports and tests all system memory up to 64 GB. Most other diagnostic programs only report the amount of system memory stored in the system BIOS, which is limited to 64 MB.</td>
</tr>
<tr>
<td>Reports potential resource conflicts</td>
<td>Run AMIDiag to determine exactly how IRQs, I/O ports, DMA channels, and system memory are assigned in your EISA or PCI computer before installing a new adapter card. AMIDiag determines which resources are assigned to which ISA, EISA, PCI, and Plug and Play adapter cards. Since most other diagnostic programs do not support EISA, Plug and Play, and PCI, they will not be able to tell you how system resources have been assigned.</td>
</tr>
</tbody>
</table>
I/O Redirection

You can use AMIDiag to perform I/O (input/output) redirection. Redirection means reading or writing from a file or device other than the one you normally use as the target or source. The second floppy disk contains the file TERMINAL.IN that you can use to perform the I/O redirection. Perform the following steps:

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rename the file TERMINAL.IN to TERMINAL.INI.</td>
</tr>
<tr>
<td>2</td>
<td>Place TERMINAL.INI in the current AMIDiag directory on the hard drive, or leave the floppy in the drive if the computer booted from the AMIDiag floppy.</td>
</tr>
<tr>
<td>3</td>
<td>Open the TERMINAL.INI file.</td>
</tr>
<tr>
<td>4</td>
<td>Change the default communication settings, such as COM port, and Baud rate, as desired.</td>
</tr>
<tr>
<td>5</td>
<td>Change the translation tables of the incoming (VT100 emulation) and outgoing characters as desired.</td>
</tr>
</tbody>
</table>

DOS Command Line Options

Type AMIDIAG /? at the DOS prompt to list the DOS commands that you can use. The following is a list of the commands:

<table>
<thead>
<tr>
<th>Command</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>/Q</td>
<td>Performs Quick test.</td>
</tr>
<tr>
<td>/A</td>
<td>Runs all tests.</td>
</tr>
<tr>
<td>/C</td>
<td>Saves configuration description to a file.</td>
</tr>
<tr>
<td>/H, /?</td>
<td>Shows this message box.</td>
</tr>
<tr>
<td>/R filename</td>
<td>Runs script file and displays file name of the script file.</td>
</tr>
<tr>
<td>/E</td>
<td>Enables log fail device information.</td>
</tr>
<tr>
<td>/I</td>
<td>Runs tests interactively.</td>
</tr>
<tr>
<td>/L filename</td>
<td>Sets the error log file name.</td>
</tr>
</tbody>
</table>
PC Basics

AMIDiag runs on IBM AT®, EISA, and AT-compatible computers. A basic grasp of the architecture of an AT computer will help you understand how to use AMIDiag.

Every computer has five main parts: processor, memory, input/output (I/O) system, disk storage, and programs.

The central processing unit (CPU) is the brains of the computer. It executes the instructions in the programs loaded into the computer. Programs are nothing more than a list of instructions (such as add, subtract, logically compare, and move information) and data.

The memory unit stores these programs while the computer is powered on. Most kinds of memory instantly lose this information when power is turned off.

The I/O system allows you to interact with the computer. I/O commonly includes a video display unit, a keyboard, a mouse, a serial port (used by modems), and a parallel port (used by the printer).

Storage units commonly include a floppy disk drive and a hard disk drive. Data and programs written to media in a storage unit are not erased when the computer power is turned off.

The AMIDiag menus provide a good basis for discussing AT architecture.

### System

The motherboard is a flat printed circuit board that has the basic wiring and integrated circuits. AMIDiag tests the following parts usually mounted on the motherboard:

<table>
<thead>
<tr>
<th>Part</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU</td>
<td>The brains of the computer. It executes the instructions in programs. The CPU controls almost all operations performed by the computer. Other systems like the DMA controller reduce CPU processing.</td>
</tr>
<tr>
<td>Coprocessor</td>
<td>Almost all CPUs contain a math coprocessor that executes programs with a lot of math instructions quickly. An additional math coprocessor can almost always be added to a computer. Some older computers do not have a math coprocessor.</td>
</tr>
<tr>
<td>DMA controller</td>
<td>DMA is a method for reducing the CPU workload. The DMA (Direct Memory Access) controller manages the flow of information directly to and from system memory and an “intelligent” peripheral device.</td>
</tr>
<tr>
<td>Part</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Interrupt controller</td>
<td>AT computers use a series of prioritized signals from peripheral devices or components (interrupt requests or IRQs) to tell the CPU know that the device needs attention. The interrupt controller manages these signals.</td>
</tr>
<tr>
<td>Timer</td>
<td>The programmable timer chip produces timing signals that are used to regulate much of the processing in the computer.</td>
</tr>
<tr>
<td>Real Time Clock</td>
<td>The real time clock is exactly what its name implies. It is a clock that provides the current day, date, and time to the computer. A small battery is provided to provide power for this clock.</td>
</tr>
<tr>
<td>CMOS RAM</td>
<td>Most memory chips lose the information they contain when power is turned off. But CMOS (Complementary Metallic Oxide Semiconductor) chips use very little power and hold information for a long time. Often 128 bytes of CMOS RAM are used. CMOS RAM contains important system configuration information. A small battery is provided to provide CMOS RAM power.</td>
</tr>
<tr>
<td>EISA bus</td>
<td>A 32-bit extension to the standard 16-bit AT bus that processes information faster.</td>
</tr>
<tr>
<td>PnP</td>
<td>The Plug and Play (PnP) architecture allows the operating system to automatically configure PnP devices and adapter cards.</td>
</tr>
<tr>
<td>PCI bus</td>
<td>The PCI (Peripheral Component Interconnect) bus is an additional 32-bit (or 64-bit) local bus that permits information from devices located on the PCI bus to be processed directly by the CPU without going through other parts of the computer. The PCI bus operates at 66 MHz or higher while the standard AT bus operates at only 8 MHz.</td>
</tr>
</tbody>
</table>

Cont’d
### Memory

Three types of memory are tested by the memory routines: ROM, system memory, and cache memory.

ROM (Read Only Memory) stores the BIOS (Basic Input Output System). The BIOS is the lowest level of software in an AT computer. The BIOS is an interface between the hardware components and the operating system. If the BIOS ROM is bad, the computer cannot run. You must either replace or update the programs on the ROM chip. The computer also has a video ROM and can have option ROMs.

System memory is what we commonly mean when we talk about a computer's memory. The operating system and the applications are stored in system memory. Microscopic parts of the DRAM (Dynamic Random Access Memory) used for system memory can malfunction. AMIDiag has several diagnostic tests for system memory.

Cache memory stores data that is used often. Cache memory uses a small amount of fast SRAM (Static Random Access Memory) so the CPU can obtain often-used data much more quickly than it could if it was accessing system memory.

### Hard disk

The hard disk drive can store much more information than system memory. Data written to the hard disk drive is not erased until you erase it, if the drive is operating normally. AMIDiag includes routines that test hard disk drives. There are many types of hard drives. SCSI drives can be tested via the AMIDiag SCSI test functions.

### Floppy

While hard disk drives can hold hundreds of megabytes of information, the diskettes used in floppy drives usually hold only 1.44 MB. But a floppy diskette is easily moved from one computer to another.

Cont’d
PC Basics,  Continued

SCSI
The SCSI bus provides a way to attach up to 7 (or 15 if using Wide SCSI) additional devices to the computer on a high-speed data bus. AMIDiag provides several tests for SCSI hard disk, tape, and CD-ROM drives.

Keyboard
The keyboard is the easiest input device to use. You type in information and get results. But a key on your keyboard could be sending the wrong information to the computer. AMIDiag has several diagnostic routines that test keyboard accuracy.

Video
The video monitor is the most obvious computer output device. Computer video is complex: there are many different video modes, screen resolutions, refresh rates, scan rates, and color combinations. Video has evolved through several standards: monochrome, CGA, EGA, VGA, and Super (VESA™) VGA are the common standards. Super VGA (Video Graphics Array) is almost universally used. This standard supports higher resolutions and more screen colors. AMIDiag provides the most comprehensive set of video diagnostic tests.
### Miscellaneous

The serial port, parallel port, mouse, and Sound Blaster™-compatible card tests are all on the AMIDiag Miscellaneous menu.

The serial ports communicate with other computers. Data is transferred one bit at a time through the serial ports, but the transfer rate can be up to 115,200 bits per second. AMIDiag tests the serial ports at all transfer rates to ensure proper operation.

The parallel ports transfer data eight bits at a time. It is used to attach a printer. AMIDiag sends a print pattern through the parallel port to make sure the port and the printer work correctly.

The mouse is more important than the keyboard because of graphical user interfaces. The mouse is attached via a special connector, the standard AT bus, or a serial port.

AT computers have always had small speakers that were barely adequate. But now many computers have sound adapter cards and high-quality speakers. Sound Blaster is an industry standard that almost all sound cards can emulate. AMIDiag tests Sound Blaster-compatible sound cards.
Chapter 2 AMIDiag Menus

The AMIDiag main menu is shown below.

Select a menu options by pressing the ↑ or ↓ keys and pressing <Enter> when the menu is highlighted. Press the → or ← keys to display a different AMIDiag menu.
Using AMIDiag Keys

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;Esc&gt;</td>
<td>Halts the current test if a test is running.</td>
</tr>
<tr>
<td></td>
<td>Exits AMIDiag if no test is running.</td>
</tr>
<tr>
<td>&lt;Enter&gt;</td>
<td>Run the highlighted AMIDiag test.</td>
</tr>
<tr>
<td>F1</td>
<td>Displays Help screens.</td>
</tr>
<tr>
<td>F2</td>
<td>Edit batch parameters.</td>
</tr>
<tr>
<td>F3</td>
<td>Load batch parameters.</td>
</tr>
<tr>
<td>F4</td>
<td>Save batch parameters.</td>
</tr>
<tr>
<td>F5</td>
<td>Select or deselect the current test.</td>
</tr>
<tr>
<td>F6</td>
<td>Select or deselect the tests on a specific AMIDiag menu.</td>
</tr>
<tr>
<td>F7</td>
<td>Select or deselect all AMIDiag tests.</td>
</tr>
<tr>
<td>F8</td>
<td>Select or deselect all tests necessary to run a system quick test.</td>
</tr>
<tr>
<td>F9</td>
<td>Displays a list of the AMIDiag function keys.</td>
</tr>
<tr>
<td>F10</td>
<td>Run the selected test or tests.</td>
</tr>
</tbody>
</table>

Selecting AMIDiag Tests

<table>
<thead>
<tr>
<th>Problem</th>
<th>AMIDiag test to run</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Processor Problems</strong></td>
<td></td>
</tr>
<tr>
<td>Make sure the computer has</td>
<td>Run the Basic Functionality test and the CPU Protected Mode on the System menu.</td>
</tr>
<tr>
<td>the proper CPU and it is</td>
<td></td>
</tr>
<tr>
<td>operating properly.</td>
<td></td>
</tr>
<tr>
<td>Check the CPU speed.</td>
<td>Run the Processor speed test on the System menu.</td>
</tr>
<tr>
<td>Check the math coprocessor.</td>
<td>Run the Coprocessor test on the System menu.</td>
</tr>
<tr>
<td>Make sure the computer clock</td>
<td>Run the Timer test and the Real Time Clock test on the System menu.</td>
</tr>
<tr>
<td>is running properly.</td>
<td></td>
</tr>
<tr>
<td>Make sure the system</td>
<td>Run the CMOS Validity test on the System menu.</td>
</tr>
<tr>
<td>configuration is not</td>
<td></td>
</tr>
<tr>
<td>corrupted.</td>
<td></td>
</tr>
<tr>
<td>Make sure the EISA adapter</td>
<td>Run the EISA system test on the System menu.</td>
</tr>
<tr>
<td>slots are functioning</td>
<td></td>
</tr>
<tr>
<td>correctly.</td>
<td></td>
</tr>
<tr>
<td>Make sure PnP devices are</td>
<td>Run the Plug and Play test on the System menu.</td>
</tr>
<tr>
<td>functioning.</td>
<td></td>
</tr>
<tr>
<td>Make sure the PCI adapter</td>
<td>Run the PCI system test on the System menu.</td>
</tr>
<tr>
<td>slots are functioning</td>
<td></td>
</tr>
<tr>
<td>correctly.</td>
<td></td>
</tr>
<tr>
<td><strong>Memory Problems</strong></td>
<td></td>
</tr>
<tr>
<td>Random memory (or performance) problems occur but BIOS POST did not find any memory problems.</td>
<td>Run the Pattern test, the Random Pattern Test and the Cache Memory test on the Memory menu.</td>
</tr>
<tr>
<td>Problem</td>
<td>AMIDiag test to run</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------</td>
</tr>
<tr>
<td>The BIOS finds memory errors or memory problems occur constantly.</td>
<td>Run the Walking 1s test on the Memory menu.</td>
</tr>
<tr>
<td>Intermittent cache memory problems.</td>
<td>Run the Cache Memory test on the Memory menu.</td>
</tr>
<tr>
<td>Identify and report data corruption because of hardware parity problems.</td>
<td>Run the Parity test on the Memory menu.</td>
</tr>
<tr>
<td>Identify shorts on data lines and data bits stuck at 0.</td>
<td>Run the Walking 0s test on the Memory menu.</td>
</tr>
</tbody>
</table>

**IDE Hard Disk Drive Problems**

<table>
<thead>
<tr>
<th>Problem</th>
<th>AMIDiag test to run</th>
</tr>
</thead>
<tbody>
<tr>
<td>Find the data transfer rate and track to track seek time for the hard disk drive.</td>
<td>Run the Performance test on the DISK IDE menu.</td>
</tr>
<tr>
<td>Determine the drive Seek capability.</td>
<td>Run the Seek test on the DISK IDE menu.</td>
</tr>
<tr>
<td>Verify the hard drive read function.</td>
<td>Run the Read/Verify test on the DISK IDE menu.</td>
</tr>
</tbody>
</table>

**Floppy Drive Problems**

<table>
<thead>
<tr>
<th>Problem</th>
<th>AMIDiag test to run</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verify that the floppy drive formats disks correctly.</td>
<td>Run the Diskette Format test on the FDD menu.</td>
</tr>
<tr>
<td>Verify the floppy drive speed.</td>
<td>Run the Drive Speed test on the FDD menu.</td>
</tr>
<tr>
<td>Make sure the floppy drive is reading and writing correctly.</td>
<td>Run the Random R/W test and the Sequential R/W test on the FDD menu.</td>
</tr>
<tr>
<td>Make sure the drive seeks correctly.</td>
<td>Run the Elevator Seek test on the FDD menu.</td>
</tr>
</tbody>
</table>

**Keyboard Problems**

<table>
<thead>
<tr>
<th>Problem</th>
<th>AMIDiag test to run</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make sure the keyboard interface works</td>
<td>Run the Keyboard Controller test on the Keyboard Menu.</td>
</tr>
<tr>
<td>Make sure each keyboard key sends the correct signal to the computer.</td>
<td>Run the Scan/ASCII Code test on the Keyboard Menu.</td>
</tr>
<tr>
<td>Make sure the keyboard LEDs work.</td>
<td>Run the Keyboard LED test on the Keyboard Menu.</td>
</tr>
</tbody>
</table>

**SCSI Drive Problems**

<table>
<thead>
<tr>
<th>Problem</th>
<th>AMIDiag test to run</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make sure that the SCSI drive is reading correctly.</td>
<td>Run the SCSI Disk Read test on the SCSI menu.</td>
</tr>
<tr>
<td>Make sure that the SCSI drive is writing correctly.</td>
<td>Run the SCSI Disk Write test on the SCSI menu.</td>
</tr>
<tr>
<td>Make sure that the SCSI tape drive is reading correctly.</td>
<td>Run the SCSI Tape Read test on the SCSI menu.</td>
</tr>
<tr>
<td>Make sure that the SCSI tape drive is writing correctly.</td>
<td>Run the SCSI Tape Write test on the SCSI menu.</td>
</tr>
<tr>
<td>Rewind the tape cartridge in the SCSI tape drive.</td>
<td>Run the SCSI Tape Rewind test on the SCSI menu.</td>
</tr>
</tbody>
</table>

**CD-ROM Drive Problems**

Chapter 2 AMIDiag Menus 13
<table>
<thead>
<tr>
<th>Problem</th>
<th>AMIDiag test to run</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make sure that the CD-ROM drive is reading correctly.</td>
<td>If the computer has a SCSI CD-ROM drive, run the SCSI CD-ROM Read test on the SCSI menu. If the computer has an ATAPI or IDE CD-ROM drive, run the CD Data test on the IDE menu.</td>
</tr>
<tr>
<td>To test the CD-ROM drive tray,</td>
<td>Choose the CD Tray Test on the IDE or SCSI group menu.</td>
</tr>
<tr>
<td>Make sure that the CD-ROM can play audio CDs correctly.</td>
<td>If the computer has a SCSI CD-ROM drive, choose the SCSI CD-ROM Play test on the SCSI menu. If the computer has an ATAPI or IDE CD-ROM drive, choose the CD Audio Test on the IDE menu.</td>
</tr>
<tr>
<td><strong>Video Problems</strong></td>
<td></td>
</tr>
<tr>
<td>Video display problems.</td>
<td>Run the Video Memory test on the Video menu.</td>
</tr>
<tr>
<td>Make sure the video display attributes (blinking, bold, and reverse video) memory are operating correctly.</td>
<td>Run the Attribute test on the Video menu.</td>
</tr>
<tr>
<td>Make sure text displays correctly.</td>
<td>Run the 40x25 and 80x25 Display tests on the Video menu.</td>
</tr>
<tr>
<td>Make sure graphics display correctly.</td>
<td>Make sure the correct video drivers are loaded. Run the Video 320x200, 640x200, 640x350, 640x480, and Color tests on the Video menu.</td>
</tr>
<tr>
<td>Make sure Super VGA graphics display correctly.</td>
<td>Run the VESA Video Mode and VESA Video Memory test on the Video menu.</td>
</tr>
<tr>
<td><strong>Serial Port Problems</strong></td>
<td></td>
</tr>
<tr>
<td>A mouse attached to a serial port does not work. A device attached to a serial port does not work.</td>
<td>Run the Serial port test on the Misc. menu.</td>
</tr>
<tr>
<td><strong>Parallel Port Problems</strong></td>
<td></td>
</tr>
<tr>
<td>A printer connected to the parallel port does not work.</td>
<td>Run the Parallel port test on the Misc. menu.</td>
</tr>
<tr>
<td><strong>Audio Problems</strong></td>
<td></td>
</tr>
<tr>
<td>Make sure the speaker attached to your computer is working correctly.</td>
<td>Run the PC speaker test on the System menu.</td>
</tr>
<tr>
<td>Make sure the Sound Blaster adapter card in your computer is working.</td>
<td>Run the Sound Blaster test on the Misc. menu.</td>
</tr>
</tbody>
</table>
### Running AMIDiag Tests

<table>
<thead>
<tr>
<th>To run this test or test group...</th>
<th>Do the Following</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run all AMIDiag tests.</td>
<td>Press &lt;F7&gt;, then &lt;F10&gt;.</td>
</tr>
<tr>
<td>Run a complete overall system</td>
<td>Press &lt;F8&gt;, then &lt;F10&gt;.</td>
</tr>
<tr>
<td>quick test.</td>
<td></td>
</tr>
<tr>
<td>Run all motherboard diagnostic</td>
<td>Select the System menu. Press &lt;F6&gt;, then tests.</td>
</tr>
<tr>
<td>routines.</td>
<td>&lt;F10&gt;.</td>
</tr>
<tr>
<td>Run all memory diagnostic</td>
<td>Select the Memory menu. Press &lt;F6&gt;, then routines.</td>
</tr>
<tr>
<td>routines.</td>
<td>&lt;F10&gt;.</td>
</tr>
<tr>
<td>Run all IDE drive diagnostic</td>
<td>Select the IDE menu. Press &lt;F6&gt;, then routines.</td>
</tr>
<tr>
<td>routines.</td>
<td>&lt;F10&gt;.</td>
</tr>
<tr>
<td>Run all floppy diagnostic</td>
<td>Select the Floppy menu. Press &lt;F6&gt;, then routines.</td>
</tr>
<tr>
<td>routines.</td>
<td>&lt;F10&gt;.</td>
</tr>
<tr>
<td>Run all keyboard diagnostic</td>
<td>Select the Keyboard menu. Press &lt;F6&gt;.</td>
</tr>
<tr>
<td>routines.</td>
<td>Press &lt;F10&gt;.</td>
</tr>
<tr>
<td>Run all video diagnostic routines.</td>
<td>Select the Video menu. Press &lt;F6&gt;. Press</td>
</tr>
<tr>
<td></td>
<td>&lt;F10&gt;.</td>
</tr>
<tr>
<td></td>
<td>&lt;F10&gt;.</td>
</tr>
<tr>
<td>Print a report about system</td>
<td>Select the Options menu. Select Generate configuration and test errors. Reports. Select the print device.</td>
</tr>
<tr>
<td>Return to the DOS prompt.</td>
<td>Select the Options menu. Select DOS shell. Type EXIT to return to AMIDiag.</td>
</tr>
<tr>
<td>Exit AMIDiag.</td>
<td>Press &lt;Esc&gt;. Choose Yes at the prompt.</td>
</tr>
</tbody>
</table>
Running AMIDiag in Batch Mode

When your computer is experiencing an intermittent problem that no diagnostic software test has been able to identify, run AMIDiag tests over an extended period of time. Many computer problems are not evident (especially memory problems) when a test is run only once. AMIDiag allows you to run diagnostic routines on only a certain part of the computer, a specific part of memory, or a specific part of a disk drive. AMIDiag also allows you to build script (.INI) files that contain test configuration information. After you have created an AMIDiag script file, you can run the AMIDiag diagnostic routines listed in the .INI file automatically.

Batch Mode Steps

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the AMIDiag tests to be run.</td>
</tr>
<tr>
<td>2</td>
<td>Select the test parameters, such as the drives, the I/O ports, or other parameters. These parameters differ for each test.</td>
</tr>
<tr>
<td>3</td>
<td>Run the tests after you configure the test by pressing &lt;F10&gt;.</td>
</tr>
<tr>
<td>4</td>
<td>You can save the current AMIDiag test configuration to a .INI file.</td>
</tr>
<tr>
<td>5</td>
<td>You can then run this set of AMIDiag tests at any time.</td>
</tr>
</tbody>
</table>

Error Log Viewer

AMIDiag allows you to display the error log while still running AMIDiag. The AMIDiag error log contains all diagnostic errors that AMIDiag has found during the current AMIDiag session. The error log viewer offers some text search capability.

To display the error log, select Display Error Log File on the AMIDiag Options menu. Enter the name of the error log file. The default error log filename is AMIDIAG.LOG. The AMIDiag error log file will be displayed.

You can access Help for more information about an error. To do so, browse to the desired error in the error window (on the right side of the screen) and press <F1>. 

16 AMIDiag User’s Guide
3 System Diagnostics

The following screen appears when System is selected from the AMIDiag Main Menu:

Error Codes  Each test on the System menu can generate error codes.
Processor Test

The Processor test makes sure that the CPUs are functioning properly.

While AMIDiag is loading, it performs the following functions:

- disables the Protected Mode test if the computer is already in protected mode,
- disables the Coprocessor test if the computer does not have a coprocessor, and
- disables the EISA test if not running in a computer with an EISA bus.

Processor Tests

The Processor test includes:

- the Basic Functionality Test,
- Processor Speed Test,
- CPU Protected Mode Test, and
- Coprocessor Test.

Basic Functionality Test

The basic functionality test makes sure that the CPU(s) in the computer are operating correctly and efficiently in all address modes. This test is performed in two modes:

- 16-bit mode tests the 16-bit registers, the 16-bit flags, and special instructions.
- 32-bit mode performed on 386 and higher systems. It tests the special 386 and 486 functions, the 32-bit registers, and the 32-bit flags.

Select Processor Test from the System Board menu and press <Enter>. This test checks the functionality of all Intel 386, 486, S-Series, Pentium, Pentium Pro, Pentium II, Pentium III, Celeron, Xeon, and Intel x86-compatible CPUs.

Cont’d
Processor Test, Continued

Processor Speed Test  This test determines and displays the CPU clock speed. The screen displays the expected processor speed and the actual CPU clock speed, not the speed index displayed by many benchmark programs. The CPU speed is determined by measuring the time taken to execute a specific instruction. The time calculation uses a separate clock source with a known frequency. The effects of cache memory and prefetch queues are disregarded in this calculation.

The Expected speed is taken from the DMI information in the computer.

Set the test parameters: Choose YES for the CPU Speed Comparison, Expected CPU Speed, and Run Test parameters.

CPU Protected Mode Test  This test tests the protected mode instructions normally used by most modern operating systems for switching to protected mode. This routine tests all Intel and all compatible CPUs.

Coprocessor Test  This test checks the functionality of the math coprocessor. Almost all CPUs have a math coprocessor. If a math coprocessor is not installed, AMIDiag does not let you choose this test. Select Coprocessor Test from the System menu and press <Enter>. This test loads and stores the control and status word, checks data transfer between the CPU and the math coprocessor, and tests exception checking while the data transfer is in progress.
DMA Controller Test

This test is a series of read and write tests on the memory address registers and page registers of DMA controllers 1 and 2. The DMA (Direct Memory Access) controller manages the flow of information directly to and from system memory and an “intelligent” peripheral device, without passing through the CPU. On error, AMIDig displays the register number, data written, and data read. To perform this test, select DMA Controller Test from the System menu and press <Enter>.

Interrupt Controller Test

The Interrupt Controller Test performs a series of read and write tests on interrupt mask registers and checks for stray interrupts after masking off all interrupts. AMIDig displays the register numbers, the data read, and the data written if there are errors in the read/write test. Select Interrupt Controller Test from the System menu and press <Enter>.

Timer Test

This test checks the accuracy of the timer count by calibrating it against the periodic interrupt of the Real Time Clock (RTC). Select Timer Test from the System menu and press <Enter>.

Real Time Clock Test

This test checks the regularity of the real time clock interrupt by calibrating it against the timer 0 interrupt. On some systems, this test resets the date and time function. Always verify the correct date and time after exiting AMIDig. To perform this test, select Real Time Clock Test from the System menu and press <Enter>.
CMOS Validity Test

This test checks the validity of the data in CMOS RAM and makes sure that the CMOS RAM checksums are correct. This test also makes sure that the battery is in good condition. Select CMOS Validity Test from the System menu and press <Enter>.

EISA System Test

Select EISA System Test to check the EISA system components, specifically the EISA DMA and interrupt controller registers. This test also checks the software NMI (nonmaskable interrupt) and the EISA fail-safe timer. This test can only be selected if AMIDiag is being executed on an EISA computer. Select EISA System Test from the System menu and press <Enter>.

PC Speaker Test

This test makes sure that the computer speakers are working correctly.
PCI System Test

The PCI System Test makes sure that the PCI bus and all PCI devices in the computer are working properly. The PCI Bus Test includes:

- the PCI Bus Scan,
- the PCI Device Access Test,
- the PCI Configuration Verification Test,
- the PCI Special Cycle Test, and
- the PCI Bus Stress Test.

**PCI Bus Scan**  This test scans for all PCI devices in the computer.

**PCI Device Access Test**  This test accesses all PCI devices in the computer by vendor ID and class code.

**PCI Configuration Verification Test**  This test verifies the transactions across the PCI bus by reading the 256 byte PCI Configuration Space associated with each detected PCI device.

**PCI Special Cycle Test**  This test generates the PCI special cycle to make sure that it can be generated.

**PCI Bus Stress Test**  This test generates a heavy load of transactions over the PCI bus by transferring large volumes of data from system memory to a PCI device (the PCI VGA controller).
Plug and Play Test

This test checks all Plug and Play devices attached to the computer. This test can only be selected if AMIDiag is being executed on a computer that complies with the Plug and Play specification. To perform this test, select Plug and Play Test and press <Enter>.

Multiprocessor Test

Select this test when running AMIDiag in a computer that has more than one CPU. This test performs a variety of diagnostics on both CPUs. To perform this test, select Multiprocessor Test from the System menu and press <Enter>. Follow the directions on the screen. The multiprocessor test includes:

- Inter-Processor Communication Test,
- CPU-Processor Test,
- FPU-Processor Test,
- MPI Arbitration, Cache Coherency Test,
- Memory Consistency Test
- L2 Cache Memory Test (for Pentium II and above processors, and
- the I/O Access Test.

Multimedia CPU Extensions Test

This test runs only on a computer that has a CPU that supports the Intel MMX instruction set extension, the 3Dnow! instructions, and/or the Intel Streaming SIMD instructions.

Cont'd
Multimedia CPU Extensions Test, Continued

The AMIDiag MMX Tests include:
- MMX registers read/write test,
- MMX instruction set test,
- saturation/wraparound arithmetic test, and
- matrix transpose test.
To perform this test, select MMX Test from the System menu and press <Enter>.

The AMIDiag 3DNow! Tests include:
- FEMMS instruction test,
- integer and floating point number conversions,
- packed integer instructions,
- packed floating point instructions, and
- packed comparison instructions.
To perform this test, select 3DNow! Test from the System menu and press <Enter>.
The AMIDiag Streaming SIMD Tests include:

- simple arithmetic instructions,
- complex arithmetic instructions,
- packed logical instructions,
- packed data manipulation instructions, and
- packed comparison instructions.

To perform this test, select Streaming SIMD Test from the System menu and press <Enter>.
SMBus Diagnostics

This test makes sure that the System Management Bus (SMBus) is working properly. Select SMBus Test from the System menu and press <Enter>. This test consists of the SMBus general test, and the SMB access test.

**General Test**

This test makes sure that the SMB host registers are holding the read/write data correctly. Data patterns are performed on the:
- slave command register,
- slave shadow port 1,
- slave shadow port 2,
- host command register,
- host address register,
- host data register 0,
- host data register 1,
- block data register, and
- slave event register.

**SMB Access Test**

This test makes sure that the SMB host status is generated correctly in the SMB host status register.

**DMI Test**

The DMI (Desktop Management Interface) test makes sure that the DMI information in your computer is stored in the proper manner and is essentially correct. The DMI file stores system configuration information, and specification information about your computer and all peripheral devices attached to your computer.
4 Memory Diagnostics

All memory tests write to all areas of installed DRAM system memory up to 64 GB. The memory tests determine the size of system memory. EMM386.EXE and all other programs that operate in protected mode cannot be loaded when running the AMIDiag memory tests.

Memory Test Error Codes Each test on the Memory menu can generate error codes.

Aborting Tests Each test on the menu can be aborted by pressing <Esc>.
DMI Memory Fault Isolation

AMIDiag isolates faulty memory modules. AMIDiag displays

The faulty memory chip is on SIMM x

This facility only works if the system BIOS in your computer has DMI support.

BIOS ROM Test

The BIOS ROM Test checks the data path of the BIOS ROM and makes sure the ROM is write-protected. Select Memory from the Main Menu, select BIOS ROM Test. Press <Enter> to start the BIOS ROM Test.

BIOS 2000 Year Rollover Test This routine tests the ability of the system BIOS in your computer to properly display the correct date and time after midnight December 31, 1999.
Parity Test

Run this test to find bad memory locations. This test finds parity errors in all system memory. This test is the best way to identify and report data corruption because of DRAM system memory hardware problems. This test diagnoses the parity error detection circuitry in DRAM.

Parity

All data is stored in patterns of binary digits (1s and 0s). Each byte has eight binary digits (bits). Parity is either even or odd. The parity of a block of data storage is the sum of all the set binary digits in that unit. If there are eight bits in each unit (a byte), the parity is the sum of all bits that are set to 1. PC system memory is organized into bytes that have even or odd parity. This parity is achieved by adding a bit, called the parity bit, which is made even or odd by the hardware circuitry to make sure all data units have the same parity. Most system memory actually has 9 bits (8 data bits and one parity bit). Adding a parity bit is a method of assuring that the data is correct.

Test Description

ISA systems include memory parity checking circuitry. When the CPU accesses a memory location that has a parity error, a bit is set in a specific register and an NMI (nonmaskable interrupt) is generated. AMIDiag captures the NMI and checks the specific register for the parity error indicator while accessing different memory regions. If a parity error occurs in the memory area where AMIDiag is located, the system may hang.

Cont’d
Run the Test  Select Memory from the Main Menu and Parity Test. Press <Enter> to start the Parity Test. A list of parameters appears, as shown below:

<table>
<thead>
<tr>
<th>Parity Test Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory Start</td>
</tr>
<tr>
<td>Memory End</td>
</tr>
<tr>
<td>Pattern Size</td>
</tr>
<tr>
<td>Percentage</td>
</tr>
</tbody>
</table>

You can specify the beginning and ending memory locations in the Memory Start and Memory End fields. You can also specify the size of the bit pattern written to memory in this test in the Pattern Size field. By changing the bit pattern size, otherwise undetected memory errors will be discovered. You should change this parameter to ALL to perform the most thorough memory error detection test. The bit pattern sizes are BYTE (8 bits), WORD (16 bits), DWORD (32 bits), or ALL (all bit pattern sizes). The default is DWORD.

The amount of memory already tested is displayed as the test runs. If the displayed percentage is less than 100%, the displayed percentage is the amount of system memory between the Memory Start and Memory End values.
Pattern Test

This test is the most exhaustive memory test in AMIDiag. This test consists of seven test routines that write a series of test patterns to memory, then read the patterns back and compare the read results with the pattern that was written. This test uses worst-case bit patterns, such as AA55h. The memory reads and write instructions test every bit of DRAM system memory.

Test Description
Each memory chip in your computer is designed to hold 1, 4, or 9 bits of data. If the memory chip does not retain data, there is an inconsistency in the data written to and read from memory. For example, the hexadecimal number 11 can be written to a memory location. If the chip that holds the least significant bit (bit 0) of this number is faulty, 10 hex is read from memory instead of 11 hex. This is called bit dropping. If bit 0 of this location sets a bit instead of dropping it, the system may read 11 hex when the actual data was 10h. If a program is loaded to the faulty memory location, it either fails or produces erroneous results. If data is loaded into this memory area, the data becomes corrupted.

When to Use
The Pattern Test is most useful when the computer has random memory (or performance) problems and BIOS POST tests cannot find memory problems. If the system has random problems you cannot identify, run the Pattern Test for several passes or even continuously. This rigorous memory test runs for a long time, but when it is difficult to determine exactly where the error is, the test must be extremely thorough. This test performs a long read and write test of memory space and identifies most memory faults. The diagnostic routines in the pattern test find system memory problems. These tests can run for an hour, depending on the CPU type and the amount of system memory. A picture of memory appears. Test progress is shown by flashing each tested memory segment as the test runs on that segment.

Cont’d
Pattern Test, Continued

Pattern Test  The test order is:

<table>
<thead>
<tr>
<th>Test Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bit Stuck High test</td>
<td>Searches for bits stuck high.</td>
</tr>
<tr>
<td>Bit Stuck Low test</td>
<td>Searches for bits stuck low.</td>
</tr>
<tr>
<td>Checkerboard test</td>
<td>Write bit patterns successively to non-contiguous memory areas.</td>
</tr>
<tr>
<td>CAS Line test</td>
<td>Tests the Column Address Strobe signal line.</td>
</tr>
<tr>
<td>Incremental test</td>
<td>Tests memory by writing incremental patterns and reading them.</td>
</tr>
<tr>
<td>Decremental test</td>
<td>Tests memory by writing decremental patterns and reading them.</td>
</tr>
<tr>
<td>Incremental Decremental test</td>
<td>Tests memory by writing incremental and decremental patterns and reading them back.</td>
</tr>
</tbody>
</table>

Run the Test  Select Memory from the Main Menu, Pattern Test, and press <Enter>. A list of parameters appears:

You can specify the beginning and ending memory locations in the Memory Start and Memory End fields. You can also specify the size of the bit pattern written to memory in the Pattern Size field. By changing the bit pattern size, otherwise undetected memory errors can be discovered. Change this parameter to ALL to perform the most thorough memory error detection test.

Cont’d
Pattern Test, Continued

Bit Pattern Sizes The bit pattern sizes are BYTE (8 bits), WORD (16 bits), DWORD (32 bits), or ALL (all bit pattern sizes). The default is DWORD. If the displayed percentage is less than 100%, the specified percentage is the amount of system memory between the Memory Start and Memory End values that has been tested. If no errors occur, select Return to main menu when this test finishes. Select Browse error list if errors occur.

Extended Pattern Test

This test is composed of two test routines that write data to memory, read the data back and compare the data. The subtests repeat until you press <Esc>. They are:

<table>
<thead>
<tr>
<th>Test Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Write/Read Cycle</td>
<td>This subtest runs diagnostics using both read and write instructions.</td>
</tr>
<tr>
<td>Read Cycle</td>
<td>This subtest runs diagnostics using read instructions.</td>
</tr>
</tbody>
</table>

Run the Test Select Memory from the Main Menu, Extended Pattern Test, and press <Enter>. If no errors occur, select Return to main menu when this test finishes. Select Browse error list if errors occur. If HIMEM.SYS is not loaded, this test accesses all system memory.
Walking 1s Test

This test uses the Walking 1s Left Test and the Walking 1s Right Test routines to identify shorts on data lines and data bits stuck at 1. Run this test if the BIOS finds memory errors or memory problems constantly occur.

Run the Test  Select Memory from the Main Menu, Walking 1s Test, and press <Enter>. A list of parameters appears:

<table>
<thead>
<tr>
<th>Walking 1s Test Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory Start              : 0 MB</td>
</tr>
<tr>
<td>Memory End                : 63 MB</td>
</tr>
<tr>
<td>Pattern Size              : BYTE</td>
</tr>
<tr>
<td>Percentage                : 100</td>
</tr>
</tbody>
</table>

You can specify the beginning and ending memory locations in the Memory Start and Memory End fields. If the displayed percentage is less than 100%, the percentage is the amount of system memory between the EXT Memory Start and EXT Memory End values tested.

You can also specify the size of the bit pattern that is written to memory in this test in the Pattern Size field. By changing the bit pattern size, otherwise undetected memory errors will be discovered. You should change this parameter to ALL to perform the most thorough memory error detection test. The bit pattern sizes are BYTE (8 bits), WORD (16 bits), DWORD (32 bits), or ALL (all bit pattern sizes). The default is BYTE. This test sequentially turns on all bits in system memory in a rolling pattern. The pattern is constructed so that only one bit of each byte is 1 at any time.
Walking 0s Test

The Walking 0s test writes shifting patterns to memory to find memory errors. This test uses two test routines to identify open data lines. The two routines are the Walking 0s Left Test and the Walking 0s Right Test. Run this test if the BIOS POST routines report memory errors or the system has constantly recurring memory problems.

Run the Test

Select Memory from the Main Menu and Walking 0s Test. Press <Enter> to start the Walking 0s Test. A list of parameters appears, as shown below:

<table>
<thead>
<tr>
<th>Walking 0s Test Parameters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory Start</td>
</tr>
<tr>
<td>Memory End</td>
</tr>
<tr>
<td>Pattern Size</td>
</tr>
<tr>
<td>Percentage</td>
</tr>
</tbody>
</table>

You can specify the beginning and ending memory locations in the Memory Start and Memory End fields. If the displayed percentage is less than 100%, the percentage is the amount of system memory between the Memory Start and Memory End values tested.

You can also specify the size of the bit pattern that is written to memory in this test in the Pattern Size field. The bit pattern sizes are BYTE (8 bits), WORD (16 bits), DWORD (32 bits), or ALL (all bit pattern sizes). The default is BYTE. This test writes a rolling zero pattern to all memory locations. The pattern is constructed so that only one bit of each byte is 0 at any time.
Random Memory Test

The Random Read/Write Test uses five test routines to write a random bit pattern to a randomly-selected DRAM system memory location and read the same memory location, looking for the same bit pattern that was written. The test cycles through each of the five routines. The routines are:

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initialize Randomize Test</td>
<td>Begin the random memory test.</td>
</tr>
<tr>
<td>Validate Randomize Test</td>
<td>Validate information found in the random memory test.</td>
</tr>
<tr>
<td>Initialize Random Increment Test</td>
<td>Begin the incremental random memory test.</td>
</tr>
<tr>
<td>Random Increment Read/Write</td>
<td>Begin the incremental random read/write memory test.</td>
</tr>
<tr>
<td>Validate Memory</td>
<td>Validate information found in the random read/write memory test.</td>
</tr>
</tbody>
</table>

Running the Test  Select Memory and Random Memory Test and press <Enter>. A list of parameters appears:

<table>
<thead>
<tr>
<th>Random Memory Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage</td>
</tr>
<tr>
<td>CONTINUE</td>
</tr>
</tbody>
</table>

This test finds soft errors in memory that are normally hidden by the cache memory algorithms. This test defeats the caching strategy and accesses system memory directly. This test also finds cache loading problems. This test cannot access memory above 64 MB if HIMEM.SYS is loaded and HIMEM.SYS does not access memory above 64 MB. If HIMEM.SYS is not loaded, this test can access all system memory.
Quick Memory Test

This test quickly verifies that the entire installed memory can be accessed. It writes a small pattern to a few bytes at certain addresses of the available address range.

Run The Test

Select Memory from the Main Menu and Quick Memory Test and press <Enter>. A list of parameters appears:

<table>
<thead>
<tr>
<th>Quick Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory Start     : 0 MB</td>
</tr>
<tr>
<td>Memory End       : 63 MB</td>
</tr>
<tr>
<td>Block Size       : 4 Bytes</td>
</tr>
<tr>
<td>Step Size        : 4 MB</td>
</tr>
</tbody>
</table>

You can choose the tested memory range by changing the Memory Start and Memory End parameters. You can also change the size of the test pattern to be written/read with the Block Size parameter. You can specify the step size in the Step Size field.
**Address Test**

This test checks for shorts and opens on address lines. The address lines are used to access data at a specified memory location. Data can be written to or read from the wrong memory location if there is a short or malfunction in the address lines because of a hardware problem. If the data is a part of the program being executed, the program itself may malfunction. Select *Memory* from the Main Menu and *Address Test*. Press <Enter> to start the Address Test. This test writes a value in one memory locations and scans the entire range of system memory to find the value.

**Refresh Test**

The type of memory used in almost all computer system memory is called DRAM (Dynamic Random Access Memory). DRAM uses a small electric charge to store memory. This charge must be refreshed approximately every 15.625 µseconds. Certain programs detect the memory refresh interval and use the refresh rate for delay loops. This AMIDiag test checks the DRAM system memory refresh interval rate.

**When to Use**

Run the Refresh Test if a program that uses timing loops based on the memory refresh rate does not work properly in your system. Many BIOS routines use such timing loops, specifically routines that access the disk drives. Select *Memory* from the Main Menu and *Refresh Test*. Press <Enter> to start the Refresh Test. If an error occurs in this test, AMIDiag displays the current refresh rate and the ideal refresh rate.

**Data Bus Test**

This test makes sure that the data bus is working properly. Choose Data Bus test from the Memory menu and press <Enter> to run this test.
**Cache Memory Test**

This test identifies and tests all internal and secondary cache memory and then performs a random pattern test within the range of the cache memory size to detect cache memory problems. This test does not run if cache memory is not installed or is disabled. This test always display the exact cache memory size. If HIMEM.SYS is loaded, this test is limited to the memory block allocated by HIMEM.SYS.

**Cache Memory**

Most modern systems have cache memory, a small amount of relatively fast SRAM (static RAM) that temporarily stores frequently used data from system memory (relatively slow DRAM). Cache memory is used because it speeds access to data and code in memory.

Caching is a method of speeding access to information in a slower device by temporarily storing the information in a faster device. For example, data stored in 70 ns DRAM can be stored temporarily in 12 – 18 ns SRAM cache memory for quicker access. The system that determines which data is stored in SRAM cache memory is called a caching algorithm.

**When to Use**

This test determines the cache memory size and tests the cache memory chips. Make sure cache memory is enabled before running this test. Cache is usually enabled via BIOS Setup. In systems with an AMIBIOS, <Ctrl> <Alt> <Shift> <↓> usually enables cache memory.

If an error occurs in this test, AMIDiag displays the current refresh rate and the ideal refresh rate.

**L2 Cache Test**

This test makes sure that the L2 secondary cache memory on the Pentium II or Pentium III CPU is functioning properly. This test directly accesses the Pentium II cache memory through the Pentium II special hardware access instead of indirectly, as is done in the Cache Memory Test.

This test is disabled if AMIDiag does not detect an Intel Pentium II or Pentium III family CPU. This test appears in addition to the Cache Memory test.
5 IDE Device Diagnostics

The IDE hard disk diagnostics test run on IDE hard disk drives. The CD-ROM drive tests work only with CD-ROM drives that use the ATAPI interface.
Important
The AMIDiag IDE hard disk drive test do not run on SCSI hard disk drives. If you have a SCSI hard disk drive, run the AMIDiag diagnostic tests on the SCSI menu.

Hide Destructive Tests Press <Alt> <H> to display the destructive test (Write Test) on the menu. Press <Alt> <H> again to hide the destructive test.

IDE HDD Write Test
This test makes sure that the selected IDE drive is writing data correctly. This test writes a pattern of data to the IDE hard disk drive, then reads the data it has written.

Warning
This test destroys all data on the tested IDE hard disk drive.

Select Write Test from the IDE menu. Choose the IDE drives to be tested from the first screen:

<table>
<thead>
<tr>
<th>Write Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Drive : YES</td>
</tr>
<tr>
<td>Start LBA Number : 0</td>
</tr>
<tr>
<td>End LBA Number : 9767519</td>
</tr>
<tr>
<td>Percentage to Test : 100</td>
</tr>
<tr>
<td>UDMA Supported : YES</td>
</tr>
</tbody>
</table>

CONTINUE
IDE HDD Read/Verify Test

This test performs sequential and random read operations on the specified part of the IDE drive. Run this test periodically to maintain the health of an IDE disk drive.

Running a Quick Test Press <F2>. Set the Repeat Count parameter to the number of times you want to run the Read test. Choose Quick Test to only test 1% of the drive.

Standard Read Test Select Read/Verify Test from the IDE HDD menu. Choose the IDE drives to be tested from a screen such as the following:

<table>
<thead>
<tr>
<th>Read Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Drive</td>
</tr>
<tr>
<td>Start LBA Number</td>
</tr>
<tr>
<td>End LBA Number</td>
</tr>
<tr>
<td>Percentage to Test</td>
</tr>
<tr>
<td>Sequential Test</td>
</tr>
<tr>
<td>Random Test</td>
</tr>
<tr>
<td>Soft Error Threshold</td>
</tr>
<tr>
<td>Data Validation</td>
</tr>
<tr>
<td>UDIDe Supported</td>
</tr>
<tr>
<td>CONTINUE</td>
</tr>
</tbody>
</table>

Warning
Choose YES to run the data validation test only if the IDE Write Test has already been run.
IDE HDD Seek Test

The Seek Test determines the head movement ability of the hard disk over the specified cylinder and head range. A sequential seek is performed, then a series of random seeks. Choose the IDE drives to be tested from the first screen:

```
   Seek Test
   Test Drive : YES
   Start LBA Number : 0
   End LBA Number : 9767519
   Percentage to Test : 100
   Sequential Test : YES
   Random Test : YES
   CONTINUE
```

IDE HDD Quick Test

This test verifies that the selected IDE Hard Disk can be fully accessed by the software. The test reads small blocks of sectors at the beginning, middle and end of the hard disk.

Run The Test

Select IDE HDD Quick Test on the Hard Disk menu and press <Enter>. Choose the IDE drives to be tested:

```
   Quick Read Test
   Test IDE Drive 0 : YES
   CONTINUE
```

Choose CONTINUE from the menu to run the Quick Test.
**IDE HDD Performance Test**

The Performance Test determines the data transfer rate, the sequential seek time, and the random seek time based on transfer size, seek count, and data transferred. The CPU reads 64 KB blocks 15 times. Then the CPU reads the number of timer ticks and displays the data. Compare the performance values displayed by AMIDiag to the IDE drive performance values specified in the computer owner’s manual.

**Transfer Rate**
The data transfer rate is measured in kilobytes per second. It is \((64 \text{ KB} \times 15) \times 18.2 \text{ times per second} \div \text{number of system timer ticks}\).

**Seek Time**
The seek time is equal to the number of timer ticks \(\times 1000\) divided by \(18.2 \text{ times per second} \times \text{the number of Seek instructions}\). Seek time is measured in milliseconds.

**Run the Test**
Select *Performance Test* on the Hard Disk menu and press <Enter>. Choose the IDE drives to be tested:

```
Performance Test
Test IDE Drive 0 : YES
CONTINUE
```

Choose Continue from the next screen to run the Performance Test.
IDE HDD Boot Sector Test

This test checks the integrity of the partition and boot sector on the IDE drive. Run this test if the computer will not boot from the IDE hard disk drive. You can run AMIDiag from a floppy diskette if a hard disk drive is not available. Select Boot Sector Test and press <Enter>. Select the test parameters from the screen. Set Repeat Count to the number of times you want to run this test. Select the drives to be tested:

Choose Continue to run this test.

IDE HDD Sleep Test

This test checks the ability of the IDE drive to go into “sleep” mode. Sleep mode saves energy and wear on the computer. Select the drives to be tested:

Choose Continue to run this test.
IDE CD Tests

IDE CD Tray Test

This test works only on CD-ROM drives with the ATAPI interface. Select this test to make sure that the CD-ROM drive can eject a CD. The CD tray should open and close. The CD-ROM drive must have an auto-eject feature for this test to work.

IDE CD Data Test

This test works only on CD-ROM drives with the ATAPI interface. This test reads all logical blocks on a CD if the starting and ending block are not specified. Place any CD in the CD-ROM drive before running this test and follow the screen instructions. This test does not play audio CDs.

IDE CD Audio Test

A speaker must be attached to the CD-ROM drive before running this test. This test plays all logical blocks if the starting and ending block are not specified. Place an audio CD in the CD-ROM drive. Follow the instructions.
**IDE CD Quick Test**

This test verifies that the selected IDE CDROM drive can fully accessed the inserted medium. The test reads small blocks of sectors at the beginning, middle and end of the CD in the drive.

**IDE CD Data Integrity Test**

This test verifies the data transferred from the CD to the computer. Unlike the CD Read test, this test requires a definition of the CD that must be provided as an external file. This external file is supplied with AMIDiag, which will specify the filename (CDTEST.INI) when you choose this test.

This test verifies the integrity of data on the CD by comparing it to the data in the external file. Errors are generated if the contents of these two files do not match. Select CD Data Integrity test from the IDE menu and press <Enter>. Follow the instructions on the screen.

**IDE Tape Drive Tests**

The IDE Tape Drive Test makes sure that any IDE tape drive attached to your computer is working properly.
IDE Tape Write Test

This test erases old data and writes new data to the tape cartridge. This test issues ATAPI write commands to the tape drive block by block sequentially.

Warning
This test destroys all data on the tape cartridge.

The test parameters are Repeat Count (number of times to run this test) and Quick Test (test only 1% of the tape cartridge). Select the tape drive to be tested. Select the starting and ending data block to be tested or the percentage of the tape cartridge to be tested. Choose Continue to run the test.
**IDE Tape Read Test**

This test issues ATAPI read commands to the tape drive block by block sequentially. Make sure the tape cartridge in the tape drive has data on it.

The test parameters are Repeat Count (number of times to run this test) and Quick Test (test only 1% of the tape cartridge.) Select the tape drive to be tested. Select the starting and ending data block to be tested or the percentage of the tape cartridge to be tested. Choose Continue to run the test.

**IDE Tape Rewind Test**

This test makes sure that the tape drive can rewind the tape cartridge correctly. The test parameters are Repeat Count (number of times to run this test) and Quick Test (test only 1% of the tape cartridge.) Select the tape drive to be tested. Select the starting and ending data block to be tested or the percentage of the tape cartridge to be tested. Choose Continue to run the test.

**IDE Tape Seek Test**

This test makes sure that the tape drive performs the Seek command correctly. The test parameters are Repeat Count (number of times to run this test) and Quick Test (test only 1% of the tape cartridge.) Select the tape drive to be tested. Select the starting and ending data block to be tested or the percentage of the tape cartridge to be tested. Choose Continue to run the test.
Chapter 5 IDE Device Diagnostics

ATAPI Removables Test

This test verifies that the removable disk drive is operating correctly. The removable drive can be an LS120 drive or an Iomega ZIP drive.

### Write Test

This test verifies the ability of the LS120 drive or ZIP drive to write data correctly to an LS120 or ZIP disk, respectively. You should use a disk that you know is good for this test. This test is normally hidden from view because it destroys the data on the disk. Press <Alt> <H> to display this test. Select the drive(s) to be tested and run the test.

**Warning**

This test destroys all data on the disk.

### Read Test

This test verifies the ability of the LS120 or ZIP drive to read data correctly in both block and random sequential format from an LS120 or ZIP disk, respectively. You should use a disk that you know is good for this test. Select the drive or drives to be tested and run the test. You can select the starting and ending clocks of data to be read or you can select the percentage of the drive to be read in a sequential or random order. You can also run a random or sequential read test.

Cont’d
### ATAPI Removables Test, Continued

#### Seek Test
This test verifies the ability of the LS120 or ZIP drive to seek blocks of data sequentially or randomly. Since most of these drives have a caching mechanism, drive performance during the sequential seek should be faster than specified by the drive vendor. The drive performance during the random seek test should be approximately the same as specified by the drive vendor. Select the test parameters and ruin the test. YOU can specify the number of times this test is to be run (repeat count), or you can specify Quick Test to test only 1% of the disk.

#### Soft Eject Test
This test verifies that the auto eject feature of the LS120 drive or ZIP drive is working properly. You can set the Repeat Count parameter to run this test a number of times. Select the test parameters and choose Continue to run the test.
6 Floppy Diagnostic Tests

User Input

The Drive Speed, Random Read/Write, and Sequential Read/Write tests require additional information. Enter the required information before performing the tests.

Hide Destructive Tests

Press <Alt> <H> to display the destructive test (Diskette Format) on the menu. Press <Alt> <H> again to hide the destructive test.
Floppy Controller Test

This test verifies the functionality of the floppy disk controller. The test performs internal register read/write tests. The test also performs DMA transfers to and from the floppy drive through the controller.

Diskette Format Test

This test determines the ability of the floppy disk controller to perform low-level formatting. The floppy format test is performed in interactive mode only. This test also determines if the magnetic media inside the floppy diskette is OK.

Warning
This test destroys all data on the floppy. This floppy must be reformatted via the DOS Format command before it can be used again.

Run the Test
Select Floppy from the Main Menu and Diskette Format from the Floppy Disk Menu. Press <Enter>. You must confirm this operation since this routine destroys all data on the floppy.

A warning appears when Diskette Format is chosen. Select Yes and press <Enter> to begin the test. Format is selected. Testing drive A: flashes. The cylinder, head, and sector are displayed as they are formatted. When this test completes, press <Enter> to return to the main menu or to run the test on drive B: if you selected both drives.

Drive Speed Test

This test determines the drive rotation speed. The 1.2 MB and 1.44 MB drive speed should be 360 RPM. The 360 KB and 720 KB drive speed should be 300 RPM.

Run the Test
Select Drive Speed Test and press <Enter>. Select the drives to be tested. Insert a formatted floppy disk in the drive and press <Enter>.
About the Read/Write Tests

You can perform the floppy sequential and random read and write tests on the AMIDiag program floppy or on any DOS-formatted floppy that also contains other DOS files. This feature is useful when testing systems with only one floppy drive. Errors can also be logged to the test floppy. Turn error logging off in single execution mode. Place a formatted floppy disk in the test floppy drive.

Data Saved

The test is non-destructive if error logging is on and the read and write tests are performed on the same drive.

Automatic

AMIDiag automatically creates TESTAREA, allocating half the available space on the floppy to TESTAREA and half for error logging.

Warning

Data on the floppy used in the Random Read/Write and Sequential Read/Write Tests is destroyed unless the TESTAREA file is specified when running these tests.
Random Read/Write Test

This test checks the drive's random seek, read, and write ability. The diskette used in this test must be formatted on the operating system currently being used before running the test.

**Warning**
Data on the floppy used in the Random Read/Write and Sequential Read/Write Tests is destroyed unless the TESTAREA file is specified when running these tests.

Select *Floppy* from the Main Menu and *Random Read/Write Test* and press <Enter>. Type Y. Press <Enter>

Insert a formatted floppy disk in the drive and press <Enter>. *Read, Write,* and *Verify* flash in sequence as these operations are performed. The cylinder numbers, head numbers, and sector numbers are read, written, and verified.

To abort the test, press <Esc>. Press <Enter> to return to the Main Menu when done, unless you have chosen to run this test on both drives A: and B:.
Sequential Read/Write Test

This test checks the sequential seek, read, and write capability of the drive. The floppy disk used in this test must be formatted on the current operating system before running the test.

**Warning**

Data on the floppy used in the Random Read/Write and Sequential Read/Write Tests is destroyed unless the TESTAREA file is specified when running these tests.

Select Floppy from the Main Menu and Sequential Read/Write Test and press <Enter>.

Type Y and press <Enter>. The following appears. Press <Enter> to continue.

Press <Enter> to continue. Write, Read, and Verify flash as these operations are performed. The cylinder numbers, head numbers, and sector numbers are read, written, and verified sequentially by sector number.

Press <Enter> to return to the Main Menu when the test completes, unless drive B: is also being tested.
**Elevator Seek Test**

This test verifies the track-to-track seeking capability of the floppy drive. This test sends Seek instructions alternately to the outer and inner sections of the floppy drive. Select *Elevator Seek Test* from the Floppy menu and press <Enter>. Select the floppy drives to be tested when prompted. Insert an empty formatted floppy diskette in the floppy drive to be tested and press <Enter>.

The floppy disk used in this test must be formatted on the operating system currently being used. A graphical display of all 80 floppy diskette tracks appears. The tracks where the Seek instructions are being written are pointed to as the Seek instructions are issued.

Select *Return to menu*. If the test does not complete correctly, select *Browse error list* to display the AMIDiag errors. You may have to replace the floppy drive or floppy controller if the test does not pass. Type *Y*.

**Disk Change Line Test**

This test verifies the disk change line capability of the floppy drive. A drive with disk line change capability allows the operating system to recognize that a new floppy disk has been inserted without accessing the File Allocation Table (FAT). The floppy disk used in this test must be formatted on the operating system currently being used before running the test.

Select *Floppy* from the Main Menu and *Disk Change Line Test* and press <Enter>. Type *Y*. If you tested drives A: and B:, the previous screens are repeated for drive B:.
AMIDiag tests all SCSI host adapters installed in your computer. SCSI tests run on all legacy SCSI or Wide and Ultra Wide SCSI controllers and devices. The SCSI tests detect and test a combination of up to 120 SCSI hard disk drives, SCSI CD-ROM drives, and SCSI tape drives.
Hide Destructive Tests  Press <Alt> <H> to display the destructive tests.  Press <Alt> <H> again to hide these tests.

**SCSI Disk Tests**

<table>
<thead>
<tr>
<th>System</th>
<th>Memory</th>
<th>IDE</th>
<th>PDD</th>
<th>SCSI</th>
<th>HDD</th>
<th>Video</th>
<th>USB</th>
<th>Misc</th>
<th>User</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **SCSI Disk Buffer Test**: Tests internal buffer on SCSI disks.

**SCSI Disk Format Test**

This test will format your SCSI disk and all data will be lost. There is no reason to run this test unless you want to reformat your Disk.

**SCSI Disk Buffer Test**

This test write logical blocks of data to the internal buffer on the disk drive. The same logical blocks of data are then read from the drive buffer and compared to the original data. This test does not alter the data on the disk drive in any way. Disk drive data integrity is not compromised by this test. If the SCSI hard disk drive does not have an internal buffer, this test cannot be selected.
### SCSI Disk Self Test

Most SCSI disk drive manufacturers provide a diagnostics test in the firmware on the SCSI drive. Choose this option to execute the diagnostic tests that reside on the SCSI disk drive. If this test is successful, you will be assured that the drive is operating in accordance with the drive manufacturer’s specifications.

**Run the Test**  
Select SCSI Disk Self Diagnostic Test and press <Enter>. Choose the parameters on the screen and choose Continue. The SCSI Disk Self diagnostics test cannot be aborted. You must wait until the entire disk self test completes.

### SCSI Disk Write Test

This test writes logical blocks to the SCSI drive sequentially. You can run this test in a destructive or non-destructive mode. Select NO in the Destructive test parameter field to run a non-destructive test.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall %</td>
<td>Specifies drivewise % as set for each drive.</td>
</tr>
<tr>
<td>Common:</td>
<td>Use the term % to specify all drives</td>
</tr>
<tr>
<td>SCSI Disk n</td>
<td>Specify an individual drive parameter.</td>
</tr>
</tbody>
</table>

Back up the hard drive to be tested before running this test in destructive mode.

Cont’d
**Coverage Prompt** When you choose Sequential Test or Random Test a prompt for the percent of the drive to be tested appears.

This test uses the SCSI Write command with a 10-byte CDB. If you do not specify a starting and ending block number, this test starts reading at block 0 and continues to the last block. Select *SCSI Disk Write Test* and press <Enter>. A default parameter screen is displayed. As the test progresses, the current block number, number of blocks tested, and number of blocks left are updated. The random test is performed on the specified percentage of blocks between the specified start and end blocks.
SCSI Disk Read Test

This test sequentially and randomly reads logical blocks from the SCSI hard disk drive. This test uses the SCSI Read command with a 10-byte CDB (Command Data Block). If you do not specify a starting and ending block number, block 0 through the last block are tested. Select SCSI Disk Read Test and press <Enter>. A default parameter screen appears.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>overall %</td>
<td>Specifies the drivewise:/ or common :/ as set for each drive. If Drivewise is selected, the drive parameters are specified for each drive used. If common is selected, all drive parameters used the % parameters, which are entered in the % for Common fields. This reduces the need to set each drive parameters if the computer has a large number of drives.</td>
</tr>
<tr>
<td>Common:</td>
<td>Use the term % to specify all drives</td>
</tr>
<tr>
<td>SCSI Disk n</td>
<td>Specify an individual drive parameter.</td>
</tr>
</tbody>
</table>

Cont’d
**SCSI Disk Read Test**, Continued

**Test Parameters** The start and end block number fields are 0 and the last block on the disk or the values set the last time this test was run. As the test runs, the current block number, number of blocks tested, and number of blocks left are updated. Also, the block tested is marked with a different character. The random test is performed on the specified percentage of blocks between the specified start and end blocks.

**SCSI Disk Boot Sector Test**

This test makes sure that you can boot from the selected SCSI disk drive. Select SCSI Disk Boot Test from the SCSI menu and press <Enter>. Follow the instructions on the screen.

**SCSI Disk Bad Block Repair**

Choose this option to repair bad blocks on the selected hard disk drive. Select SCSI Disk Bad Block Repair from the SCSI menu and press <Enter>. Follow the instructions on the screen.

**SCSI Disk Spin Down Test**

Choose this option to test the ability of the SCSI disk to spin down. Select SCSI Disk Spin Down Test from the SCSI menu and press <Enter>. Follow the instructions on the screen.
**SCSI Disk Quick Test**

This test verifies that the selected SCSI Hard Disk can be fully accessed by the software. The test reads small blocks of sectors at the beginning, middle and end of the hard disk.

**Run The Test**

Select SCSI Disk Quick Test on the Hard Disk menu and press <Enter>.

Choose CONTINUE from the menu to run the Quick Test.

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**SCSI CD Tests**

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**SCSI CDROM Buffer Test**

This diagnostic makes sure that the memory buffer on the CD-ROM drive is working correctly.
SCSI CDROM Self Test

Most SCSI CD-ROM drive manufacturers provide a diagnostics test on the drive. Choose this option to execute the diagnostic tests that reside on the drive. If this test is successful, the drive is operating in accordance with the drive manufacturer’s specifications.

Run the Test

Select SCSI CD-ROM Self Diagnostics Test and press <Enter>. Choose the parameters on the screen and choose Continue. This test cannot be aborted. You must wait until the entire test completes.

SCSI CDROM Tray Test

Select this test to make sure that the CD-ROM drive can eject a CD. The CD tray should open and close. The CD-ROM drive must have an auto-eject feature for this test to work.
SCSI CDROM Read Test

This test reads logical blocks of data from the CD-ROM drive. This test issues the SCSI Read command with a 10-byte CDB. Select SCSI CD-ROM Read Test and press <Enter>.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>overall %</td>
<td>Specifies drivewise :/ as set for each drive.</td>
</tr>
<tr>
<td>Common:</td>
<td>Use the term % to specify all drives</td>
</tr>
<tr>
<td>SCSI CD-ROM n</td>
<td>Specify an individual drive parameter.</td>
</tr>
</tbody>
</table>

If the Sequential Test or Random Test, you are prompted for the percentage of the drive to be tested. Choose a percentage and choose CONTINUE.

If the starting and ending block are not specified, this test reads from block 0 to the last block. This test fails if an audio CD is placed in the drive. This test supports multi-format CDs with data and audio tracks. The random test is performed on the specified blocks between the start and end blocks.
Before running this test: connect a speaker to the CD-ROM drive and insert an audio CD in the CD-ROM drive.

This test makes sure that the CD-ROM drive can play audio CDs. This test issues the SCSI Play command to the CD-ROM drive. You can select the sequence of tracks played. Follow the screen directions to play an audio CD.

This test makes sure that the SCSI CD-ROM drive reads data correctly. Select SCSI CDROM Data test. Set the Test CDROM n parameter to Yes and choose Continue to run this test.

This test verifies that the selected SCSI CDROM drive can fully accessed the inserted medium. The test reads small blocks of sectors at the beginning, middle and end of the CD in the drive.

Select SCSI CDROM Quick Test on the SCSI CDROM menu and press <Enter>.

Choose CONTINUE from the menu to run the Quick Test.
SCSI Tape Tests

SCSI Tape Buffer Test

This test write logical blocks of data to the internal buffer on the tape drive. The same logical blocks of data are then read from the tape drive buffer and compared to the original data. This test does not alter the data on the tape in the tape drive in any way. Data integrity is not compromised by this test. If the tape drive does not have an internal buffer, this test cannot be selected.

SCSI Tape Self Test

Most SCSI tape drive manufacturers provide a diagnostics test in the firmware on the SCSI tape drive. Choose this option to execute the diagnostic tests that reside on the SCSI tape drive. If this test is successful, you are assured that the tape drive is operating in accordance with the drive manufacturer’s specifications.

Run the Test

Select SCSI Tape Self Diagnostics Test and press <Enter>. Choose the parameters on the screen and choose Continue. The SCSI Tape Self diagnostics test cannot be aborted. You must wait until the entire disk self test completes.
SCSI Tape Write Test

This test erases old data and writes new data to the tape cartridge. This test issues SCSI write commands to the tape drive block by block sequentially.

**Warning**
This test destroys all data on the tape cartridge.

The test parameters are Repeat Count (number of times to run this test) and Quick Test (test only 1% of the tape cartridge). Select the tape drive to be tested. Select the starting and ending data block to be tested or the percentage of the tape cartridge to be tested. Choose Continue to run the test.

SCSI Tape Read Test

This test reads sequential logical blocks from the SCSI tape. The reading terminates when end of medium marker, end of partition marker, or blank data is encountered. This test issues the SCSI Read command with a 6-byte CDB. Select *SCSI Tape Read Test* and press <Enter>.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>overall %</td>
<td>Specifies drivewise % as set for each drive.</td>
</tr>
<tr>
<td>Common:</td>
<td>Use the term % to specify all drives</td>
</tr>
<tr>
<td>SCSI Tape n</td>
<td>Specify an individual drive parameter.</td>
</tr>
</tbody>
</table>

A prompt for the percent of the drive to be tested appears. Specify the percentage of the drive to be tested and choose CONTINUE.

If the tape is not positioned at the beginning or the starting block, a tape rewind command is issued before the test is performed. The rewind operation may take some time.

SCSI Tape Rewind Test

This test makes sure that the SCSI tape drive can rewind a tape. Select *SCSI Tape Rewind Test* and press <Enter>. 
8 Keyboard Diagnostic Tests

Keyboard Controller Test

The Controller Test issues a Self-Test command to the keyboard controller and makes sure that the response is OK. It then sends the Diagnostic Echo command to the keyboard and waits for a return from the keyboard. Select Keyboard from the Main Menu and Controller Test.
Scan/ASCII Code Test

The Scan and ASCII Code Test determines if a pressed keys match the Scan and ASCII codes for that key. Every time you press a key to verify its code, both the scan code and ASCII code of the pressed key is displayed. The key symbol is also displayed.

Perform this test to identify faulty keys. Use the tables on the following screens to verify that the displayed scan and ASCII codes are correct.

Run the Test

Select Keyboard from the Main Menu and Scan/ASCII Code Test. Press <Enter> to display a keyboard layout. Scan code and ASCII Code appear above the keyboard layout.

Press the keys on the keyboard. The scan codes and ASCII codes display in the appropriate fields for each key as it is pressed. Use this test to verify the codes with their respective keys. Press <Ctrl> <Break> to exit this test.
Lower Case Keyboard Scan/ASCII Codes

<table>
<thead>
<tr>
<th>Keystroke</th>
<th>Scan Code</th>
<th>ASCII Code</th>
<th>Keystroke</th>
<th>Scan Code</th>
<th>ASCII Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Esc</td>
<td>01</td>
<td>1B</td>
<td>1</td>
<td>02</td>
<td>31</td>
</tr>
<tr>
<td>2</td>
<td>03</td>
<td>32</td>
<td>3</td>
<td>04</td>
<td>33</td>
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<td>4</td>
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<td>6</td>
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<td>38</td>
<td>9</td>
<td>0A</td>
<td>39</td>
</tr>
<tr>
<td>0</td>
<td>0B</td>
<td>30</td>
<td>0C</td>
<td>2D</td>
<td></td>
</tr>
<tr>
<td>–</td>
<td>0D</td>
<td>3D</td>
<td>Backspace</td>
<td>0E</td>
<td>68</td>
</tr>
<tr>
<td>Tab</td>
<td>0F</td>
<td>09</td>
<td>10</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>w</td>
<td>11</td>
<td>77</td>
<td>e</td>
<td>12</td>
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<td>r</td>
<td>13</td>
<td>72</td>
<td>t</td>
<td>14</td>
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</tr>
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<td>y</td>
<td>15</td>
<td>79</td>
<td>u</td>
<td>16</td>
<td>75</td>
</tr>
<tr>
<td>t</td>
<td>17</td>
<td>69</td>
<td>o</td>
<td>18</td>
<td>6F</td>
</tr>
<tr>
<td>p</td>
<td>19</td>
<td>70</td>
<td>l</td>
<td>1A</td>
<td>5B</td>
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<tr>
<td>l</td>
<td>1B</td>
<td>5D</td>
<td>Return</td>
<td>1C</td>
<td>0D</td>
</tr>
<tr>
<td>Ctrl</td>
<td>***</td>
<td>***</td>
<td>a</td>
<td>1E</td>
<td>61</td>
</tr>
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<td>s</td>
<td>1F</td>
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<td>3B</td>
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<td>27</td>
</tr>
<tr>
<td>‘</td>
<td>29</td>
<td>60</td>
<td>Shift</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>\</td>
<td>2B</td>
<td>5C</td>
<td>z</td>
<td>2C</td>
<td>7A</td>
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<td>x</td>
<td>2D</td>
<td>78</td>
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<td>2E</td>
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<td>n</td>
<td>31</td>
<td>6E</td>
<td>m</td>
<td>32</td>
<td>6D</td>
</tr>
<tr>
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<td>33</td>
<td>2C</td>
<td>'</td>
<td>34</td>
<td>2E</td>
</tr>
<tr>
<td>/</td>
<td>35</td>
<td>2F</td>
<td>*</td>
<td>37</td>
<td>2A</td>
</tr>
<tr>
<td>Alt</td>
<td>***</td>
<td>***</td>
<td>Space</td>
<td>39</td>
<td>20</td>
</tr>
<tr>
<td>Caps Lock</td>
<td>***</td>
<td>***</td>
<td>F1</td>
<td>3B</td>
<td>00</td>
</tr>
<tr>
<td>F2</td>
<td>3C</td>
<td>00</td>
<td>F3</td>
<td>3D</td>
<td>00</td>
</tr>
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<td>42</td>
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<td>F10</td>
<td>44</td>
<td>00</td>
<td>F11</td>
<td>85</td>
<td>00</td>
</tr>
<tr>
<td>F12</td>
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<td>Num Lock</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>Scroll Lock</td>
<td>***</td>
<td>***</td>
<td>Home</td>
<td>47</td>
<td>00</td>
</tr>
<tr>
<td>5</td>
<td>48</td>
<td>00</td>
<td>PgUp</td>
<td>49</td>
<td>00</td>
</tr>
<tr>
<td>8</td>
<td>0D</td>
<td>00</td>
<td>→</td>
<td>4B</td>
<td>00</td>
</tr>
<tr>
<td>Center key</td>
<td>4C</td>
<td>00</td>
<td>–</td>
<td>4D</td>
<td>00</td>
</tr>
<tr>
<td>+</td>
<td>4E</td>
<td>2B</td>
<td>End</td>
<td>4F</td>
<td>00</td>
</tr>
<tr>
<td>–</td>
<td>50</td>
<td>00</td>
<td>PgDn</td>
<td>51</td>
<td>00</td>
</tr>
<tr>
<td>Ins</td>
<td>52</td>
<td>00</td>
<td>Del</td>
<td>53</td>
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</tr>
<tr>
<td>SysReq</td>
<td>no key</td>
<td>no key</td>
<td>Key 45</td>
<td>56</td>
<td>5C</td>
</tr>
<tr>
<td>Enter</td>
<td>E0</td>
<td>0D</td>
<td>↑</td>
<td>E0</td>
<td>2F</td>
</tr>
<tr>
<td>Print Screen</td>
<td>***</td>
<td>***</td>
<td>Pause</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>Home</td>
<td>47</td>
<td>E0</td>
<td>↑</td>
<td>48</td>
<td>E0</td>
</tr>
<tr>
<td>PgUp</td>
<td>49</td>
<td>E0</td>
<td>←</td>
<td>4B</td>
<td>E0</td>
</tr>
</tbody>
</table>

*** No keystroke, but perform another action.
### Uppercase (Shift) Keyboard Scan/ASCII Codes

<table>
<thead>
<tr>
<th>Keystroke</th>
<th>Scan Code</th>
<th>ASCII Code</th>
<th>Keystroke</th>
<th>Scan Code</th>
<th>ASCII Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shift Esc</td>
<td>01</td>
<td>1B</td>
<td>!</td>
<td>02</td>
<td>21</td>
</tr>
<tr>
<td>(a)</td>
<td>03</td>
<td>40</td>
<td>#</td>
<td>04</td>
<td>23</td>
</tr>
<tr>
<td>$</td>
<td>05</td>
<td>24</td>
<td>%</td>
<td>06</td>
<td>25</td>
</tr>
<tr>
<td>^</td>
<td>07</td>
<td>5E</td>
<td>&amp;</td>
<td>08</td>
<td>26</td>
</tr>
<tr>
<td>*</td>
<td>09</td>
<td>2A</td>
<td>(</td>
<td>0A</td>
<td>28</td>
</tr>
<tr>
<td>)</td>
<td>0B</td>
<td>29</td>
<td></td>
<td>0C</td>
<td>5F</td>
</tr>
<tr>
<td>+</td>
<td>0D</td>
<td>2B</td>
<td>Shift Backspace</td>
<td>0E</td>
<td>08</td>
</tr>
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<td>30</td>
<td>00</td>
</tr>
<tr>
<td>Alt n</td>
<td>31</td>
<td>00</td>
<td>Alt m</td>
<td>32</td>
<td>00</td>
</tr>
<tr>
<td>Alt `</td>
<td>33</td>
<td>00</td>
<td>Alt *</td>
<td>34</td>
<td>00</td>
</tr>
<tr>
<td>Alt /</td>
<td>35</td>
<td>00</td>
<td>Alt Caps Lock</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>Alt Space</td>
<td>39</td>
<td>00</td>
<td>Alt F1</td>
<td>68</td>
<td>00</td>
</tr>
<tr>
<td>Alt F2</td>
<td>69</td>
<td>00</td>
<td>Alt F3</td>
<td>6A</td>
<td>00</td>
</tr>
<tr>
<td>Alt F4</td>
<td>6B</td>
<td>00</td>
<td>Alt F5</td>
<td>6C</td>
<td>00</td>
</tr>
<tr>
<td>Alt F6</td>
<td>6D</td>
<td>00</td>
<td>Alt F7</td>
<td>6E</td>
<td>00</td>
</tr>
<tr>
<td>Alt F8</td>
<td>6F</td>
<td>00</td>
<td>Alt F9</td>
<td>70</td>
<td>00</td>
</tr>
<tr>
<td>Alt F10</td>
<td>71</td>
<td>00</td>
<td>Alt F11</td>
<td>8B</td>
<td>00</td>
</tr>
<tr>
<td>Alt F12</td>
<td>8C</td>
<td>00</td>
<td>Alt Num Lock</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>Alt Scroll Lock</td>
<td>***</td>
<td>***</td>
<td>Alt Keypad -</td>
<td>4A</td>
<td>00</td>
</tr>
<tr>
<td>Alt Keypad +</td>
<td>4E</td>
<td>00</td>
<td>Alt Keypad Numbers #</td>
<td>#</td>
<td>#</td>
</tr>
<tr>
<td>Alt Del</td>
<td>--</td>
<td>--</td>
<td>Alt SysReq</td>
<td>(no key)</td>
<td>(no key)</td>
</tr>
<tr>
<td>Alt key 45</td>
<td>--</td>
<td>--</td>
<td>Alt Enter</td>
<td>A6</td>
<td>00</td>
</tr>
<tr>
<td>Alt /</td>
<td>A4</td>
<td>00</td>
<td>Alt Print Screen</td>
<td>**</td>
<td>***</td>
</tr>
<tr>
<td>Alt Pause</td>
<td>***</td>
<td>***</td>
<td>Alt Home</td>
<td>97</td>
<td>00</td>
</tr>
<tr>
<td>Alt ↑</td>
<td>98</td>
<td>00</td>
<td>Alt PgUp</td>
<td>99</td>
<td>00</td>
</tr>
<tr>
<td>Alt ←</td>
<td>9B</td>
<td>00</td>
<td>Alt →</td>
<td>9D</td>
<td>00</td>
</tr>
<tr>
<td>Alt End</td>
<td>9F</td>
<td>00</td>
<td>Alt ↓</td>
<td>A0</td>
<td>00</td>
</tr>
<tr>
<td>Alt PgDn</td>
<td>A1</td>
<td>00</td>
<td>Alt Ins</td>
<td>A2</td>
<td>00</td>
</tr>
<tr>
<td>Alt Del</td>
<td>A3</td>
<td>00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*** Does not provide a keystroke but performs another action.
– No function assigned to this keystroke combination.
LED Test

This test makes sure that all keyboard LEDs are working. As each LED is turned on, you must report if the LED is lit.

Clock Line Test

The Keyboard Clock Line Test makes sure the keyboard clock line is working properly. Select Keyboard and Keyboard Clock Line Test. Press <Enter> to start the Keyboard Clock Line Test. The Clock Line Test screen should appear when the test completes.

Data Line Test

The Keyboard Data Line Test makes sure the keyboard data line is working properly. Select Keyboard from the Main Menu and Keyboard Data Line Test. Press <Enter> to start the Keyboard Data Line Test.
9 Video Diagnostic Tests
Video Diagnostic Tests, Continued

**Important**

*Do not run the VESA Video Mode Test or the VESA Video Memory Test unless your monitor supports the VESA VGA modes.*  
The VESA video mode test and VESA video memory test are performed on all Super VGA adapter cards that support the VESA video BIOS extensions. It does not matter if the video card is located on the ISA, EISA, VESA VL-Bus, or PCI bus. This test works for any Super VGA video card on any bus.

**Running Video Tests**  
The video test you run depend on the type of monitor installed on your computer. The type of monitor the test can be run on is specified below.

**Video Controller Tests**

These tests are designed for the controller aspect of the video diagnostics.

**VGA Controller Test**

This test verifies the functionality of the graphics controller in VGA mode. These tests include:

- vertical synchronization,
- horizontal synchronization,
- graphics controller test,
- attribute controller test, and
- DAC register test.

**Video Memory Test**

This test tests the base 256 KB of video memory via a memory pattern test. This test can be run on all monochrome and all color monitors.

**VESA Video Memory Test**

This test works only with Super VGA adapters. The VESA Video Memory Test checks all VESA video memory. This
test may last a few minutes. Select *VESA Video Memory Test* from the Memory menu and press <Enter>.

Since this test checks video memory, it is performed in the video mode that uses the greatest amount of video memory. The screen may be blank because this video mode may not be supported by the monitor attached to your computer. If this test is grayed on the menu, you cannot run this test because your computer does not have the correct video driver. VESA VGA BIOS drivers may be available from the manufacturer of the video adapter card in your computer.

The VESA Video Memory Test includes the:
- Window Memory Test, and the
- Frame Buffer Test.

**AGP Test**

This test makes sure that the Accelerated Graphics Port (AGP), the AGP graphics adapter card, and the AGP connectors and circuitry are all working correctly. Select AGP Test from the Video menu and press <Enter>. Follow the directions on the screen.

**Intel i810/i815 Video Test**

This test checks the functionality of the on-board video controller in the Intel i810/i815 based chipsets. These tests include:
- register R/W test,
- graphics translation table (GTT) test,
- hardware cursor test, and
- DAC register test.

**Video Monitor Test**

These tests verify the video controller output in addition to the communication between the controller and the display device.
Attribute Test

This test tests the video display attributes. This test displays a screen with a blinking line, reverse video line, high intensity line, and lines in 8 colors in video mode 3 (mode 7 if monochrome). This test can be run on all monochrome and all color monitors.
### Page Selection Test

This test tests all 8 video pages. This test displays a screen of 0s, then 1s, then 2s, then 3s, and so on, in black and white, indicating that each video page is being used correctly. This test only runs on color monitors.

### Color Test

This test displays the possible colors in foreground, background, and border. This test can be run on all color monitors.

### Text Mode Tests

The text mode tests are: 40 x 25 Display Test

<table>
<thead>
<tr>
<th>Test Name</th>
<th>Test Description</th>
<th>Type of Monitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 x 25 Display Test</td>
<td>Tests the 80 x 25 character set of the display adapter, displaying the entire character set in black and white, then in reverse video in video mode 3 (mode 7 if monochrome).</td>
<td>All monochrome and all color monitors.</td>
</tr>
<tr>
<td>40 x 25 Display Test</td>
<td>Tests the 40 x 25 character set of the display adapter in black and white, displaying the entire character set in black and white, then in reverse video.</td>
<td>All monochrome and all color monitors.</td>
</tr>
</tbody>
</table>
The following subtests appear in all Graphics Mode Tests (320 x 200, 640 x 200, 640 x 350, 640 x 480):

<table>
<thead>
<tr>
<th>Subtest</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text and Attribute Test</td>
<td>Makes sure all characters are displayed in the proper color.</td>
</tr>
<tr>
<td>Grid Test</td>
<td>Verifies the graphic dot spacing for each mode.</td>
</tr>
<tr>
<td>Aspect Ratio and Display Centering</td>
<td>Centers the monitor display.</td>
</tr>
<tr>
<td>Circular Pattern Test</td>
<td>Centers the monitor display.</td>
</tr>
<tr>
<td>Resolution</td>
<td>Reports the screen resolution.</td>
</tr>
<tr>
<td>Animation and Flicker</td>
<td>Reports the video adapter card speed.</td>
</tr>
<tr>
<td>Pixel Throughput</td>
<td>Reports the speed at which complex patterns are drawn on the screen.</td>
</tr>
</tbody>
</table>

These video tests may not appear correctly when displaying high resolution VESA video modes on a multisync monitor. The monitor must be adjusted for each individual video mode. After the video mode you will be using appears, you must center the monitor by choosing the **Aspect Ratio and Display Centering** subtest.

The graphics mode tests are:

<table>
<thead>
<tr>
<th>Test Name</th>
<th>Test Description</th>
<th>Type of Monitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>320 x 200 Graphics Test</td>
<td>Displays a black and white 9 x 13 window and redisplays it in reverse video. Then displays a three-color screen, a screen of random colors, then a black and white screen, and finally 256 colors.</td>
<td>All color monitors.</td>
</tr>
<tr>
<td>640 x 200 Graphics Test</td>
<td>Displays three black and white boxes, then goes from a black screen to a white screen, and back to a black screen.</td>
<td>All color monitors</td>
</tr>
<tr>
<td>640 x 350 Graphics Test</td>
<td>Displays a 16 color screen, then fills the screen with random colors, then returns to a blank screen.</td>
<td>EGA and VGA adapters only.</td>
</tr>
<tr>
<td>640 x 480 Graphics Test</td>
<td>Displays a 16 color screen, then fills the screen with random colors, then returns to a blank screen.</td>
<td>Only VGA adapters.</td>
</tr>
</tbody>
</table>
**VESAs Video Modes Test**

This test only works with Super VGA adapters. This test checks all Super VGA (VESAs) video modes supported by the installed video adapter. Select VESA Video Mode Test from the Memory menu and press <Enter>. A screen such as the following appears. The list varies depending on the VESA screen resolutions that the video adapter in your computer supports.

You can then select each resolution. You can enable or disable the test for each color or text mode.

**VESAs Monitor Test**

This test tests the Display Data Channel (DDC) between the video adapter and the monitor. This test only works with Plug and Play Monitors.

**LCD Panel Test**

Before an LCD flat panel can be tested, the VESA video modes that support 64 KB colors must be present. One of the followings VESA video modes must be present:

- 0x110,
- 0x113, or
- 0x116.

**Run Test**
The LCD Panel Tests consist of just the Wave pattern test. Follow the instructions on the screen.

**Test Parameters**
The only test parameter is Wave Pattern Test. The options are Yes or No. The default is Yes.
i740 Test

i740 General Test This test verifies the read/write capabilities of the various system registers for the i740 graphics chip.

i740 VGA Memory Test This test checks the video memory on the i740-based video adapter by reading and writing various patterns and verifying them.

i740 Hardware Cursor Test This test verifies the hardware cursor overlay functionality of the i740-based video adapter.

i740 Command Execution Test This test runs several i740-specific commands to test the functionality of the high- and low-priority FIFOs and the batch command execution.
10 USB Tests

The USB tests diagnose problems with USB peripherals.

Select USB Test from the USB menu to diagnose problems with USB peripherals and to make sure that USB support is provided in the system BIOS.
Human Interface Devices

From this screen, you can diagnose problems with a USB keyboard, USB mouse of USB Hub.

Keyboard Test

This test diagnoses USB keyboard hardware functionality and determines the data transfer rate between the USB host controller and the USB keyboard. This test tests the USB keyboard key codes and keystrokes.

Run the Test

Select Device Test from the USB menu. Select USB Keyboard test and press <Enter>. There are four sub tests available for USB keyboard test:

- USB Keyboard Control Test,
- USB Keyboard Code Test,
- USB Keyboard LED Test, and
- USB Keyboard PnP Test.

Test Parameters

The following test parameters appear:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test This Device</td>
<td>Select YES to run the USB Keyboard Test. The default is YES if AMIDig found a USB keyboard.</td>
</tr>
<tr>
<td>PnP Test</td>
<td>Select YES to run the USB Keyboard PnP (Plug and Play) Test. The default is YES if AMIDig found a USB keyboard. This test makes sure that the USB keyboard plug and play feature works properly. The Plug and Play feature automatically configures the USB device when the device is attached to the computer.</td>
</tr>
</tbody>
</table>
Mouse Test

This test performs USB Mouse tests on both UHCI and OHCI systems.

Run the Test: Select Device Test from the USB menu. Select USB Mice test and press <Enter>. There are three sub tests available for USB mice test:

- USB Mouse Control Test,
- USB Mouse Sensitive Test, and
- USB Mouse PnP Test.

Test Parameters: The following test parameters appear:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test This Device</td>
<td>Select YES to run the USB Keyboard Test. The default is YES if AMIDiag found a USB keyboard.</td>
</tr>
<tr>
<td>Sensitivity Test</td>
<td>Select YES to run the Sensitivity test.</td>
</tr>
<tr>
<td>PnP Test</td>
<td>Select YES to run the USB Mice PnP (Plug and Play) Test. The default is YES if AMIDiag found a USB mouse. This test makes sure that the USB mouse plug and play feature works properly. The Plug and Play feature automatically configures the USB device when the device is attached to the computer.</td>
</tr>
</tbody>
</table>

USB Hub Test

This test verifies the functionality of an external USB Hub. It does not test the built in Root/Hub on the USB controller.

Test Parameters: The following test parameters appear:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test This Device</td>
<td>Select YES to run the USB Hub Test. The default is YES if AMIDiag found a USB Hub.</td>
</tr>
<tr>
<td>Port Number X</td>
<td>These are the parameters for each port on the external hub.</td>
</tr>
<tr>
<td>Device Connected</td>
<td>Select YES if there is a device attached to this port on the USB Hub. The default is YES if AMIDiag found a USB device attached to the port.</td>
</tr>
<tr>
<td>Device Speed</td>
<td>Select UNKNOWN if you are not certain the protocol speed of the USB device. Most USB Keyboards and USB Mice use a LOW speed setting (10kops), where most USB Mass Storage Devices (floppy drives, CDROMs, etc.) use the FULL speed setting. IF AMIDiag detects a device attached to the port, it should set this parameter to the detected value.</td>
</tr>
</tbody>
</table>
Mass Storage Devices

From this screen, you can diagnose problems with a USB Floppy Drive, USB Zip/LS120 Drive or a USB CDROM.

Floppy Test

These tests are designed to verify the functionality of the USB Floppy Drive.

Floppy Basic Test

This tests whether or not the system can communicate with the USB Floppy Drive.

Floppy Format Test

This test determines the ability of the floppy drive to perform low-level formatting. The floppy format test is performed in interactive mode only. This test also determines if the magnetic media inside the floppy diskette is OK.

Warning
This test destroys all data on the floppy. This floppy must be reformatted via the DOS Format command before it can be used again.

Floppy Speed Test

This test determines the drive rotation speed. The 1.2 MB and 1.44 MB drive speed should be 360 RPM. The 360 KB and 720 KB drive speed should be 300 RPM.

Floppy Sequential Test

This test checks the sequential seek, read, and write capability of the drive. The floppy disk used in this test must be formatted on the current operating system before running the test.
Floppy Random Test

This test checks the drive's random seek, read, and write ability. The diskette used in this test must be formatted on the operating system currently being used before running the test.

Floppy Seek Test

This test verifies the track-to-track seeking capability of the floppy drive. This test sends Seek instructions alternately to the outer and inner sections of the floppy drive.

Floppy Change Line Test

This test verifies the disk change line capability of the floppy drive. A drive with disk line change capability allows the operating system to recognize that a new floppy disk has been inserted without accessing filesystem. The floppy disk used in this test must be formatted on the operating system currently being used before running the test.

Zip/LS120 Basic Test

This tests whether or not the system can communicate with the USB Zip/LS120 Drive.

Zip/LS120 Format Test

This test determines the ability of the Zip/LS120 drive to perform low-level formatting. The Zip/LS120 format test is performed in interactive mode only. This test also determines if the magnetic media inside the ZIP/LS120 diskette is OK.

Warning
This test destroys all data on the Zip/LS120 disk.
**Zip/LS120 Speed Test**

This test determines the drive rotation speed.

**Zip/LS120 Sequential Test**

This test checks the sequential seek, read, and write capability of the drive. The floppy disk used in this test must be formatted on the current operating system before running the test.

**Zip/LS120 Random Test**

This test checks the drive's random seek, read, and write ability. The medium used in this test must be formatted on the operating system currently being used before running the test.

**Zip/LS120 Seek Test**

This test verifies the track-to-track seeking capability of the Zip/LS120 drive. This test sends Seek instructions alternately to the outer and inner sections of the Zip/LS120 drive.

**Zip/LS120 Change Line Test**

This test verifies the disk change line capability of the Zip/LS120 drive. A drive with disk line change capability allows the operating system to recognize that a new disk has been inserted without accessing the filesystem. The medium used in this test must be formatted on the operating system currently being used before running the test.
CDROM Basic Test
This tests whether or not the system can communicate with the USB CDROM Drive.

CDROM Data Test
This test reads all logical blocks on a CD if the starting and ending block are not specified. Place any data CD in the CD-ROM drive before running this test and follow the screen instructions. This test does not play audio CDs.

CDROM Audio Test
A speaker must be attached to the CD-ROM drive before running this test. This test plays all logical blocks if the starting and ending block are not specified. Place an audio CD in the CD-ROM drive. Follow the instructions.

CDROM Eject Test
Select this test to make sure that the CDROM drive can eject a CD. The CD tray should open and close. The CDROM drive must have an auto-eject feature for this test to work.
11 Miscellaneous Diagnostic Tests

Serial Port Test

The Serial Port test makes certain that all the serial ports in the computer are functioning properly.

AMIDiag can test up to four serial ports (COM 1 Through COM 4). All the parameters, including parity, number of data/stop bits, can be selected for each serial port.

Cont'd
The test routines check all COM port controller at speeds from 300 to 115,200 bps (up to 460,800 bps if a 16550 UART is installed). Select the number of data bits, number of stop bits, and parity type for each serial port. Set the parameters for the ports to be tested. Highlight a field using the ↑ and ↓ keys and set the parameters. Select Continue and press <Enter>.

Serial Port Hardware Test The serial port tests includes:
- Serial Port Hardware Test
- Internal Loopback Test
- External LoopBack Test
- FIFO Test
- Baud Rate Test

Internal LoopBack Test This test verifies the proper functionality of the transmitter and receiver register in the serial port using the internal loopback mechanism.

External Loopback Test This test verifies the proper functionality of the transmitter and receiver register in the serial port. This test requires an external loopback connector to be physically connected to the serial port.

Baud Rate Test This test verifies the accuracy of the data being transferred by the serial port at different baud rates.

FIFO Test This test verifies the proper functionality of the FIFO in the serial port. This test is enabled only for UART 16550 and above.
### Parallel Port Test

The Parallel Port test makes certain that all the parallel ports in the computer are functioning properly. AMIDiag can test up to three parallel ports (LPT1 through LPT3). This test checks every part of the parallel port controller and allows you to set parameters for the characteristics of the individual parallel ports for testing. All parameters can be modified for each parallel port.

The Parallel Port Test includes:
- Parallel Port Hardware Test
- Interrupt Test
- Printer Test
- ECP Test
- EPP Test

### Parallel Port Hardware Test
This test verifies the parallel port registers as well as the read/write capabilities of the parallel port data buffer.

### Interrupt Test
This test checks data transfer in interrupt driver mode (an interrupt is generated when the parallel port receives an ACK).

### Printer Test
This test the printer's capability to print different patterns and characters. The following subtests are performed:
- Pattern Printing Test
- Bold Character Test
- Compressed Mode Test
- Form Feed Test

**Note:**
This test supports Postscript-enabled laser and inkjet printers.

### ECP Test
This test verifies the functionality of the ECP Mode Registers and ECP FIFO Registers.

### EPP Test
This test verifies the parallel port in EPP Mode.
IR Port Test

This test makes sure that any infrared devices attached through a serial port are working properly. Select IR Port Test from the AMIDiag Misc. main menu. Follow the instructions on the screen.

Modem Diagnostics

This test makes sure the internal or external modem is connected to the system properly. The subtests are:
- IRQ activation test,
- Loopback test, and
- Dial tone test

AmIDiag cannot test PCMCIA PC Card modems unless they have PCM drivers. This test also runs diagnostics on modems attached to the ISA bus, PnP modems, and PCMCIA modems.

IRQ Activation Test  This test checks the IRQ of the COM port the selected modem is connected to.

Loopback Test  This test checks every part of the modem and RS-232 cable except the telephone line outgoing interface. During this test, data from the computer is sent through an RS-232 cable to the modem transmitter. The data is modulated to an analog signal, then loopbacked to the receiver. The data is then demodulated to digital form and sent through the RS-232 cable back to the computer.

Dial Tone Test  This test makes sure that a dial tone is present. This test is skipped in batch mode, since it requires user intervention.

Cont'd
Modem Diagnostics, Continued

Running Modem Tests A list of modems in the computer is displayed, as shown below. Select a modem and specify the tests to run on the modem.

- Modem on port XXXX
- Modem on port YYYY
- Modem on port ZZZZ
- Modem on port KKKK

Next, select the tests to run on the selected modem. The following appears:

- Run IRQ Activation Test
- Run Loopback Test
- Run Dial Tone test

Modem Information The following information about the modem in this computer is displayed:

- Modem at XXXX
- Modem Product Code
- ROM Checksum
- Firmware revision
- Modem Capabilities

The next three items are displayed only if there is any response to these commands:

- Response to Command ATI5
- Response to Command ATI6
- Response to Command ATI7

The following items are displayed if fax capabilities supported:

- Fax Class supported
- Fax/Modem Model
- Fax/Modem manufacturer
- Fax/Modem firmware revision
Sound Test

Audio Basic Tests This test checks the basic functionality of the sound card’s digital signal processor (DSP.) It also tests the ability of the card to generate interrupts.

SB-Compatible Tests This test consists of four subtests that can work with any sound card that uses Sound Blaster emulation mode. AMIDIag automatically detects all Sound Blaster 16-Bit compatible sound cards. If a 16-bit Sound Blaster card is installed in the computer, only the Speaker test requires a response. Select Sound Test and press <Enter>.

Stereo Test The AMIDIag stereo test diagnoses problems with the stereo capability of the speakers attached to your computer. Select Stereo Test from the Misc menu. AMIDIag displays the following. Follow the instructions.
Sound Test, Continued

**Volume Test**  The AMIDiag volume test diagnoses problems with the volume of the speakers attached to your computer. Select Volume Test from the Misc menu. AMIDiag displays the following messages. Follow the instructions.

**Pitch Test**  The pitch test diagnoses problems with the pitch of the sounds from the speakers attached to your computer. Select Pitch Test from the Misc menu. AMIDiag displays the following messages. Follow the instructions.

**Playback Rate Test**  This test diagnoses problems with the playback rate of the speakers attached to your computer. Select Playback Rate Test from the Misc menu. AMIDiag displays the following messages. Follow the instructions.

**Frequency Test**  This test diagnoses problems with the frequency of the speakers attached to your computer. Select Frequency Test from the Misc menu. AMIDiag displays the following messages. Follow the instructions.

Cont’d
**Sound Test, Continued**

**WSS Compatible Tests** These tests are similar to the SB-compatible test described above. This test tests the Windows Sound System (WSS) component of the sound card. This test tests the stereo ability of the WSS logical device of the sound card. This test tests the left and right channels that supports stereo. The signal is first tested in the left channel, then in the right channel, then in both the channels. If the sound card Version is earlier than version 3, a sequence of signals is played first in the left channel, then in the right channel, then in both the channels. You must respond to the on-screen messages to determine the result of the test.

If the sound card supports extended mode programming, the test is implemented using the internal loopback method. A single frequency signal is generated using the FM synthesizer. It is first played in the left channel. The tests are done automatically. The test is repeated for the right channel, then for both the channels. The test is run twice, once using the direct I/O method and the second time using 8-bit DMA. If the sound card is compatible with the Creative Sound Blaster 16, it supports both the external and internal loopback methods. An external stereo jack is needed for the external loopback method. The internal loopback method is similar to the method described above. In the external loopback method, the signal is generated using the mathematical expression. The SS-compatible sound tests include:

- Stereo Test,
- Volume Test,
- Pitch Test,
- Playback Rate Test,
- Frequency Test, and
- Speaker Test.

**Joystick Port Test** The other test on the AMIDiag Miscellaneous menu sound test is the joystick port test. The test parameters are:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run test</td>
<td>Select Yes or No. The default is Yes.</td>
</tr>
<tr>
<td>Number of joysticks</td>
<td>Select One or Two. Select Two to perform this test for one 2-axial, 2-button joystick. The default is One.</td>
</tr>
</tbody>
</table>
PCI Sound Test

This test makes sure that any sound card attached to the PCI local bus is working properly. Select PCI Sound Test from the Misc menu and press <Enter>. Select PCI Sound Card Tests to run diagnostic tests on the PCI sound card in your computer.

PS/2 Mouse Test

This test checks the computer’s ability to communicate with a PS/2 mouse. It does not test the functionality of the mouse itself.

APM Functionality Test

This test checks the computer’s Advanced Power Management (APM) functions using the APM functions that have been implemented on your computer. This test checks the display, hard disk drive, COM ports, parallel port, and PCMCIA sockets for proper APM operation.

Device APM Test

This test makes sure that power management works for video, hard disk drive, COM ports, parallel port, and PCMCIA sockets (if these devices are under power management). This test puts the device in Standby mode and Off modes.
ACPI Test

This test makes sure that all ACPI-compliant devices in the computer are working properly. Select ACPI Test from the Misc. menu and press <Enter> Follow the instructions on the screen.

This diagnostics consists of the following tests:

- System Address Map test,
- ACPI Tables test,
- Definition Blocks test,
- ACPI Power Button test (if configured), and
- ACPI Sleep Button test (if configured).

The Advanced Configuration and Power Interface (ACPI) is a part of the Intel Operating System Directed Power Management (OSPM) specification for laptop, mobile, server, desktop, and home computers. ACPI includes the existing BIOS power management standards, APM APIs, PnP (Plug and Play) BIOS APIs, and other standards into one coherent power management and configuration specification. The ACPI BIOS interrupt is INT 15h Function AX = 8420h.

ACPI also provides an orderly transition from legacy hardware to ACPI hardware. ACPI and AMIBIOS allow both older legacy standards and ACPI to exist together in a computer. New system architectures will stretch the limits of the current Plug and Play interface. ACPI evolves the existing motherboard configuration interface to support advanced system architectures in a more robust and more efficient manner.
The TI card bus test runs diagnostics test on the TI PC Card bus controller. The test include:

<table>
<thead>
<tr>
<th>Test</th>
<th>Description</th>
<th>Messages</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCI Memory Space Test</td>
<td>This test verifies that memory-mapped I/O space is enabled and accessible. This test scans memory from 0C800h – 0D000h for a contiguous 4 KB memory space mapped to access the controller registers. If the controller registers are not in the memory space, the test fails and no other tests run.</td>
<td>PCI Memory Space Test Pass Fail Memory Space Enabled xnnn:xxxxh</td>
</tr>
<tr>
<td>Register Read Write Test</td>
<td>This test makes sure that all controller registers are accessible. This test writes, reads, and verifies the contents of the Cardbus controller Writeable registers.</td>
<td>Register Read Write Test Pass Fail</td>
</tr>
<tr>
<td>Power down Test</td>
<td>This tests the socket power down mode operation. In power down mode, all registers are tristated. When set to normal mode all registers values must be restored.</td>
<td>Power down Test Pass Fail</td>
</tr>
<tr>
<td>Vcc Power Test</td>
<td>This test tests the Vcc power applied to the socket. Power is applied to the PC card and the status is checked to see if the socket has been successfully powered up. This test requires a 16-bit or 32-bit PC card is in the socket. This is an interactive test.</td>
<td>Vcc Power Test Pass Fail Vcc applied x.xx V</td>
</tr>
<tr>
<td>Card Detect Pins Test</td>
<td>This test checks the status of the Card Detect Pins after insertion or removal of PC card. Remove and insert a PC Card during this test.</td>
<td>Card Detect Pins Test Pass Fail</td>
</tr>
</tbody>
</table>

Cont’d
Test Parameters The test parameters are:

- **Repeat Count**
  Set the number of times to run the test. The default is 1.

- **Test Socket A** (Yes or No. The default is Yes)

- **Test Socket B** (Yes or No. The default is Yes)

Card Bus Controller Information This routine provides information about the TI Card bus controller. The following is displayed for each socket:

- PCI Bus Number
- PCI Device Number
- PCI Function Number
- Voltages that the Socket Supports
- PC Card Presence
- PC Card type
Network Diagnostics

This test checks if the network connection is working properly. IPX/SPX or NETBIOS protocol drivers must be loaded for this test. If these drivers are not loaded, this test is disabled on the Misc. menu. This test sends a packet to itself and then receives the packet. It then compares the contents of the received packet to the contents of the packet that was transmitted.

i8255x Ethernet Chip

This test checks access to the i8255x Control/Status Register through I/O and memory.

Cont’d
### i8255x Ethernet Chip, Continued

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>i8255x Walking Bits Test</strong></td>
<td>This test performs walking one's test on all valid I/O registers.</td>
</tr>
<tr>
<td><strong>i8255x Self Test</strong></td>
<td>This test checks the functionality of the i8255x micro-machine, internal registers and internal ROM.</td>
</tr>
<tr>
<td><strong>i8255x IRQ Test</strong></td>
<td>This test makes sure that an interrupt was assigned to the i8255x and then forces the controller to generate an IRQ to see if it gets acknowledged properly.</td>
</tr>
<tr>
<td><strong>i8255x MAC Address Test</strong></td>
<td>This test determines if the stored MAC address is valid.</td>
</tr>
<tr>
<td><strong>i8255x Transmission Test</strong></td>
<td>This test determines if the i8255x controller is transmitting/receiving data properly.</td>
</tr>
</tbody>
</table>

**Note:** This test requires 2 or more i8255x Ethernet controllers in the system.
You can add individual diagnostic routines to AMIDiag. These routines can be executed from the User Menu.

**Custom Menus**

Any item that appears on the User Menu has been added to AMIDiag by a user, OEM, VAR, or system integrator. This menu is entirely customized.

**Writing User Programs**

The American Megatrends AMIDiag API Specification contains all the information you will need to write an AMIDiag user program.

This specification also describes how to modify an existing DOS program, utility, or diagnostic routine so that the program can be included in AMIDiag. Call American Megatrends AMIDiag Sales at 800-828-9264.
The System Information utility detects and reports sound cards, PCI, Plug and Play, EISA, PCMCIA, and SCSI devices. You can run Sysinfo from within AMIDiag by selecting System Information from the AMIDiag Options menu.
**Sysinfo Requirements** Sysinfo requires 400 KB of free DOS memory. Sysinfo may not run from the AMIDiag menu if you do not have enough free DOS memory space. If not, run Sysinfo from the DOS prompt by typing `SYSINFO`

and pressing <Enter>.

Sysinfo launches sysfind, which launches a lot of diag modules which are not on the same floppy as sysinfo.

**When to Use Sysinfo** Use Sysinfo to determine the hardware and software environment. The environment may not be what you expect. For example, computer dealers sometimes inadvertently mislabel computers. Does your computer really operate at 133 MHz? Sysinfo can tell you. It recognizes all Intel and Intel x86-compatible CPUs, including the P54C.

This example is just one of many ways that Sysinfo can be very useful.

**Accuracy** If Sysinfo reports that an attached component or device is not present, verify that the system BIOS supports the device and that the device has been installed through the computer manufacturer or dealer. Make sure the proper device drivers are loaded. Make sure the motherboard in your computer supports the device. Call American Megatrends technical support at 770-246-8645 if you are still having problems with Sysinfo reports.

Cont’d
**Sysinfo Limitations** Sysinfo gathers system information by directly accessing hardware, using standard APIs (Application Programming Interfaces), and traditional software scanning methods. However, even though a device is present in the computer, the device may not be supported by the system BIOS in the computer or the necessary drivers may not be loaded. For example, your computer may have PCMCIA sockets, but if the appropriate card and socket services device drivers are not loaded and the system BIOS does not support the appropriate version of card and socket services, Sysinfo cannot report PCMCIA sockets.

**Reports** To print the entire Sysinfo report, select Edit Report Parameters from the Sysinfo Options menu and select LPT1 as the Report destination. Press <F7> to select all Sysinfo menus when Sysinfo is running, then press <F10> to run all selected menu items. The entire Sysinfo report on your computer will be printed.
**Finding Information** Select an option by pressing the → or ← keys, then press <Enter>.

<table>
<thead>
<tr>
<th>To display information about</th>
<th>Menu</th>
<th>Menu Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>adapter cards installed in the computer</td>
<td>Hardware</td>
<td>Adapter Information</td>
</tr>
<tr>
<td>the AUTOEXEC.BAT file</td>
<td>Environment</td>
<td>List AUTOEXEC.BAT</td>
</tr>
<tr>
<td>the basic system configuration</td>
<td>Hardware</td>
<td>System Configuration</td>
</tr>
<tr>
<td>BIOS version</td>
<td>Hardware</td>
<td>BIOS Information</td>
</tr>
<tr>
<td>the CONFIG.SYS file</td>
<td>Environment</td>
<td>List CONFIG.SYS</td>
</tr>
<tr>
<td>device drivers</td>
<td>Environment</td>
<td>Device Drivers</td>
</tr>
<tr>
<td>the display (system monitor)</td>
<td>Setup</td>
<td>Display Setup</td>
</tr>
<tr>
<td>DMA channel assignments</td>
<td>Hardware</td>
<td>DMA Assignment</td>
</tr>
<tr>
<td>DOS information</td>
<td>Environment</td>
<td>DOS Environment</td>
</tr>
<tr>
<td>EISA configuration information</td>
<td>Setup</td>
<td>EISA information</td>
</tr>
<tr>
<td>quitting Sysinfo</td>
<td>Options</td>
<td>Exit Sysinfo</td>
</tr>
<tr>
<td>hardware interrupt assignments</td>
<td>Hardware</td>
<td>Hardware Interrupts</td>
</tr>
<tr>
<td>I/O port assignments</td>
<td>Hardware</td>
<td>I/O Ports</td>
</tr>
<tr>
<td>logical drive assignments</td>
<td>Storage</td>
<td>Logical Drives</td>
</tr>
<tr>
<td>map of memory</td>
<td>Environment</td>
<td>Memory Map</td>
</tr>
<tr>
<td>type and amount of memory</td>
<td>Hardware</td>
<td>Memory</td>
</tr>
<tr>
<td>motherboard information</td>
<td>Hardware</td>
<td>Motherboard</td>
</tr>
<tr>
<td>multimedia (CD-ROM, sound cards)</td>
<td>Setup</td>
<td>Multimedia information</td>
</tr>
<tr>
<td>Multiprocessing information</td>
<td>Hardware</td>
<td>Multiprocessor information</td>
</tr>
<tr>
<td>network information</td>
<td>Setup</td>
<td>Network information</td>
</tr>
<tr>
<td>PCI information</td>
<td>Setup</td>
<td>PCI information</td>
</tr>
<tr>
<td>PCMCIA information</td>
<td>Setup</td>
<td>PCMCIA information</td>
</tr>
<tr>
<td>physical drives assigned in the computer</td>
<td>Storage</td>
<td>Physical Drives</td>
</tr>
<tr>
<td>Plug and Play information</td>
<td>Setup</td>
<td>P-n-Play Information</td>
</tr>
<tr>
<td>power management information</td>
<td>Setup</td>
<td>Power Management Information</td>
</tr>
<tr>
<td>printing system configuration information</td>
<td>Options</td>
<td>See the procedure for this</td>
</tr>
<tr>
<td>on page 113</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCSI device information</td>
<td>Setup</td>
<td>SCSI information</td>
</tr>
<tr>
<td>software interrupt assignments</td>
<td>Environment</td>
<td>Software Interrupts</td>
</tr>
<tr>
<td>system configuration information</td>
<td>Hardware</td>
<td>System Configuration</td>
</tr>
</tbody>
</table>
Sysinfo Keys

<table>
<thead>
<tr>
<th>Key</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Go to the next screen.</td>
</tr>
<tr>
<td>&lt;Enter&gt;</td>
<td>Select a menu option.</td>
</tr>
<tr>
<td>P</td>
<td>Return to the previous screen.</td>
</tr>
<tr>
<td>→, ←, ↑, ↓</td>
<td>Scroll through screen items.</td>
</tr>
<tr>
<td>&lt;Esc&gt;</td>
<td>Quit this screen or exit Sysinfo and return to AMIDiag.</td>
</tr>
<tr>
<td>&lt;F1&gt;</td>
<td>Display a Help screen.</td>
</tr>
<tr>
<td>&lt;F2&gt;</td>
<td>Edit report parameters.</td>
</tr>
<tr>
<td>&lt;F3&gt;</td>
<td>Load report parameters.</td>
</tr>
<tr>
<td>&lt;F4&gt;</td>
<td>Save report parameters.</td>
</tr>
<tr>
<td>&lt;F5&gt;</td>
<td>Select or deselect current menu item.</td>
</tr>
<tr>
<td>&lt;F6&gt;</td>
<td>Select or deselect all items in a menu.</td>
</tr>
<tr>
<td>&lt;F7&gt;</td>
<td>Select or deselect all Sysinfo menu items.</td>
</tr>
<tr>
<td>&lt;F9&gt;</td>
<td>Display a description of the function keys.</td>
</tr>
<tr>
<td>&lt;F10&gt;</td>
<td>Run selected items.</td>
</tr>
</tbody>
</table>

Function Keys
You can execute several Sysinfo menu items and send the Sysinfo results to a DOS file or to the printer. To use this option, you must first select the Sysinfo menu items that you want information on. Highlight a menu item and press <F5> to select an item. You can press <F7> to deselect all Sysinfo menu items. Press <F6> to select or deselect all menu items on a specific Sysinfo menu.

Exit Sysinfo
Select the Options menu and Exit Sysinfo to return to AMIDiag.
You can customize a set of AMIDiag diagnostic routines to run on your computer. You can save this customized set of diagnostic tests as a batch file to be run later.

To set or display AMIDiag runtime parameters, select Edit Batch Parameters from the AMIDiag Options menu. You can set:

- the type of AMIDiag test to be run,
- the number of times each test is run, and
- the test parameters. For example, you can specify the starting and ending hard disk drive heads and cylinders to be tested.

**Edit Batch Parameters Menu**
The following box appears when you select Edit Batch Parameters:

```
EDIT BATCH PARAMETERS

Batch Parameters
Repeat Count
Interactive
Quick Test
Test Parameters
CONTINUE
```
Batch Parameters

Choose Batch Parameters and press <Enter>. The following appears. Each field is explained below.

<table>
<thead>
<tr>
<th>Cycle Mode</th>
<th>Specifications the number of test cycle scripts in the file. In each cycle there can be a different set of test parameters.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycle Number</td>
<td>This field can be set to All or One. Specifies whether to test through all of the cycles or just one cycle.</td>
</tr>
<tr>
<td>Test Mode</td>
<td>The mode refers to the overall control, not individual cycles. The test modes are:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous</td>
<td>The specified tests are executed until &lt;Esc&gt; or &lt;Ctrl&gt; &lt;Break&gt; is pressed.</td>
</tr>
<tr>
<td>Timebound</td>
<td>Specify how long the test is to run. Type the hours in the Time Limit Hrs field and the minutes in the Time Limit Min and press &lt;Enter&gt;. The maximum hours is 999. The maximum minutes is 59.</td>
</tr>
<tr>
<td>Passbound</td>
<td>Set the number of passes (up to 65,535) for the selected AMIDiag tests in the Number of Passes field. You can press &lt;Enter&gt; to accept the default (run each selected diagnostic test once).</td>
</tr>
</tbody>
</table>

Cont’d
Batch Parameters, Continued

<table>
<thead>
<tr>
<th>Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timebound</td>
<td>Specify how long the test is to run. Type the hours in the Time Limit Hrs field and the minutes in the Time Limit Min field and press &lt;Enter&gt;. The maximum hours is 999. The maximum minutes is 59.</td>
</tr>
<tr>
<td>Passbound</td>
<td>Set the number of passes (up to 65,535) for the selected AMIDiag tests in the Number of Passes field. You can press &lt;Enter&gt; to accept the default (run each selected diagnostic test once).</td>
</tr>
</tbody>
</table>

Test Limit Hrs Specifies the time period in hours in case of cycle Timebound test mode.

Test Limit Min Specifies the time period in minutes in case of cycle Timebound test mode.

Number of Passes Specifies the number of passes of cycles, in case of pass bound test mode.

Cycle Test Mode Specifies the test mode in a cycle. The cycle test modes are:

Cycle TLimit Hrs Specifies the time period in hours in case of Cycle Timebound test mode.

Cycle TLimit Min Specifies the time period in minutes in case of Cycle Timebound test mode.
Batch Parameters, Continued

**Passes In Cycle** Specifies the number of passes in a cycle, in case of cycle pass bound test mode. Individual tests also have a count specifying how many times they are to be executed.

**Test Order** The test order parameters are:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default</td>
<td>The selected AMIDiag tests are executed in exactly the same order they were selected in.</td>
</tr>
<tr>
<td>Random</td>
<td>The selected AMIDiag tests are executed in a random manner.</td>
</tr>
<tr>
<td>Testwise</td>
<td>The selected AMIDiag tests are executed in the order they appear on the AMIDiag menus.</td>
</tr>
</tbody>
</table>

**Test Order Example** Assume that you want to run Test A three times, Test B two times, and Test C just one time. The AMIDiag tests would be run in the following manner, depending on the Test Order parameter:

<table>
<thead>
<tr>
<th>Test Order Parameter</th>
<th>Actual order of tests as they are run</th>
</tr>
</thead>
<tbody>
<tr>
<td>Default</td>
<td>A, B, C, A, B, A</td>
</tr>
<tr>
<td>Testwise</td>
<td>A, A, A, B, B, C</td>
</tr>
<tr>
<td>Random</td>
<td>A, B, B, A, C, A</td>
</tr>
</tbody>
</table>

**Wait on Error** This field can be set to YES or NO. If set to YES, AMIDiag waits for you to press any key after finding every error.

**Break On Error** This field can be set to YES or NO. If set to YES, AMIDiag stops running after it finds an error.

Cont’d
Interactive Test  Select Interactive Test parameter to run the interactive tests in interactive mode. Your input is required in an interactive test. The default value for this parameter is always No. The actions are:

<table>
<thead>
<tr>
<th>Interactive Test Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>For all AMIDiag diagnostic tests that support the interactive flag: if the test cannot be executed without your input, the test will not run. This test does not run in batch mode appears. If the test can be run without your input but it is impossible to decide if the test has passed or failed without your input, the test will execute, but it will always pass.</td>
</tr>
<tr>
<td>Yes</td>
<td>If the test cannot be run without your input, it will run now and will wait for your input as appropriate. If the test can be run without your input, but it is impossible to decide if the test has passed or failed without your input, the test will execute and it will wait for your decision whether the test passed.</td>
</tr>
</tbody>
</table>

Quick Test  This parameter specifies that tests must be run in quick test mode. Abbreviated versions of the diagnostic tests are executed in quick test mode. The selected test are run in quick test mode if the test supports quick mode. You can use the quick test parameter in two ways:

<table>
<thead>
<tr>
<th>Quick Test Use</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete a system test in a shorter time.</td>
<td>Select the diagnostic tests you want to run or you can press &lt;F7&gt; to select all diagnostic tests on an AMIDiag menu. Set the Quick Test parameter to Yes. If you press &lt;F10&gt; to run the tests, all tests except the tests that support quick test will run normally. The tests that support quick tests run in quick mode. If your computer has several IDE and SCSI hard disk and CD-ROM drives, testing all drives will take a long time. When you select quick test, the IDE and SCSI devices will be tested quickly, saving lots of time.</td>
</tr>
<tr>
<td>Use quick test mode for fast system verification</td>
<td>Press &lt;F8&gt; when the AMIDiag main menu is displayed to set this parameter to Yes and to select the tests defines as System Quick Test Components. You can either script this test by pressing &lt;F4&gt; or running the tests in batch mode by pressing &lt;F10&gt;.</td>
</tr>
</tbody>
</table>

Splash Screen  This field selects whether or not to display the user-defined splash screen after testing is completed. The splash screen is defined in the RESULT.INI file.
Repeat Count

The following appears when you select Repeat Count from the Edit Batch Parameters box. Choose the number of times that you want to run the AMIDiag tests on the associated AMIDiag menus. You can run each test 1 - 255 times. If you have set the Passbound parameters (see the previous screen) to 5 and you set the repeat count to 5, the test will be run a total of 25 times.

Interactive Test

Choose Interactive Test. The screen that appears is similar to the Repeat Count screen, as shown below:

Select the test group. A list of all tests appears. Tests that support interactive test have Yes beside them. Highlight the tests to be run and press <Enter>.

Aborting Tests

Press <Esc> to abort the testing process. Testing stops after any test in progress has been completed.
Quick Test

Choose Quick Test.

Select the test group. A list of all tests appears. Tests that support quick test have Yes beside them. Highlight the tests to be run and press <Enter>.
Test Parameters

The following box appears when you select Test Parameters from the Edit Batch Parameters box. Each item in this box is the name of an AMIDiag menu. When you select an AMIDiag menu name from this menu and press <Enter>, all AMIDiag tests on the menu are listed. Choose the tests to be run in batch mode by highlighting the test and pressing <Enter>.

For example, if you select System, the following screen appears. If you highlight a test, such as Basic Functionality Test, the test parameters for that test are displayed. Set the parameters and select another diagnostic test. Select CONTINUE when you have set all test parameters for the AMIDiag test to be run in batch mode.
Load Batch Parameters

You can load previously saved AMIDiag batch diagnostic test parameters by choosing this option. The following appears when you select this option:

```
Name of Script File to Load from
C:\DOOM\AMIDIAG.INI
```

Press <Enter> to accept the default batch parameter file (AMIDIAG.INI) or type the appropriate AMIDiag batch parameter filename. You can use any valid DOS filename. The filename extension does not have to be .INI. You can then run the AMIDiag diagnostic tests that are specified in this file by pressing <F10>.

Save Batch Parameters

You can save all batch mode parameters, selected tests, selected devices, and error logging information to an AMIDiag batch parameter file via this option. You can then load this ASCII file later and use the same saved options to run another AMIDiag test session later. This option allows you to use the same test parameters every time you perform an AMIDiag session.

Press <Enter> to accept the default batch parameter file (AMIDIAG.INI) or type the appropriate AMIDiag batch parameter filename.

Automatically Run Tests

If you add the /R parameter when starting AMIDiag, AMIDiag automatically executes the batch parameters, then returns to the DOS command line when AMIDiag has completed running the batch parameters. You can then run the AMIDiag diagnostic tests that are specified in this file at a later date. Type

```
AMIDIA\G /R AMIDIAG.INI
```

at the DOS prompt and press <Enter>. 
Configuration Files

Test Configuration Files The structure of the test configuration files is similar to Microsoft Windows .INI files. These files must conform to the following guidelines:

• No spaces are permitted in the section name or entry name.
• The string corresponding to an entry can be any text string.
• If no match is found for an entry, a default string is used.
• Strings are not case-sensitive.
• Invalid entries are ignored.
• Script file comment lines start with ‘;’. The ; does not have to be in the first column.

Type of Files The types of test configuration files are:

• AMITESTS.INI, and
• USRTESTS.INI (optional).

AMITESTS.INI This file contains information about the test configuration when AMIDiag was shipped. Most AMIDiag tests are implemented as external .EXE programs, so AMIDiag can run in a limited memory environment. Information about how a test is integrated into AMIDiag menus is stored in this file. You must not modify or delete this file.

USRTESTS.INI This optional script file must be in the same directory as AMIDIAG.EXE. USRTESTS.INI specifies the external user-generated AMIDiag tests and their properties. USRTESTS.INI must have a TestInfo section. The information in this file can be written to your specifications. The TestInfo entries are:

<table>
<thead>
<tr>
<th>Entry</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>[TestInfo]</td>
<td>Information about new tests to be added.</td>
</tr>
<tr>
<td>TestCount =</td>
<td>Number of new tests.</td>
</tr>
<tr>
<td>HotKeyEnabled =</td>
<td>YES or NO</td>
</tr>
<tr>
<td>Test1 =</td>
<td>Section Header for Test1</td>
</tr>
<tr>
<td>Test2 =</td>
<td>Section Header for Test2</td>
</tr>
</tbody>
</table>

There must be a separate section for each test.

Note: If the value for HotKeyEnabled is Yes, hidden destructive tests will display when you press Alt-H. If No, you cannot enable destructive tests using a hot key. This applies to all tests defined in AMITESTS.INI and USRTESTS.INI.
<table>
<thead>
<tr>
<th>Entry</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>[TestSectionHeader]</td>
<td>Information about a test module.</td>
</tr>
<tr>
<td>Group</td>
<td>One of the group names. For the tests specified in usrtest.ini, the group name must be USER.</td>
</tr>
<tr>
<td>Name ID</td>
<td>Test name that displays in the menu. If tests have the same EXE file, this parameter identifies the test.</td>
</tr>
<tr>
<td>Description</td>
<td>A 1-80 character test description displayed at the bottom of the screen.</td>
</tr>
<tr>
<td>ExePath</td>
<td>The full pathname for the .EXE file. Parameters can be passed to the program either using this line or the following two identifiers:</td>
</tr>
<tr>
<td>SubMenu</td>
<td>YES or NO. If Yes, an arrow displays beside the test name in the menu to indicate a second level test selection menu is present.</td>
</tr>
</tbody>
</table>

**Note:** The following parameters are effective for the USRTESTS.INI file only.

<table>
<thead>
<tr>
<th>Entry</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>InitCommand</td>
<td>The command line parameters passed to the EXE file during the initialization stage.</td>
</tr>
<tr>
<td>RunCommand</td>
<td>The command line parameters passed to the EXE file during run test stage.</td>
</tr>
<tr>
<td>InitSuccCode</td>
<td>If specified, this user test is enabled only when the return code after initialization is as specified.</td>
</tr>
<tr>
<td>PassExitCode</td>
<td>If specified, the test control module reports an error only when the return code is not as specified. If not specified, the return code is considered by the control module as “Undefined.” In such a case, there is no failing condition.</td>
</tr>
<tr>
<td>Tenable</td>
<td>YES or NO. If Yes, this appears normally in the USER menu. If No, this test will be hidden and can be enabled using Hot Key. If No, the AMIDiag program decides whether it can be enabled or not, based on the value in the HotKeyEnabled (described in the previous section of this table.)</td>
</tr>
</tbody>
</table>
This file describes the test parameters, both batch mode parameters and individual test parameters. This file can be created by AMIDiag. It can be edited by any text editor. This sections and entries in this file are:

<table>
<thead>
<tr>
<th>Section</th>
<th>Entries</th>
</tr>
</thead>
</table>
| [Cycles] | Count Specifies the number of test cycles. 
Cycle Mode All or One. 
CycleNumber Specifies the cycle number. 
Mode Passboard, Time bound, or Continuous. 
Passes Specifies number of passes. 
Hours Specifies the hour part of time period. 
Minutes Specifies the minute part of time period. 
BreakAllOnError Breaks from batch mode on first error. |
| [CYCLEn:BatchParams] | Specifies batch mode parameters for cycle n. 
ModeInCycle Passbound, Timebound, or Continuous 
PassesInCycle Specifies the number of passes in a cycle. 
HoursInCycle Specifies the hour part of time period in a cycle. 
MinutesInCycle Specifies the minute part of the time period in a cycle. 
Order Default, Random, or TestwiseWaitOnError YES or NO |
| TestInteractiveAll YES or NO. This is the global control for interactive tests. If this is set to Yes, TestInteractive is force to Yes for all interactive tests regardless of what their individual TestInteractive parameter value is.
QuickTestAll YES or NO. The default is No. This is the global control for the Quick Test. If this is set to Yes, Quick Test is forced for all tests that support Quick Test regardless of what their individual Quick Test parameter value is. |
<table>
<thead>
<tr>
<th>Section</th>
<th>Entries</th>
</tr>
</thead>
<tbody>
<tr>
<td>[CYCLEn:ErrorLog]</td>
<td>Error Log parameters</td>
</tr>
<tr>
<td></td>
<td>LogErrors YES or NO</td>
</tr>
<tr>
<td></td>
<td>LogActivity YES or NO</td>
</tr>
<tr>
<td></td>
<td>StartTimeStamp YES or NO</td>
</tr>
<tr>
<td></td>
<td>EndTimeStamp YES or NO</td>
</tr>
<tr>
<td></td>
<td>LogErrorsOnly YES or NO</td>
</tr>
<tr>
<td></td>
<td>LogErrorsOnlyWithTime YES or NO</td>
</tr>
<tr>
<td></td>
<td>LogAppend YES or NO</td>
</tr>
<tr>
<td></td>
<td>LogFailDeviceInfo YES or NO</td>
</tr>
<tr>
<td></td>
<td>LogDeviceInfoOnAbort YES or NO</td>
</tr>
<tr>
<td></td>
<td>Device NONE, FILE, COMn, or LPTn</td>
</tr>
<tr>
<td></td>
<td>File Full pathname of the log file.</td>
</tr>
<tr>
<td></td>
<td>Heading Title of the log.</td>
</tr>
<tr>
<td>[CYCLEn:TestName]</td>
<td>Individual test parameters</td>
</tr>
<tr>
<td></td>
<td>Repeat Number of times to repeat the test in one pass of a cycle.</td>
</tr>
<tr>
<td></td>
<td>TestInteractive YES or NO. Effective if the value of TestInteractiveAll is No.</td>
</tr>
<tr>
<td></td>
<td>QuickTest YES or NO. Effective if the value of QuickTestAll is No.</td>
</tr>
<tr>
<td></td>
<td>Other parameters… Parameters specific to a test.</td>
</tr>
<tr>
<td>[CYCLEn:ExecBat]</td>
<td>Specify the .bat file to be executed at the end of cycle n.</td>
</tr>
<tr>
<td></td>
<td>BatPath The full pathname for the .BAT file. Parameters can be passed to the .BAT file in this line.</td>
</tr>
</tbody>
</table>
Sample AMIDIAG.INI File

[_cycles]
Count = 1

[Cycle1:BatchParams]
Mode = CONTINUOUS
Order = Random
Passes = 1
Hours = 1
Minutes = 0
WaitOnError = NO
BreakOnError = NO

[Cycle1:ErrorLog]
LogErrors = YES
LogActivity = YES
StartTimeStamp = YES
EndTimeStamp = YES
Device = None
File = AMIDIAG.LOG
Heading =

[Cycle1:BasicFunctionalityTest]
Repeat = 1

[Cycle1:ProcessorSpeedTest]
Repeat = 1

[Cycle1:CoprocessorTest]
Repeat = 1

[Cycle1:DMAControllerTest]
Repeat = 1

[Cycle1:InterruptControllerTest]
Repeat = 1

Cont’d
[Cycle1:TimerTest]
Repeat = 1

[Cycle1:RealTimeClockTest]
Repeat = 1

[Cycle1:CMOSValidityTest]
Repeat = 1

[Cycle1:PCISystemTest]
Repeat = 1

[Cycle1:Plug-n-PlayTest]
Repeat = 1

[Cycle1:BIOSROMTest]
Repeat = 1

[Cycle1:ParityTest]
Repeat = 1
StartAddress = 0
EndAddress = 1

[Cycle1:Walking1'sTest]
Repeat = 1
StartAddress = 0
EndAddress = 1

[Cycle1:Walking0'sTest]
Repeat = 1
StartAddress = 0
EndAddress = 1

[Cycle1:RefreshTest]
Repeat = 1

[Cycle1:PerformanceTest]
Repeat = 1
TestDriveC = Yes

[Cycle1:SeekTest]
Repeat = 1
StartCylinderC = 0
EndCylinderC = 1001
StartHeadC = 0
EndHeadC = 15
PercentageC = 100
TestDriveC = Yes

Cont’d
Sample AMIDIAG.INI File, Continued

[Cycle1:Read/VerifyTest]
Repeat = 1
StartCylinderC = 0
EndCylinderC = 1001
StartHeadC = 0
EndHeadC = 15
PercentageC = 100
TestDriveC = Yes

[Cycle1:CheckTestCyl]
Repeat = 1
TestDriveC = Yes

[Cycle1:DisketteFormat]
Repeat = 1
RunTestOnFlp_A = YES
RunTestOnFlp_B = NO

[Cycle1:DriveSpeedTest]
Repeat = 1
RunTestOnFlp_A = YES
RunTestOnFlp_B = NO

[Cycle1:RandomR/WTest]
Repeat = 1
RunTestOnFlp_A = YES
RunTestOnFlp_B = NO

[Cycle1:SequentialR/WTest]
Repeat = 1
RunTestOnFlp_A = YES
RunTestOnFlp_B = NO

[Cycle1:ElevatorSeekTest]
Repeat = 1
RunTestOnFlp_A = YES
RunTestOnFlp_B = NO

[Cycle1:DiskChangeLineTest]
Repeat = 1
RunTestOnFlp_A = YES
RunTestOnFlp_B = NO

[Cycle1:ControllerTest]
Repeat = 1

Cont’d
[Cycle1:Scan/ASCIICodeTest]
Repeat = 1

[Cycle1:KeyboardLEDTest]
Repeat = 1

[Cycle1:KeyboardClockLineTest]
Repeat = 1

[Cycle1:KeyboardDatalineTest]
Repeat = 1

[Cycle1:VideoMemoryTest]
Repeat = 1

[Cycle1:AttributeTest]
Repeat = 1

[Cycle1:PageSelectionTest]
Repeat = 1

[Cycle1:ColorTest]
Repeat = 1

[Cycle1:SerialPortTest]
Repeat = 1
ParityCOM1 = None
StopBitsCOM1 = 2
DataBitsCOM1 = 8
LoopbackOnCOM1 = No
BaudStartCOM1 = 300
BaudEndCOM1 = 115200
RunTestOnCOM1 = Yes
ParityCOM2 = None
StopBitsCOM2 = 2
DataBitsCOM2 = 8
LoopbackOnCOM2 = No
BaudStartCOM2 = 300
BaudEndCOM2 = 115200
RunTestOnCOM2 = Yes

[Cycle1:ParallelPortTest]
Repeat = 1
PrinterOnLPT1 = No
RunTestOnLPT1 = Yes
PrinterOnLPT2 = No
RunTestOnLPT2 = Yes
Generate Report

Select Generate Report to specify the output device: disk file, printer, or serial port.

Choose CONTINUE after setting report parameters.

Report destination Choose where the report is sent. Select NONE, File, COM1, or LPT1. If you select File, enter a valid DOS filename when prompted.

Log errors Select YES to direct AMIDiag to write all errors to the selected output device. The settings are YES or NO.

Log test activities Select YES to log all test activities (the test, how many times) to the output device. The settings are YES or NO.

Log test start time Select YES to write the time that a test starts to the error logging device. The settings are YES or NO.

Log test end time Select YES to write the time that a test ends to the error logging device. The settings are YES or NO.

Log errors only Select YES to direct AMIDiag to write log errors only to the selected output device. The settings are YES or NO.

Log errors only with time Select YES to direct AMIDiag to write errors and the time they occurred to the selected output device. The settings are YES or NO.

Cont’d
Generate Report, continued

**Append to old log file** Select YES to direct AMIDiag to append the current log file to a previous log file. The settings are YES or NO.

**Log device info on fail** If a system error occurs and the system fails while AMIDiag logs an error, you can log the information about the device on which you log error messages. The settings are YES or NO.

**Log device info on abort** If you choose to abort the report generation, you can log the information about the device on which you log error messages. The settings are YES or NO.

Display Error Log File

AMIDiag allows you to display the error log while still running AMIDiag. The AMIDiag error log contains all diagnostic errors that AMIDiag has found during the current AMIDiag session. The log file viewer offers some text search capability.

To display the error log, select Display Error Log File from the AMIDiag Options menu. Enter the name of the error log file. The default filename is AMIDIAG.LOG. The AMIDiag error log file will display.

DOS Shell

Select this option for the DOS prompt. You can run DOS programs and then return to AMIDiag by typing Exit at the DOS prompt.
Chapter 13 Options Menu

**Toggle All Tests in Menu**
Select this option to display the list of test menus and select a menu. When you select a menu, the tests for that menu display.

**Toggle All Tests**
Choose this option to select all tests.

**Toggle All Quick Tests**
Choose this option to select all quick tests. Quick tests are abbreviated versions of the complete test. They test one percent of the items.

**Run Selected Tests**
Choose this option to run the tests that you have selected.

**Toggle Hidden Test Display**
Select this option to display all hidden tests.
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