

KT400A INFINITY

Rev. A+
System Board
User's Manual

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Caution

To avoid damage to the system:

- Use the correct AC input voltage range.

To reduce the risk of electric shock:

- Unplug the power cord before removing the system chassis cover for installation or servicing. After installation or servicing, cover the system chassis before plugging the power cord.

Battery:

- Danger of explosion if battery incorrectly replaced.
- Replace only with the same or equivalent type recommend by the manufacturer.
- Dispose of used batteries according to the battery manufacturer's instructions.

Joystick or MIDI port:

- Do not use any joystick or MIDI device that requires more than 10A current at 5V DC. There is a risk of fire for devices that exceed this limit.

FCC and DOC Statement on Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio TV technician for help.

Notice:

1. The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
2. Shielded interface cables must be used in order to comply with the emission limits.

Notice

This user's manual contains detailed information about the system board. If, in some cases, some information doesn't match those shown in the multilingual manual, the multilingual manual should always be regarded as the most updated version. The multilingual manual is included in the system board package.

To view the user's manual, insert the CD into a CD-ROM drive. The autorun screen (Mainboard Utility CD) will appear. Click the "TOOLS" icon then click "Manual" on the main menu.

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Chapter 1 - Introduction

1.1 Features and Specifications

1.1.1 Features

Chipset

- VIA® chipset
 - VIA® KT400A
 - VIA® VT8235CD

Processor

The system board is equipped with Socket A for PGA processor. It is also equipped with a switching voltage regulator that automatically detects 1.100V to 1.850V.

- AMD Athlon™ XP 266/333MHz FSB
- AMD Athlon™ 266MHz FSB



Important:

To ensure proper boot up and operation of your system, you must power-off the system then turn off the power supply's switch or unplug the AC power cord prior to replacing the CPU.

System Memory

- Supports up to 3GB memory (unbuffered DIMM)
- Uses PC1600 (DDR200), PC2100 (DDR266), PC2700 (DDR333) or PC3200 (DDR400) DDR SDRAM DIMM, 2.5V type
- Three 184-pin DDR SDRAM DIMM sockets
- L2 cache memory
 - Athlon™ XP / Athlon™ processor: built-in 256KB Level 2 pipelined burst cache

DIMMs	Memory Size	DIMMs	Memory Size
2MBx64	16MB	16MBx64	128MB
4MBx64	32MB	32MBx64	256MB
8MBx64	64MB	64MBx64	512MB

Expansion Slots

The system board is equipped with 1 AGP slot and 5 PCI slots.

AGP (Accelerated Graphics Port)

AGP is an interface designed to support high performance 3D graphics cards. It utilizes a dedicated pipeline to access system memory for texturing, z-buffering and alpha blending. The AGP slot supports AGP 8x with up to 2132MB/sec. bandwidth and AGP 4x with up to 1066MB/sec. bandwidth for 3D graphics applications. AGP in this system board will deliver faster and better graphics to your PC.

Onboard Audio Features

- AC'97 2.2 S/PDIF extension compliant codec
- Supports Microsoft® DirectSound/DirectSound 3D
- AC'97 supported with full duplex, independent sample rate converter for audio recording and playback
- 6-channel audio output

S/PDIF

S/PDIF is a standard audio file transfer format that transfers digital audio signals to a device without having to be converted first to an analog format. This prevents the quality of the audio signal from degrading whenever it is converted to analog. S/PDIF is usually found on digital audio equipment such as a DAT machine or audio processing device. The S/PDIF connector on the system board sends surround sound and 3D audio signal outputs to amplifiers and speakers and to digital recording devices like CD recorders.

6-channel Audio

The 6-channel audio output function is supported by using the 4-channel connector, the audio jacks at the rear panel and configuring the audio driver. Please refer to chapters 2 and 4

Onboard LAN Features

- Uses VIA VT6103 Phy controller
- Integrated IEEE 802.3, 10BASE-T and 100BASE-TX compatible PHY
- VIA 8235 MI (Management Interface)
- Integrated power management functions
- Full duplex support at both 10 and 100 Mbps
- Supports IEEE 802.3u auto-negotiation
- Supports wire for management

ATA RAID - Redundant Array of Independent Disk

- RAID 0, 1, 0+1 and 1.5
- Two independent IDE channels support 4 hard disk drives (UDMA modes 33/66/100/133 or EIDE)
- Supports PIO modes 0/1/2/3/4, DMA modes 0/1/2 and UDMA modes 0/1/2/3/4/5/6

PCI Bus Master IDE Controller

- Two PCI IDE interfaces support up to four IDE devices
- Supports ATA/33, ATA/66, ATA/100 and ATA/133 hard drives
- UDMA Modes 3, 4, 5 and 6 Enhanced IDE (data transfer rate up to 133MB/sec.)
- Bus mastering reduces CPU utilization during disk transfer
- Supports ATAPI CD-ROM, LS-120 and ZIP

Serial ATA IDE Interface

Serial ATA is a storage interface that is compliant with SATA 1.0 specification. With speed of up to 1.5Gbps, it improves hard drive performance even in data intensive environments such as audio/video, consumer electronics and entry-level servers.

- Uses Marvell 88i8030 chip
- Supports one SATA (Serial ATA) interface which is compliant with SATA 1.0 specification (1.5Gbps interface)

IEEE 1394a Interface

IEEE 1394A is fully compliant with the 1394A OHCI (Open Host Controller Interface) 1.1 specification. It supports up to 63 devices that can run simultaneously on a system. 1394A is a fast external bus standard that supports data transfer rates of up to 400Mbps. In addition to its high speed, it also supports isochronous data transfer which is ideal for video devices that need to transfer high levels of data in real-time. 1394A supports both Plug-and-Play and hot plugging.

- Uses VIA VT6306 chip
- Supports three 100/200/400 Mb/sec ports

IrDA Interface

The system board is equipped with an IrDA connector for wireless connectivity between your computer and peripheral devices. The IRDA (Infrared Data Association) specification supports data transfers of 115K baud at a distance of 1 meter.

USB Ports

The system board supports USB 2.0 and USB 1.1 ports. USB 1.1 supports 12Mb/second bandwidth while USB 2.0 supports 480Mb/second bandwidth providing a marked improvement in device transfer speeds between your computer and a wide range of simultaneously accessible external Plug and Play peripherals.

BIOS

- Award BIOS, Windows® 95/98/2000/ME/XP Plug and Play compatible
- Genie BIOS provides:
 - CPU/DRAM overclocking
 - CPU/AGP/DRAM/Chipset overvoltage
- Supports SCSI sequential boot-up
- Flash EPROM for easy BIOS upgrades
- Supports DMI 2.0 function
- 4Mbit flash memory

Desktop Management Interface (DMI)

The system board comes with a DMI 2.0 built into the BIOS. The DMI utility in the BIOS automatically records various information about your system configuration and stores these information in the DMI pool, which is a part of the system board's Plug and Play BIOS. DMI, along with the appropriately networked software, is designed to make inventory, maintenance and troubleshooting of computer systems easier. Refer to chapter 4 for instructions on using the DMI utility.

Rear Panel I/O Ports (PC 99 color-coded connectors)

- Four USB 2.0/1.1 ports
- One RJ45 LAN port
- Two DB-9 serial ports
- One DB-25 parallel port
- One mini-DIN-6 PS/2 mouse port
- One mini-DIN-6 PS/2 keyboard port
- Three audio jacks: line-out, line-in and mic-in

I/O Connectors

- One connector for 2 additional external USB 2.0/1.1 ports
- Three connectors for 3 external IEEE 1394a ports
- One connector for 1 external game/MIDI port
- One front audio connector for external line-out and mic-in jacks
- Two internal audio connectors (AUX-in and CD-in)
- One 4-channel audio output connector
- One S/PDIF-in/out connector
- One connector for IrDA interface
- Two RAID IDE connectors
- One connector for serial ATA interface
- Two IDE connectors
- One floppy drive connector
- Two ATX power supply connectors
- One Wake-On-LAN connector
- CPU, chassis and second fan connectors

1.1.2 System Health Monitor Functions

The system board is capable of monitoring the following “system health” conditions.

- Monitors CPU/system temperature
- Monitors 12V/5V/3.3V/CPU/VBAT(V)/5VSB(V) voltages
- Monitors CPU/chassis fan speed
- Automatic chassis fan on/off control
- Read back capability that displays temperature, voltage and fan speed

1.1.3 Intelligence

CPU Fan Protection

The CPU Fan Protection function has the capability of monitoring the CPU fan when the system boots. Once it has detected that the CPU fan did not rotate, 5 warning beeps will sound then the system will automatically power-off. This preventive measure has been added to protect the CPU from damage and insure a safe computing environment.

CPU Temperature Protection

The CPU Temperature Protection function has the capability of monitoring the CPU's temperature during system boot-up. Once the system has detected that the CPU's temperature exceeded the temperature limit defined in the BIOS, 5 warning beeps will sound then the system will automatically power-off.

Automatic Chassis Fan Off

The chassis fan will automatically turn off once the system enters the Suspend mode.

Dual Function Power Button

Depending on the setting in the “Soft-Off By PWRBTN” field of the Power Management Setup, this switch will allow the system to enter the Soft-Off or Suspend mode.

Wake-On-Ring

This feature allows the system that is in the Suspend mode or Soft Power Off mode to wake-up/power-on to respond to calls coming from an external modem or respond to calls from a modem PCI card that uses the PCI PME (Power Management Event) signal to remotely wake up the PC.



Important:

If you are using a modem add-in card, the 5VSB power source of your power supply must support a minimum of $\geq 720\text{mA}$.

Wake-On-LAN

This feature allows the network to remotely wake up a Soft Power Down (Soft-Off) PC. It is supported via the onboard LAN port, via a PCI LAN card that uses the PCI PME (Power Management Event) signal or via a LAN card that uses the Wake-On-LAN connector. However, if your system is in the Suspend mode, you can power-on the system only through an IRQ or DMA interrupt.



Important:

The 5VSB power source of your power supply must support $\geq 720\text{mA}$.

Wake-On-Keyboard/Wake-On-Mouse

This function allows you to use the PS/2 keyboard or PS/2 mouse to power-on the system.



Important:

The 5VSB power source of your power supply must support $\geq 720\text{mA}$.

Wake-On-USB

This function allows you to use a USB device to wake up a system from the S3 (STR - Suspend To RAM) state.



Important:

- *If you are using the Wake-On-USB function for 2 USB ports, the 5VSB power source of your power supply must support $\geq 1.5A$.*
- *If you are using the Wake-On-USB function for 3 or more USB ports, the 5VSB power source of your power supply must support $\geq 2A$.*

RTC Timer to Power-on the System

The RTC installed on the system board allows your system to automatically power-on on the set date and time.

ACPI STR

The system board is designed to meet the ACPI (Advanced Configuration and Power Interface) specification. ACPI has energy saving features that enables PCs to implement Power Management and Plug-and-Play with operating systems that support OS Direct Power Management. Currently, only Windows® 98SE/2000/ME/XP supports the ACPI function. ACPI when enabled in the Power Management Setup will allow you to use the Suspend to RAM function.

With the Suspend to RAM function enabled, you can power-off the system at once by pressing the power button or selecting "Standby" when you shut down Windows® 98SE/2000/ME/XP without having to go through the sometimes tiresome process of closing files, applications and operating system. This is because the system is capable of storing all programs and data files during the entire operating session into RAM (Random Access Memory) when it powers-off. The operating session will resume exactly where you left off the next time you power-on the system.



Important:

The 5VSB power source of your power supply must support $\geq 1A$.

AC Power Failure Recovery

When power returns after an AC power failure, you may choose to either power-on the system manually, let the system power-on automatically or return to the state where you left off before power failure occurs.

Virus Protection

Most viruses today destroy data stored in hard drives. The system board is designed to protect the boot sector and partition table of your hard disk drive.

1.2 Package Checklist

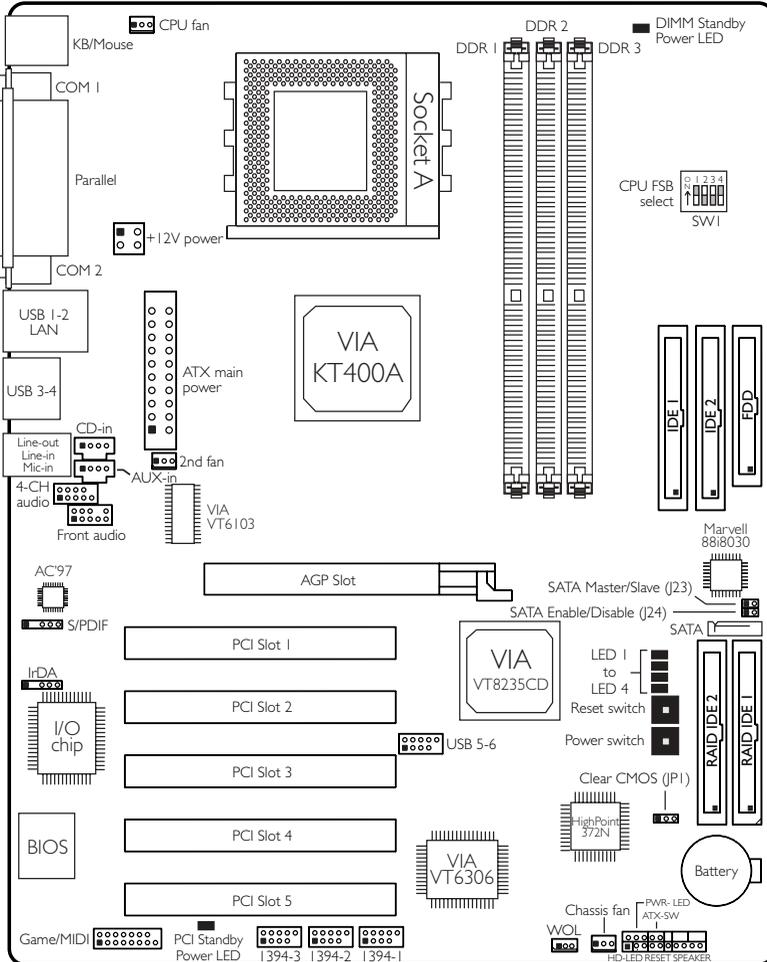
The system board package contains the following items:

- The system board
- One users manual
- One serial ATA data cable
- One card-edge bracket mounted with a game/MIDI port
- One card-edge bracket mounted with one S/PDIF-in port and one S/PDIF-out port
- One card-edge bracket mounted with three 1394a ports
- Two IDE cables for ATA/33, ATA/66, ATA/100 or ATA/133 IDE drives
- One 34-pin floppy disk drive cable
- One I/O shield
- One "HighPoint 372 N RAID Drivers" diskette
- One "Mainboard Utility" CD
- One pack of jumper caps (five 2.54mm jumper caps)

If any of these items are missing or damaged, please contact your dealer or sales representative for assistance.

Chapter 2 - Hardware Installation

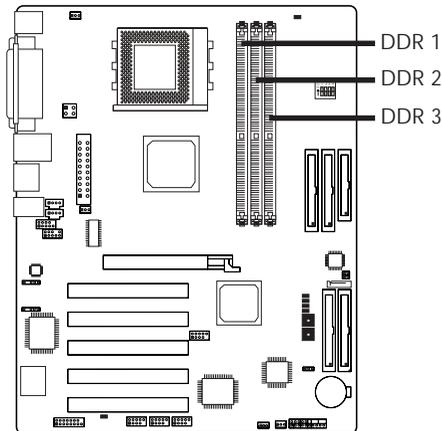
2.1 System Board Layout



**Warning:**

- *To ensure proper boot up and operation of your system, you must power-off the system then turn off the power supply's switch or unplug the AC power cord prior to altering the setting of a jumper or replacing the CPU.*
- *Electrostatic discharge (ESD) can damage your system board, processor, disk drives, add-in boards, and other components. Perform the upgrade instruction procedures described at an ESD workstation only. If such a station is not available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the system chassis. If a wrist strap is unavailable, establish and maintain contact with the system chassis throughout any procedures requiring ESD protection.*

2.2 System Memory

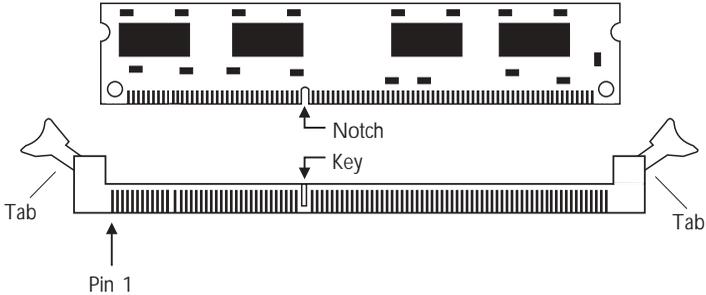


The system board supports DDR SDRAM DIMM. Double Data Rate SDRAM (DDR SDRAM) is a type of SDRAM that doubles the data rate through reading and writing at both the rising and falling edge of each clock. This effectively doubles the speed of operation therefore doubling the speed of data transfer.

Refer to chapter 1 (System Memory section) for detailed specification of the memory supported by the system board.

2.2.1 Installing the DIM Module

A DIM module simply snaps into a DIMM socket on the system board. Pin 1 of the DIM module must correspond with Pin 1 of the socket.



1. Pull the “tabs” which are at the ends of the socket to the side.
2. Position the DIMM above the socket with the “notch” in the module aligned with the “key” on the socket.
3. Seat the module vertically into the socket. Make sure it is completely seated. The tabs will hold the DIMM in place.

2.3 CPU

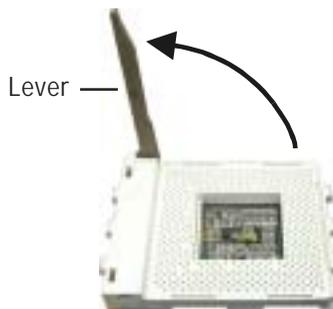
2.3.1 Overview

The system board is equipped with a surface mount Socket A CPU socket. This socket is exclusively designed for installing an AMD CPU.



2.3.2 Installing the CPU

1. Make sure the PC and all other peripheral devices connected to it has been powered down.
2. Disconnect all power cords and cables.
3. Locate Socket A on the system board.
4. Unlock the socket by pushing the lever sideways, away from the socket, then lifting it up to a 90° angle. Make sure the socket is lifted to at least this angle otherwise the CPU will not fit in properly.



5. Position the CPU above the socket then align the gold mark on the corner of the CPU (designated as pin 1) with pin 1 of the socket.



Important:

Handle the CPU by its edges and avoid touching the pins.



— Gold mark



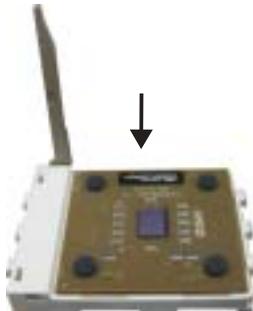
Pin 1

6. Insert the CPU into the socket until it is seated in place. The CPU will fit in only one orientation and can easily be inserted without exerting any force.

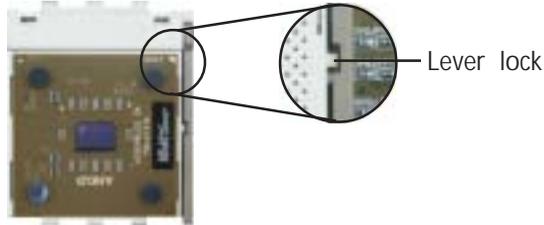


Important:

Do not force the CPU into the socket. Forcing the CPU into the socket may bend the pins and damage the CPU.



7. Once the CPU is in place, push down the lever to lock the socket. The lever should click on the side tab to indicate that the CPU is completely secured in the socket.



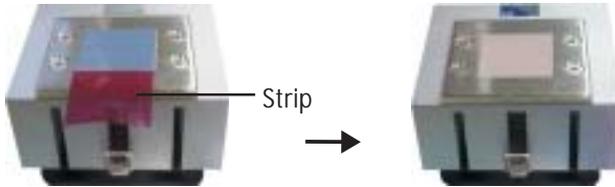
2.3.3 Installing the Fan and Heat Sink

The CPU must be kept cool by using a CPU fan with heat sink. Without sufficient air circulation across the CPU and heat sink, the CPU will overheat damaging both the CPU and system board.

1. Before you install the fan / heat sink, you must apply a thermal paste onto the top of the CPU. The thermal paste, which is usually supplied together with the CPU, looks somewhat similar to the one shown below. Do not spread the paste all over the surface. When you later place the heat sink on top of the CPU, the compound will disperse evenly.



Do not apply the paste if the fan / heat sink already has a patch of thermal paste on its underside. Peel the strip that covers the paste then place the fan / heat sink on top of the CPU.



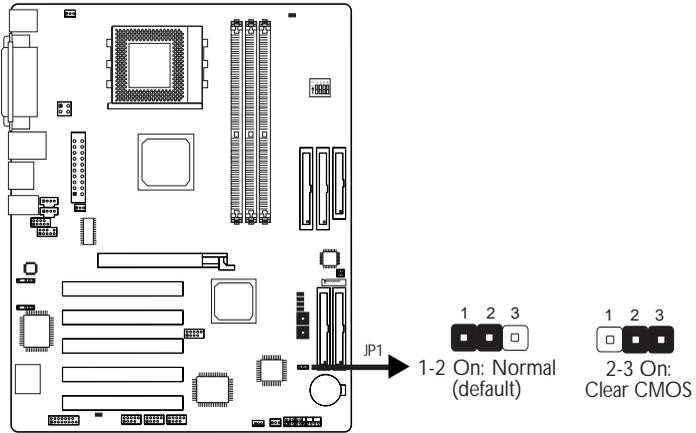
2. After placing the fan / heat sink on top of the CPU, latch the retaining clip on one side of the fan heat sink onto the protruding tab on the side of the socket.



3. Push down the other retaining clip until it latches and lock onto the protruding tab on that side of the socket. Make sure there is sufficient air circulation across the CPU fan and heat sink.

2.4 Jumper Settings

2.4.1 Jumper Settings for Clearing CMOS Data



If you encounter the following,

- CMOS data becomes corrupted.*
- You forgot the keyboard, supervisor or user password.*
- You are unable to boot-up the computer system because the CPU's ratio/clock was incorrectly set in the BIOS.*

you can reconfigure the system with the default values stored in the ROM BIOS.

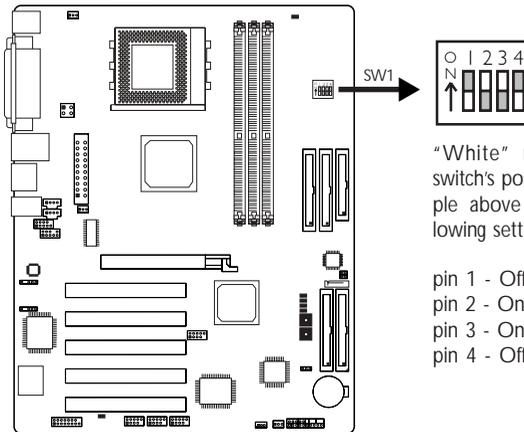
To load the default values stored in the ROM BIOS, please follow the steps below.

1. Power-off the system and unplug the power cord.
2. Set JP1 pins 2 and 3 to On. Wait for a few seconds and set JP1 back to its default setting, pins 1 and 2 On.
3. Plug the power cord and power-on the system.

If your reason for clearing the CMOS data is due to incorrect setting of the CPU's ratio/clock in the BIOS, please proceed to step 4.

4. After powering-on the system, press to enter the main menu of the BIOS.
5. Select the Genie BIOS Setting submenu and press <Enter>.
6. Set the "CPU Clock Setting" or "CPU Multiplier Setting" field to its default setting or an appropriate bus clock or frequency ratio. Refer to the Genie BIOS Setting section in chapter 3 for more information.
7. Press <Esc> to return to the main menu of the BIOS setup utility. Select "Save & Exit Setup" and press <Enter>.
8. Type <Y> and press <Enter>.

2.4.2 DIP Switch Settings for Selecting the CPU's FSB



"White" represents the switch's position. The example above shows the following settings:

pin 1 - Off
 pin 2 - On
 pin 3 - On
 pin 4 - Off

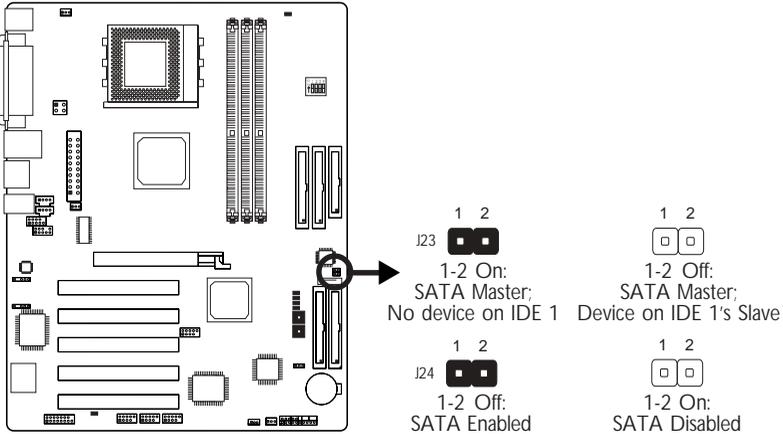
CPU FSB	1	2	3	4
100MHz	Off	On	On	NA
133MHz	Off	On	Off	NA
166MHz	On	Off	Off	NA

SW1 is used to select the front side bus of the CPU installed on the system board.

**Important:**

- *Overclocking may result to the CPU's or system's instability and are not guaranteed to provide better system performance. If you are unable to boot your system due to overclocking, make sure to set the DIP switch back to its default settings.*
- *To ensure proper boot up and operation of your system, you must power-off the system then turn off the power supply's switch or unplug the AC power cord prior to altering the setting.*

2.4.3 Jumper Settings for Serial ATA



J24 is used to enable or disable the onboard Serial ATA function.

1-2 On - The onboard Serial ATA is disabled.

1-2 Off - The onboard Serial ATA is enabled. Serial ATA only uses IDE 1's master channel. Therefore, make sure J23 (see below) is configured properly.

J23 must be configured only if the onboard Serial ATA is enabled.

1-2 On - This sets the Serial ATA to the IDE 1's master channel. You must not connect any device to IDE 1.

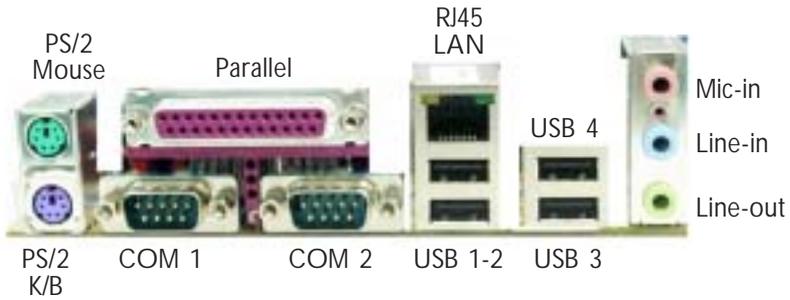
1-2 Off - This sets the Serial ATA to the IDE 1's master channel but allows you to connect an IDE device to the IDE 1's slave channel.

BIOS Setting:

"Serial ATA Control" in the Genie BIOS Setting submenu of the BIOS must be set accordingly. Refer to chapter 3 for more information.

Jumpers		SATA	IDE			
J23	J24	Primary Master	Primary Master	Primary Slave	Secondary Master	Secondary Slave
On/Off	On	x	✓	✓	✓	✓
Off	Off	✓	x	✓	✓	✓
On	Off	✓	x	x	✓	✓

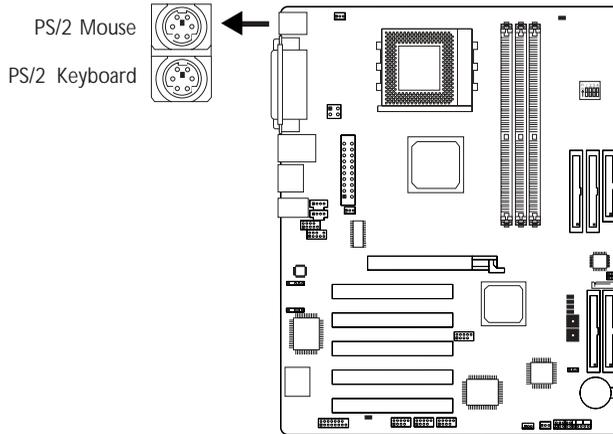
2.5 Rear Panel I/O Ports



The rear panel I/O ports consist of the following:

- PS/2 mouse port
- PS/2 keyboard port
- Parallel port
- Serial ports
- LAN port
- USB ports
- Mic-in, Line-in and Line-out jacks

2.5.1 PS/2 Mouse and PS/2 Keyboard Ports



The system board is equipped with an onboard PS/2 mouse (Green) and PS/2 keyboard (Purple) ports. The PS/2 mouse port uses IRQ12. If a mouse is not connected to this port, the system will reserve IRQ12 for other expansion cards.



Warning:

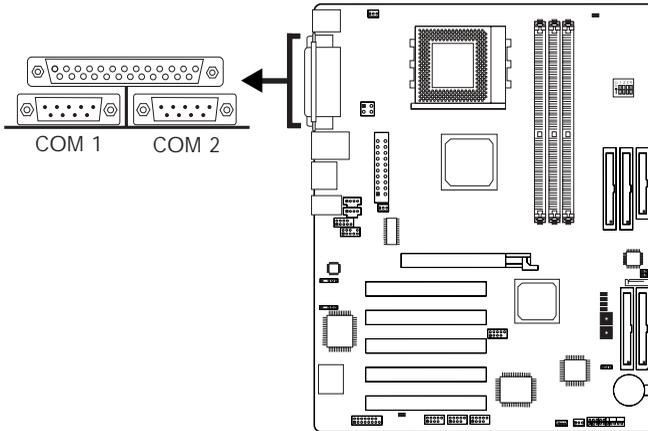
Make sure to turn off your computer prior to connecting or disconnecting a mouse or keyboard. Failure to do so may damage the system board.

Wake-On-Keyboard/Mouse

The Wake-On-Keyboard/Mouse function allows you to use the keyboard or mouse to power-on the system. To use this function:

- BIOS Setting:
Refer to the “Wake Up Events” field in the Power Management Setup submenu of the BIOS for the BIOS settings of this function. Refer to chapter 3 for more information.

2.5.2 Serial Ports



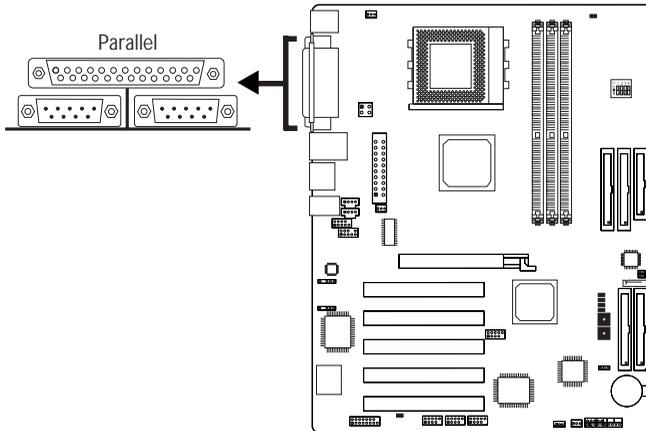
The system board is equipped with onboard serial ports both in Teal/Turquoise color.

These ports are RS-232C asynchronous communication ports with 16C550A-compatible UARTs that can be used with modems, serial printers, remote display terminals, and other serial devices.

BIOS Setting

Select the serial ports' I/O address in the Integrated Peripherals submenu ("Super IO Device" field) of the BIOS. Refer to chapter 3 for more information.

2.5.3 Parallel Port



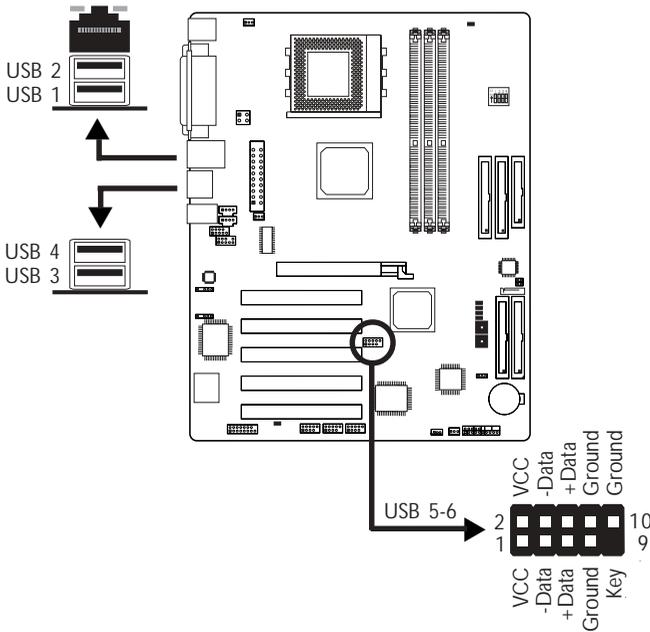
The system board has a standard parallel port (Burgundy) for interfacing your PC to a parallel printer. It supports SPP, ECP and EPP.

Setting	Function
SPP (Standard Parallel Port)	Allows normal speed operation but in one direction only.
ECP (Extended Capabilities Port)	Allows parallel port to operate in bidirectional mode and at a speed faster than the SPP's data transfer rate.
EPP (Enhanced Parallel Port)	Allows bidirectional parallel port operation at maximum speed.

BIOS Setting

Select the parallel port's mode in the Integrated Peripherals submenu ("Super IO Device" field) of the BIOS. Refer to chapter 3 for more information.

2.5.4 Universal Serial Bus Ports



The system board is equipped with four onboard USB 2.0/1.1 ports (Black).

J15 allows you to connect 2 additional USB 2.0/1.1 ports. The additional USB ports, which are mounted on a card-edge bracket, will be provided as options. If you want to use the optional USB ports, install the card-edge bracket to the system chassis then insert the connector that is attached to the USB port cables to J15.

BIOS Setting

Enable or disable the onboard USB in the Integrated Peripherals submenu of the BIOS.

If you are using a USB 2.0 device, you must enable the USB 2.0 function in the Genie BIOS Setting submenu of the BIOS. Refer to chapter 3 for more information.

Driver Installation

You may need to install the proper drivers in your operating system to use the USB device. Refer to your operating system's manual or documentation for more information.

If you are using a USB 2.0 device, install the "USB 2.0 Drivers". Refer to chapter 4 for more information.

Wake-On-USB

The Wake-On-USB function allows you to use a USB device to wake up a system from the S3 (STR - Suspend To RAM) state. To use this function:

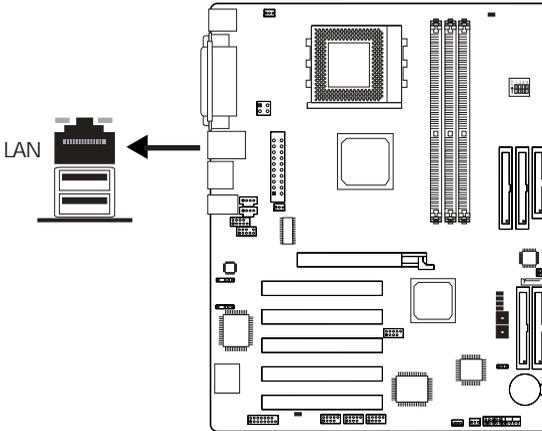
- BIOS Setting:
"USB Resume From S3" ("Wake Up Events" field) in the Power Management Setup submenu of the BIOS must be set to Enabled. Refer to chapter 3 for more information.



Important:

- *If you are using the Wake-On-USB function for 2 USB ports, the 5VSB power source of your power supply must support $\geq 1.5A$.*
- *If you are using the Wake-On-USB function for 3 or more USB ports, the 5VSB power source of your power supply must support $\geq 2A$.*

2.5.5 RJ45 LAN Port



The system board is equipped with an onboard RJ45 LAN port. It allows the system board to connect to a local area network by means of a network hub.

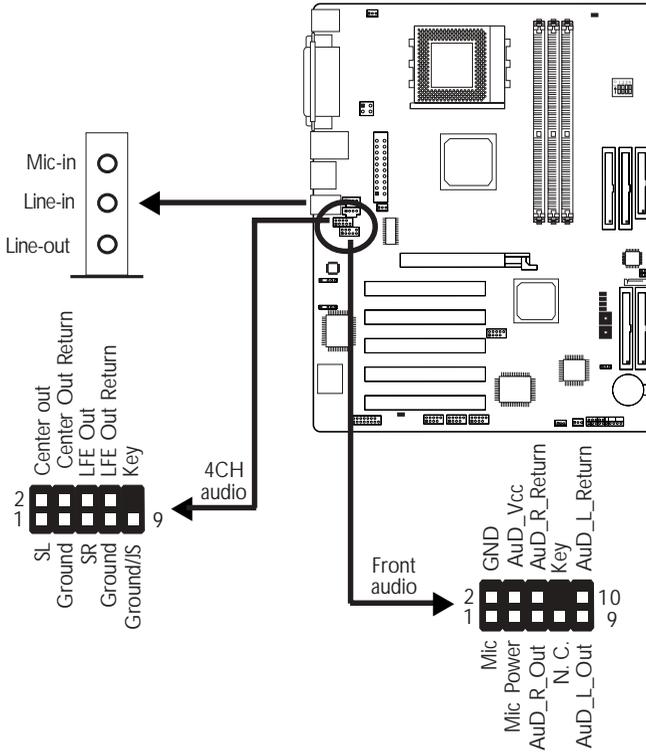
BIOS Setting

Enable or disable the onboard LAN in the Genie BIOS Setting submenu of the BIOS. Refer to chapter 3 for more information.

Driver Installation

Install the "LAN Drivers". Refer to chapter 4 for more information.

2.5.6 Audio



Audio Jacks

The system board is equipped with 3 audio jacks. A jack is a one-hole connecting interface for inserting a plug.

- Line-out Jack (Lime)
This jack is used to connect external speakers for audio output from the system board. Using this jack disables the front audio's line-out function.

- **Line-in Jack (Light Blue)**
This jack can be connected to the line-out jack of any external audio devices such as Hi-fi set, CD player, AM/FM radio tuner, synthesizer, etc. Connect a stereo cable from the line-out jack of your external device to this line-in jack.
- **Mic-in Jack (Pink)**
This jack is used to connect an external microphone. Use the C-Media application software to select between using this jack and the front audio's mic-in jack.

Front Audio

The front audio connector (J6) allows you to connect to the line-out and mic-in jacks that are at the front panel. Using the line-out jack disables the rear audio's line-out function. Use the C-Media application software to select between using the mic-in jack and the rear audio's mic-in jack.

Remove the jumper caps from pins 5-6 and pins 9-10 of J6 prior to connecting the front audio cable connector. Make sure pin 1 of the cable connector is aligned with pin 1 of J6. If you are not using this connector, make sure to replace the jumper caps back to their original pin locations.

Pins 5-6 and 9-10 short (default)	The front audio is disabled. The rear audio is enabled.
-----------------------------------	--

Pins 5-6 and 9-10 open	The front audio is enabled. The rear audio is disabled.
------------------------	--

4-Channel Audio

The 4-channel connector (J5) supports four audio output signals: center channel, subwoofer, rear right channel and rear left channel. The 4 audio output signals together with the line-out jack (at the rear panel) support 6-channel audio output.

One card-edge bracket, mounted with a rear jack and a center/subwoofer jack, will be provided as an option. Remove the jumper caps from pins 2-4 and pins 6-8 of J5 prior to connecting the audio cable connector. Make sure pin 1 of the cable connec-

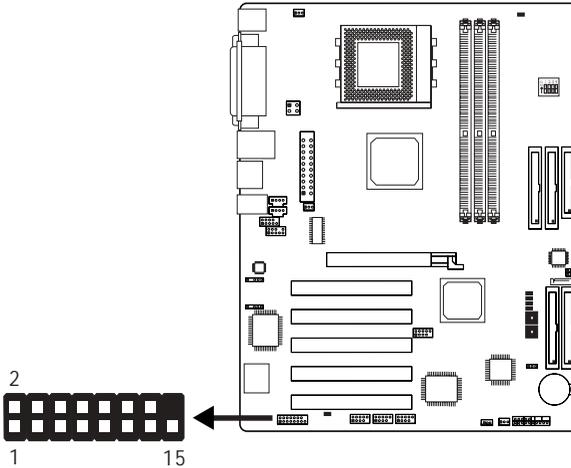
tor is aligned with pin 1 of J5. If you are not using this connector, replace the jumper caps back to their original pin locations. Now install the card-edge bracket to the system chassis.

Driver Installation

Install the “Audio Drivers”. The 3D Audio Configuration software, which is an audio panel for setting basic audio configurations, will at the same time be installed into your system. The application program will allow you to configure 2-channel, 4-channel and 6-channel audio modes as well as configure the audio effects. Refer to chapter 4 for more information.

2.6 I/O Connectors

2.6.1 Game/MIDI Port

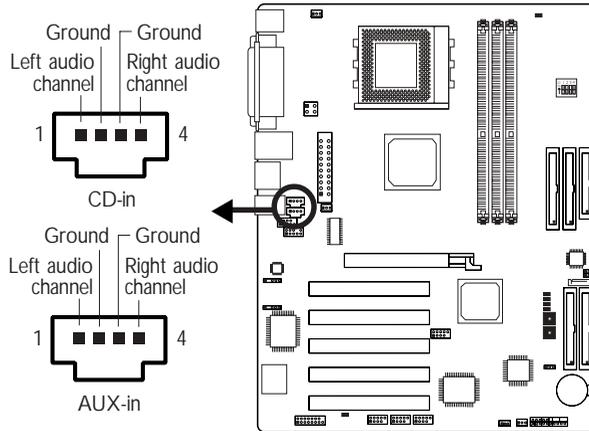


The system board is equipped with a 15-pin connector at location J9 for connecting an external game/MIDI port. One card-edge bracket, mounted with a game/MIDI port cable, is provided with the system board. Install the card-edge bracket to the system chassis then connect the game/MIDI port cable to connector J9. Make sure the colored stripe on the ribbon cable is aligned with pin 1 of connector J9.

BIOS Setting

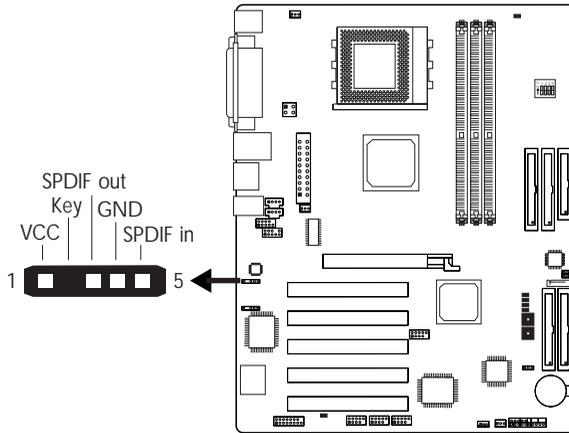
Configure the game port in the Integrated Peripherals submenu ("Super I/O Device" field) of the BIOS. Refer to chapter 3 for more information.

2.6.2 Internal Audio Connectors



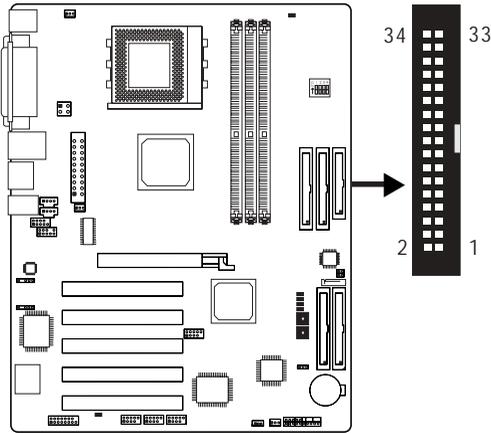
The CD-in (J7) and AUX-in (J8) connectors are used to receive audio from a CD-ROM drive, TV tuner or MPEG card.

2.6.3 S/PDIF Connector



The system board is equipped with a S/PDIF connector. One card-edge bracket, mounted with S/PDIF ports, is provided with the system board. Install the card-edge bracket to the system chassis then connect the audio cable connector to J2. Make sure pin 1 of the audio cable connector is aligned with pin 1 of J2.

2.6.4 Floppy Disk Drive Connector



The system board is equipped with a shrouded floppy disk drive connector that supports two standard floppy disk drives. To prevent improper floppy cable installation, the shrouded floppy disk header has a keying mechanism. The 34-pin connector on the floppy cable can be placed into the header only if pin 1 of the connector is aligned with pin 1 of the header.

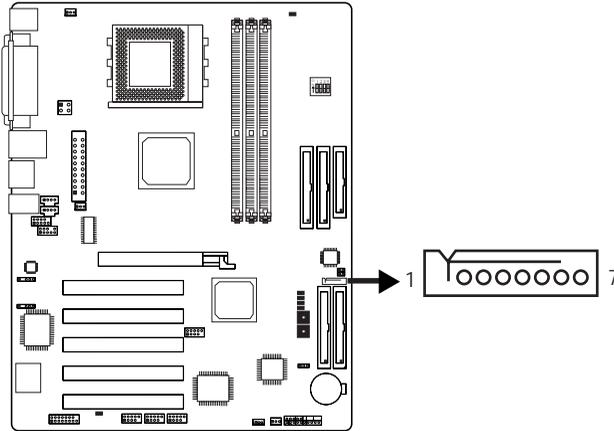
Connecting the Floppy Disk Drive Cable

Install one end of the floppy disk drive cable into the shrouded floppy disk header (FDD) on the system board and the other end-most connector to the drive you want to designate as Drive A. If you are connecting another drive (Drive B), install the middle connector of the cable to the drive. The colored edge of the daisy chained ribbon cable should be aligned with pin 1 of FDD.

BIOS Setting

Enable or disable this function in the Integrated Peripherals submenu ("Super I/O Device" field) of the BIOS. Refer to chapter 3 for more information.

2.6.5 Serial ATA Connector



One Serial ATA cable is provided with the system board. Connect one end of the cable to J22 and the other end to your serial ATA device.

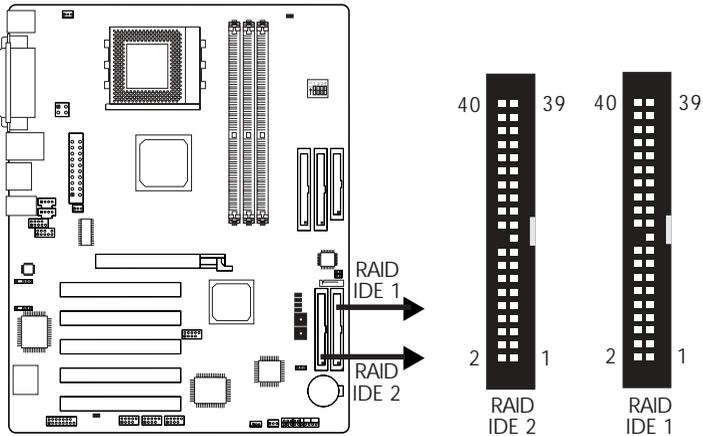
Jumper Setting

J23 and J24 must be configured properly. Refer to “Jumper Settings for Serial ATA” in this chapter for more information.

BIOS Setting

Enable the onboard Serial ATA in the Genie BIOS Setting submenu of the BIOS. Refer to chapter 3 for more information.

2.6.6 RAID IDE Disk Drive Connectors



The HighPoint RAID controller allows configuring RAID on hard drives connected to the RAID IDE connectors. It supports RAID levels 0, 1, 0+1 and 1.5.

RAID Level	Minimum Number of Drives
RAID 0	2
RAID 1	2
RAID 0+1	4
RAID 1.5	2

The two shrouded RAID IDE headers (RAID IDE 1 and RAID IDE 2) can interface up to four Enhanced IDE (Integrated Drive Electronics) disk drives. To prevent improper IDE cable installation, the shrouded RAID IDE header has a keying mechanism. The 40-pin connector on the IDE cable can be placed into the header only if pin 1 of the connector is aligned with pin 1 of the header.

Hard drives must be Ultra ATA/133, Ultra ATA/100, Ultra ATA/66, Ultra ATA/33, EIDE and/or Fast ATA-2 compatible. For optimal performance, install identical drives of the same model and capacity. The drives' matched performance allows the RAID array to function better as a single drive.

Drives in an array must be identical. If striping for performance, use two new drives. If mirroring for protection, you can use two new drives or use an existing drive and a new drive (the new drive must be the same size or larger than the existing drive). Only two drives can be configured as RAID. Since both of these drives must be in Master mode, striping or mirroring must be done between 2 RAID IDE channels; not between 2 drives that are chained on the same channel.



Note:

Only connect IDE hard drives to the RAID IDE connectors.

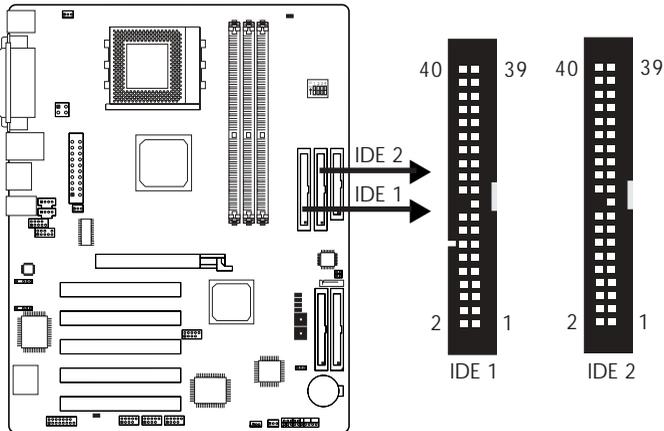
BIOS Setting

1. Enable or disable the HighPoint RAID controller in the Genie BIOS Setting submenu of the Award BIOS. If the hard drives connected to the RAID IDE connectors will not be configured as RAID, make sure to set the "HP372N RAID Control" field to Disabled.
2. Configure and manage RAID in the HighPoint BIOS Configuration Utility. Refer to chapter 3 for more information.

Driver Installation

Install the HighPoint RAID drivers and utility. Refer to chapter 4 for more information.

2.6.7 IDE Disk Drive Connectors



The system board is equipped with two shrouded PCI IDE headers that will interface four Enhanced IDE (Integrated Drive Electronics) disk drives. To prevent improper IDE cable installation, each shrouded PCI IDE header has a keying mechanism. The 40-pin connector on the IDE cable can be placed into the header only if pin 1 of the connector is aligned with pin 1 of the header.

Each IDE connector supports 2 devices, a Master and a Slave. Use an IDE ribbon cable to connect the drives to the system board. An IDE ribbon cable has 3 connectors on them, one that plugs into an IDE connector on the system board and the other 2 connect to IDE devices. The connector at the end of the cable is for the Master drive and the connector in the middle of the cable is for the Slave drive.

Connecting the IDE Disk Drive Cable

Install one end of the IDE cable into the IDE 1 header on the system board and the other connectors to the IDE devices.

If you are adding a third or fourth IDE device, use another IDE cable and install one end of the cable into the IDE 2 header on the system board and the other connectors to the IDE devices.

**Note:**

Refer to your disk drive user's manual for information about selecting proper drive switch settings.

Adding a Second IDE Disk Drive

When using two IDE drives, one must be set as the master and the other as the slave. Follow the instructions provided by the drive manufacturer for setting the jumpers and/or switches on the drives.

The system board supports Enhanced IDE or ATA-2, ATA/33, ATA/66, ATA/100 or ATA/133 hard drives. We recommend that you use hard drives from the same manufacturer. In a few cases, drives from two different manufacturers will not function properly when used together. The problem lies in the hard drives, not the system board.

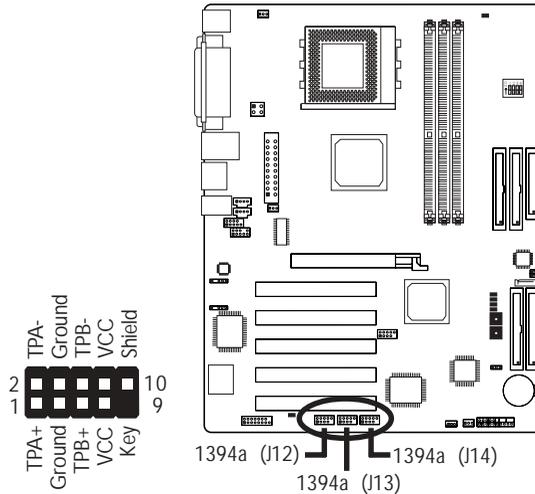
**Important:**

If you encountered problems while using an ATAPI CD-ROM drive that is set in Master mode, please set the CD-ROM drive to Slave mode. Some ATAPI CD-ROMs may not be recognized and cannot be used if incorrectly set in Master mode.

BIOS Setting

Enable or disable the onboard primary or secondary IDE in the Integrated Peripherals submenu ("VIA OnChip IDE Device" field) of the BIOS. Refer to chapter 3 for more information.

2.6.8 IEEE 1394a Connectors

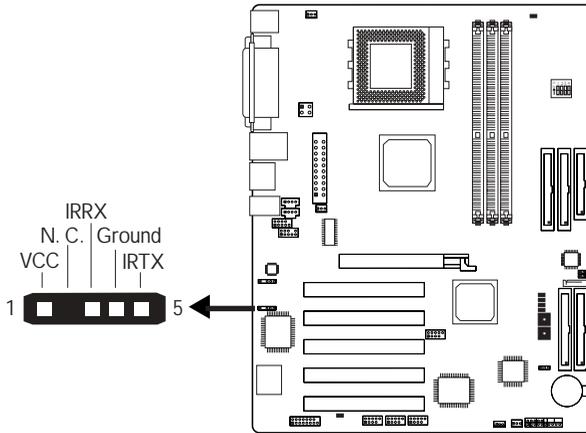


The system board is equipped with three 1394a connectors. One card-edge bracket, mounted with two 1394a ports, is provided with the system board. Install the card-edge bracket to the system chassis then connect the cable connector to a 1394a connector. Make sure pin 1 of the cable connector is aligned with pin 1 of the 1394a connector.

BIOS Setting

Enable or disable the onboard 1394 in the Genie BIOS Setting of the BIOS. Refer to chapter 3 for more information.

2.6.9 IrDA Connector



Connect your IrDA cable to connector J1 on the system board.

**Note:**

The sequence of the pin functions on some IrDA cable may be reversed from the pin function defined on the system board. Make sure to connect the cable to the IrDA connector according to their pin functions.

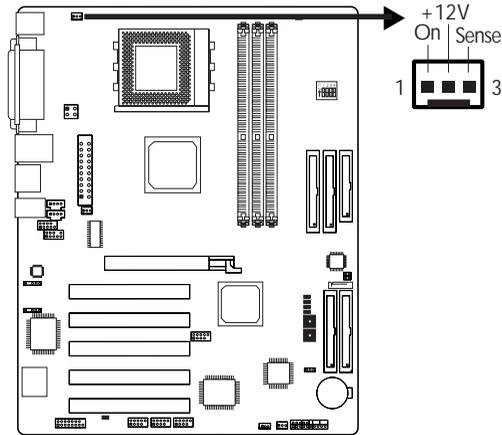
BIOS Setting

Set "UART2 Mode Select" ("Super IO Device" field) in the Integrated Peripherals submenu of the BIOS to the type of IrDA standard supported by your device.

Driver Installation

You may need to install the proper drivers in your operating system to use the IrDA function. Refer to your operating system's manual or documentation for more information.

2.6.10 CPU Fan Connector



The CPU must be kept cool by using a fan with heatsink. Connect the CPU fan to the 3-pin fan connector at location J10 of the system board. The system is capable of monitoring the speed of the CPU fan.

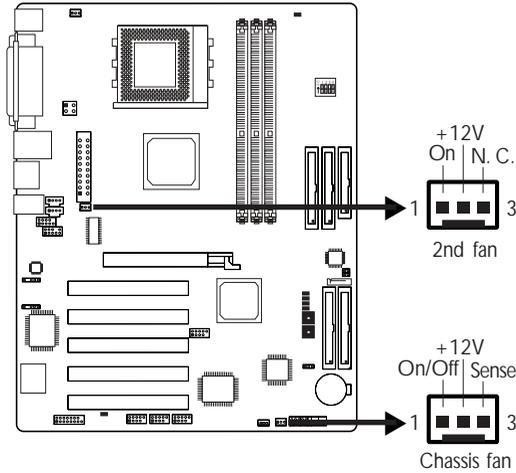
BIOS Setting

The “PC Health Status” submenu of the BIOS will display the current speed of the CPU fan. Refer to chapter 3 for more information.

More Information

Refer to appendix B for information on using the CPU Fan Protection function.

2.6.11 Chassis Fan and Second Fan Connectors



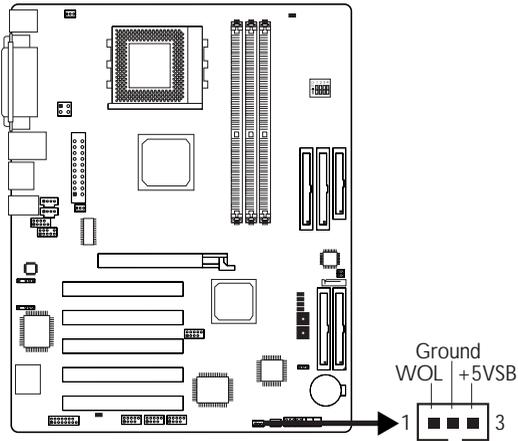
The chassis fan connector (J17) and second fan connector (J11) are used to connect cooling fans. The cooling fans will provide adequate airflow throughout the chassis to prevent overheating the CPU and system board components.

The system is capable of monitoring and controlling the speed of the chassis fan. The chassis fan will automatically turn off once the system enters the Suspend mode.

BIOS Setting

The “PC Health Status” submenu of the BIOS will display the current speed of the chassis fan. Refer to chapter 3 for more information.

2.6.12 Wake-On-LAN Connector



Your LAN card package should include a cable. Connect one end of the cable to the wakeup header on the card and the other end to location J16 on the system board. The network will detect Magic Packet and assert a wakeup signal to power-up the system. Refer to the add-in card's manual for details. Note: Your LAN card must support the remote wake up function.



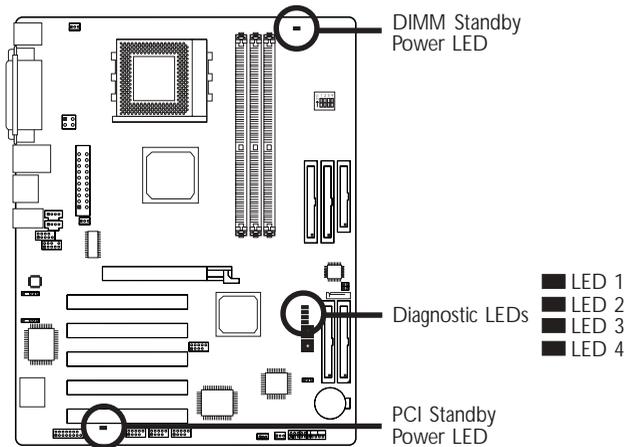
Important:

The 5VSB power source of your power supply must support $\geq 720\text{mA}$.

BIOS Setting

To use the Wake-On-LAN function, you must enable "Resume On LAN/Ring" ("Wake Up Events" field) in the Power Management Setup of the BIOS.

2.6.13 LEDs



DIMM Standby Power LED

This LED will turn red when the system's power is on or when it is in the Suspend state (Power On Suspend or Suspend to RAM). It will not light when the system is in the Soft-Off state.

PCI Standby Power LED

This LED will turn red when the system is in the power-on, Soft-Off or Suspend (Power On Suspend or Suspend to RAM) state.

**Important:**

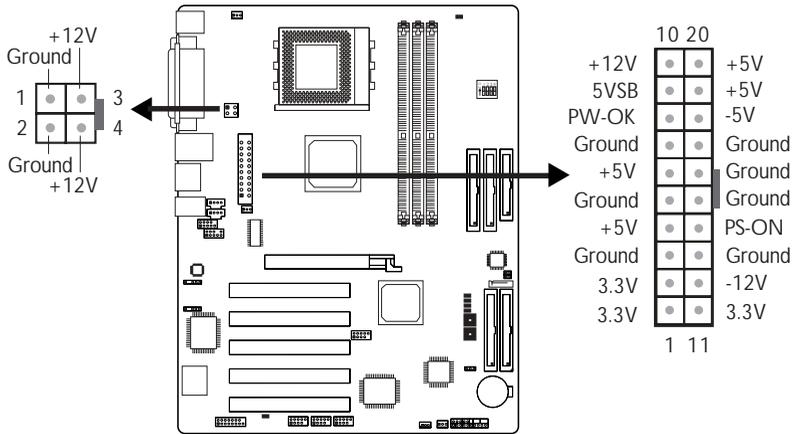
If the DIMM Standby Power LED or PCI Standby Power LED is lighted, you must power-off the system then turn off the power supply's switch or unplug the power cord prior to installing any memory modules or add-in cards.

Diagnostic LEDs

LED 1 to LED 4 are diagnostic LEDs. These LEDs will indicate the current condition of the system.

	LED 1	LED 2	LED 3	LED 4
Early program chipset register before POST.	On	Off	Off	Off
Testing memory presence.	Off	On	Off	Off
Initializing the DRAM controller (sizing).	On	On	Off	Off
Initializing the FSB frequency.	Off	Off	On	Off
Initializing the DRAM frequency.	On	Off	On	Off
Programming the DRAM timing.	Off	On	On	Off
Programming the GTL timing.	On	On	On	Off
Checking CMOS checksum and battery.	Off	Off	Off	On
Initializing the clock generator.	On	Off	Off	On
Initializing USB.	Off	On	Off	On
Testing all memory (cleared all extended memory to 0).	On	On	Off	On
Initializing the onboard Super IO.	Off	Off	On	On
Detecting and installing an IDE device.	On	Off	On	On
Final initialization.	Off	On	On	On
Booting the system.	On	On	On	On

2.6.14 Power Connectors

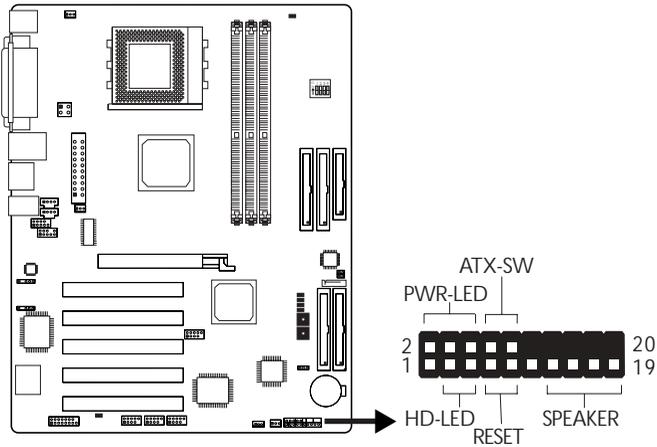


We recommend that you use a power supply that complies with the ATX12V Power Supply Design Guide Version 1.1. An ATX12V power supply has a standard 20-pin ATX main power connector and a 4-pin +12V power connector that must be inserted onto CN7 and CN6 connectors respectively.

The 4-pin +12V power connector enables the delivery of more +12VDC current to the processor's Voltage Regulator Module (VRM).

The system board requires a minimum of 250 Watt power supply to operate. Your system configuration (amount of memory, add-in cards, peripherals, etc.) may exceed the minimum power requirement. To ensure that adequate power is provided, use a 300 Watt (or greater) power supply.

2.6.15 Front Panel Connectors



HD-LED: Primary/Secondary IDE LED

This LED will light when the hard drive is being accessed.

RESET: Reset Switch

This switch allows you to reboot without having to power off the system thus prolonging the life of the power supply or system.

SPEAKER: Speaker Connector

This connects to the speaker installed in the system chassis.

ATX-SW: ATX Power Switch

Depending on the setting in the BIOS setup, this switch is a “dual function power button” that will allow your system to enter the Soft-Off or Suspend mode. Refer to “Soft-Off By PWRBTN” in the Power Management Setup (Chapter 3).

PWR-LED: Power/Standby LED

When the system's power is on, this LED will light. When the system is in the S1 (POS - Power On Suspend) state, it will blink every second. When the system is in the S3 (STR - Suspend To RAM) state, it will blink every second.

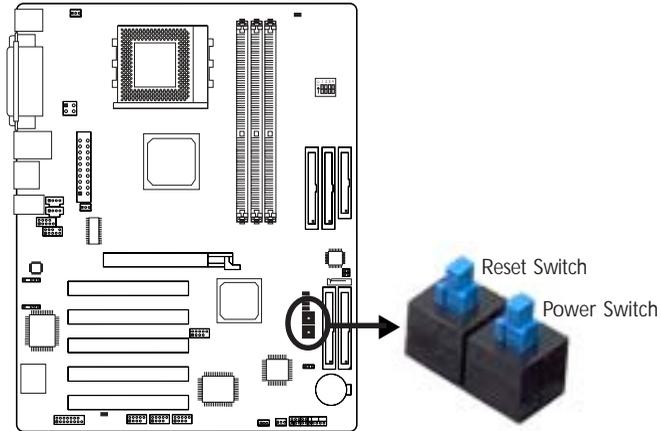


Note:

If a system did not boot-up and the Power/Standby LED did not light after it was powered-on, it may indicate that the CPU or memory module was not installed properly. Please make sure they are properly inserted into their corresponding socket.

	Pin	Pin Assignment
HD-LED (Primary/Secondary IDE LED)	3 5	HDD LED Power HDD
Reserved	14 16	N. C. N. C.
ATX-SW (ATX power switch)	8 10	PWRBT+ PWRBT-
Reserved	18 20	N. C. N. C.
RESET (Reset switch)	7 9	Ground H/W Reset
SPEAKER (Speaker connector)	13 15 17 19	Speaker Data N. C. Ground Speaker Power
PWR-LED (Power/Standby LED)	2 4 6	LED Power (+) LED Power (+) LED Power (-) or Standby Signal

2.6.16 EZ Touch Switches (Power Switch and Reset Switch)



The presence of the power switch and reset switch on the system board are user-friendly especially to DIY users. They provide convenience in powering on and/or resetting the system while fine tuning the system board before it is installed into the system chassis.

Chapter 3 - Award BIOS Setup Utility

3.1 The Basic Input/Output System

The Basic Input/Output System (BIOS) is a program that takes care of the basic level of communication between the processor and peripherals. In addition, the BIOS also contains codes for various advanced features found in this system board. This chapter explains the Setup Utility for the Award BIOS.

After you power up the system, the BIOS message appears on the screen and the memory count begins. After the memory test, the following message will appear on the screen:

Press DEL to enter setup

If the message disappears before you respond, restart the system or press the "Reset" button. You may also restart the system by pressing the <Ctrl> <Alt> and keys simultaneously.

When you press , the main menu screen will appear.

Phoenix - AwardBIOS CMOS Setup Utility

Standard CMOS Features	Genie BIOS Setting
Advanced BIOS Features	Load Fail-Safe Defaults
Advanced Chipset Features	Load Optimized Defaults
Integrated Peripherals	Set Supervisor Password
Power Management Setup	Set User Password
PnP/PCI Configurations	Save & Exit Setup
PC Health Status	Exit Without Saving
Esc : Quit	↑↓→← : Select Item
F10 : Save & Exit Setup	
Time, Date, Hard Disk Type...	

3.1.1 Standard CMOS Features

Use the arrow keys to highlight "Standard CMOS Features" and press <Enter>. A screen similar to the one on the next page will appear.

Phoenix - AwardBIOS CMOS Setup Utility
Standard CMOS Features

		Item Help
Date (mm:dd:yy)	Thu, Mar 6 2003	Menu Level Change the day, month, year and century
Time (hh:mm:ss)	14 : 35 : 25	
▶ IDE Primary Master	Press Enter None	
▶ IDE Primary Slave	Press Enter None	
▶ IDE Secondary Master	Press Enter None	
▶ IDE Secondary Slave	Press Enter None	
Drive A	1.44M, 3.5 in.	
Drive B	None	
Video	EGA/VGA	
Halt On	All, But Keyboard	
Base Memory	640K	
Extended Memory	129024K	
Total Memory	130048K	
↑↓→← : Move Enter:Select +/~/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

The settings on the screen are for reference only. Your version may not be identical to this one.

3.1.1.1 Date

The date format is <day>, <month>, <date>, <year>. Day displays a day, from Sunday to Saturday. Month displays the month, from January to December. Date displays the date, from 1 to 31. Year displays the year, from 1994 to 2079.

3.1.1.2 Time

The time format is <hour>, <minute>, <second>. The time is based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00. Hour displays hours from 00 to 23. Minute displays minutes from 00 to 59. Second displays seconds from 00 to 59.

3.1.1.3 IDE Primary Master, IDE Primary Slave, IDE Secondary Master and IDE Secondary Slave

Move the cursor to the "IDE Primary Master", "IDE Primary Slave", "IDE Secondary Master" or "IDE Secondary Slave" field, then press <Enter>. The following screen will appear.

Phoenix - AwardBIOS CMOS Setup Utility
IDE Primary Master

IDE HDD Auto Detection	Press Enter	Item Help
IDE Primary Master Access Mode	Auto Auto	Menu Level
Capacity	0 M	Change the day, month, year and century
Cylinder	0	
Head	0	
Precomp	0	
Landing Zone Sector	0	
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F6: Fail-Safe Defaults F7: Optimized Defaults		

The settings on the screen are for reference only. Your version may not be identical to this one.

IDE HDD Auto Detection

Detects the parameters of the drive. The parameters will automatically be shown on the screen.

IDE Primary Master/Slave and IDE Secondary Master/Slave

If you wish to define your own drive type manually, select "Manual". The drive type information should be included in the documentation from your hard disk vendor. If you select "Auto", the BIOS will auto-detect the HDD & CD-ROM drive at the POST stage and show the IDE for the HDD & CD-ROM drive. If a hard disk has not been installed, select "None".

Access Mode

For hard drives larger than 528MB, you would typically select the LBA type. Certain operating systems require that you select Normal or Large. Please check your operating system's manual or Help desk on which one to select.

Capacity

Displays the approximate capacity of the disk drive. Usually the size is slightly greater than the size of a formatted disk given by a disk checking program.

Cylinder

This field displays the number of cylinders.

Head

This field displays the number of read/write heads.

Precomp

This field displays the number of cylinders at which to change the write timing.

Landing Zone

This field displays the number of cylinders specified as the landing zone for the read/write heads.

Sector

This field displays the number sectors per track.

3.1.1.4 Drive A and Drive B

These fields identify the types of floppy disk drives installed.

<i>None</i>	No floppy drive is installed
<i>360K, 5.25 in.</i>	5-1/4 in. standard drive; 360KB capacity
<i>1.2M, 5.25 in.</i>	5-1/4 in. AT-type high-density drive; 1.2MB capacity
<i>720K, 3.5 in.</i>	3-1/2 in. double-sided drive; 720KB capacity
<i>1.44M, 3.5 in.</i>	3-1/2 in. double-sided drive; 1.44MB capacity
<i>2.88M, 3.5 in.</i>	3-1/2 in. double-sided drive; 2.88MB capacity

3.1.1.5 Video

This field selects the type of video adapter used for the primary system monitor. Although secondary monitors are supported, you do not have to select the type. The default setting is EGA/VGA.

<i>EGA/VGA</i>	Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SVGA and PGA monitor adapters.
<i>CGA 40</i>	Color Graphics Adapter. Power up in 40-column mode.

- CGA 80* Color Graphics Adapter. Power up in 80-column mode.
- Mono* Monochrome adapter. Includes high resolution monochrome adapters.

3.1.1.6 Halt On

This field determines whether the system will stop if an error is detected during power up. The default setting is All Errors.

- No Errors* The system boot will not stop for any errors detected.
- All Errors* The system boot will stop whenever the BIOS detects a non-fatal error.
- All, But Keyboard* The system boot will not stop for a keyboard error; it will stop for all other errors.
- All, But Diskette* The system boot will not stop for a disk error; it will stop for all other errors.
- All, But Disk/Key* The system boot will not stop for a disk or keyboard error; it will stop for all other errors.

3.1.1.7 Base Memory

Displays the amount of base (or conventional) memory installed in the system. The value of the base memory is typically 512K for systems with 512K memory installed on the motherboard or 640K for systems with 640K or more memory installed on the motherboard.

3.1.1.8 Extended Memory

Displays the amount of extended memory detected during boot-up.

3.1.1.9 Total Memory

Displays the total memory available in the system.

3.1.2 Advanced BIOS Features

The Advanced BIOS Features allows you to configure your system for basic operation. Some entries are defaults required by the system board, while others, if enabled, will improve the performance of your system or let you set some features according to your preference.

Phoenix - AwardBIOS CMOS Setup Utility
Advanced BIOS Features

		Item Help
Virus Warning	Disabled	Menu Level Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep
CPU L1 Cache	Enabled	
CPU L2 Cache	Enabled	
CPU L2 Cache ECC Checking	Enabled	
Quick Power On Self Test	Fast	
RAID or SCSI Card Boot	RAID	
First Boot Device	Floppy	
Second Boot Device	CDROM	
Third Boot Device	HDD-0	
Boot Other Device	Enabled	
Swap Floppy Drive	Disabled	
Boot Up Floppy Seek	Enabled	
Boot Up NumLock Status	On	
Typeomatic Rate Setting	Disabled	
X Typeomatic Rate (Chars/Sec)	6	
X Typeomatic Delay (Msec)	250	
Security Option	Setup	
APIC Mode	Disabled	
X MPS Version Control for OS	1.4	
OS Select For DRAM > 64MB	Non-OS2	
HDD S.M.A.R.T. Capability	Disabled	
Small Logo(EPA) Show	Enabled	
ESC:Exit F1:General Help F7:Optimized Defaults		

The screen above list all the fields available in the Advanced BIOS Features submenu, for ease of reference in this manual. In the actual CMOS setup, you have to use the scroll bar to view the fields. The settings on the screen are for reference only. Your version may not be identical to this one.

3.1.2.1 Virus Warning

This field protects the boot sector and partition table of your hard disk drive. When this field is enabled, the Award BIOS will monitor the boot sector and partition table of the hard disk drive. If an attempt is made to write to the boot sector or partition table of the hard disk drive, the BIOS will halt the system and an error message will appear.

After seeing the error message, if necessary, you will be able to run an anti-virus program to locate and remove the problem before any damage is done.

Many disk diagnostic programs which attempt to access the boot sector table will cause the warning message to appear. If you are running such a program, we recommend that you first disable

this field. Also, disable this field if you are installing or running certain operating systems like Windows® 95/98/2000/ME/XP or the operating system may not install nor work.

3.1.2.2 CPU L1 Cache and CPU L2 Cache

These fields, when enabled, will speed up the memory access.

3.1.2.3 CPU L2 Cache ECC Checking

The processors supported by the system board come with built-in Level 2 cache. By default, ECC is enabled to check the Level 2 cache. If you are not using this function, set this field to Disabled.

3.1.2.4 Quick Power On Self Test

This field speeds up Power On Self Test (POST) after you power on the system. When Enabled, the BIOS will shorten or skip some check items during POST.

3.1.2.5 RAID or SCSI Card Boot

If you want the system to boot from a drive that is connected to the RAID IDE connector or SCSI add-in card, you must first select "SCSI" in the "First Boot Device" field.

If there are drives connected to both the RAID IDE connector and SCSI add-in card, you must select which drive you want to boot.

- | | |
|-------------|---|
| <i>RAID</i> | The drive is connected to the RAID IDE connector that is on the system board. |
| <i>SCSI</i> | The drive is connected to the SCSI add-in card that is installed in a PCI slot. |

If the drive is connected to either one of them only, you don't need to particularly select an option in this field because the system will automatically detect for the existing drive.

3.1.2.6 First Boot Device, Second Boot Device, Third Boot Device and Boot Other Device

Select the drive to boot first, second and third in the “First Boot Device” “Second Boot Device” and “Third Boot Device” fields respectively. The BIOS will boot the operating system according to the sequence of the drive selected. Set “Boot Other Device” to Enabled if you wish to boot from another device.

3.1.2.7 Swap Floppy Drive

When this field is enabled and the system is booting from the floppy drive, the system will boot from drive B instead of drive A. When this option is disabled and the system is booting from the floppy drive, the system will boot from drive A. You must have two floppy drives to use this function.

3.1.2.8 Boot Up Floppy Seek

When enabled, the BIOS will check whether the floppy disk drive installed is 40 or 80 tracks. Note that the BIOS cannot distinguish between 720K, 1.2M, 1.44M and 2.88M drive types as they are all 80 tracks. When disabled, the BIOS will not search for the type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360KB.

3.1.2.9 Boot Up NumLock Status

This allows you to determine the default state of the numeric keypad. By default, the system boots up with NumLock on wherein the function of the numeric keypad is the number keys. When set to Off, the function of the numeric keypad is the arrow keys.

3.1.2.10 Typematic Rate Setting

Disabled Continually holding down a key on your keyboard will cause the BIOS to report that the key is down.

Enabled The BIOS will not only report that the key is down, but will first wait for a moment, and, if the key is still down, it will begin to report that the key has been depressed repeatedly. For example, you would use such a feature to accelerate cursor movements with the arrow keys. You can then select the typematic rate and typematic delay in the "Typematic Rate (Chars/Sec)" and "Typematic Delay (Msec)" fields below.

3.1.2.11 Typematic Rate (Chars/Sec)

This field allows you to select the rate at which the keys are accelerated.

3.1.2.12 Typematic Delay (Msec)

This field allows you to select the delay between when the key was first depressed and when the acceleration begins.

3.1.2.13 Security Option

This field determines when the system will prompt for the password - everytime the system boots or only when you enter the BIOS setup. Set the password in the Set Supervisor/User Password submenu.

System The system will not boot and access to Setup will be denied unless the correct password is entered at the prompt.

Setup The system will boot, but access to Setup will be denied unless the correct password is entered at the prompt.

3.1.2.14 APIC Mode

The default setting is "Disabled". Set this field to "Enabled" to configure the next field - MPS Version Control For OS.

3.1.2.15 MPS Version Control for OS

This field is used to select the MPS version used by the system.

3.1.2.16 OS Select for DRAM > 64MB

This field allows you to access the memory that is over 64MB in OS/2.

3.1.2.17 HDD S.M.A.R.T. Capability

The system board supports SMART (Self-Monitoring, Analysis and Reporting Technology) hard drives. SMART is a reliability prediction technology for ATA/IDE and SCSI drives. The drive will provide sufficient notice to the system or user to backup data prior to the drive's failure. The default is Disabled. If you are using hard drives that support S.M.A.R.T., set this field to Enabled. SMART is supported in ATA/33 or later hard drives.

3.1.2.18 Small Logo(EPA) Show

Enabled The EPA logo will appear during system boot-up.

Disabled The EPA logo will not appear during system boot-up.

3.1.3.1 DRAM Clock/Drive Control

Move the cursor to this field and press <Enter>. The following screen will appear.

Phoenix - AwardBIOS CMOS Setup Utility		Item Help
DRAM Clock/Drive Control		Menu Level
DRAM Timing	By SPD	
X DRAM CAS Latency	2.5	
X Bank Interleave	Disabled	
X Precharge to Active (Trp)	5T	
X Tras Non-DDR400/DDR400 (Tras)	7T/10T	
X Active to CMD (Trcd)	5T	
DRAM Burst Length	4	
DRAM Queue Depth	4 level	
DRAM Drive Strength	Auto	
X DRAM Drive Value	04	
DDR DRAM Command Rate	2T Command	
Write Recovery Time	3T	
tWTR for DDR400 ONLY	3T	

↑↓→← Move	Enter:Select	+/-/PU/PD:Value	F10:Save	ESC:Exit	F1:General Help
	F5:Previous Values	F6:Fail-Safe Defaults		F7:Optimized Defaults	

The settings on the screen are for reference only. Your version may not be identical to this one.

DRAM Timing

This field is used to select the timing of the DRAM.

By SPD

The EEPROM on a DIMM has SPD (Serial Presence Detect) data structure that stores information about the module such as the memory type, memory size, memory speed, etc. When this option is selected, the system will run according to the information in the EEPROM. This option is the default setting because it provides the most stable condition for the system. The "DRAM CAS Latency" to "Active to CMD (Trcd)" fields will show the default settings by SPD.

Performance

If you want the system to run at a speed faster than the one "by SPD", select this option. However, compatibility problems may occur with some DRAMs. If you encounter any problems, please set this field to "By SPD" or "Manual".

Manual If you want better performance for your system other than the one “by SPD” or “Performance”, select “Manual”. Then select the best option in the “DRAM CAS Latency” to “Active to CMD (Trcd)” fields.

DRAM CAS Latency

This field is used to select the clock cycle of the SDRAM CAS latency time. The option selected specifies the time before SDRAM starts a read command after receiving it.

Bank Interleave

The options are Enabled and Disabled.

Precharge to Active (Trp)

The options are 6T/8T, 7T/10T, 5T/6T and 8T/12T.

Tras Non-DDR400/DDR400 (Tras)

The options are 5T and 6T.

Active to CMD (Trcd)

The options are 2T, 3T, 4T and 5T.

DRAM Burst Length

The options are 4 and 8.

DRAM Queue Depth

Leave this field in its default setting.

DRAM Drive Strength

The options are Auto and Manual. When this field is set to Manual, you must select a value in the “DRAM Drive Value” field.

DRAM Drive Value

This field is used to select a value for the DRAM drive strength.

AGP Mode

This field allows you to select the AGP mode (data transfer rate) that your AGP card supports to enable enhanced graphics performance with high bandwidth speeds.

1X mode provides data transfer rate of up to 264MB/sec.

2X mode provides data transfer rate of up to 528MB/sec.

4X mode provides data transfer rate of up to 1066MB/sec.

AGP Driving Control

Set this field to Manual only if there are compatibility problems with some AGP cards. When set to Manual, select a value in the "AGP Driving Value" field.

AGP Driving Value

This field is used to select a value for the AGP Driving control. We recommend that you leave this field in its default setting.

AGP Fast Write

Select Enabled to support the AGP Fast Write function.

AGP Master 1 WS Write

Set this field to Enabled to add one clock tick to AGP write operations.

AGP Master 1 WS Read

Set this field to Enabled to add one clock tick to AGP read operations.

AGP 3.0 Calibration Cycle

Set this field to Enabled to support the AGP 3.0 calibration cycle operations.

DBI Output for AGP Trans.

This field, when enabled, will provide better stability to the entire system.

3.1.3.4 HALT Command Detect

Select Enabled to support the halt command detection function.

3.1.3.5 System BIOS Cacheable

When this field is enabled, accesses to the system BIOS ROM addressed at F0000H-FFFFFH are cached, provided that the cache controller is enabled. The larger the range of the Cache RAM, the higher the efficiency of the system.

3.1.3.6 Video RAM Cacheable

When enabled, it allows the video RAM to be cacheable thus providing better video performance. If your graphics card does not support this function, leave this field in its default setting - Disabled.

3.1.3.7 I/O Recovery Time

Selecting Enabled will allow additional time for I/O devices to respond to the system. However, if your I/O devices are capable of fast I/O, select Disabled to speed up system operation.

OnChip Primary IDE and OnChip Secondary IDE

These fields allow you to enable or disable the primary and secondary IDE controller. The default is Enabled. Select Disabled if you want to add a different hard drive controller.

IDE Prefetch Mode

This allows data and addresses to be stored in the internal buffer of the chip, thus reducing access time. Enable this field to achieve better performance.

IDE Primary Master/Slave PIO and IDE Secondary Master/Slave PIO

PIO means Programmed Input/Output. Rather than have the BIOS issue a series of commands to effect a transfer to or from the disk drive, PIO allows the BIOS to tell the controller what it wants and then let the controller and the CPU perform the complete task by themselves. Your system supports five modes, 0 (default) to 4, which primarily differ in timing. When Auto is selected, the BIOS will select the best available mode after checking your drive.

- Auto* The BIOS will automatically set the system according to your hard disk drive's timing.
- Mode 0-4* You can select a mode that matches your hard disk drive's timing. Caution: Do not use the wrong setting or you will have drive errors.

IDE Primary Master/Slave UDMA and IDE Secondary Master/Slave UDMA

These fields allow you to set the Ultra DMA in use. When Auto is selected, the BIOS will select the best available option after checking your hard drive or CD-ROM.

- Auto* The BIOS will automatically detect the settings for you.
- Disabled* The BIOS will not detect these categories.

3.1.4.2 VIA OnChip PCI Device

Move the cursor to this field and press <Enter>. The following screen will appear.

Phoenix - AwardBIOS CMOS Setup Utility		Item Help
VIA OnChip PCI Device		Menu Level
VIA-3058 AC97 Audio	Auto	
↑↓→← Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

The settings on the screen are for reference only. Your version may not be identical to this one.

VIA-3058 AC97 Audio

- Auto* Select this option when using the onboard audio codec.
- Disabled* Select this option when using a PCI sound card.

UART2 Mode Select

The system board supports IrDA function for wireless connectivity between your computer and peripheral devices. You may not use IrDA and the COM 2 serial port at the same time. If you are using the COM 2 serial port, make sure this field is set to Normal.

To use the IrDA function, follow the steps below.

1. Connect your IrDA cable to connector J1 on the system board.
2. Set the "UART2 Mode Select" field to the type of IrDA standard supported by your IrDA peripheral/device (IrDA or ASKIR). For better transmission of data, your IrDA peripheral device must be within a 30° angle and within a distance of 1 meter.
3. Set the "RxD TxD Active" and "IR Transmission Delay" fields appropriately.

RxD, TxD Active

The options are Hi, Lo; Lo, Hi; Lo, Lo; and Hi, Hi.

IR Transmission Delay

If this option is Enabled, transmission of data will be slower. This is recommended when you encounter transmission problem with your device.

Onboard Parallel Port

- 378/IRQ7, 3BC/IRQ7, 278/IRQ5* Selects the I/O address and IRQ for the onboard parallel port.
- Disabled* Disables the onboard parallel port.

Parallel Port Mode

The options are Normal, SPP, EPP, ECP and ECP+EPP. These apply to standard specifications and will depend on the type and speed of your device. Refer to your peripheral's manual for the best option.

SPP

Allows normal speed operation but in one direction only.

“ECP (Extended Capabilities Port)”

Allows parallel port to operate in bidirectional mode and at a speed faster than the normal mode's data transfer rate.

“EPP (Enhanced Parallel Port)”

Allows bidirectional parallel port operation at maximum speed.

EPP Mode Select

This is used to select the EPP mode.

ECP Mode Use DMA

This is used to select the DMA channel used for the parallel port.

Game Port Address

This field is used to select the game port's address.

Midi Port Address

This field is used to select the MIDI port's address. If you have selected the MIDI port's address, you may select its IRQ in the “Midi Port IRQ” field.

Midi Port IRQ

This field is used to select the MIDI port's IRQ.

3.1.4.4 Init Display First

This field is used to select whether to initialize AGP or PCI first when the system boots.

- AGP* When the system boots, it will first initialize AGP.
- PCI Slot* When the system boots, it will first initialize PCI.

3.1.4.5 OnChip USB Controller

This field is used to select the USB ports you want Enabled.

3.1.4.6 USB Keyboard Support

By default, USB Keyboard Support is Disabled. However, if you are using a USB keyboard under DOS, make sure to enable this function.

3.1.4.7 IDE HDD Block Mode

- Enabled* The IDE HDD uses the block mode. The system BIOS will check the hard disk drive for the maximum block size the system can transfer. The block size will depend on the type of hard disk drive.
- Disabled* The IDE HDD uses the standard mode.

3.1.5.3 Power Management Option

This field allows you to select the type (or degree) of power saving by changing the length of idle time that elapses before the "Suspend Mode" field is activated.

- Min Saving* Minimum power saving time for Suspend mode = 1 hr.
- Max Saving* Maximum power saving time for Suspend mode = 1 min.
- User Define* Allows you to set the power saving time in the "Suspend Mode" field.

3.1.5.4 HDD Power Down

After the set time of system inactivity, the hard disk drive will be powered down while all other devices remain active.

3.1.5.5 Suspend Mode

This is selectable only when the Power Management field is set to User Define. When the system enters the Suspend mode according to the power saving time selected, the CPU and onboard peripherals will be shut off.

3.1.5.6 Video Off Option

- Always On* The system BIOS will never turn off the screen.
- Suspend -> Off* The screen is off when the system is in the Suspend mode.
- All Modes -> Off* The screen is off when the system is in the Doze, Standby or Suspend mode.

3.1.5.7 Video Off Method

This determines the manner in which the monitor is blanked.

- V/H SYNC + Blank* This will cause the system to turn off the vertical and horizontal synchronization ports and write blanks to the video buffer.
- Blank Screen* This only writes blanks to the video buffer.
- DPMS Support* Initializes display power management signaling. Select this if your video board supports it.

3.1.5.8 MODEM Use IRQ

This field is used to set an IRQ channel for the modem installed in your system.

3.1.5.9 Soft-Off by PWRBTN

This field allows you to select the method of powering off your system.

Delay 4 Sec Regardless of whether the Power Management field is enabled or disabled, if the power button is pushed and released in less than 4 sec, the system enters the Suspend mode. The purpose of this function is to prevent the system from powering off in case you accidentally “hit” or pushed the power button. Push and release again in less than 4 sec to restore. Pushing the power button for more than 4 seconds will power off the system.

Instant-Off Pressing and then releasing the power button at once will immediately power off your system.

3.1.5.10 Run VGABIOS if S3 Resume

When this field is set to Auto, the system will initialize the VGA BIOS when it wakes up from the S3 state. This can be configured only if the “ACPI Suspend Type” field is set to “S3(STR)”.

3.1.5.11 PWR Lost Resume State

Keep Off When power returns after an AC power failure, the system’s power is off. You must press the Power button to power-on the system.

Turn On When power returns after an AC power failure, the system will automatically power-on.

Last State When power returns after an AC power failure, the system will return to the state where you left off before power failure occurs. If the system’s power is off when AC power failure occurs, it will remain off when power returns. If the system’s power is on when AC power failure occurs, the system will power-on when power returns.

PS2KB Wakeup from S3/S4/S5

Any Key Use any keyboard keys to wake up the system from the S3/S4/S5 state.

Disable Disables the keyboard wakeup function.

Ctrl+F1 to Ctrl+F12 Use any of these function keys to wakeup the system from the S3/S4/S5 state.

PS2MS Wakeup from S3/S4/S5

This field, when enabled, allows you to use the PS/2 mouse to wake up the system from the S3/S4/S5 state.

USB Resume from S3

This field, when enabled, allows you to use a USB 2.0 or USB 1.1 device to wake up the system.

VGA

When set to On, the system will respond and wake up to any VGA activity.

LPT & COM

Select the port you would like the system to respond and wake up when an event occurs on that port.

HDD & FDD

When set to On, the system will respond and wake up to any hard drive or floppy drive activity.

PCI Master

When set to On, the system will respond and wake up to any PCI or bus master activity.

PowerOn by PCI Card

This field should be set to Enabled only if your PCI card such as LAN card or modem card uses the PCI PME (Power Management Event) signal to remotely wake up the PC. Refer to the card's documentation for more information.

Resume On LAN/Ring

This field supports two functions.

- When enabled, the system will power-on to respond to calls coming through an external modem.
- When enabled, the LAN card in the system will allow the network to power-on a Soft Power Down (Soft-Off) PC. However, if your system is in the Suspend mode, you can wake up the system only through an IRQ or DMA interrupt. Your LAN card must support the remote wake up function. Refer to "Wake-On-LAN Connector" in chapter 2 for more information.

Resume by Alarm

- Enabled* When Enabled, you can set the date and time you would like the Soft Power Down (Soft-Off) PC to power-on in the "Date (of Month)" and "Resume Time (hh:mm:ss)" fields. However, if the system is being accessed by incoming calls or the network prior to the date and time set in these fields, the system will give priority to the incoming calls or network.
- Disabled* Disables the automatic power-on function. (default)

Date (of Month)

- 0* The system will power-on everyday according to the time set in the "Resume Time (hh:mm:ss)" field.
- 1-31* Select a date you would like the system to power-on. The system will power-on on the set date, and time set in the "Resume Time (hh:mm:ss)" field.

Resume Time (hh:mm:ss)

This is used to set the time you would like the system to power-on. If you want the system to power-on everyday as set in the "Date (of Month)" field, the time set in this field must be later than the time of the RTC set in the Standard CMOS Features submenu.

3.1.6.3 IRQ Resources

Move the cursor to this field and press <Enter>. The “IRQ-3” to “IRQ-15” fields will appear. Set each system interrupt to either Legacy ISA or PCI/ISA PnP.

PCI/ISA PnP For devices compliant with the PCI bus architecture.

Legacy ISA For devices compliant with the original PC AT bus specification.

3.1.6.4 PCI/VGA Palette Snoop

This field determines whether the MPEG ISA/VESA VGA cards can work with PCI/VGA or not. The default value is Disabled.

Enabled MPEG ISA/VESA VGA cards work with PCI/VGA.

Disabled MPEG ISA/VESA VGA cards does not work with PCI/VGA.

3.1.6.5 PCI IRQ Assignment

By default, an IRQ is automatically assigned to the PCI devices that are installed in the PCI slots.

If a PCI device has not been assigned an IRQ, you must manually assign an IRQ for the device. During system boot-up, you will see “NA” for the device that does not have an IRQ assigned.

screen instructing you to press in order to enter the main menu of the BIOS. If you did not press , the system will automatically power-off after the 5 warning beeps. You may either:

1. Press then enter a new CPU temperature limit;
or
2. Allow the system to power-off after the 5 warning beeps then check whether the heatsink and fan are mounted properly onto the CPU because high CPU temperature may be due to incorrect fan/heatsink installation. Now restart the system. If the same problem persist, it may be that the CPU fan is damaged or it is not rotating properly. Try replacing it with a new fan. If it is due to other contributing factors that resulted to high CPU temperature, you may need to set a lower CPU temperature limit.

CPU Temperature References

When you power-up a system, the BIOS message appears on the screen and the memory count begins. After the memory test, the CPU temperature range is normally between 32°C and 35°C. When you run an operating system then tried to reboot the system, the CPU temperature range at this time is between 40°C and 45°C. These temperature references serve as a guide when you select the CPU temperature limit.

3.1.7.4 Current System Temp., Current CPU Temperature, Current CPU Fan Speed and Current Chassis Fan Speed

These fields show the internal temperature of the system, current temperature of the CPU, and the current fan speed of the CPU and chassis fans in RPM (Revolutions Per Minute).

3.1.7.5 +3.3V, +5V, +12V, VBAT(V) and 5VSB(V)

These fields show the output voltage of the power supply.



Note:

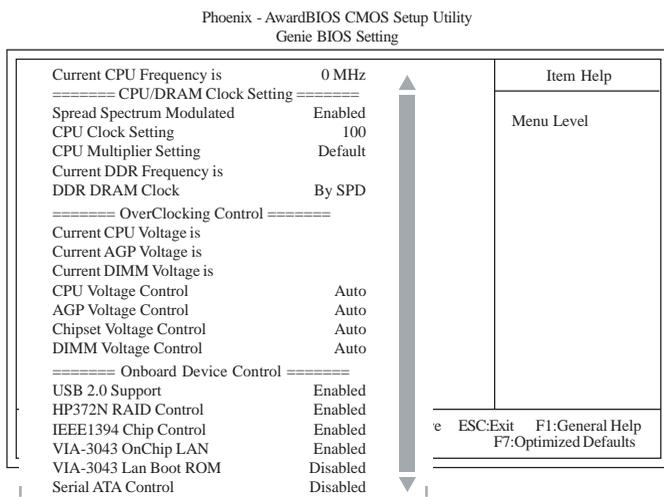
The onboard hardware monitor function is capable of detecting "system health" conditions but if you want a warning message to pop-up or a warning alarm to sound when an abnormal condition occurs, you must install the Winbond Hardware Monitor utility. This utility is included in the CD that came with the

system board. Refer to the Winbond Hardware Monitor section in chapter 4 for more information.

3.1.7.6 Shutdown Temperature

You can prevent the system from overheating by selecting a temperature in this field. If the system detected that its temperature exceeded the one set in this field, it will automatically shutdown. This function will work only when you enable this function in the Winbond Hardware Monitor utility.

3.1.8 Genie BIOS Setting



The settings on the screen are for reference only. Your version may not be identical to this one.

3.1.8.1 Current CPU Frequency is

This field will show the current CPU frequency.

3.1.8.2 Spread Spectrum Modulated

Leave this field in its default setting. Do not alter this setting unless advised by an engineer or technician.

3.1.8.3 CPU Clock Setting

This field provides several options for selecting the external system bus clock of the processor. The available options allow you to adjust the processor's bus clock by 1MHz increment.



Important:

Selecting an external bus clock other than the default setting may result to the processor's or system's instability and are not guaranteed to provide better system performance.

3.1.8.4 CPU Multiplier Setting

This field is used to select the CPU's frequency ratio.

3.1.8.5 Current DDR Frequency is

This field will show the current DDR frequency.

3.1.8.6 DDR DRAM Clock

This field is used to select the DRAM clock.

3.1.8.7 Current CPU Voltage is

This field will show the current CPU voltage.

3.1.8.8 Current AGP Voltage is

This field will show the current AGP voltage.

3.1.8.9 Current DIMM Voltage is

This field will show the current DIMM voltage.

3.1.8.10 CPU Voltage Control

This field allows you to manually adjust to a higher core voltage that is supplied to the CPU. If you want to use the CPU's default core voltage, leave this field in its default setting. The CPU's Vcore will be generated according to the CPU VID configuration.



Important:

Although this function is supported, we do not recommend that you use a higher voltage because unstable current may be supplied to the system board causing damage.

3.1.8.11 AGP Voltage Control

This field allows you to manually select higher voltage supplied to the AGP. If you want to use the default voltage, leave this field in its default setting.

**Important:**

Although this function is supported, we do not recommend that you use a higher voltage because unstable current

3.1.8.12 Chipset Voltage Control

This field allows you to manually select higher voltage supplied to the chipset. If you want to use the default voltage, leave this field in its default setting.

**Important:**

Although this function is supported, we do not recommend that you use a higher voltage because unstable current may be supplied to the system board causing damage.

3.1.8.13 DIMM Voltage Control

This field allows you to manually select higher voltage supplied to the DRAM. If you want to use the DRAM's default voltage, leave this field in its default setting.

**Important:**

Although this function is supported, we do not recommend that you use a higher voltage because unstable current may be supplied to the system board causing damage.

3.1.8.14 USB 2.0 Support

If you are using USB 2.0, this field must be set to Enabled.

3.1.8.15 HP372N RAID Control

This field is used to enable or disable the onboard RAID function.

3.1.8.16 IEEE1394 Chip Control

This field is used to enable or disable the onboard IEEE1394 function.

3.1.8.17 VIA-3043 OnChip LAN

This field is used to enable or disable the onboard LAN.

3.1.8.18 VIA-3043 Lan Boot ROM

Enable this field if you wish to use the boot ROM (instead of a disk drive) to boot-up the system and access the local area network directly.

If you wish to change the boot ROM's settings, type the <Shift> and <F10> keys simultaneously when prompted during boot-up. Take note: you will be able to access the boot ROM's program (by typing <Shift> + <F10>) only when this field is enabled.

3.1.8.19 Serial ATA Control

This field is used to enable or disable the onboard serial ATA function.

3.1.9 Load Fail-Safe Defaults

The “Load Fail-Safe Defaults” option loads the troubleshooting default values permanently stored in the ROM chips. These settings are not optimal and turn off all high performance features. You should use these values only if you have hardware problems. Highlight this option in the main menu and press <Enter>. The message below will appear.

Load Fail-Safe Defaults (Y/N)? N

If you want to proceed, type <Y> and press <Enter>. The default settings will be loaded.

3.1.10 Load Optimized Defaults

The “Load Optimized Defaults” option loads optimized settings from the BIOS ROM. Use the default values as standard values for your system. Highlight this option in the main menu and press <Enter>. The message below will appear.

Load Optimized Defaults (Y/N)? N

Type <Y> and press <Enter> to load the Setup default values.

3.1.11 Set Supervisor Password

If you want to protect your system and setup from unauthorized entry, set a supervisor's password with the "System" option selected in the Advanced BIOS Features. If you want to protect access to setup only, but not your system, set a supervisor's password with the "Setup" option selected in the Advanced BIOS Features. You will not be prompted for a password when you cold boot the system.

Use the arrow keys to highlight "Set Supervisor Password" and press <Enter>. The message below will appear.

Enter Password:

Type in the password. You are limited to eight characters. When done, the message below will appear:

Confirm Password:

You are asked to verify the password. Type in exactly the same password. If you type in a wrong password, you will be prompted to enter the correct password again. To delete or disable the password function, highlight "Set Supervisor Password" and press <Enter>, instead of typing in a new password. Press the <Esc> key to return to the main menu.

3.1.12 Set User Password

If you want another user to have access only to your system but not to setup, set a user's password with the "System" option selected in the Advanced BIOS Features. If you want a user to enter a password when trying to access setup, set a user's password with the "Setup" option selected in the Advanced BIOS Features.

Using user's password to enter Setup allows a user to access only "Set User Password" that appears in the main menu screen. Access to all other options is denied. To set, confirm, verify, disable or delete a user's password, follow the procedures described in the section "Set Supervisor Password".

3.1.13 Save & Exit Setup

When all the changes have been made, highlight "Save & Exit Setup" and press <Enter>. The message below will appear:

Save to CMOS and Exit (Y/N)? N

Type "Y" and press <Enter>. The modifications you have made will be written into the CMOS memory, and the system will reboot. You will once again see the initial diagnostics on the screen. If you wish to make additional changes to the setup, press <Ctrl> <Alt> <Esc> simultaneously or after memory testing is done.

3.1.14 Exit Without Saving

When you do not want to save the changes you have made, highlight "Exit Without Saving" and press <Enter>. The message below will appear:

Quit Without Saving (Y/N)? N

Type "Y" and press <Enter>. The system will reboot and you will once again see the initial diagnostics on the screen. If you wish to make any changes to the setup, press <Ctrl> <Alt> <Esc> simultaneously or after memory testing is done.

3.2 HighPoint BIOS Configuration Utility

The HighPoint BIOS Configuration Utility is used to configure and manage RAID on drives connected to the RAID IDE connector.



Important:

Before you run the HighPoint BIOS Configuration Utility, make sure the “HP372N RAID Control” field in the Genie BIOS Setting submenu of the Award BIOS is set to Enabled.

After you power up the system and all hard disk drives have been detected, the boot ROM message screen will appear as shown below.

```
HighPoint Technologies, Inc. HP1370/372 BIOS Setting Utility v2.3
(c) 1999-2001. HighPoint Technologies, Inc. All rights reserved
Press <Ctrl><H> to run BIOS Setting Utility
Scan Devices. Please wait ...
```

Press the <Ctrl> and <H> keys simultaneously. The BIOS Configuration Utility screen will appear.

```
HighPoint Technologies, Inc. HP372N/372 BIOS Setting Utility
Main Menu Help
1. Create Array
2. Delete Array
3. Create/Delete Spare
4. Select Best Disk
Create a RAID array with
the hard disks attached to
HPT372's controller.
F1: View Array Status
F: Move to next item
Enter: Confirm the selection
ESC: Exit from the utility

Channel Status
Channel Drive Name Array Name Mode Size(GB) Status
Primary Master: ST320415S ATA/133 20.04 HDD1
Primary Slave: ST375320S ATA/66 14.25 HDD2
Secondary Master: WDC WD3600CS-00090H ATA/133 36.04 HDD3
Secondary Slave: No Drive

(c) 1999-2001. HighPoint Technologies, Inc.
All rights reserved
www.highpoint-tech.com
```



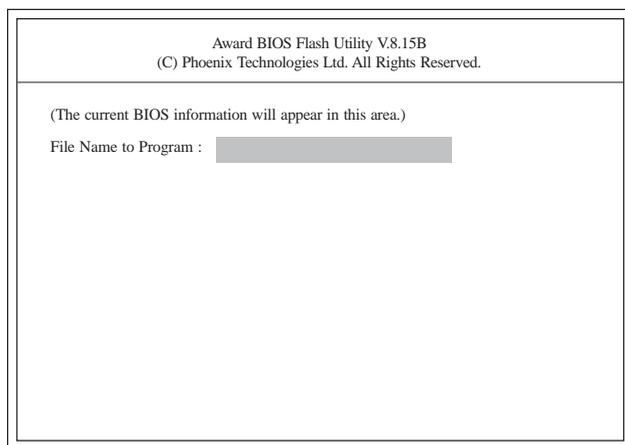
Note:

Refer to the “BIOS Configuration Utility” section in the HighPoint RAID User’s Manual for information on using the utility. The manual is included in the CD.

3.3 Updating the BIOS

To update the BIOS, you will need the new BIOS file and a flash utility, AWDFLASH.EXE. You can download them from DFI's web site or contact technical support or your sales representative.

1. Save the new BIOS file along with the flash utility AWDFLASH.EXE to a floppy disk.
2. Reboot the system and enter the Award BIOS Setup Utility to set the first boot drive to "Floppy".
3. Save the setting and reboot the system.
4. After the system booted from the floppy disk, execute the flash utility by typing AWDFLASH.EXE. The following screen will appear:



5. Type the new BIOS file name onto the gray area that is next to "File Name to Program" then press <Enter>.

- The following will appear.

Do You Want to Save BIOS (Y/N)

This question refers to the current existing BIOS in your system. We recommend that you save the current BIOS and its flash utility; just in case you need to reinstall the BIOS. To save the current BIOS, press <Y> then enter the file name of the current BIOS. Otherwise, press <N>.

- The following will then appear.

Press "Y" to Program or "N" to Exit

- Press <Y> to flash the new BIOS.

Chapter 4 - Supported Software

4.1 Desktop Management Interface (DMI)

The mainboard comes with a DMI built into the BIOS. DMI, along with the appropriately networked software, is designed to make inventory, maintenance and troubleshooting of computer systems easier. With DMI, a network administrator or MIS engineer can remotely access some information about a particular computer system without physically going to it. Quite often a service call may be unnecessary as the problem can be solved remotely.

The DMI utility in the BIOS automatically records various information about your system configuration. Information about the type and speed of CPU, type and amount of memory for each memory slot, BIOS revision level, types of add-in PCI boards and components, certain revision numbers of hardware installed, etc. are automatically detected and stored in the DMI pool, which is a part of the mainboard's Plug and Play BIOS. Additional information, such as ISA based peripherals, which may not be automatically detected, can be manually recorded in the DMI pool by using the Add DMI menu. The DMI pool data is then verified or updated whenever the system hardware or setup is altered.

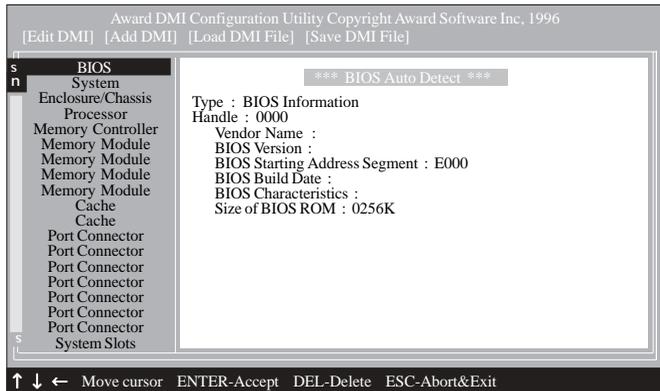
4.1.1 Running the DMI Utility

To run the DMI utility, type: DMICFG.EXE. You can download this utility from <ftp://ftp.dfusa.com> - /utilities/DMI directory.

The DMI utility must run in real mode with at least 180K of base memory. Memory managers like HIMEM.SYS (required by Windows) must not be installed. You may do this by using one of the 3 methods listed below.

1. Boot up from a system diskette without the AUTOEXEC.BAT and CONFIG.SYS files,
2. "REM" HIMEM.SYS in the CONFIG.SYS, or
3. Press <F5> during bootup to bypass your AUTOEXEC.BAT and CONFIG.SYS files.

4.1.2 Using the DMI Utility



The four menus located on top of the DMI Configuration Utility screen are Edit DMI, Add DMI, Load DMI File and Save DMI File. Use the ← or → (left or right) arrow keys to select a menu from the Menu bar.

On the left side of the screen is a list of the system configuration items. Use the ↑ or ↓ (up or down) arrow keys to select an item.

The commands at the bottom of the screen will allow you to navigate through the various setup menus.

Edit DMI

1. Use the ← or → arrow keys to select the Edit DMI menu.
2. Highlight the item on the left screen that you would like to edit by using the ↑ or ↓ arrow keys, then press <Enter>.
3. The cursor will move to the screen you select allowing you to edit information. The screen will also display the auto-detected information.
4. Press <F10> to update the edited information into the flash ROM.

Add DMI

1. Use the ← or → arrow keys to select the Add DMI menu.
2. Highlight the item on the left screen that you would like to add by using the ↑ or ↓ arrow keys, then press <Enter>.
3. The cursor will move to the screen you select allowing you to enter information about the added item.
4. Press <F10> to save information into the flash ROM.

To view information about the added items, go to the Edit DMI menu.

Load DMI File

1. Use the ← or → arrow keys to select the Load DMI File menu.
2. The following message will appear.

Press [Enter] to select DMI file for load

Press <Enter>.

3. The DMI files will appear on the screen. Select the file you would like to load and press <Enter>.
4. The following message will appear.

Do you want to execute? (Y/N)

Type <Y>. All previous DMI structures will be destroyed and the new file will be saved into the flash ROM.

Save DMI File

1. Use the ← or → arrow keys to select the Save DMI File menu.
2. The following message will appear.

Press [Enter] to select DMI file for save

Press <Enter>.

3. Enter the directory and filename under which you would like the DMI file saved.

4.2 Drivers, Utilities and Software Applications

The CD that came with the system board contains drivers, utilities and software applications required to enhance the performance of the system board.

Insert the CD into a CD-ROM drive. The autorun screen (Main Board Utility CD) will appear. If after inserting the CD, "Autorun" did not automatically start (which is, the Main Board Utility CD screen did not appear), please go directly to the root directory of the CD and double-click "Setup".



4.2.1 VIA® Service Pack

The VIA® Service Pack contains the following drivers.

- VIA ATAPI Vendor Support Driver
- AGP VxD Driver
- IRQ Routing Miniport Driver
- VIA INF Driver

To install VIA Service Pack, please follow the steps below.

1. On the left side of the autorun screen, click the “CHIPSET” icon.
2. Click “VIA Service Pack” on the main menu. The following screen will appear.



3. Click “Next”. Please read the “VIA Service Pack Readme” carefully before proceeding to step 3.
4. Follow the prompts on the screen to complete the installation.
5. Reboot the system for the drivers to take effect.

VIA® Service Pack Installation Notes

“AGP VxD Driver” and “VIA INF Driver” in the “VIA Service Pack” are supported in Windows® 95, Windows® 98, Windows® 98 SE, Windows® ME and Windows® 2000.

You must first install VIA® Service Pack prior to installing any other drivers. However, this may not be the case for some AGP cards. Please read carefully the following information.



Important:

The VGA driver that came with some AGP cards is already bundled with the AGP VxD driver. Since the version of the bundled VxD driver may be older than the one provided in the CD, installing the bundled VxD driver may cause problems. If you are using this type of card, we recommend that you install first the AGP card's VGA driver before installing the VIA Service Pack.

4.2.2 Audio Drivers

The audio drivers are supported in the following operating systems: Windows® 98, Windows® 98 SE, Windows® ME, Windows NT® 4.0, Windows® 2000 and Windows® XP.

To install the driver, please follow the steps below.

1. On the left side of the autorun screen, click the "AUDIO" icon.
2. Click "Audio Drivers" on the main menu. The following screen will appear. Click "Install Device Driver".



- The following screen will appear.



- Follow the prompts on the screen to complete installation.
- Reboot the system for the driver to take effect.



Note:

The 3D Audio Configuration software, which is an audio panel for setting basic audio configurations, will at the same time be installed into your system. Refer to the "3D Audio Configuration" section in this chapter for more information.

4.2.4 LAN Drivers

The LAN drivers for Windows® ME, Windows® 2000 and Windows® XP support "Autorun".

To install the LAN driver, please follow the steps below.

1. On the left side of the autorun screen, click the "NETWORK" icon.
2. Click "LAN Drivers" on the main menu.
3. The driver will automatically be installed.

The LAN drivers for Windows® 98 and Windows® 98 SE does not support "Autorun". Once the system has detected the fast ethernet controller, it will prompt you to install the driver for the operating system you are using. The driver is in the "LANDRV" root directory of the CD. Please refer to README for the exact location of the drivers.

4.2.5 HighPoint RAID Drivers

If the hard drives connected to the RAID IDE connectors will be configured as RAID, you must install the Highpoint RAID drivers.

1. On the left side of the autorun screen, click the "TOOLS" icon.
2. Click "HighPoint RAID Drivers" on the main menu. A "readme" screen which contains the RAID drivers installation instructions will appear.



The installation procedure will lead you to install the driver from a diskette. The diskette is included in the system board package.

To install the RAID drivers:

1. Insert the "HighPoint 372 N RAID Drivers" diskette.
2. Follow the installation instructions shown on the screen.
3. Reboot the system for the driver to take effect.



Note:

Refer to the HighPoint RAID User's Manual for more information about the RAID drivers. The manual is included in the CD.

4.2.6 HighPoint RAID Utility

This utility is used to configure and manage RAID on drives connected to the RAID IDE connectors.

To install the utility, please follow the steps below.

1. On the left side of the autorun screen, click the "TOOLS" icon.
2. Click "HighPoint RAID Utility" on the main menu. The following screen will appear.



3. Follow the installation instructions shown on the screen.
4. Reboot the system for the driver to take effect.



Note:

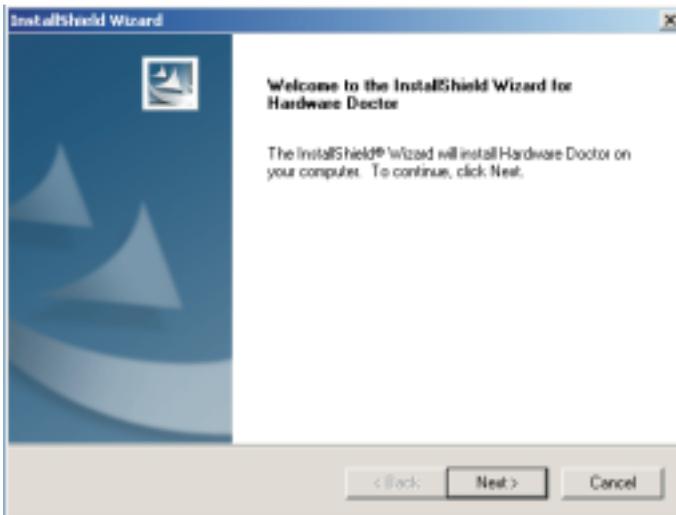
Refer to the HighPoint RAID User's Manual for more information about the utility. The manual is included in the CD.

4.2.7 Winbond Hardware Monitor

The system board comes with the Winbond Hardware Monitor utility contained in the provided CD. This utility is capable of monitoring the system's "health" conditions and allows you to manually set a range (Highest and Lowest Limit) to the items being monitored. If the settings/values are over or under the set range, a warning message will pop-up. The utility can also be configured so that a beeping alarm will sound whenever an error occurs. We recommend that you use the "Default Setting" which is the ideal setting that would keep the system in good working condition.

To install, please follow the steps below.

1. On the left side of the autorun screen, click the "TOOLS" icon.
2. Click "Winbond Hardware Monitor" on the main menu. The following screen will appear.



3. Follow the prompts on the screen to complete installation.
4. Reboot the system for the driver to take effect.

4.2.8 Microsoft DirectX 8.1

To install, please follow the steps below.

1. On the left side of the autorun screen, click the "TOOLS" icon.
2. Click "Microsoft DirectX 8.1" on the main menu. The following screen will appear.



3. Click "Yes" to continue.
4. Follow the prompts on the screen to complete installation.
5. Reboot the system for the driver to take effect.



Note:

If you are using Windows® XP, you do not need to install "Microsoft DirectX 8.1" because it is already supported by the operating system.

4.2.9 McAfee VirusScan Online (English OS only)

The McAfee VirusScan Online is the most reliable and convenient way of protecting your PC from computer viruses. When you install McAfee VirusScan Online, your computer is safe because it automatically scans for viruses and checks for virus updates so that PC protection stays up-to-date.

To install, please follow the steps below.

1. On the left side of the autorun screen, click the "TOOLS" icon.
2. Click "McAfee VirusScan Online" on the main menu. The following screen will appear.



3. Click "Yes" to continue.
4. Follow the prompts on the screen to complete installation.
5. Restart the system.

4.2.10 RadarSync

RadarSync is a software utility that must be installed in your system to allow online updates of the system's BIOS. It provides an easy and fast way of accessing the website for downloading the latest version of the BIOS. Using your existing Internet connection, the utility can automatically connect to the web server.

Installing RadarSync

1. On the left side of the autorun screen, click the "TOOLS" icon.
2. Click "RadarSync" on the main menu. The following screen will appear.



3. Follow the prompts on the screen to complete installation.
4. Reboot the system for the driver to take effect.

Launching RadarSync

Click Start on your Windows desktop, point to Programs then click RadarSync. The RadarSync icon will appear on the taskbar.

If you are online, it will start to “radar” (rotate) looking for updates for your PC. If you are not online, RadarSync will be in sleep mode.

If you want to customize or manage the options in RadarSync, double-click the icon to open the RadarSync. software.

Updating the System

When RadarSync is running and you are online, the Update Window will from time to time pop up on your computer screen. This means RadarSync has found an update file for the system's BIOS.

By finding the updates for you and downloading them, RadarSync saves you time.

To get an update once RadarSync notifies you about it, click “Download” on the Update Window.



Note:

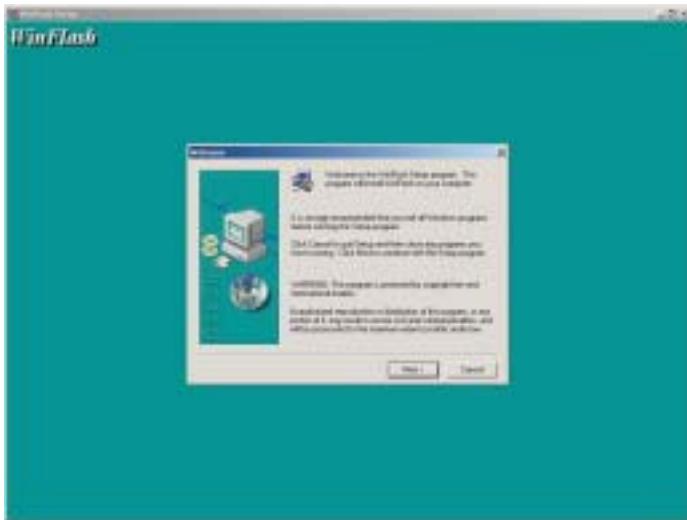
Refer to the RadarSync User's Manual for more information. The manual is included in the CD.

4.2.11 WinFlash

WinFlash is a utility program that allows you to flash the BIOS under an operating system.

To install, please follow the steps below.

1. On the left side of the autorun screen, click the "TOOLS" icon.
2. Click "WinFlash" on the main menu. The following screen will appear.

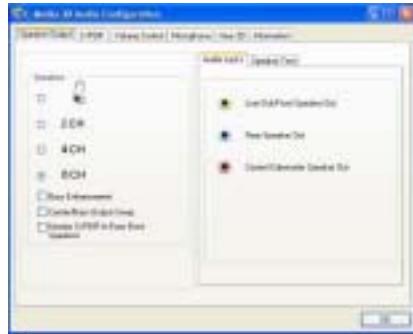


3. Follow the prompts on the screen to complete installation.
4. Restart the system.

To flash the BIOS, run the WinFlash utility.

Speaker Output

When you open 3D Audio Configuration, the default screen that appears is the Speaker Output. This is where you will configure analog output settings to speakers.



S/PDIF

This panel is used to configure S/PDIF output which provides a low-distortion digital data transfer between audio devices.



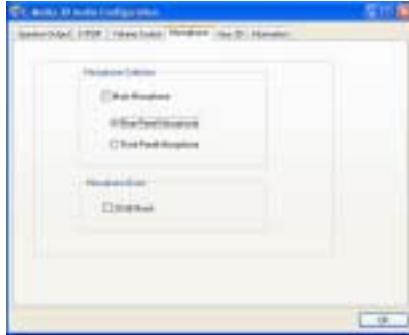
Volume Control

This panel provides digital volume control for all 6 channels. You can regulate each volume to the speaker when playing digital sound sources.



Microphone

This panel is used to configure the microphone.



Xear 3D

Xear 3D is a sound technology for 2-channel virtual surround, adjustable multi-channel sound field, innovative listening mode, amazing sound effects and 3D positional audio. It has 3 functional blocks: Virtual Speaker Shifter, Sound Effect and Multi-channel Music Demo.



Note:

Refer to the Audio User's Manual for more information about 3D Audio Configuration. The manual is included in the CD.

4.4 Installation Notes

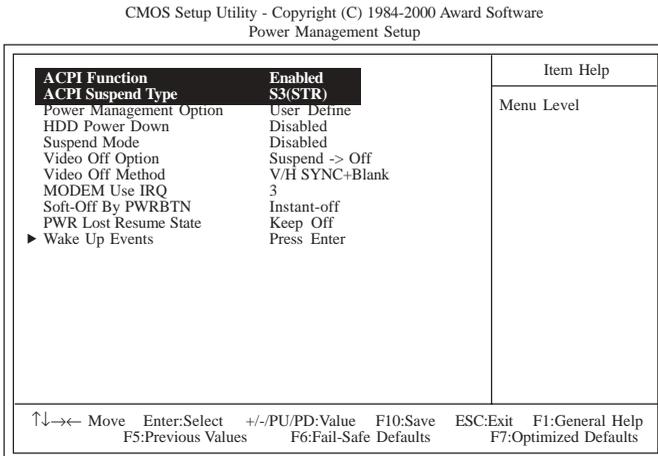
1. "Autorun" ONLY supports the Windows® 98, Windows® 98 SE, Windows® ME, Windows® 2000, Windows NT® 4.0 and Windows® XP operating systems. If after inserting the CD, "Autorun" did not automatically start (which is, the Main Board Utility CD screen did not appear), please go directly to the root directory of the CD and double-click "Setup".
2. All steps or procedures to install software drivers are subject to change without notice as the softwares are occassionally updated. Please go to DFI's web site at "<http://www.dfi.com/support1/download2.asp>" for the latest version of the drivers or software applications.

Appendix A - Using the Suspend to RAM Function

A.1 Using the Suspend to RAM Function

If you are using the Windows® 98 operating system, please follow the steps below.

1. Select "Power Management Setup" in the main menu screen and press <Enter>.
2. In the "ACPI Function" field, select "Enabled".
3. In the "ACPI Suspend Type" field, select "S3(STR)".



The settings on the screen are for reference only. Your version may not be identical to this one.

4. Press <Esc> to return to the main menu.
5. Select "Save & Exit Setup" and press <Enter>. Type <Y> and press <Enter>.
6. Install Windows® 98 by typing the following parameter. This is to ensure that the ACPI function is supported.

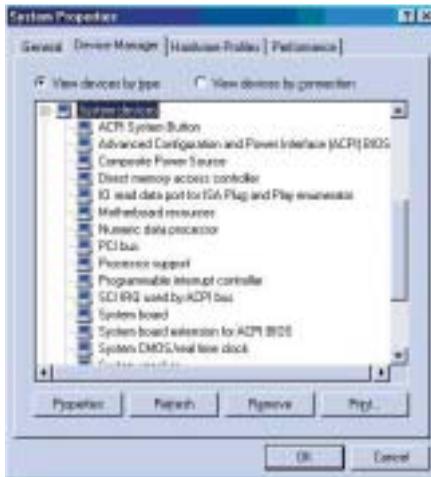
[drive]:>setup /p j

If you have previously installed Windows® 98, you need to upgrade the system in order to support ACPI. Please contact Microsoft for upgrade information.

Using the Suspend to RAM Function

7. Boot Windows® 98. In the Windows® 98 desktop, click the Start button. Move the cursor to Settings, then click Control Panel.

To check whether ACPI was properly installed, double-click the System icon. In the System Properties dialog box, click the "Device Manager" tab. In "View devices by type", click "System devices".

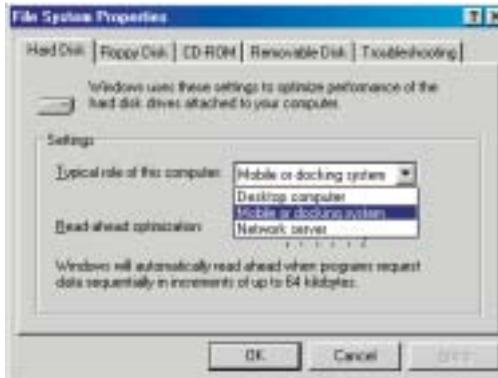


8. Double-click the System icon. In the System Properties dialog box, click the Performance tab.



Using the Suspend to RAM Function

- Click File System. In the “Typical role of this computer” field, select “Mobile or docking system”. Click Apply, then click OK. Restart the computer.



- Repeat step 7 to open the Control Panel dialog box. Double-click the Power Management icon.
- Click the Advanced tab. In the “When I press the power button on my computer” field, select “Standby”.



Using the Suspend to RAM Function

- After completing the steps above and you want to power-off the computer, you do not need to go through the process of closing files, applications and operating system. You can power-off the computer at once by pressing the power button or selecting "Standby" when you shut down Windows® 98.

To power-on the computer, just press the power button. The operating session where you left off when you power-off the computer will resume in not more than 8 seconds.

If you have changed the color or resolution (in the Display Properties dialog box), do not apply the settings without restarting. You must restart the computer.



Important:

If you are unable to use the Suspend to RAM function (after performing the steps above in Windows® 98 or when you are in Windows® 2000/ME/XP), please check whether your add-in cards or devices support this function. If this function is not supported, you need to download the appropriate driver from their respective website.

Appendix B - CPU Fan Protection

The CPU must be kept cool by using a CPU fan with heat sink. Without sufficient air circulation across the CPU and heat sink, the CPU will overheat damaging both the CPU and system board.

The system board supports the CPU Fan Protection function. It has the capability of monitoring the CPU fan when the system boots. Once it has detected that the CPU fan did not rotate, 5 warning beeps will sound then the system will automatically power-off. This preventive measure has been added to protect the CPU from damage and insure a safe computing environment.

To use the CPU Fan Protection function, please follow the steps below.

1. Before you power-on the system, make sure the heat sink and CPU fan are correctly installed onto the CPU. The system is capable of monitoring the CPU fan, therefore you must use a fan with sense pin to support this function. Connect the CPU fan to the CPU fan connector on the system board.
2. The "CPU Fan Protection" field in the PC Health Status submenu of the BIOS must be set to "Enabled".
3. You may now power-on the system.

Three circumstances may occur causing the system to detect CPU fan failure.

1. The CPU fan is not connected to the CPU fan connector on the system board.
2. The CPU fan may be damaged. Replace it with a new fan.
3. The CPU fan did not rotate immediately upon system boot-up or it took some time before the CPU fan rotated. Check whether the heat sink and fan are mounted properly onto the CPU then restart the system. If the same problem occurs, you must replace it with a good quality fan - one that will rotate immediately once power comes in and also one that will dissipate heat more efficiently, otherwise, you have to disable this function in the BIOS.

Appendix C - CPU Temperature Protection

The CPU Temperature Protection function has the capability of monitoring the CPU's temperature during system boot-up.

To use the CPU Temperature Protection function, please follow the steps below.

1. Select the "PC Health Status" submenu in the BIOS.
2. Set the "CPU Temp. Prot. Function" field to "Enabled".
3. Select the CPU temperature limit in the "CPU Temp. Prot. Alarm" field.
4. Press <Esc> to return to the main menu then save the settings by selecting "Save & Exit Setup".

Once the system has detected that the CPU's temperature exceeded the temperature limit defined in the BIOS, 5 warning beeps will sound then the system will automatically power-off.

Check whether the heat sink and fan are mounted properly onto the CPU because high CPU temperature may be due to incorrect fan / heat sink installation. Now restart the system. If the same problem persists, it may be the CPU fan is damaged or it is not rotating properly. Try replacing it with a new fan. If it is due to other contributing factors that resulted to high CPU temperature, you may need to set a lower CPU temperature limit.

CPU Temperature References

When you power-up a system, the BIOS message appears on the screen and the memory count begins. After the memory test, the CPU temperature range is normally between 32°C and 35°C. When you run an operating system then tried to reboot the system, the CPU temperature range at this time is between 40°C and 45°C. These temperature references serve as a guide when you select the CPU temperature limit.

Appendix D - System Error Message

When the BIOS encounters an error that requires the user to correct something, either a beep code will sound or a message will be displayed in a box in the middle of the screen and the message, PRESS F1 TO CONTINUE, CTRL-ALT-ESC or DEL TO ENTER SETUP, will be shown in the information box at the bottom. Enter Setup to correct the error.

D.1 POST Beep

There are two kinds of beep codes in the BIOS. One code indicates that a video error has occurred and the BIOS cannot initialize the video screen to display any additional information. This beep code consists of a single long beep followed by three short beeps. The other code indicates that a DRAM error has occurred. This beep code consists of a single long beep.

D.2 Error Messages

One or more of the following messages may be displayed if the BIOS detects an error during the POST. This list indicates the error messages for all Awards BIOSes:

CMOS BATTERY HAS FAILED

The CMOS battery is no longer functional. It should be replaced.



Caution:

Danger of explosion if battery incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the battery manufacturer's instructions.

CMOS CHECKSUM ERROR

Checksum of CMOS is incorrect. This can indicate that CMOS has become corrupt. This error may have been caused by a weak battery. Check the battery and replace if necessary.

DISPLAY SWITCH IS SET INCORRECTLY

The display switch on the motherboard can be set to either monochrome or color. This indicates the switch is set to a different

setting than indicated in Setup. Determine which setting is correct, either turn off the system and change the jumper or enter Setup and change the VIDEO selection.

FLOPPY DISK(S) fail (80)

Unable to reset floppy subsystem.

FLOPPY DISK(S) fail (40)

Floppy type mismatch.

Hard Disk(s) fail (80)

HDD reset failed.

Hard Disk(s) fail (40)

HDD controller diagnostics failed.

Hard Disk(s) fail (20)

HDD initialization error.

Hard Disk(s) fail (10)

Unable to recalibrate fixed disk.

Hard Disk(s) fail (08)

Sector Verify failed.

Keyboard is locked out - Unlock the key

The BIOS detects that the keyboard is locked. Keyboard controller is pulled low.

Keyboard error or no keyboard present

Cannot initialize the keyboard. Make sure the keyboard is attached correctly and no keys are being pressed during the boot.

Manufacturing POST loop

System will repeat POST procedure infinitely while the keyboard controller is pull low. This is also used for the M/B burn in test at the factory.

BIOS ROM checksum error - System halted

The checksum of ROM address F0000H-FFFFFH is bad.

Memory test fail

The BIOS reports memory test fail if the memory has error(s).

Appendix E - Troubleshooting

E.1 Troubleshooting Checklist

This chapter of the manual is designed to help you with problems that you may encounter with your personal computer. To efficiently troubleshoot your system, treat each problem individually. This is to ensure an accurate diagnosis of the problem in case a problem has multiple causes.

Some of the most common things to check when you encounter problems while using your system are listed below.

1. The power switch of each peripheral device is turned on.
2. All cables and power cords are tightly connected.
3. The electrical outlet to which your peripheral devices are connected is working. Test the outlet by plugging in a lamp or other electrical device.
4. The monitor is turned on.
5. The display's brightness and contrast controls are adjusted properly.
6. All add-in boards in the expansion slots are seated securely.
7. Any add-in board you have installed is designed for your system and is set up correctly.

Monitor/Display

If the display screen remains dark after the system is turned on:

1. Make sure that the monitor's power switch is on.
2. Check that one end of the monitor's power cord is properly attached to the monitor and the other end is plugged into a working AC outlet. If necessary, try another outlet.
3. Check that the video input cable is properly attached to the monitor and the system's display adapter.
4. Adjust the brightness of the display by turning the monitor's brightness control knob.

The picture seems to be constantly moving.

1. The monitor has lost its vertical sync. Adjust the monitor's vertical sync.
2. Move away any objects, such as another monitor or fan, that may be creating a magnetic field around the display.
3. Make sure your video card's output frequencies are supported by this monitor.

The screen seems to be constantly wavering.

1. If the monitor is close to another monitor, the adjacent monitor may need to be turned off. Fluorescent lights adjacent to the monitor may also cause screen wavering.

Power Supply

When the computer is turned on, nothing happens.

1. Check that one end of the AC power cord is plugged into a live outlet and the other end properly plugged into the back of the system.
2. Make sure that the voltage selection switch on the back panel is set for the correct type of voltage you are using.
3. The power cord may have a "short" or "open". Inspect the cord and install a new one if necessary.

Floppy Drive

The computer cannot access the floppy drive.

1. The floppy diskette may not be formatted. Format the diskette and try again.
2. The diskette may be write-protected. Use a diskette that is not write-protected.
3. You may be writing to the wrong drive. Check the path statement to make sure you are writing to the targeted drive.
4. There is not enough space left on the diskette. Use another diskette with adequate storage space.

Hard Drive

Hard disk failure.

1. Make sure the correct drive type for the hard disk drive has been entered in the BIOS.
2. If the system is configured with two hard drives, make sure the bootable (first) hard drive is configured as Master and the second hard drive is configured as Slave. The master hard drive must have an active/bootable partition.

Excessively long formatting period.

1. If your hard drive takes an excessively long period of time to format, it is likely a cable connection problem. However, if your hard drive has a large capacity, it will take a longer time to format.

Parallel Port

The parallel printer doesn't respond when you try to print.

1. Make sure that your printer is turned on and that the printer is on-line.
2. Make sure your software is configured for the right type of printer attached.
3. Verify that the onboard LPT port's I/O address and IRQ settings are configured correctly.
4. Verify that the attached device works by attaching it to a parallel port that is working and configured correctly. If it works, the printer can be assumed to be in good condition. If the printer remains inoperative, replace the printer cable and try again.

Serial Port

The serial device (modem, printer) doesn't output anything or is outputting garbled characters.

1. Make sure that the serial device's power is turned on and that the device is on-line.
2. Verify that the device is plugged into the correct serial port on the rear of the computer.
3. Verify that the attached serial device works by attaching it to a serial port that is working and configured correctly. If the serial device does not work, either the cable or the serial device has a problem. If the serial device works, the problem may be due to the onboard I/O or the address setting.
4. Make sure the COM settings and I/O address are configured correctly.

Keyboard

Nothing happens when a key on the keyboard was pressed.

1. Make sure the keyboard is properly connected.
2. Make sure there are no objects resting on the keyboard and that no keys are pressed during the booting process.

System Board

1. Make sure the add-in card is seated securely in the expansion slot. If the add-in card is loose, power off the system, re-install the card and power up the system.
2. Check the jumper settings to ensure that the jumpers are properly set.
3. Verify that all memory modules are seated securely into the memory sockets.
4. Make sure the memory modules are in the correct locations.
5. If the board fails to function, place the board on a flat surface and seat all socketed components. Gently press each component into the socket.
6. If you made changes to the BIOS settings, re-enter setup and load the BIOS defaults.