LANPARTY
KT400A

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 (Main Board Utility CD) will appear. Click "User's Manual".

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Chapter 1 - Introduction

1.1 Features and Specifications

1.1.1 Features

Chipset

- VIA® KT400A and 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™ 200/266MHz FSB
- AMD Duron™ 200MHz 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
- Three184-pin DDR SDRAM DIMM sockets
- L2 cache memory
  - Duron™ processor: built-in 64KB Level 2 pipelined burst cache
  - Athlon™ XP / Athlon™ processor: built-in 256KB Level 2 pipelined burst cache

Introduction

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 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

Onboard Dual LAN Features

• Uses VIA VT6103 Phy and Realtek 8101L controllers
• Integrated IEEE 802.3, 10BASE-T and 100BASE-TX compatible PHY
• 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 Inexpensive 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

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

IEEE 1394a Interface

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

The VIA VT6306 controller is a complete single chip IEEE 1394a solution. It is fully compliant with the 1394a OHCI (Open Host Controller Interface) 1.1 specification. 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 allowing devices to be attached or removed from the system, even with the power on.

S/PDIF

The system board is equipped with the S/PDIF (Sony/Philips Digital Interface) digital audio interface. 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.

IrDA Interface

The system board is equipped with an IrDA connector for wireless connectivity between your computer and peripheral devices.

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 in 1MHz stepping
   - 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
- Two RJ45 LAN port
- Two NS16C550A-compatible DB-9 serial ports
- One SPP/ECP/EPP 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 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 interface supports up to two 2.88MB floppy drives
- One ATX power supply connector
- One Wake-On-LAN connector
- One Wake-On-Ring connector
- CPU, chassis and second chassis fan connectors

1.1.2 Damage Free Inteligence

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
- CPU Fan Protection function monitors the CPU fan during system boot-up
- CPU Temperature Protection function monitors CPU temperature during system boot-up

Refer to the "PC Health Status" section in chapter 3 and the "Winbond Hardware Monitor" section in chapter 4 for more information.

CPU Temperature Protection

The CPU Temperature Protection function has the capability of monitoring the CPU's temperature during system boot-up. Once it has detected that the CPU's temperature exceeded the CPU temperature limit defined in the BIOS, the system will automatically power-off after 5 warning beeps. Refer to "CPU Temp. Prot. Function and CPU Temp. Prot. Alarm" in the PC Health Status section in chapter 3 for more information.

CPU Fan Protection

The CPU Fan Protection function has the capability of monitoring the CPU fan during system boot-up and will automatically power-off the system once it has detected that the CPU fan did not rotate. This preventive measure has been added to protect the CPU from damage and insure a safe computing environment. Refer to "CPU Fan Connector with CPU Fan Protection Function" in chapter 2 and "CPU Fan Protection" in the PC Health Status section in chapter 3 for more information.

Over Voltage

The Over Voltage function allows you to manually adjust to a higher core voltage that is supplied to the CPU. 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. Refer to "OverClocking Control" in the Genie BIOS Setting section in chapter 3 for more information.

CPU Overclocking

The CPU Overclocking function allows you to adjust the processor's bus clock. However, overclocking may result to the processor's or system's instability and are not guaranteed to provide better system performance. Refer to "OverClocking Control" in the Genie BIOS Setting section in chapter 3 for more information.

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.

1.1.3 Energy Efficient Design

- Supports ACPI specification and OS Directed Power Management
- Supports ACPI STR (Suspend to RAM) function
- Wake-On-Events include:
  - Wake-On-Ring (through internal or external modem)
  - Wake-On-LAN
  - RTC timer to power-on the system
- System power management supported
- CPU stopped clock control
- Hardware supports SMI green mode
- Microsoft®/Intel® APM 1.2 compliant
- Soft Power supported - ACPI v1.0a specification
- AC power failure recovery

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® 98/2000/ME/XP supports the ACPI function allowing 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® 98/2000/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. Refer to "Using the Suspend to RAM Function" in appendix A for more information.

Important:
The 5VSB power source of your power supply must support ≥1A.

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 through an internal or external modem. Refer to "Wake-On-Ring Connector" in chapter 2 and "Resume On LAN/Ring" ("Wake Up Events" field) in the Power Management Setup section in chapter 3 for more information.

Important:

If you are using a modem add-in card, the 5VSB power source of your power supply must support a minimum of ≥720mA.

Wake-On-LAN

The Wake-On-LAN function allows the network to remotely wake up a Soft Power Down (Soft-Off) PC. Your LAN card must support the remote wakeup function. Refer to "Wake-On-LAN Connector" in chapter 2 and "Resume On LAN/Ring" ("Wake Up Events" field) in the Power Management Setup section in chapter 3 for more information.

Important:

The 5VSB power source of your power supply must support a minimum of ≥720mA.

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. Refer to "Resume By Alarm" ("Wake Up Events" field) in the Power Management Setup section in chapter 3 for more information.

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. Refer to "PWR Lost Resume State" in the Power Management Setup section in chapter 3 for more information.

1.2 Package Checklist

The system board package contains the following items:

- ☑ The system board
- ☑ Two user's manual
- ☑ Two IDE round cables for ATA/33, ATA/66, ATA/100 or ATA/133 IDE drives
- ☑ One 34-pin floppy disk drive round cable
- ☑ One card-edge bracket mounted with 3 1394a ports
- ☑ One serial ATA cable
- ☑ One card-edge bracket mounted with 2 USB 2.0/1.1 ports
- ☐ One card-edge bracket mounted with 1 S/PDIF-in port and 1 S/PDIF-out port (optional)
- ☐ One card-edge bracket mounted with a 4-channel audio output connector (optional)
- ☐ One card-edge bracket mounted with a front audio output connector (optional)
- ☑ One FrontX I/O port assembly kit
- ☑ One "RAID Driver" floppy diskette
- ☑ One "Main Board Utility" CD
- ☑ One "WinDVD/WinRIP Utility" CD

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
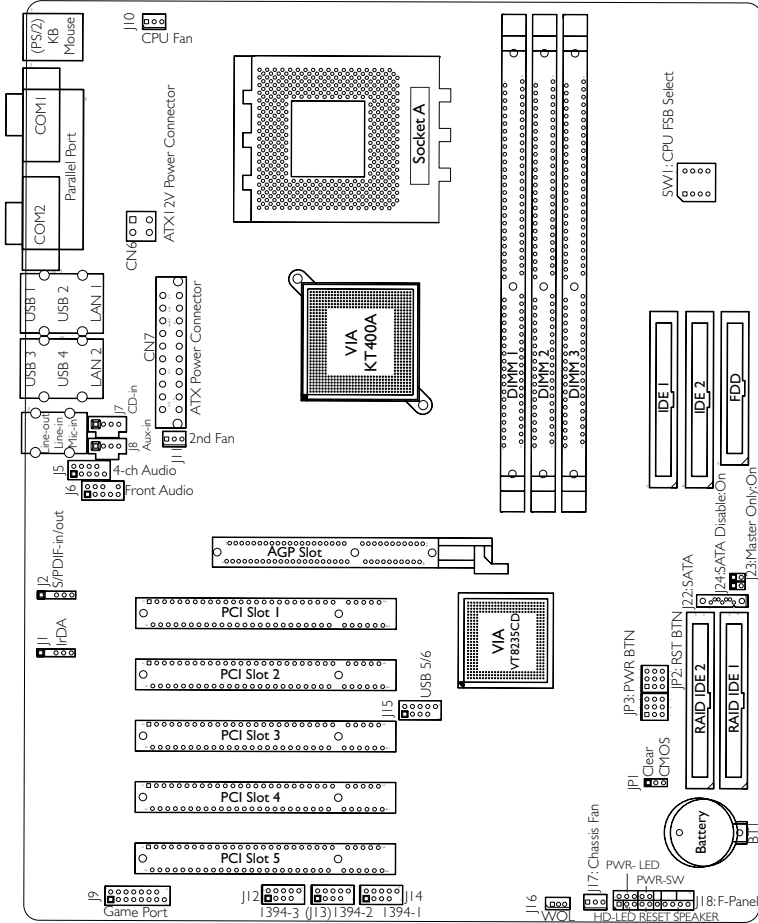
2.2 Installing the CPU in a Socket A

Warning:
- Before you install or remove any component, ensure that the power supply is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the systemboard, peripherals, and/or components.

- Use a grounded wrist strap or touch a safely grounded object or to any metal object, , before handling components to avoid damaging them due to static electricity.

Open Lever
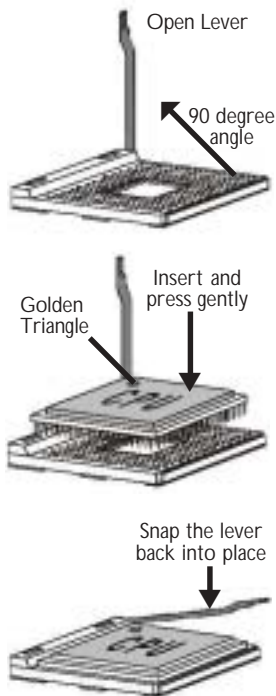
90 degree angle

1. Pull the lever sideways away from the socket. Make sure to raise the lever up to a 90 degree angle.

Golden Triangle

Insert and press gently

2. Look for a golden triangle marked on the top surface of the CPU close to one of it's corners. These markings indicate Pin 1 of the CPU. The CPU can only fit in the correct orientation.

Snap the lever back into place

3. Gently insert the CPU with Pin 1 at the same corner of Socket that contains the end of the lever. Allow the weight of the CPU to push itself into place. Do not apply extra pressure as doing so may result in damaging your CPU and or systemboard. Snap the lever back into place.

Important:
Installing a heat sink with cooling fan is necessary for proper heat dissipation from your CPU. Apply a thin layer of thermal paste on top of CPU to dissipate the heat more effectively. Failing to do so may result in overheating and possible burnout of your CPU.

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.

2.3 System Memory

DIMM 1
DIMM 2
DIMM 3
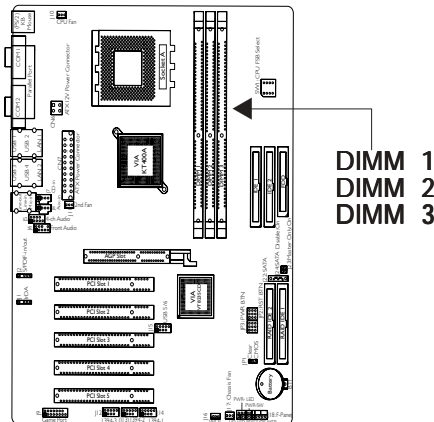
The system board is equipped with three 184-pin DDR SDRAM DIMM (Dual In-line Memory Module) sockets that support 2.5V DDR SDRAM DIMM. Double Data Rate SDRAM (DDR SDRAM) is a type of SDRAM that doubles the data rate through reading and writing at both the rising and falling edge of each clock. This effectively doubles the speed of operation therefore providing two times faster data transfer.

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

2.3.1 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.
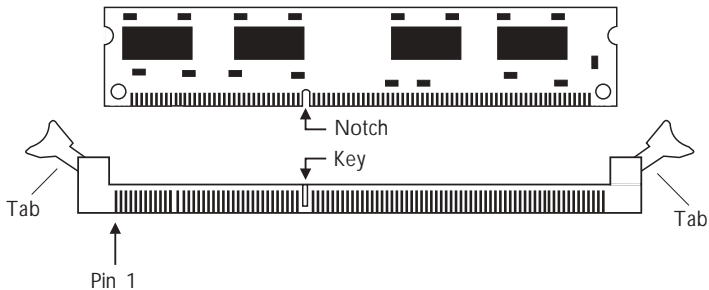
1. Pull the "tabs" which are at the ends of the socket to the side.

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.

2.4 Jumper Settings for Clearing CMOS Data

(JP1)
Clear CMOS Data
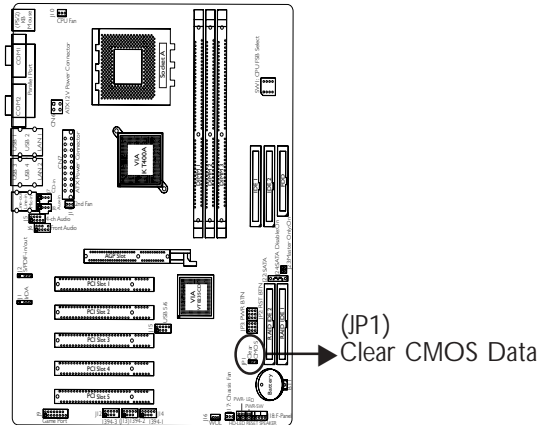
1-2 On:
Normal (default)
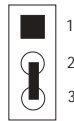
2-3 On:
Clear CMOS Data

Clear CMOS Data - Jumper JP1

If you encounter the following,

a) CMOS data becomes corrupted.
b) You forgot the supervisor or user password.
c) You are unable to boot-up the computer system because the processor's bus 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 JP3 pins 2 and 3 to On. Wait for a few seconds and set JP3 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 processor's bus clock in the BIOS, please proceed to step 4.

4. After powering-on the system, press <Del> to enter the main menu of the BIOS.

5. Select the "Frequency/Voltage Control" submenu and press <Enter>.

6. Set the "Clock By Slight Adjust" field to its default setting or an appropriate bus clock. Refer to "Clock By Slight Adjust" in the "Frequency/Voltage Control" 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>.

2.5 Switch Settings for Selecting the CPU's Front Side Bus

(SW1)
CPU FSB Select

1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
ON	ON	ON	ON
OFF	OFF	OFF	OFF
100MHz (200MHz FSB) (default)	133MHz (266MHz FSB)	166MHz (333MHz FSB)	200MHz (400MHz FSB)

CPU Front Side Bus Select - SW1

This switch is used to select the front side bus of the CPU in-stalled on the system board.

⬥ 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 the jumper.

2.6 Jumper Settings for Serial ATA

SATA Mode Select

(J23)

(J24)

SATA Enable/Disable Select

J23   J24

1 On: SATA Master Only   1 On: SATA Enable

1 Open: SATA Slave   1 Open: SATA Disable

These jumper are used to select master or slave mode (J23) and Enable or disable (J24) the SATA function on the system board.

Warning:
Make sure to turn off the power supply's switch or unplug the AC power cord prior to altering the setting of the jumper. Failure to do so may result in electrical shock!

2.7 Ports and Connectors

ATX Triple Deck Ports
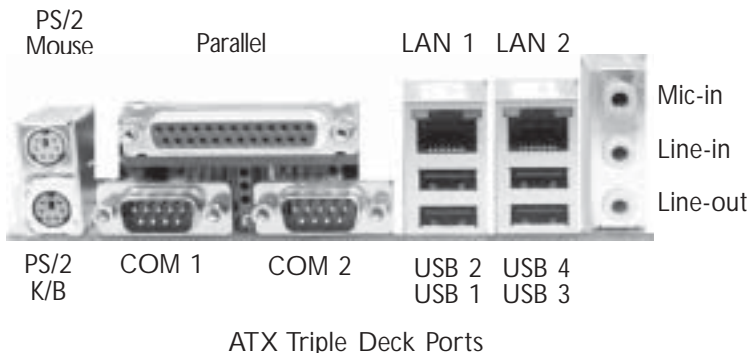
2.7.1 PS/2 Mouse and PS/2 Keyboard Ports
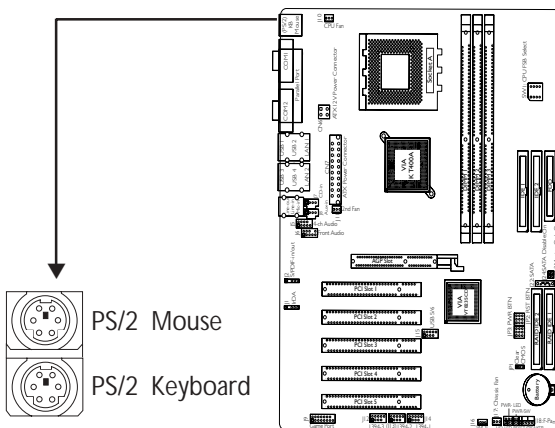
The system board is equipped with an onboard PS/2 mouse (Green) and PS/2 keyboard (Purple) ports - both are located at the ATX triple deck ports of the system board. The PS/2 mouse port uses IRQ12. If a mouse is not connected to this port, the system will reserve IRQ12 for other expansion cards.

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.

2.7.2 Serial Ports

COM 1
Serial Port
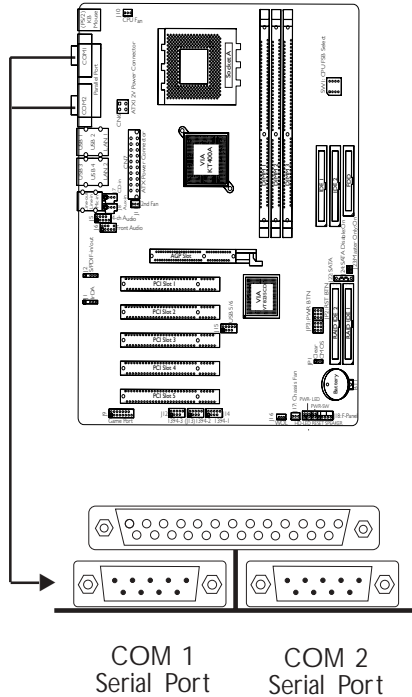
COM 2
Serial Port

The system board is equipped with onboard serial ports (COM 1 and COM 2) - both in Teal/Turquoise color located at the ATX triple deck ports of the board.

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. You can set the serial ports' I/O address in the Integrated Peripherals submenu ("Super IO Device" field) of the BIOS.

2.7.3 Parallel Port
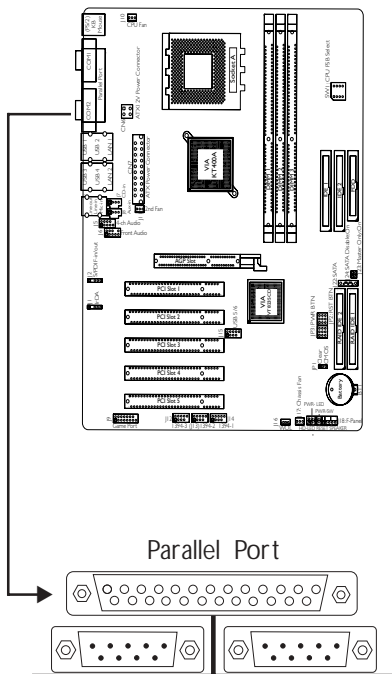
Parallel Port

The system board has a standard parallel port (Burgundy) located at the ATX triple deck ports of the board for interfacing your PC to a parallel printer. It supports SPP, ECP and EPP modes. You can set the port's mode in the Integrated Peripherals submenu ("Super IO Device" field) of the BIOS.

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.

2.7.4   Universal Serial Bus Ports

(J15) USB 5 & 6

USB 2   USB 4
USB 1   USB3
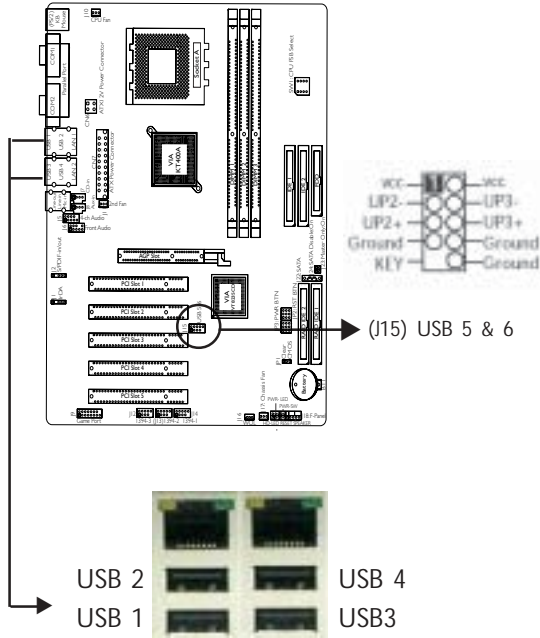
Onboard USB Ports (USB 1/2 and USB 3/4)

Additional USB Ports (USB 5/6)

Pin	Function	Pin	Function
1	VCC	6	VCC
2	UP2-	7	UP3-
3	UP2+	8	UP3+
4	Ground	9	Ground
5	Key	10	Ground

The system board supports 6 USB ports. USB allows data exchange between your computer and a wide range of simultaneously accessible external Plug and Play peripherals. You must have the proper drivers installed in your operating system to use the USB ports. Refer to your operating system's manual or documentation.

Four onboard USB ports (Black) are located at the ATX triple deck I/O ports of the board.

The J15 connector on the system board allows you to connect 2 more optional USB ports. These optional USB ports, which are mounted on a card-edge bracket, will be provided as an option. If you wish 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. The USB ports' cable connector can be inserted only if pin 1 of the cable is aligned with pin 1 of J15.

2.7.5 RJ45 Fast-Ethernet Port
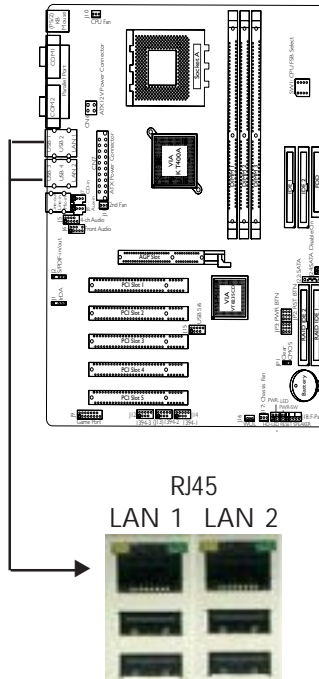
RJ45
LAN 1 LAN 2

The system board is equipped with two onboard RJ45 fast-ethernet LAN ports at location the ATX triple deck ports. It allows the mainboard to connect to a local area network by means of a network hub. You can enable or disable the onboard LAN in the Integrated Peripherals submenu ("VIA OnChip PCI Device" field) of the BIOS.

2.7.6 Game/MIDI Port Header
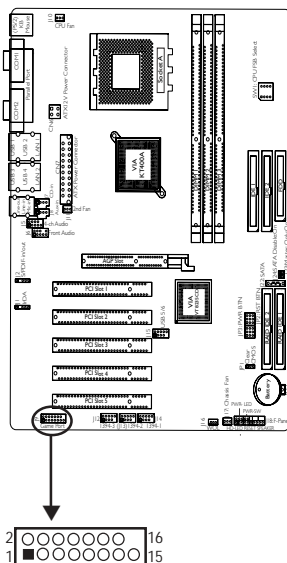
(J9) Game/MIDI Port Header

One card-edge bracket, mounted with 15-pin D-sub port, will be provided as an option. Install the card-edge bracket to the system chassis then connect the cable connector to J9. Make sure pin 1 of the cable connectors is aligned with pin 1 of J9. Now connect your analog joystick to the 15-pin D-sub port that are on the bracket.

This port works well with any application that is compatible with the standard PC joystick. You can configure the game port in the Integrated Peripherals submenu ("Super IO Device" field) of the BIOS.

2.7.7 Audio Jacks and Connectors

Mic-in
Line-in
Line-out
Audio Jacks

4-CH Audio
(J5) 2 / 1 ... 10 / 9
(J6) 2 / 1 ... 10 / 9
Front Audio
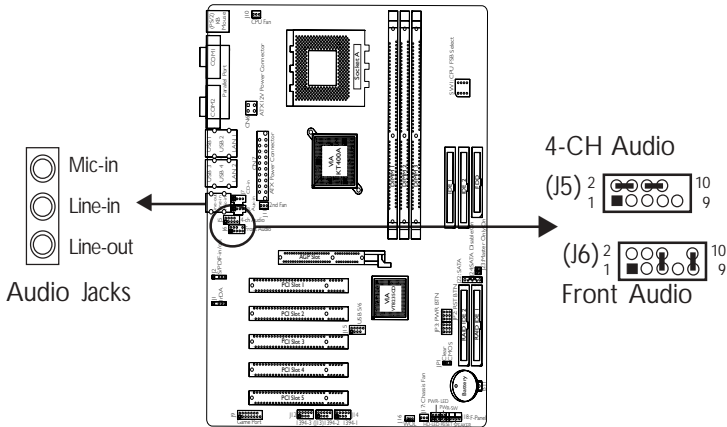
Onboard Audio Jacks

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.

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)
Connect a microphone to the mic-in jack.

Front Audio(J6)

Front Audio connector provides you the option of connecting another line-out and mic-in jacks. One card-edge bracket, mounted with line-out and mic-in jacks, will be provided as an option. Install the card-edge bracket to the system chassis then remove the jumper cap s from (J6) pin 5-6 and pin 9-10. Connect the audio cable connector and make sure pin 1 of the cable connector is aligned with pin 1 of J6.

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Front Audio (J6)

Pin	Function	Pin	Function
1	Mic+	2	Ground
3	Mic Power	4	AuD_Vcc (Avcc)
5	AuD_R_Out	6	AuD_R_Return (GND)
7	N. C.	8	Key
9	AuD_L_Out	10	AuD_L_Return (GND)

4-Channel Audio (J5)

The 4-channel audio connector (J5) supports 4 audio output sig-nals: center channel, subwoofer, rear right channel and rear left channel. The 4-channel audio connector together with the line-in and mic-in jacks (at the rear panel) supports 6-channel audio output. One card-edge bracket, mounted with a 4-channel audio output connector, will be provided as an option. Install the card-edge bracket to the system chassis then remove the jumper cap s from (J5) pin 2-4 and pin 6-8. Connect the audio cable connec-tor and make sure pin 1 of the cable connector is aligned with pin 1 of J5. Now connect the external speakers' cable connector to the 4-channel audio output connector that is on the bracket.

4-Channel Audio (J5)

Pin	Function	Pin	Function
1	SL	2	Center out
3	Ground	4	Ground
5	SR	6	LFE Out
7	Ground	8	LFE Out
9	Power	10	Key

Note:
If, you are not using the 4-channel audio function, put the jumper caps back to (J5) pin 2-4 and pin 6-8 to enable the (default) back panel audio jacks function. The 6-channel audio output function can also be supported via C-Media software. Refer to chapter 4 for more information.

2.7.8   Internal Audio Connectors

R GND L

CD-in (J7)
Aux-in (J8)
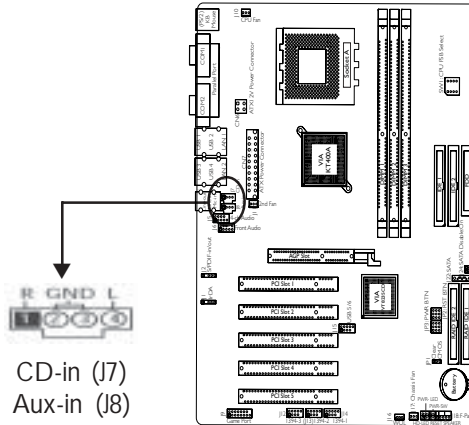
Pin	Function
1	Left audio channel
2	Ground
3	Ground
4	Right audio channel

AUX-in and CD-in

These connectors are used to receive audio from a CD-ROM drive, TV tuner or MPEG card.

2.7.9   S/PDIF-in/out Connector

S/PDIF-in/out
(J2)
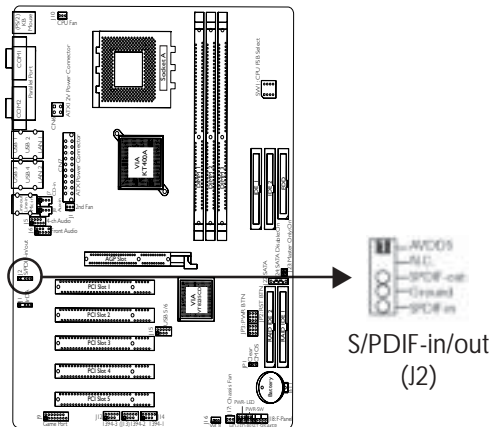
Pin	Function
1	AVDD5
2	N. C.
3	SPDIF-out
4	Ground
5	SPDIF-in

The system board is equipped with a digital audio interface - S/PDIF
(Sony/Philips Digital Interface). 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.

2.7.10   Floppy Disk Drive Connector
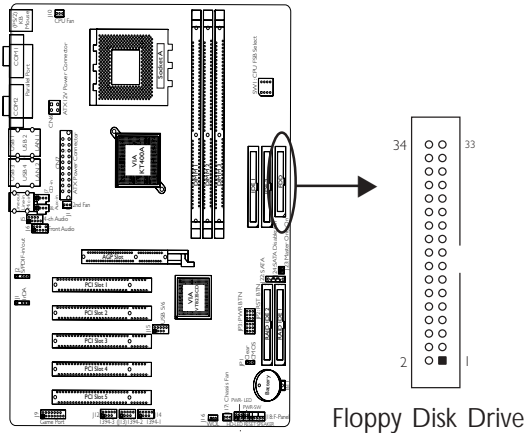
Floppy Disk Drive

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. You may enable or disable this function in the Integrated Peripherals submenu ("Super IO Device" field) of the BIOS.

Connecting the Floppy Disk Drive Cable

1. Install the 34-pin header connector of the floppy disk drive cable into the shrouded floppy disk header (FDD) on the system board. The colored edge of the ribbon should be aligned with pin 1 of FDD.

2. Install the other 34-pin header connector(s) into the disk drive(s). Align the colored edge of the daisy chained ribbon cable with pin 1 of the drive edge connector(s). The end-most connector should be attached to the drive you want to designate as Drive A.

2.7.11   IDE Disk Drive Connectors

IDE 1   IDE 2
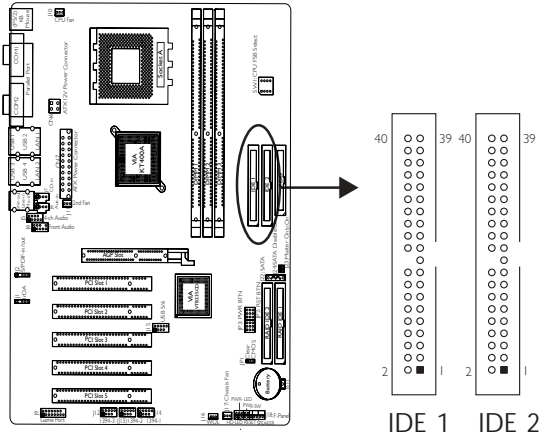
The system board is equipped with two shrouded PCI IDE headers that will interface four Enhanced IDE (Integrated Drive Electronics) disk drives. To prevent improper IDE cable installation, each shrouded PCI IDE header has a keying mechanism. The 40-pin connector on the IDE cable can be placed into the header only if pin 1 of the connector is aligned with pin 1 of the header. You may enable or disable the onboard primary or secondary IDE controller in the Integrated Peripherals submenu ("VIA OnChip IDE Device" field) of the BIOS.

Connecting the IDE Disk Drive Cable

1. If you are connecting two IDE drives, install the 40-pin connector of the IDE cable into the primary shrouded IDE header (IDE 1). If you are adding a third or fourth IDE device, install the 40-pin connector of the other IDE cable into the secondary shrouded IDE header (IDE 2).

2. Install the other 40-pin header connector(s) into the device with the colored edge of the ribbon cable aligned with pin 1 of the drive edge connector(s).

> 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 and 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.

2.7.12 RAID IDE Disk Drive Connector
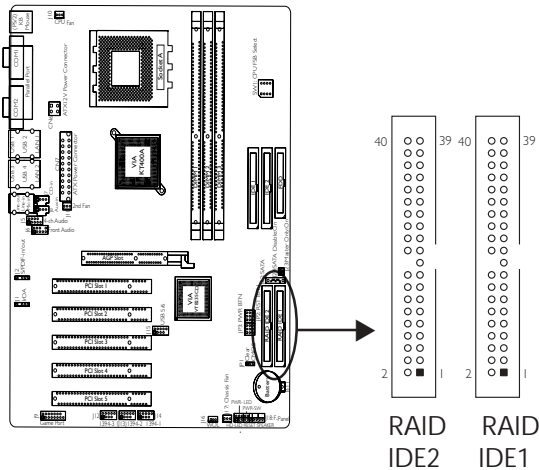
RAID   RAID
IDE2   IDE1

The system board is equipped with one shrouded RAID IDE header that will interface two 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, 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 striping or mirroring is done on the same channel, one drive must be set in Master mode and the other in Slave mode.

Note:

- *The RAID and Serial ATA functions cannot be used at the same time. Refer to the "Jumper Settings for Serial ATA or RAID" section in this chapter.*
- *Only connect IDE hard drives to the RAID IDE connectors.*
- *PCI slot 4 and RAID IDE use the same IRQ. If you are using add-in cards such as PCI audio card, please do not install it into PCI slot 4.*
- *Refer to the RAID user's manual included in the CD for information on configuring RAID.*

2.7.13 IrDA Connector

(J1) IrDA
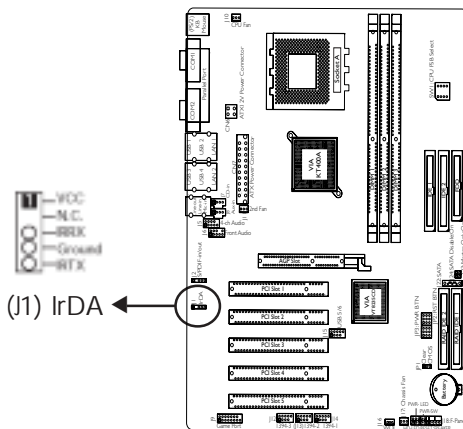
Pin	Function
1	VCC
2	N. C.
3	IRRX
4	Ground
5	IRTX

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.

Connect your IrDA cable to connector J1 on the system board. 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. You must have the proper drivers installed in your operating system to use this connector. Refer to your operating system's manual or documentation.

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.

2.7.14   Serial ATA IDE Connector
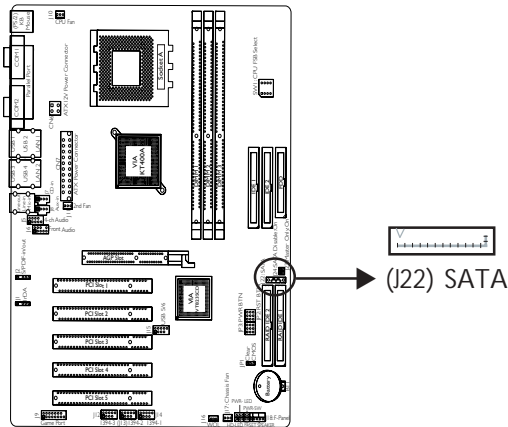
(J22) SATA

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.

Connect one end of the Serial ATA cable to J22 and the other end to your serial ATA device.

> Note:
> *The Serial ATA and RAID functions cannot be used at the same time. Refer to the "Jumper Settings for Serial ATA or RAID" section in this chapter.*

2.7.15 IEEE 1394a Connectors

2 |○○○○○| 10
1 |■○○○| 9

(J12) I394 3
(J13) I394 2
(J14) I394 1 ←
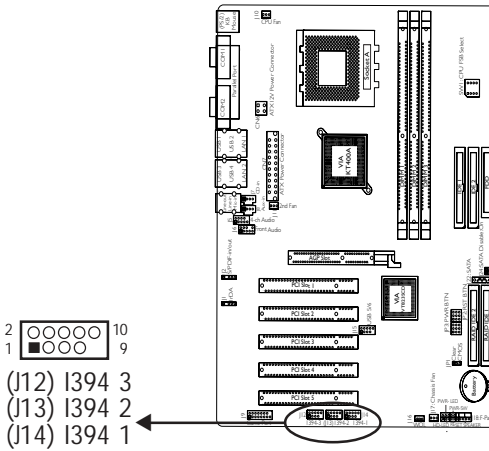
Pin	Function	Pin	Function
1	TPA+	2	TPA-
3	Ground	4	Ground
5	TPB+	6	TPB-
7	VCC	8	VCC
9	Key	10	Shield

The VIA VT6306 controller is a complete single chip IEEE 1394a solution. It is fully compliant with the 1394a OHCI (Open Host Controller Interface) 1.1 specification. 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 allowing devices to be attached or removed from the system, even with the power on.

One card-edge bracket, mounted with 3 IEEE 1394a ports, will be provided as an option. Install the card-edge bracket to the system chassis then connect the cable connectors to J2, J13 and/or J14. Make sure pin 1 of the cable connectors is aligned with pin 1 of J2, J13 and/or J14. Now connect your 1394a devices to the 1394a ports that are on the bracket.

27.16 CPU Fan Connector with Protection Function

(J10) CPU Fan
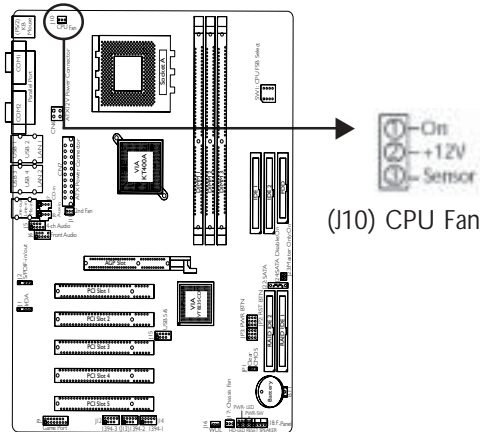
Pin	Function
1	On
2	+12V
3	Sensor

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

The CPU Fan Protection function supported by the system board has the capability of monitoring the CPU fan during system boot-up and will automatically power-off the system once it has detected that the CPU fan did not rotate. 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 heatsink and CPU fan are correctly installed onto the CPU. The system is capable of monitoring the CPU fan, therefore you must use a fan

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with sense pin to support this function. Connect the CPU fan to the 3-pin fan connector at location J10 on the system board.

2. Make sure the "CPU Fan Protection" field in the PC Health Status submenu of the BIOS is set to "Enabled". Refer to PC Health Status section in chapter 3 for more information.

3. You may now power-on the system.

Two circumstances may occur causing the system to power-off automatically. A beeping alarm will sound before the system will power-off.

1. The CPU fan did not rotate because the CPU fan is damaged.

When you boot-up the system and the CPU fan did not rotate, it may indicate that the fan is damaged. Replace it with a new fan.

2. The CPU fan did not rotate immediately upon system boot-up or it took some time before the CPU fan rotated.

If the CPU fan did not rotate immediately upon system boot-up or it took some time before the fan rotated, check whether the heatsink 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 can dissipate heat more efficiently, otherwise, you have to disable this function in the "CPU Fan Protection" field (PC Health Status submenu) of the BIOS.

2.7.17 Chassis Fan Connectors

(J11)
Second Chassis Fan

— On
— +12V
— Sensor

(J17)
Chassis Fan

— On
— +12V
— Sensor
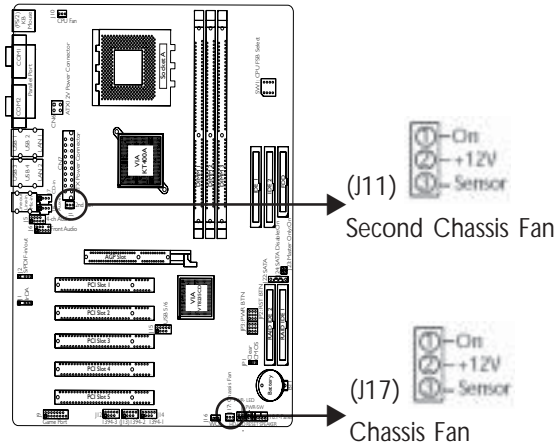
Pin	Function
1	On/Off
2	+12V
3	Sensor

If you are installing a chassis fan in the system unit, connect the fan's connector to J11 and/or J17 on the system board. The fan will provide adequate airflow throughout the chassis to prevent over-heating the processor. The system is capable of monitoring and controlling the speed of the chassis fan. It will automatically turn off once the system enters the Suspend mode.

2.7.18 Wake-On-LAN Connector

(J16)
Wake-On-LAN
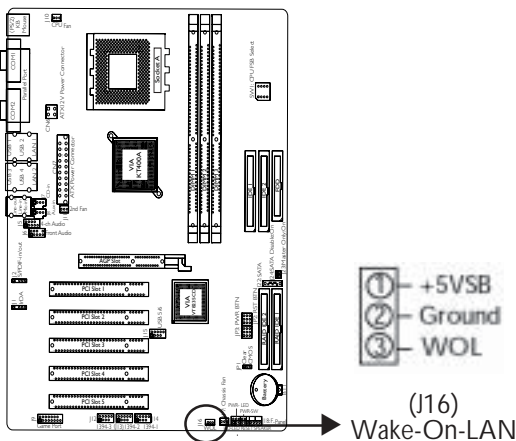
Pin	Function
1	+5VSB
2	Ground
3	WOL

The Wake-On-LAN connector is used to connect to a LAN card that has the same connector. This function will allow the network to remotely power-on a Soft Power Down (Soft-Off) PC. However, if your system is in the Suspend mode, you can power-on the system only through an IRQ or DMA interrupt.

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. 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 ≥720mA.

2.7.19 Power Connectors

(CN6) ATX12V
Power Connector

(CN7) ATX Power
Connector
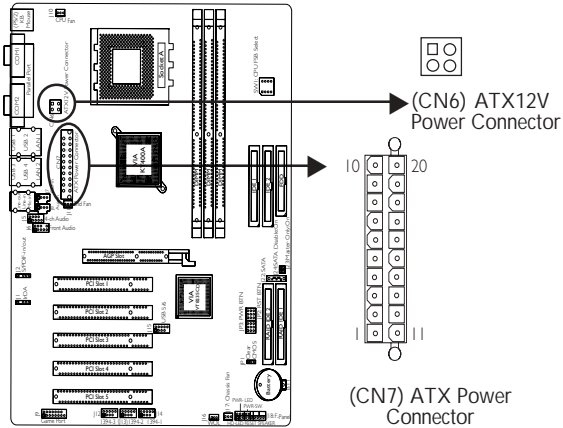
The pin assignment of the ATX power connector is shown below.

CN7

Pin	Function	Pin	Function
1	3.3V	11	3.3V
2	3.3V	12	-12V
3	Ground	13	Ground
4	+5V	14	PS-ON
5	Ground	15	Ground
6	+5V	16	Ground
7	Ground	17	Ground
8	PW-OK	18	-5V
9	5VSB	19	+5V
10	+12V	20	+5V

CN6

Pin	Function	Wire
1	COM	BLK
2	COM	BLK
3	+12V	YEL
4	+12V	YEL

Important:
The system board requires a minimum of 300W electric current.

2.7.20   Front Panel Connectors

(JP2) Internal Reset Switch
(JP3) Internal Power Switch

Front Panel Connector
(J18)
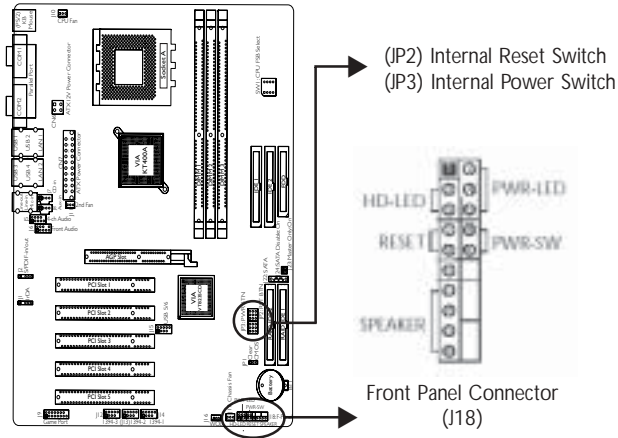
HD-LED: Primary/Secondary IDE LED
This LED will light when the hard drive is being accessed.

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).

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.

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 4 seconds.

Function	Pin	Pin Assignment
HD-LED (Primary/Secondary IDE LED)	3 5	HDD LED Power HDD
N.A. N.A.	14 16	N.C. N.C.
ATX-SW (ATX power switch)	8 10	PWRBT+ PWRBT-
N.A. N.A.	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

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.

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:

<p align="center">Press DEL to enter setup</p>

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 <Del> keys simultaneously.

When you press <Del>, the main menu screen will appear.

<p align="center">Phoenix - AwardBIOS CMOS Setup Utility</p>

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       ├──────────────────────┤
    │  Time (hh:mm:ss)     14 : 35 : 25           │  Menu Level          │
    │                                             │                      │
    │ ▶ IDE Primary Master   Press Enter None     │  Change the day, month,│
    │ ▶ IDE Primary Slave    Press Enter None     │  year and century    │
    │ ▶ 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        Auto              ├──────────────────┤
   Access  Mode                Auto              │ Menu Level       │
                                                 │                  │
   Capacity                    0 M               │ Change the day, month,│
                                                 │ year  and  century│
   Cylinder                    0                 │                  │
   Head                        0                 │                  │
   Precomp                     0                 │                  │
   Landing  Zone               0                 │                  │
   Sector                                        │                  │
                                                 │                  │
                                                 │                  │
                                                 │                  │
   ↑↓→← :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.

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

EGA/VGA	Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SVGA and PGA monitor adapters.
CGA 40	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	
CPU L1 Cache	Enabled	Menu Level
CPU L2 Cache	Enabled	
CPU L2 Cache ECC Checking	Enabled	Allows you to choose
Quick Power On Self Test	Fast	the VIRUS warning
RAID or SCSI Card Boot	RAID	feature for IDE Hard
First Boot Device	Floppy	Disk boot sector
Second Boot Device	CDROM	protection. If this
Third Boot Device	HDD-0	function is enabled and
Boot Other Device	Enabled	someone attempt to
Swap Floppy Drive	Disabled	write data into this
Boot Up Floppy Seek	Enabled	area, BIOS will show a
Boot Up NumLock Status	On	warning message on
Typematic Rate Setting	Disabled	screen and alarm beep
X Typematic Rate (Chars/Sec)	6	
X Typematic 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	ESC:Exit F1:General Help
Small Logo(EPA) Show	Enabled	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 speed up the memory access. The default value is enabled. Enable the external cache for better performance.

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 then select the drive you want to boot.

RAID   Boot the drive connected to the RAID IDE connector that is on the system board.

SCSI   Boot the drive 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. The options are: Non-OS2 and OS2.

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 Advanced Chipset Features

```
                    Phoenix - AwardBIOS CMOS Setup Utility
                         Advanced Chipset Features

   ┌──────────────────────────────────────────┬──────────────────────┐
   │  ▶ DRAM Clock/Drive Control    Press Enter │      Item  Help       │
   │  ▶ AGP & P2P Bridge Control    Press Enter │                      │
   │  ▶ CPU & PCI Bus Control       Press Enter │  Menu Level          │
   │    HALT Commamd Detect         Disabled    │                      │
   │    System BIOS Cacheable       Disabled    │                      │
   │    Video RAM Cacheable         Disabled    │                      │
   │    I/O Recovery Time           Disabled    │                      │
   │                                            │                      │
   │                                            │                      │
   │                                            │                      │
   │                                            │                      │
   │                                            │                      │
   │                                            │                      │
   ├────────────────────────────────────────────────────────────────┤
   │  ↑↓→←  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.

This section gives you functions to configure the system based on the specific features of the chipset. The chipset manages bus speeds and access to system memory resources. These items should not be altered unless necessary. The default settings have been chosen because they provide the best operating conditions for your system. The only time you might consider making any changes would be if you discovered some incompatibility or that data was being lost while using your system.

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
                     DRAM Clock/Drive Control

┌──────────────────────────────────────────────┬─────────────────┐
│                                                │   Item  Help    │
│    DRAM Timing                    By SPD        ├─────────────────┤
│  X DRAM CAS Latency               2.5           │ Menu Level      │
│  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   Select this option if you want to manually select the options 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 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.

DDR DRAM Command Rate

The options are 1T Command and 2T Command.

Write Recovery Time

The options are 2T and 3T.

tWTR for DDR400 ONLY

The options are 1T, 2T and 3T.

3.1.3.2 AGP & P2P Bridge Control

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

```
                    Phoenix - AwardBIOS CMOS Setup Utility
                          AGP & P2P Bridge Control

    ┌──────────────────────────────────────────┬──────────────────┐
    │                                           │    Item Help     │
    │   AGP Aperture Size          128M         ├──────────────────┤
    │   AGP Mode                   4X           │ Menu Level       │
    │   AGP Driving Control        Auto         │                  │
    │ X AGP Driving Value          DA           │                  │
    │   AGP Fast Write             Enabled      │                  │
    │   AGP Master 1 WS Write      Enabled      │                  │
    │   AGP Master 1 WS Read       Enabled      │                  │
    │   AGP 3.0 Calibration cycle  Enabled      │                  │
    │   DBI Output for AGP Trans.  Enabled      │                  │
    │                                           │                  │
    │                                           │                  │
    │                                           │                  │
    │                                           │                  │
    │                                           │                  │
    ├───────────────────────────────────────────────────────────── │
    │ ↑↓→← 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.

AGP Aperture Size

This field is relevant to the memory-mapped graphics data of the AGP card installed in your system. Leave this in its default setting, which is 128M.

AGP Mode

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

AGP-1X mode, offering a data transfer rate of up to 264MB/sec.
AGP-2X mode, offering a data transfer rate of up to 528MB/sec.
AGP-4X mode, offering a 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, you must 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. The default is Enabled.

3.1.3.3 CPU & PCI Bus Control

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

```
                    Phoenix - AwardBIOS CMOS Setup Utility
                          CPU & PCI Bus Control

 ┌──────────────────────────────────────────────┬──────────────────┐
 │  PCI Master 0 WS Write        Enabled         │     Item  Help   │
 │  AGP Master 0 WS Write        Enabled         ├──────────────────┤
 │  CPU-PCI Post Write           Enabled         │  Menu Level      │
 │  CPU-AGP Post Write           Enabled         │                  │
 │  VLink 8x Support             Enabled         │                  │
 │  PCI Delay Transaction        Enabled         │                  │
 │                                               │                  │
 │                                               │                  │
 │                                               │                  │
 │                                               │                  │
 │                                               │                  │
 │                                               │                  │
 │                                               │                  │
 ├──────────────────────────────────────────────┴──────────────────┤
 │  ↑↓→←  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.

PCI Master 0 WS Write and AGP Master 0 WS Write

When enabled, writes to the PCI or AGP bus are executed with zero wait state.

CPU-PCI Post Write and CPU-AGP Post Write

The options are Enabled and Disabled.

VLink 8x Support

Enabled   The speed of VLink which links the North Bridge and South Bridge is 8x.
Disabled   The speed of VLink which links the North Bridge and South Bridge is 4x.

PCI Delay Transaction

When enabled, this function frees up the PCI bus for other PCI masters during the PCI-to-ISA transactions. This allows PCI and ISA buses to be used more efficiently and prevents degradation of performance on the PCI bus when ISA accesses are made.

3.1.3.4 HALT Commamd Detect

Select Enabled to support the halt command detection function.

3.1.3.4 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.

3.1.3.5 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.

3.1.3.6 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.

3.1.4 Integrated Peripherals

Phoenix - AwardBIOS CMOS Setup Utility
Integrated Peripherals

		Item Help
▶ VIA OnChip IDE Device	Press Enter	
▶ VIA OnChip PCI Device	Press Enter	Menu Level
▶ Super IO Device	Press Enter	
Init Display First	PCI Slot	
OnChip USB Controller	All Enabled	
USB Keyboard Support	Disabled	
IDE HDD Block Mode	Disabled	

↑↓→← 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.

3.1.4.1 VIA OnChip IDE Device

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

Phoenix - AwardBIOS CMOS Setup Utility
VIA OnChip IDE Device

		Item Help
OnChip Primary IDE	Enabled	
OnChip Secondary IDE	Enabled	Menu Level
IDE Prefetch Mode	Disabled	
IDE Primary Master PIO	Auto	
IDE Primary Slave PIO	Auto	
IDE Secondary Master PIO	Auto	
IDE Secondary Slave PIO	Auto	
IDE Primary Master UDMA	Auto	
IDE Primary Slave UDMA	Auto	
IDE Secondary Master UDMA	Auto	
IDE Secondary Slave UDMA	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.

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
                              VIA OnChip PCI Device

    ┌─────────────────────────────────────────────┬────────────────────────┐
    │                                             │      Item  Help        │
    │  VIA-3058 AC97 Audio            Auto        ├────────────────────────┤
    │                                             │  Menu Level            │
    │                                             │                        │
    │                                             │                        │
    │                                             │                        │
    │                                             │                        │
    │                                             │                        │
    │                                             │                        │
    │                                             │                        │
    │                                             │                        │
    │                                             │                        │
    │                                             │                        │
    │                                             │                        │
    ├─────────────────────────────────────────────┴────────────────────────┤
    │ ↑↓→← 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.

3.1.4.3 Super IO Device

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

```
                    Phoenix - AwardBIOS CMOS Setup Utility
                              Super IO Device

  ┌─────────────────────────────────────────────┬──────────────────────┐
  │                                              │      Item  Help      │
  │  Onboard FDC Controller     Enabled          ├──────────────────────┤
  │  Onboard Serial Port 1      3F8/IRQ4         │  Menu Level          │
  │  Onboard Serial Port 2      2F8/IRQ3         │                      │
  │  UART2 Mode Select          Normal           │                      │
  │  RxD, TxD Active            Hi, Lo           │                      │
  │  IR Transmission Delay      Enabled          │                      │
  │  Onboard Parallel Port      378/IRQ7         │                      │
  │  Parallel Port Mode         SPP              │                      │
  │  EPP Mode Select            EPP 1.7          │                      │
  │  ECP Mode Use DMA           3                │                      │
  │  Game Port Address          201              │                      │
  │  Midi Port Address          Disabled         │                      │
  │ X Midi Port IRQ             10               │                      │
  │                                              │                      │
  │                                              │                      │
  │                                              │                      │
  │                                              │                      │
  ├──────────────────────────────────────────────┴──────────────────────┤
  │ ↑↓→←  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.

Onboard FDC Controller

Enabled   Enables the onboard floppy disk controller.
Disabled   Disables the onboard floppy disk controller.

Onboard Serial Port 1 and Onboard Serial Port 2

Auto   The system will automatically select an I/O address for the onboard serial port 1 and serial port 2.
3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3 Allows you to manually select an I/O address for the onboard serial port 1 and serial port 2.
Disabled   Disables the onboard serial port 1 and/or serial port 2.

UART2 Mode Select

The system board supports IrDA function for wireless connectivity between your computer and peripheral devices. You may not use IrDA (J17) and the COM 2 (J1) 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 J17 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. The options are: Enabled and Disabled.

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 Power Management Setup

The Power Management Setup allows you to configure your system to most effectively save energy.

```
                    Phoenix - AwardBIOS CMOS Setup Utility
                         Power  Management  Setup

┌─────────────────────────────────────────────────┬─────────────────┐
│                                                   │    Item  Help   │
│  ACPI Function                 Enabled            ├─────────────────┤
│  ACPI Suspend Type             S1(POS)            │  Menu Level     │
│  Power  Management Option      User  Define       │                 │
│  HDD  Power  Down              Disabled           │                 │
│  Suspend Mode                  Disabled           │                 │
│  Video Off Option              Suspend -> Off     │                 │
│  Video Off Method              V/H SYNC+Blank     │                 │
│  MODEM Use IRQ                 3                   │                 │
│  Soft-Off By PWRBTN            Instant-off        │                 │
│  Run VGABIOS if S3 Resume      Auto               │                 │
│  PWR Lost Resume State         Keep Off           │                 │
│ ► Wake Up Events               Press Enter        │                 │
│                                                   │                 │
│                                                   │                 │
│                                                   │                 │
├─────────────────────────────────────────────────┴─────────────────┤
│ ↑↓→← 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.

3.1.5.1 ACPI Function

This function should be enabled only in operating systems that support ACPI. Currently, only Windows**®** 98/2000/ME/XP supports ACPI. If you want to use the Suspend to RAM function, make sure this field is enabled then select "S3(STR)" in the "ACPI Suspend Type" field.

3.1.5.2 ACPI Suspend Type

This field is used to select the type of Suspend mode.

S1(POS)   Enables the Power On Suspend function.
S3(STR)   Enables the Suspend to RAM function. If you are using the Windows**®** 98 operating system, refer to "Using the Suspend to RAM Function" in appendix A for more information.

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 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.

3.1.5.11 Wake Up Events

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

```
                    Phoenix - AwardBIOS CMOS Setup Utility
                              Wake Up Events

    PS2KB Wakeup Select           Hot  Key            Item  Help
    PS2KB Wakeup from S3/S4/S5    Disabled
    PS2MS Wakeup from S3/S4/S5    Disabled          Menu Level
    USB Resume from S3            Disabled
    VGA                          Off
    LPT & COM                    LPT/COM
    HDD & FDD                    On
    PCI Master                   Off
    PowerOn by PCI Card          Disabled
    Resume On LAN/Ring           Disabled
    Resume by Alarm              Disabled
  X Date (of Month)              0
  X Resume Time (hh:mm:ss)       0 : 0 : 0
  ► IRQs Activity Monitoring     Press  Enter



  ↑↓→← 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.

PS2KB Wakeup Select

Hot Key   Use any of the function keys, between F1 and F12, to wake up the system from the power-off mode.

Password Use a password to wake up the system from the power-off mode. Select this option and press <Enter>. Enter your password. You can enter up to 5 characters. Type in exactly the same password to confirm, then press <Enter>. If you selected this option, the "PS2KB Wakeup From S3/S4/S5" and "PS2MS Wakeup From S3/S4/S5" fields will not be configurable.

> **Important:**
> *If you forgot the password, you must power-off the system, unplug the power cord and clear the CMOS data. Follow the steps in the "Jumper Settings for Clearing CMOS Data" section in chapter 2.*

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 or internal modem. Refer to "Wake-On-Ring Connector" in chapter 2 for more information.
- 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.

3.1.5.12 IRQs Activity Monitoring

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

```
                Phoenix - AwardBIOS CMOS Setup Utility
                       IRQs Activity Monitoring

 ┌──────────────────────────────────────────┬─────────────────────┐
 │                                           │     Item  Help      │
 │  Primary  INTR          ON                ├─────────────────────┤
 │  IRQ3 (COM 2)           Enabled           │                     │
 │  IRQ4 (COM 1)           Enabled           │  Menu Level         │
 │  IRQ5 (LPT 2)           Enabled           │                     │
 │  IRQ6 (Floppy Disk)     Enabled           │                     │
 │  IRQ7 (LPT 1)           Enabled           │                     │
 │  IRQ8 (RTC Alarm)       Disabled          │                     │
 │  IRQ9 (IRQ2 Redir)      Disabled          │                     │
 │  IRQ10 (Reserved)       Disabled          │                     │
 │  IRQ11 (Reserved)       Disabled          │                     │
 │  IRQ12 (PS/2 Mouse)     Enabled           │                     │
 │  IRQ13 (Coprocessor)    Enabled           │                     │
 │  IRQ14 (Hard Disk)      Enabled           │                     │
 │  IRQ15 (Reserved)       Disabled          │                     │
 │                                           │                     │
 │                                           │                     │
 │                                           │                     │
 │                                           │                     │
 ├───────────────────────────────────────────┴────────────────────┤
 │ ↑↓→← 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.

When the "Primary INTR", and "IRQ3" - "IRQ15" fields are enabled, access to the specified IRQ will cause the system to wake up completely from the power management mode. When disabled, the system will not wake up from the power management mode despite access to the specified IRQ.

3.1.6 PnP/PCI Configurations

This section describes configuring the PCI bus system. It covers some very technical items and it is strongly recommended that only experienced users should make any changes to the default settings.

Phoenix - AwardBIOS CMOS Setup Utility
PnP/PCI Configurations

		Item Help
Reset Configuration Data	Disabled	
Resources Controlled By	Auto(ESCD)	Menu Level
X IRQ Resources	Press Enter	
		Default is Disabled.
PCI/VGA Palette Snoop	Disabled	Select Enabled to reset Extended System Configuration Data
* PCI IRQ Assignment *		(ESCD) when you exit Setup if you have
Slot 1,5	Auto	installed a new add-on
Slot 2	Auto	and the system
Slot 3	Auto	reconfiguration has
Onboard USB/Slot 4	Auto	caused such a serious conflict that the OS cannot boot.

↑↓→← 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.

3.1.6.1 Reset Configuration Data

Enabled The BIOS will reset the Extended System Configuration Data (ESCD) once automatically. It will then recreate a new set of configuration data.

Disabled The BIOS will not reset the configuration data.

3.1.6.2 Resources Controlled By

The Award Plug and Play BIOS has the capability to automatically configure all of the boot and Plug and Play compatible devices.

Auto(ESCD) The system will automatically detect the settings for you.

Manual Choose the specific IRQ resources in the "IRQ Resources" field.

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.

3.1.7 PC Health Status

Phoenix - AwardBIOS CMOS Setup Utility
PC Health Status

		Item Help
Show PC Health When POST	Enabled	
CPU Fan Protection	Disabled	Menu Level
CPU Temp. Prot. Function	Disabled	
X CPU Temp. Prot. Alarm	60	
Current System Temp.	27C/80F	
Current CPU Temperature	37C/98F	
Current CPU FAN Speed	0 RPM	
Current Chassis FAN Speed	0 RPM	
+3.3	3.35 V	
+5 V	4.90 V	
+12 V	11.85 V	
VBAT(V)	3.24 V	
5VSB(V)	5.37 V	
Shutdown Temperature	Disabled	

↑↓→← 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.

3.1.7.1 CPU Fan Protection

The CPU Fan Protection function, when enabled, has the capability of monitoring the CPU fan during system boot-up and will automatically power-off the system once it has detected that the CPU fan did not rotate. Set this field to Disabled if you are not using this function. Refer to "CPU Fan Connector with CPU Fan Protection Function" in chapter 2 for more information.

3.1.7.2 CPU Temp. Prot. Function and CPU Temp. Prot. Alarm

The CPU Temperature Protection function has the capability of monitoring the CPU's temperature during system boot-up. To use this function, set the "CPU Temp. Prot. Function" field to "Enabled" then select the desired CPU temperature limit in the "CPU Temp. Prot. Alarm" field. Once the system has detected that the CPU's temperature exceeded the limit, 5 warning beeps will sound and at the same time, a warning message will appear on the boot-up screen instructing you to press <Del> in order to enter the main menu of the BIOS. If you did not press <Del>, the system will automatically power-off after the 5 warning beeps. You may either:

1. Press <Del> 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.

3.1.7.3 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).

3.1.7.4 CPU(V)

These fields show the voltage of the processor.

3.1.7.5 +3.3V, +5V, +12V, -12V, -5V, 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 Hardware Monitor utility. This utility is included in the CD that came with the system board. Refer to the Hardware Monitor section in chapter 4 for more information.*

Shutdown Temperature

This field is used to set the temperature that would shutdown the system in order to prevent CPU overheat.

3.1.8 Genie BIOS Setting

Phoenix - AwardBIOS CMOS Setup Utility
Genie BIOS Setting

Current CPU Frequency is	0 MHz	Item Help
Lan Party LOGO Show	Enabled	
======= CPU/DRAM Clock Setting =======		Menu Level
Spread Spectrum Modulated	Enabled	
CPU Clock Setting	100	
CPU Multiplier Setting	Default	
Current DDR Frequency is		
DDR DRAM Clock	By SPD	
======= OverClocking Control =======		
Current CPU Voltage is		
Current AGP Voltage is		
Current DIMM Voltage is		
CPU Voltage Control	Auto	
AGP Voltage Control	Auto	
Chipset Voltage Control	Auto	
DIMM Voltage Control	Auto	
======= Onboard Device Control =======		
USB 2.0 Support	Enabled	e ESC:Exit F1:General Help
HP372N RAID Control	Enabled	F7:Optimized Defaults
IEEE1394 Chip Control	Enabled	
VIA-3043 OnChip LAN	Enabled	
VIA-3043 Lan Boot ROM	Disabled	
RTM Lan Device Control	Enabled	
RTM Lan Boot ROM	Disabled	
Serial ATA Control	Disabled	

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 is used to show the current CPU frequency.

3.1.8.2 Lan Party LOGO Show

When Enabled, the Lan Party logo will appear during system boot-up.

3.1.8.3 CPU/DRAM Clock Setting

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

CPU Clock Setting
This field is used to select the CPU's clock FSB.

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

Current DDR Frenquency is

This field is used to show the current DDR frequency

DDR DRAM Clock

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

3.1.8.4 OverClocking Control

Current CPU Voltage is

This field shows the detected voltage of the CPU.

Current AGP Voltage is

This field shows the detected voltage of the AGP.

Current DIMM Voltage is

This field shows the detected voltage of the DDR SDRAM DIMM.

CPU Voltage Control

This field allows you to manually adjust to a higher core voltage that is supplied to the CPU.

AG P Voltage Control

This field allows you to manually adjust to a higher voltage that is supplied to the AGP.

Current DIMM Voltage is

This field is used to show the current DIMMs voltages.

Chipset Voltage Control

This field allows you to manually adjust to a higher voltage that is supplied to the chipset.

DIMM Voltage Control

This field allows you to manually adjust to a higher voltage that is supplied to the memory modules.

3.1.8.5 Onboard Device Control

USB 2.0 Support

This field is used to enable USB 2.0 supports that can transfer data between the computer and peripherals 40 times faster than original USB. Hi-Speed USB 2.0 technology offers transfer rates up to 480Mbps (megabits per second) compared to USB 1.1 devices, which transfer at speeds of 12Mbps.

HP372N RAID Control

Enabled   Enables the onboard RAID function.
Disabled   Disables the onboard RAID function.

IEEE1394 Chip Control

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

VIA-3043 OnChip LAN

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

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.

RTM Lan Device Control

This field is used to enable or disable the "RTM Lan Device Control".

RTM Lan Boot ROM

Enabled   Enables the onboard RTM LAN Boot ROM function.
Disabled   Disables the onboard RTM LAN Boot ROM function.

Serial ATA Control

Enabled   Enables the onboard Serial ATA function.
Disabled   Disables 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.

<p align="center">Load Fail-Safe Defaults (Y/N)? N</p>

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.

<p align="center">Load Optimized Defaults (Y/N)? N</p>

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 <Del> 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 <Del> after memory testing is done.

3.2 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.

```
            Award BIOS Flash Utility V.8.15B
      (C) Phoenix Technologies Ltd. All Rights Reserved.

  (The current BIOS information will appear in this area.)

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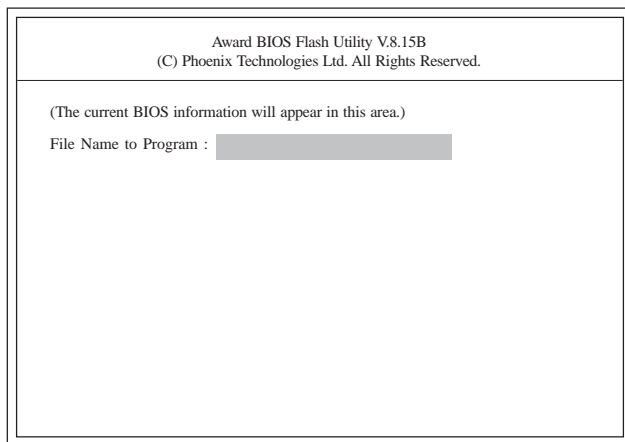
5. Type the new BIOS file name onto the gray area that is next to
    "File Name to Program" then press <Enter>.

6. 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>.

7. The following will then appear.

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

8. 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.dfiusa.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

```
            Award DMI Configuration Utility Copyright Award Software Inc, 1996
         [Edit DMI]   [Add DMI]   [Load DMI File]   [Save DMI File]
  s          BIOS
  n         System                    ***  BIOS Auto Detect  ***
        Enclosure/Chassis
           Processor          Type  :  BIOS Information
        Memory Controller     Handle :  0000
         Memory  Module          Vendor Name  :
         Memory  Module          BIOS Version  :
         Memory  Module          BIOS Starting Address Segment  :  E000
         Memory  Module          BIOS Build Date :
            Cache               BIOS Characteristics  :
            Cache               Size of BIOS ROM  :  0256K
         Port  Connector
         Port  Connector
         Port  Connector
         Port  Connector
         Port  Connector
         Port  Connector
  s        System Slots
  ↑  ↓  ←   Move cursor    ENTER-Accept    DEL-Delete    ESC-Abort&Exit
```

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". The following screen will appear.
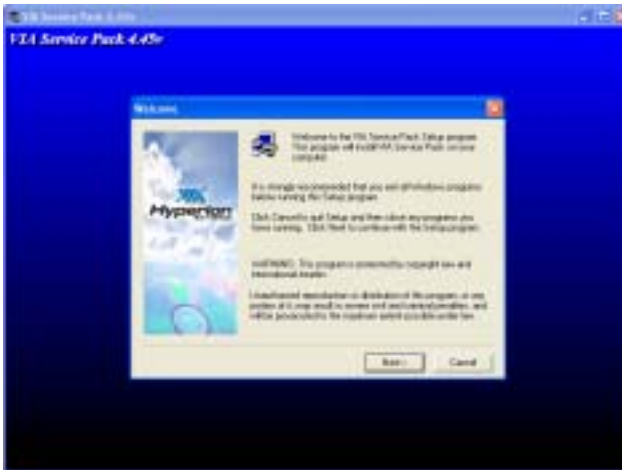
3. Click "Next". Please read the "VIA Service Pack Readme" carefully before proceeding to step 3.

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

The "AGP VxD Driver" and "VIA INF Driver" drivers 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® 2000 and Windows® XP.

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

1. On the left side of the autorun screen, click the "AUDIO" icon.

2. Click "Audio Drivers". 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.

4.2.3   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 on the LAN Driver that you want to install first.

3. Follow the prompts on the screen to complete installation.

4. Reboot the system for the driver to take effect.

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.

4.2.4   USB 2.0 Drivers

To install the USB 2.0 driver, please follow the steps below.

1. On the left side of the autorun screen, click the "USB" icon.

2. Click "USB 2.0 Drivers". The following screen will appear.
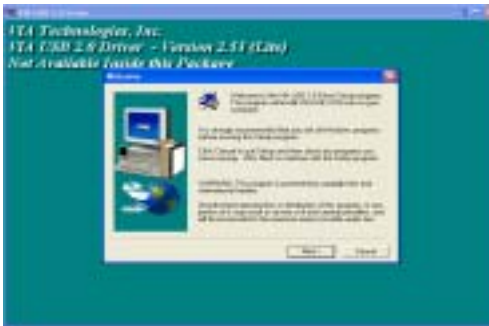
3. Follow the prompts on the screen to complete installation.

4. Restart the system.

4.2.5 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.*

2.4.6 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.

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.*

4.2.6 Winbond Hardware Monitor

The system board comes with the Hardware Monitor utility contained in the provided CD. It is capable of monitoring the system's hardware conditions such as the temperature of the CPU and system, voltage, and speed of the CPU and system fans. It also allows you to manually set a range to the items being monitored. If the 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.

Note:
Use this utility only in Windows® 98, Windows® 98 SE, Windows® ME, Windows® 2000 or Windows® XP operating system.

To install Hardware Monitor, please follow the steps below.

1. Click "Winbond Hardware Monitor". The following screen will appear.
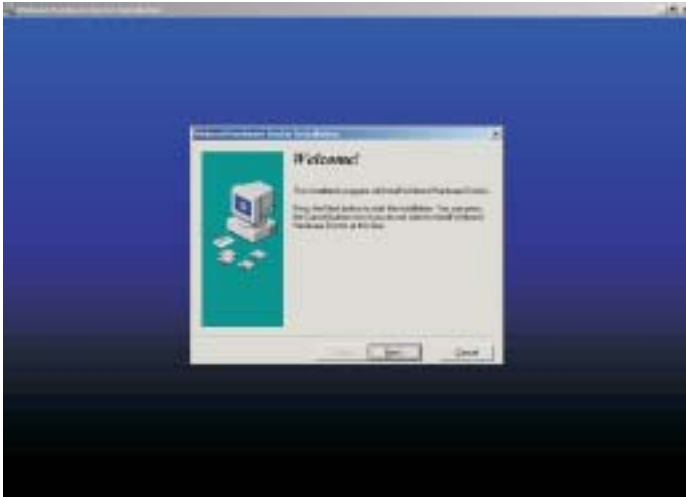
2. Follow the prompts on the screen to complete installation.

3. Restart the system.

4.2.7 Microsoft DirectX 8.1

To install Microsoft DirectX 8.1, please follow the steps below.

1. Click "Microsoft DirectX 8.1". The following screen will appear.
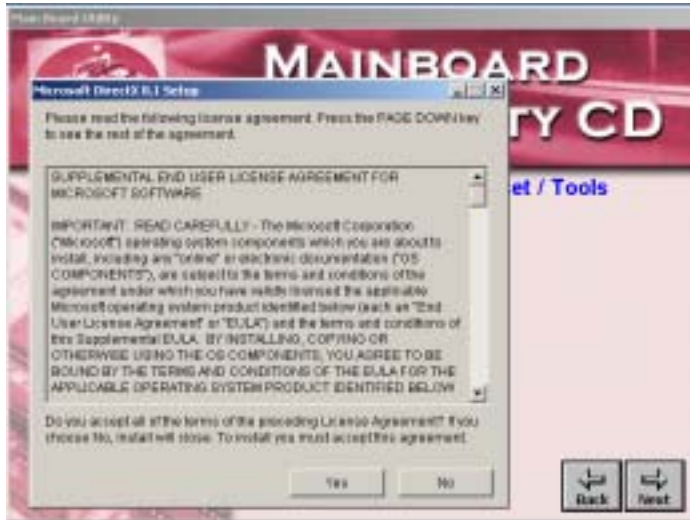
2. Click "Yes" to continue.

3. Follow the prompts on the screen to complete installation.

4. Reboot the system for the driver to take effect.

4.2.8 McAfee VirusScan Online

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

To install, please follow the steps below.

1. Click "McAfee VirusScan Online". The following screen will ap-
pear.

2. Click "Yes" to continue.

3. Follow the prompts on the screen to complete installation.

4. Restart the system.

4.3 C-Media Audio Sofware Application

The line-in and mic-in jacks (at the rear panel) together with the 4-channel audio connector supports 6-channel audio output. If, for any reason, you are not using the 4-channel audio connector which is made possible by connecting a 4-channel audio cable, the 6-channel audio output function can be supported using software application. Please follow the steps below.

6-Channel Audio Output Configuration

"3D Audio Configuration" is C-Media's 3D audio setting panel with that you can control basic audio configuration. After finishing the installation of the driver and rebooting the system, you can find the panel from the system tray in the right-bottom of your screen. You can click right button of the mouse on it to get an audio-related pop-up menu as follows.
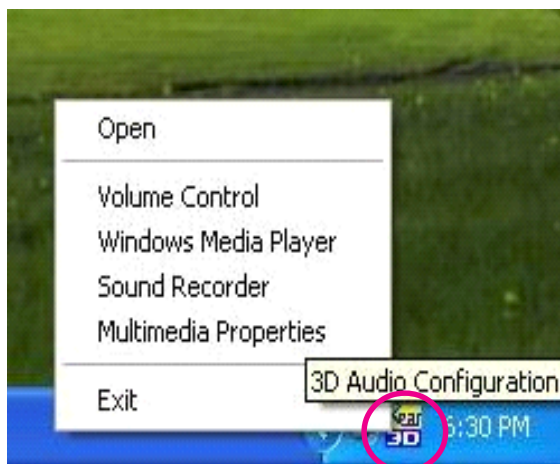
Speaker Output

When you open the "3D Audio Configuration", you will see the default Output tab as the figure below. "Speaker Output" tab collects main setting/options for analog output to speakers.
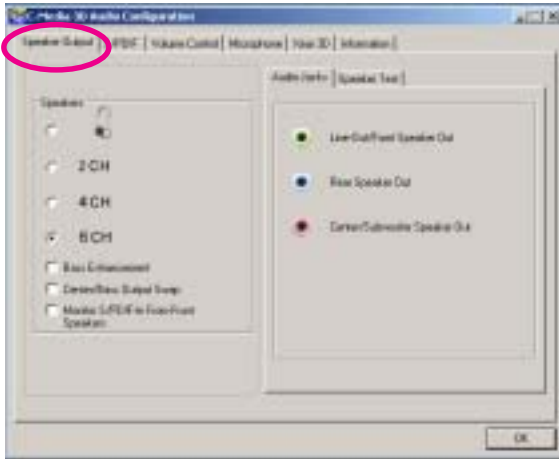
5.1-Channel Speaker Setup

Set up a 5.1 speaker system to enjoy real 5.1 surround sound when playing DVD movie titles like the figure below. The subwoofer only has low-frequency effect (LFE) instead of broadband audio frequency and hence it's often called the ".1" speaker. Please connect the speakers to the correct jacks referring to the jack function description in the audio configuration panel.

5.1 Speakers   Jack Function Description

> Note:
> *With the 6-channel mode supported using software, both the line-in and mic-jacks at the rear panel will instead function as line-out. Therefore you can connect your speakers to these jacks (line-out, line-in and mic-in) for 6-channel audio output. Under such circumstance, line-in will not be supported. Mic-in on the other hand is supported by using the Front Audio connector on the system board.*

Please refer to the C-Media User's Manual included in the CD for more detail information.

4.4 Installation Notes

1. "Autorun" ONLY supports the Windows® 98, Windows® 98 SE, Windows® ME, Windows® 2000 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)".

```
            CMOS Setup Utility - Copyright (C) 1984-2000 Award Software
                            Power Management Setup
┌─────────────────────────────────────────────────┬──────────────────────┐
│ ACPI Function              Enabled               │     Item Help        │
│ ACPI Suspend Type          S3(STR)               ├──────────────────────┤
│ Power Management Option     User Define          │  Menu Level          │
│ HDD Power Down              Disabled             │                      │
│ Suspend Mode               Disabled              │                      │
│ Video Off Option           Suspend -> Off        │                      │
│ Video Off Method           V/H SYNC+Blank        │                      │
│ MODEM Use IRQ              3                      │                      │
│ Soft-Off By PWRBTN         Instant-off           │                      │
│ PWR Lost Resume State       Keep  Off            │                      │
│ ▶ Wake Up Events           Press  Enter          │                      │
│                                                  │                      │
│                                                  │                      │
│                                                  │                      │
├──────────────────────────────────────────────────┴──────────────────────┤
│ ↑↓→←  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.

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.

A

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".
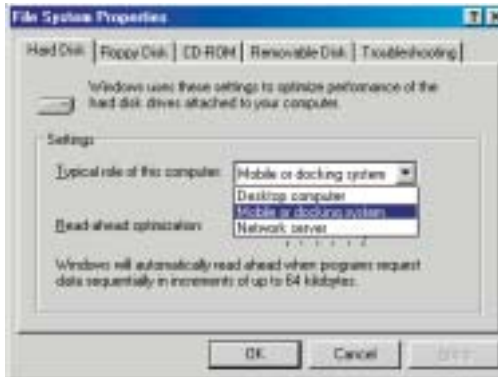

8.   Double-click the System icon. In the System Properties dialog box, click the Performance tab.

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

10. Repeat step 7 to open the Control Panel dialog box. Double-click the Power Management icon.

11. Click the Advanced tab. In the "When I press the power button on my computer" field, select "Standby".

12. 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.
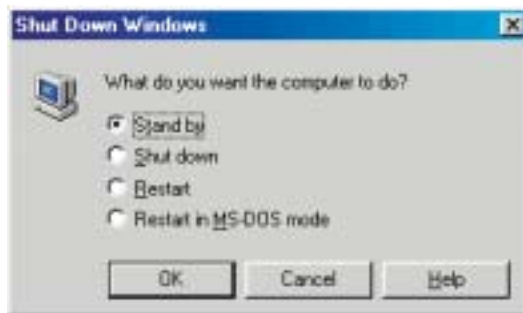
Important:
If you are unable to use the Suspend to RAM function (after performing the steps above in Windows® 98 or when you are in Windows® 2000/ME/XP), please check whether your add-in cards or devices support this function. If this function is not supported, you need to download the appropriate driver from their respective website.

Appendix B - 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.

B.1 POST Beep

There are two kinds of beep codes in the BIOS. One code indicates that a video error has occured 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 occured. This beep code consists of a single long beep.

B.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 C - Troubleshooting

C.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.

CPU Fan Protection

After booting up the system, a beeping alarm sounded then the system's power was turned off:

1. The CPU fan did not rotate because the fan is damaged. Replace it with a new one.
2. The CPU fan did not rotate immediately or it took some time before the fan rotated. Check whether the heatsink 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 can dissipate heat more efficiently, otherwise, you have to disable this function in the "CPU Fan Protection" field (PC Health Status submenu) of the BIOS.

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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.

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

••Troubleshooting

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.