CM64-AL

System Board
User's Manual

90200547

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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.

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About this Manual

An electronic file of this manual is included in the CD. To view the user's manual in the CD, insert the CD into a CD-ROM drive. The autorun screen (Main Board Utility CD) will appear. Click "User's Manual" on the main menu.

Warranty

1. Warranty does not cover damages or failures that arised from misuse of the product, inability to use the product, unauthorized replacement or alteration of components and product specifications.

2. The warranty is void if the product has been subjected to physical abuse, improper installation, modification, accidents or unauthorized repair of the product.

3. Unless otherwise instructed in this user's manual, the user may not, under any circumstances, attempt to perform service, adjustments or repairs on the product, whether in or out of warranty. It must be returned to the purchase point, factory or authorized service agency for all such work.

4. We will not be liable for any indirect, special, incidental or consequencial damages to the product that has been modified or altered.

Static Electricity Precautions

It is quite easy to inadvertently damage your PC, system board, components or devices even before installing them in your system unit. Static electrical discharge can damage computer components without causing any signs of physical damage. You must take extra care in handling them to ensure against electrostatic build-up.

1. To prevent electrostatic build-up, leave the system board in its anti-static bag until you are ready to install it.
2. Wear an antistatic wrist strap.
3. Do all preparation work on a static-free surface.
4. Hold the device only by its edges. Be careful not to touch any of the components, contacts or connections.
5. Avoid touching the pins or contacts on all modules and connectors. Hold modules or connectors by their ends.

Important:
Electrostatic discharge (ESD) can damage your processor, disk drive 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.

Safety Measures

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.

About the Package

The system board package contains the following items. If any of these items are missing or damaged, please contact your dealer or sales representative for assistance.

- ☑ The system board
- ☑ A user's manual
- ☑ One IDE cable
- ☑ One floppy cable
- ☑ One "Mainboard Utility" CD

The system board and accessories in the package may not come similar to the information listed above. This may differ in accordance to the sales region or models in which it was sold. For more information about the standard package in your region, please contact your dealer or sales representative.

Before Using the System Board

Before using the system board, prepare basic system components.

If you are installing the system board in a new system, you will need at least the following internal components.

- A CPU
- Memory module
- Storage devices such as hard disk drive, CD-ROM, etc.

You will also need external system peripherals you intend to use which will normally include at least a keyboard, a mouse and a video display monitor.

Chapter 1 - Introduction

Specifications

Processor	Pentium® III - FCPGA2 133MHz FSB (1.13GHz-1.26GHz on 0.13μ) - FCPGA 133MHz FSB (533EB-1GHz) - FCPGA 100MHz FSB (500E-1.1GHz) Celeron™ - FCPGA2 100MHz FSB (≥1.2GHz on 0.13μ) - FCPGA 100MHz FSB (800MHz-1.1GHz)
Chipset	VIA® chipset - North bridge: VIA® Apollo PLE133T 8601T - South bridge: VIA® 82C686B
System Memory	Supports up to 1GB using VCM (Virtual Channel Memory) or PC SDRAM DIMM (unbuffered or registered) Two 168-pin DIMM sockets Uses x64 PC SDRAM, 3.3V - PC-100 SDRAM DIMM for 100MHz FSB processors - PC-133 SDRAM DIMM for 133MHz FSB processors
Expansion Slots	4 PCI slots 3 ISA slots
BIOS	Award BIOS 2Mbit flash memory
Power Management	ACPI and OS Directed Power Management ACPI STR (Suspend to RAM) function Wake-On-PS/2 Keyboard/Mouse Wake-On-USB Keyboard/Mouse Wake-On-LAN Wake-On-Ring RTC timer to power-on the system AC power failure recovery
Hardware Monitor	Monitors CPU/system temperature and overheat alarm Monitors VCORE/3.3V/5V/12V voltages and failure alarm Monitors CPU/chassis fan speed and failure alarm CPU Overheat Protection function monitors CPU temperature during system boot-up
Graphics	Integrated Trident 2D/3D video accelerator
Audio	Realtek ALC202A AC'97 audio CODEC 2-channel audio output

LAN	Realtek RTL8100C PCI LAN Fully compliant to IEEE 802.3 (10BASE-T) and 802.3u (100BASE-TX) standards
IDE	Supports two IDE connectors that allows connecting up to four UltraDMA 100Mbps hard drives
Rear Panel I/O	1 mini-DIN-6 PS/2 mouse port 1 mini-DIN-6 PS/2 keyboard port 1 RJ45 LAN port 2 USB 1.1 ports 1 parallel port 1 COM port 1 VGA port 1 game port Line-out, line-in and mic-in jacks
Internal I/O	1 connector for 2 additional external USB 1.1 ports 1 connector for 1 external COM port 1 front audio connector for external line-out and mic-in jacks 1 CD-in internal audio connector 1 AUX-in internal audio connector 1 IrDA connector 2 IDE connectors 1 floppy connector 1 Wake-On-LAN connector 1 Wake-On-Ring connector 1 20-pin ATX main power connector 1 front panel connector 2 fan connectors
PCB	ATX form factor 20.1cm (7.92") x 30.5cm (12")

Features

The integrated Trident video accelerator supports optimized Shared Memory Architecture (SMA) and shares 8MB of the system memory. 3D rendering features 32-bit true color rendering and MPEG-2 video textures. It also supports 2D hardware acceleration features.

CPU Overheat Protection has the capability of monitoring the CPU's temperature during system boot up. Once the CPU's temperature exceeded the temperature limit pre-defined by the CPU, the system will automatically shutdown. This preventive measure has been added to protect the CPU from damage and insure a safe computing environment.

The two DIMM sockets support PC SDRAM DIMMs. PC SDRAM (Synchronous Dynamic Random Access Memory) uses a fast memory interface technology that includes using the clock on the chip to synchronize with the CPU clock so that the timing of the memory chips and the timing of the CPU are synchronized. This saves time during transmission of data, subsequently increasing system performance.

The onboard Realtek ALC202A which is an AC'97 compatible audio codec supports 2-channel audio output.

The Realtek RTL8100C PCI LAN supports up to 100Mbps.

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

USB 1.1 The system board supports 4 USB 1.1 ports at 12Mb/second bandwidth. USB allows data exchange between your computer and a wide range of simultaneously accessible external Plug and Play peripherals.

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

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

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

Important:
The 5VSB power source of your power supply must support ≥720mA.

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

Important:
The 5VSB power source of your power supply must support ≥720mA.

WAKE-ON-USB This function allows you to use a USB keyboard or USB mouse to wake up a system from the S3 (STR - Suspend To RAM) state.

Important:
If you are using the Wake-On-USB Keyboard/Mouse function for 2 USB ports, the 5VSB power source of your power supply must support ≥1.5A. For 3 or more USB ports, the 5VSB power source of your power supply must support ≥2A.

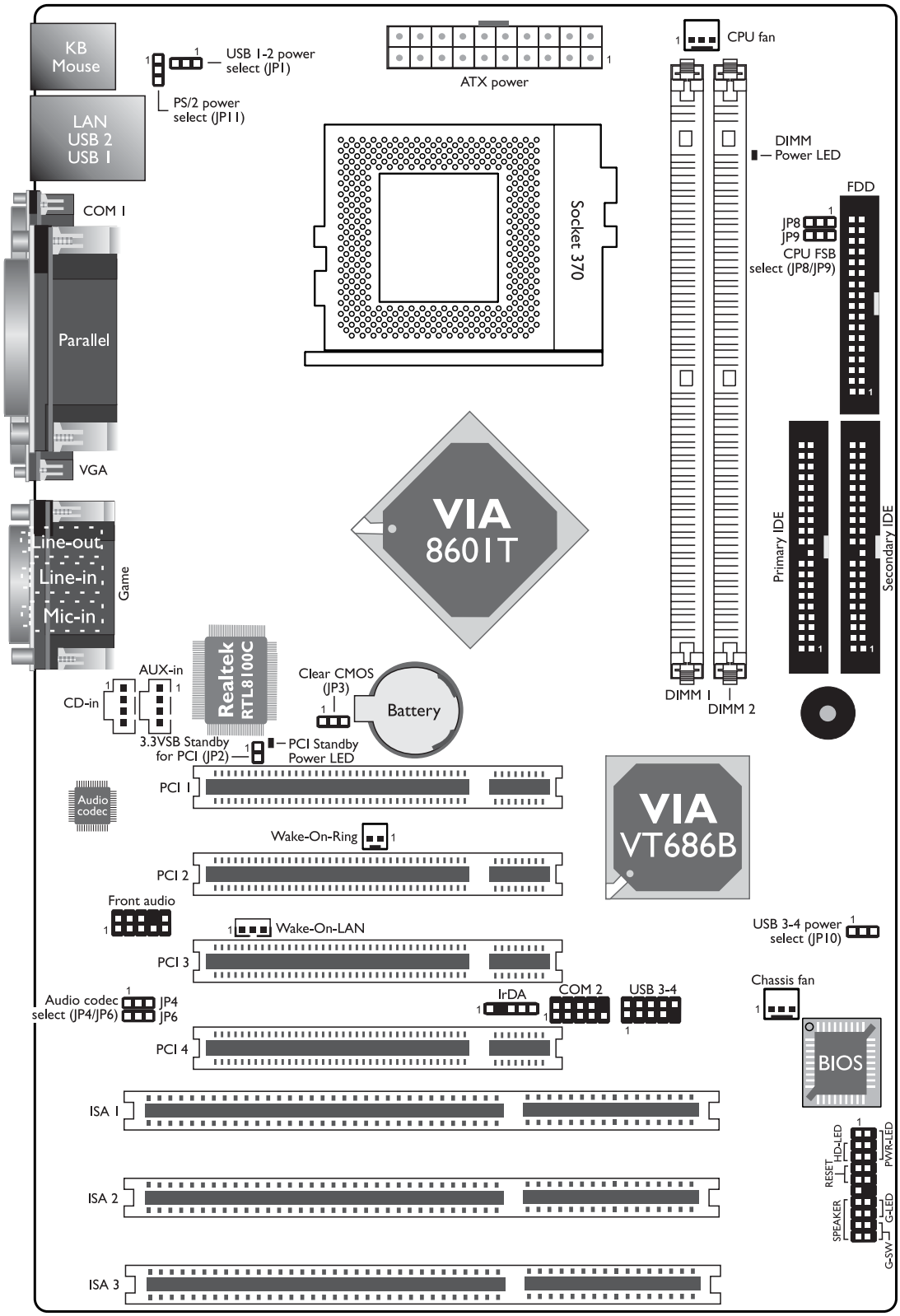
ACPI The system board is designed to meet the ACPI (Advanced Configuration and Power Interface) specification. ACPI has energy saving features that enables PCs to implement Power Management and Plug-and-Play with operating systems that support OS Direct Power Management. Currently, only Windows® 2000/XP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

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

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

Chapter 2 - Hardware Installation

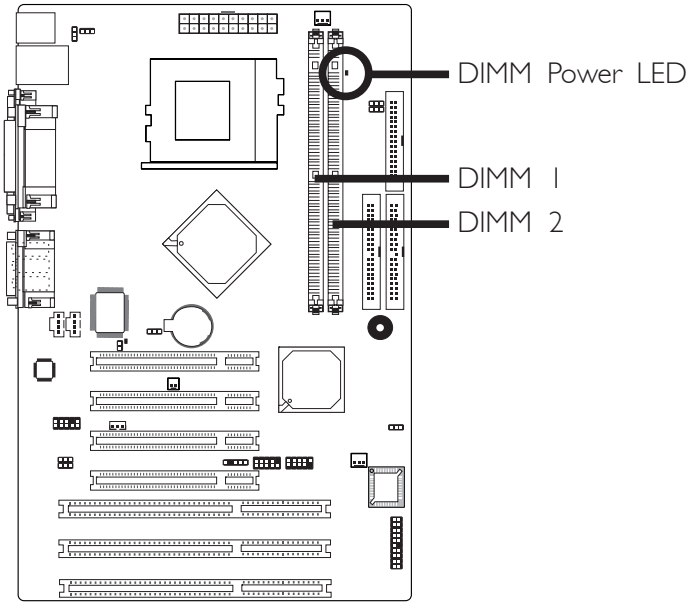
System Board Layout



Warning:
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.

System Memory

Warning:
When the DIMM Power LED lit red, it indicates that power is present on the DIMM sockets. Power-off the PC then unplug the power cord prior to installing any memory modules. Failure to do so will cause severe damage to the motherboard and components.



The system board is equipped with two 168-pin DIMM (Dual In-line Memory Module) sockets that support VCM or PC SDRAM DIMM. PC SDRAM (Synchronous Dynamic Random Access Memory) uses a fast memory interface technology that includes using the clock on the chip to synchronize with the CPU clock so that the timing of the memory chips and the timing of the CPU are synchronized. This saves time during transmission of data, subsequently increasing system performance.

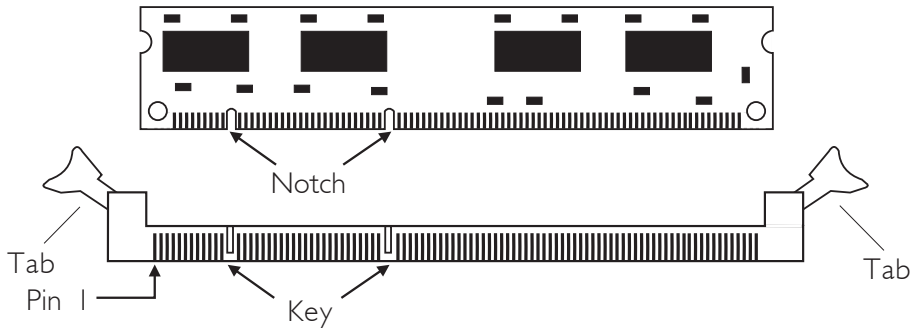
Important:
If you are using more than one DIMM, make sure you insert the same type of DIMMs into the DIMM sockets. Using different types (VCM or PC SDRAM) of DIMMs may cause problems.

BIOS Setting

Configure the system memory in the Advanced Chipset Features submenu of the BIOS.

Installing the DIMM

A DIMM simply snaps into a DIMM socket on the system board. Pin 1 of the DIMM 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 "notches" in the module aligned with the "keys" 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.

CPU

Overview

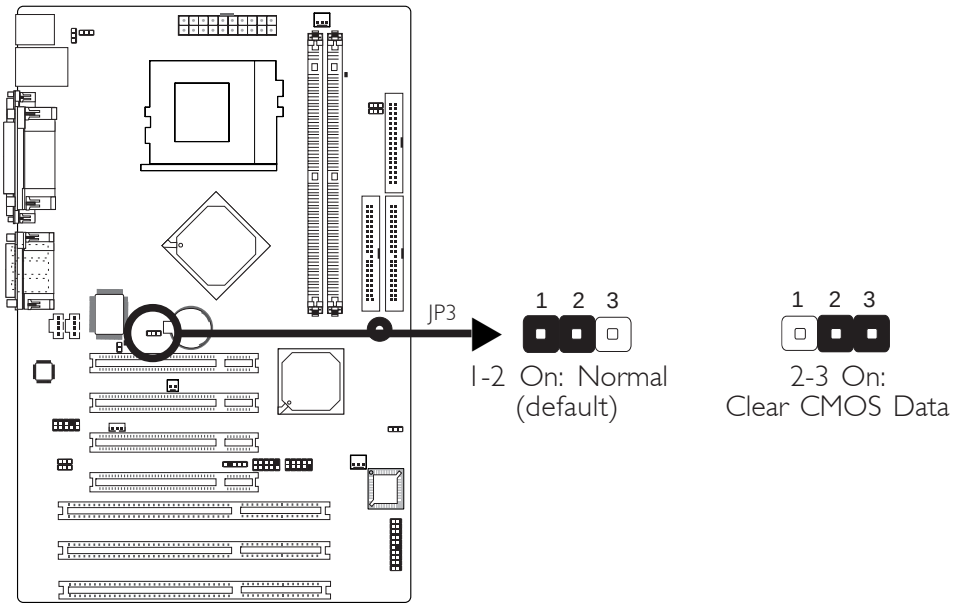
The system board is equipped with a surface mount 370-pin CPU socket for installing an Intel Pentium® III or Celeron™ CPU.

Installing the CPU

1. Make sure the PC and all other peripheral devices connected to it has been powered down.
2. Disconnect all power cords and cables.
3. Locate Socket 370 on the system board.
4. Unlock the socket by pushing the lever sideways, away from the socket, then lifting it up to a 90° angle. Make sure the socket is lifted to at least this angle otherwise the CPU will not fit in properly.
5. Position the CPU above the socket then align the marked corner of the CPU (designated as pin 1) with pin 1 of the socket.
6. Insert the CPU into the socket until it is seated in place. The CPU will fit in only one orientation and can easily be inserted without exerting any force. Do not force the CPU into the socket. Forcing the CPU into the socket may bend the pins and damage the CPU.
7. Once the CPU is in place, push down the lever to lock the socket. The lever should click on the side tab to indicate that the CPU is completely secured in the socket.
8. Place the CPU fan heatsink on the CPU. Latch one side of the fan heatsink's retaining clip onto the protruding tab on the side of the socket.
9. Push down the other retaining clip until it latches and lock onto the protruding tab on that side of the socket. Make sure there is sufficient air circulation across the CPU fan heatsink.
10. Connect the CPU fan's cable connector to the CPU fan connector on the system board.

Jumper Settings

Clear CMOS Data



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 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. Now power-on the system.

   If your reason for clearing the CMOS data is due to incorrect setting of the processor's 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.

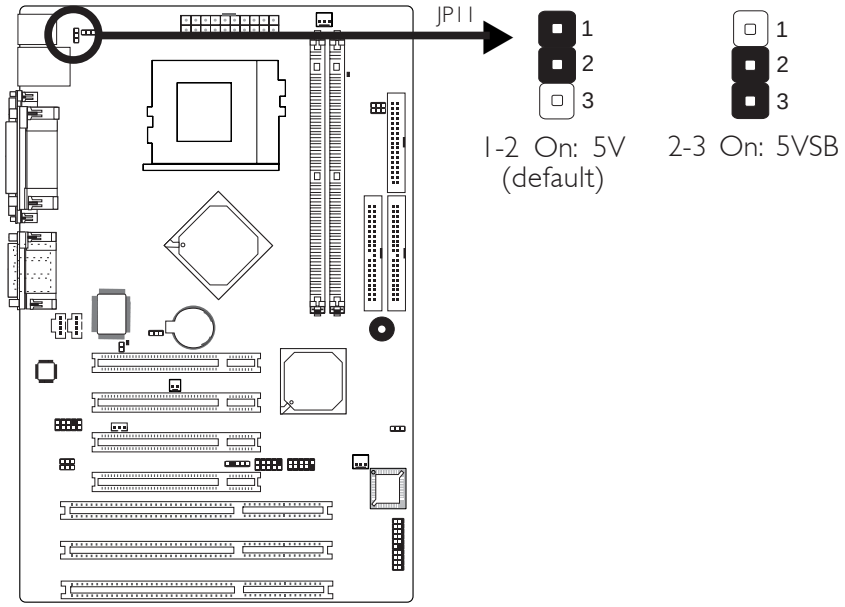
5. Select the Frequency/Voltage Control submenu and press <Enter>.

6. Set the processor's clock to its default setting or an appropriate bus clock. Refer to 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>.

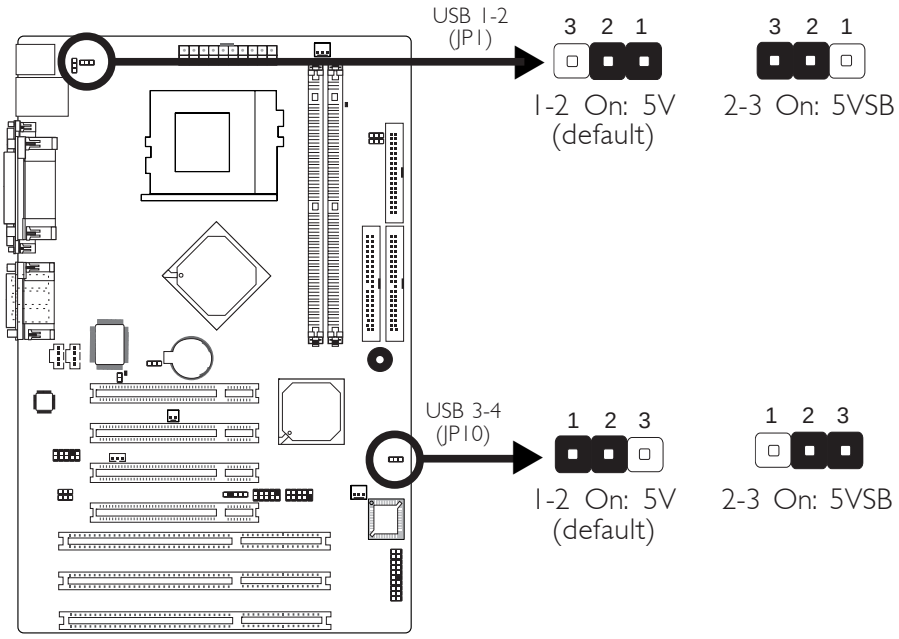
PS/2 Power Select



JP11 is used to select the power of the PS/2 keyboard/mouse port. Selecting 5VSB will allow you to use the PS/2 keyboard or PS/2 mouse to wake up the system.

Important:
The 5VSB power source of your power supply must support ≥720mA.

USB Power Select



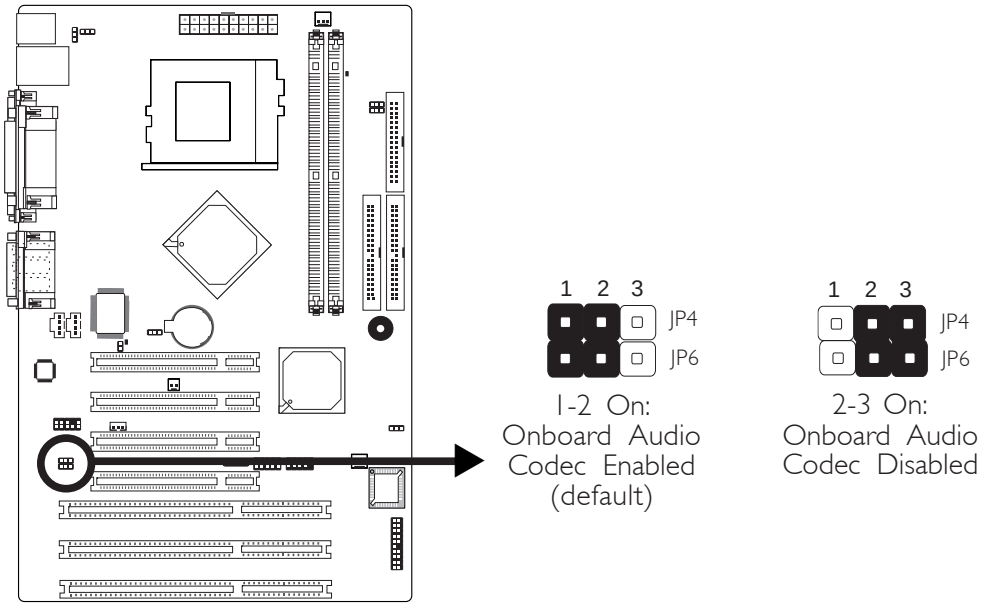
JP1 and JP10 are used to select the power of the USB ports. Selecting 5VSB will allow you to use the USB keyboard or USB mouse to wake up the system.

BIOS Setting

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

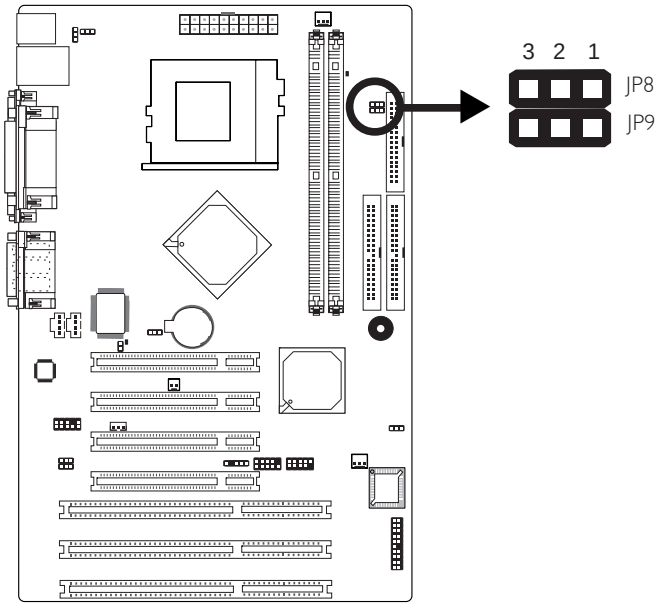
Important:
If you are using the Wake-On-USB Keyboard/Mouse function for 2 USB ports, the 5VSB power source of your power supply must support ≥1.5A. For 3 or more USB ports, the 5VSB power source of your power supply must support ≥2A.

Onboard Audio Codec Select



JP4 and JP6 are used to enable or disable the onboard audio codec.

CPU FSB Select



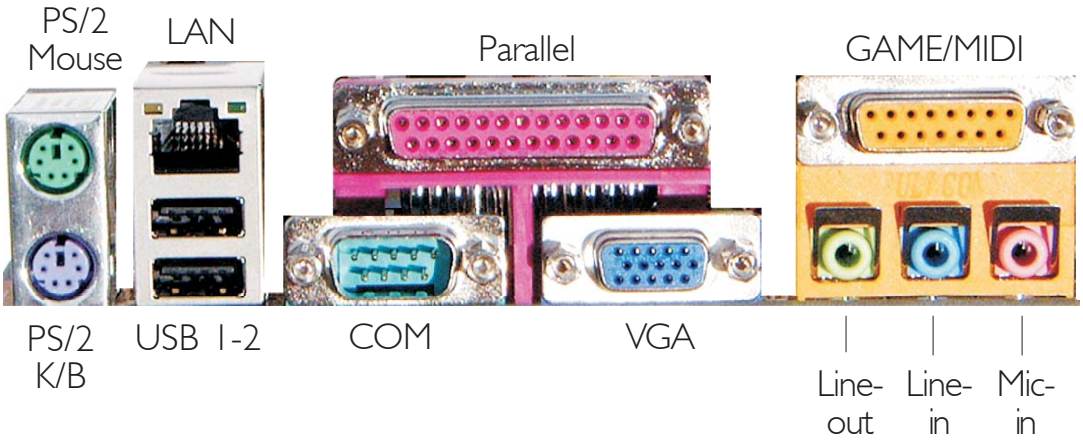
FSB	JP8	JP9
Auto	1-2 On	1-2 On
66MHz	2-3 On	2-3 On
100MHz	2-3 On	All Off
133MHz	All Off	All Off

JP8 and JP9 are used to select the front side bus of the CPU. The default setting is Auto. The system will run according to the front side bus of the CPU installed on the system board. You can also set the FSB fixed at 100MHz or 133MHz.

Important:

- *If you are using a CPU whose frequency has been locked by the manufacturer, overclocking will have no effect.*
- *Overclocking may result to the CPU's or system's instability and are not guaranteed to provide better system performance. If you are unable to boot your system due to overclocking, make sure to set these jumpers back to their default settings.*

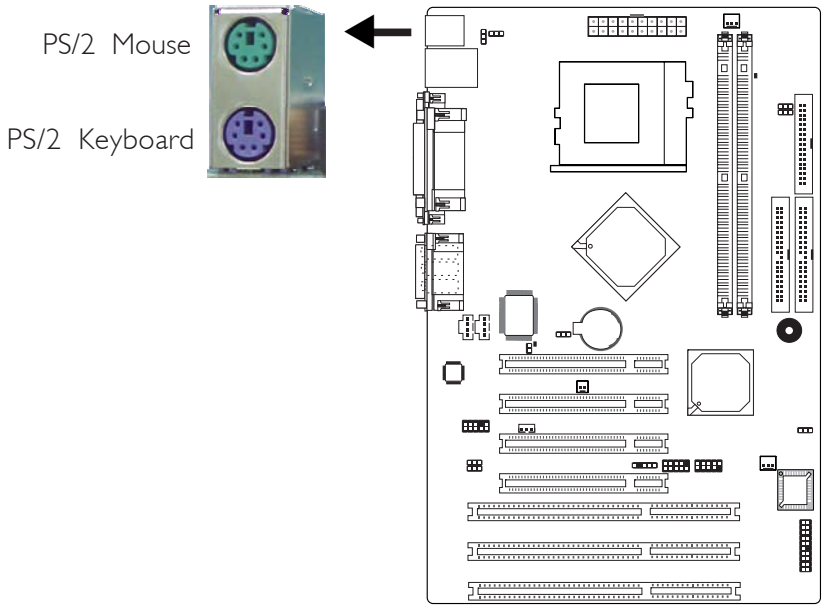
Rear Panel I/O Ports



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

- PS/2 mouse port
- PS/2 keyboard port
- LAN port
- USB ports
- Parallel port
- COM port
- VGA port
- Game/MIDI port
- Line-out port
- Line-in port
- Mic-in port

PS/2 Mouse and PS/2 Keyboard



The system board is equipped with an onboard PS/2 mouse (Green) and PS/2 keyboard (Purple) ports - both at location J1 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.

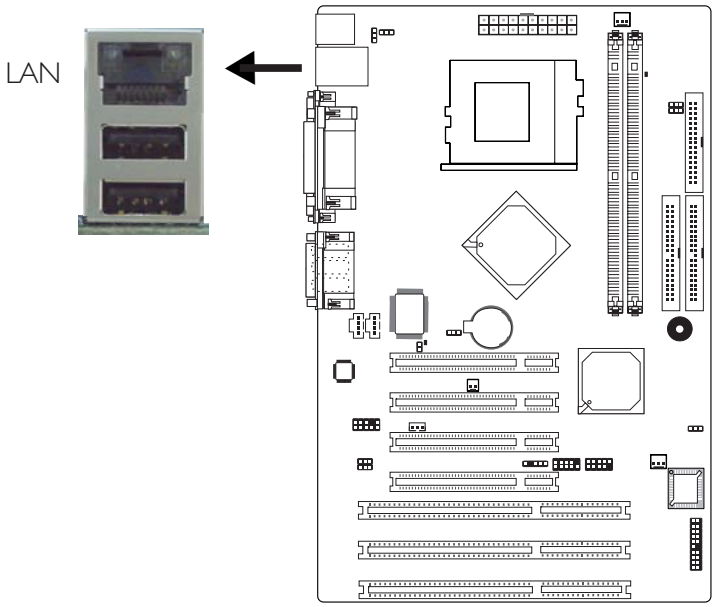
Warning:
Make sure to turn off your computer prior to connecting or disconnecting a mouse or keyboard. Failure to do so may damage the system board.

Wake-On-PS/2 Keyboard/Mouse

The Wake-On-PS/2 Keyboard/Mouse function allows you to use the PS/2 keyboard or PS/2 mouse to power-on the system. To use this function:

- **Jumper Setting:**
  JP11 must be set to "2-3 On: 5VSB". Refer to "PS/2 Power Select" in this chapter for more information.

RJ45 LAN



The onboard LAN port is at location J2 of the system board. LAN allows the system board to connect to a local area network by means of a network hub.

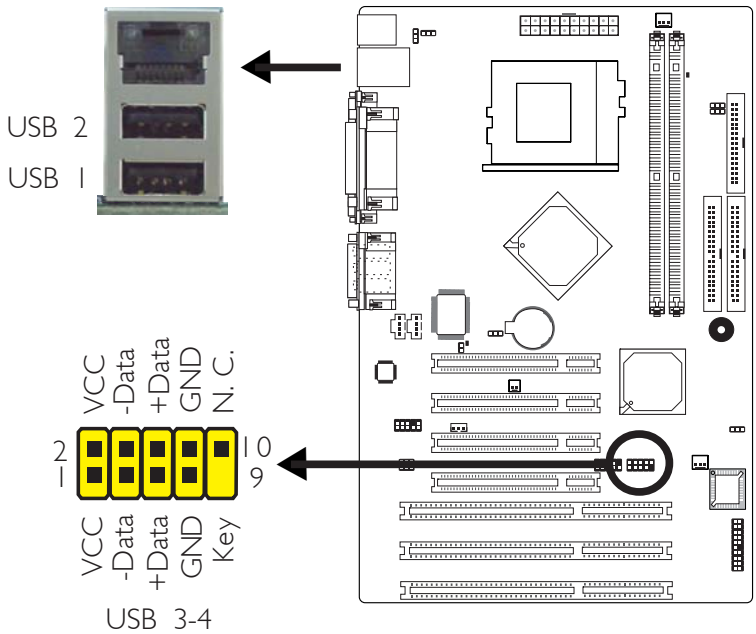
BIOS Setting

Configure the onboard LAN in the Advanced BIOS Features submenu of the BIOS. Refer to chapter 3 for more information.

Driver Installation

Install the LAN driver. Refer to chapter 4 for more information.

USB (Universal Serial Bus)



The system board supports 4 USB 1.1 ports. Two onboard USB 1.1 ports (Black) are at location J2 (USB 1-2) of the system board.

The J24 (USB 3-4) connector allows you to connect 2 additional USB 1.1 ports. Your USB ports may come mounted on a card-edge bracket. Install the card-edge bracket to an available slot at the rear of the system chassis then insert the connector that is attached to the USB port cables to J24. Make sure pin 1 of the cable connector is aligned with pin 1 of the J24.

BIOS Setting

Configure the onboard USB in the Advanced Chipset Features submenu of the BIOS. Refer to chapter 3 for more information.

Driver Installation

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

Wake-On-USB Keyboard/Mouse

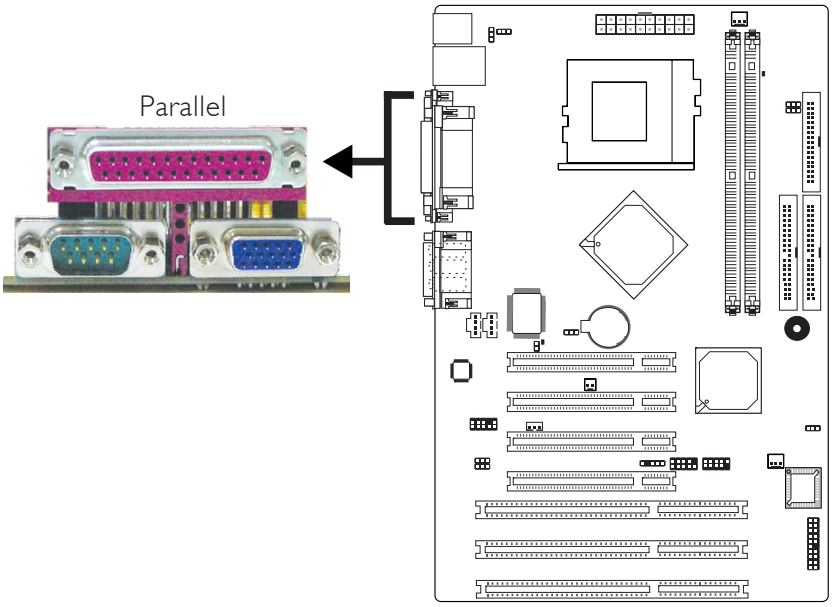
The Wake-On-USB Keyboard/Mouse function allows you to use a USB keyboard or USB mouse to wake up a system from the S3 (STR - Suspend To RAM) state. To use this function:

- **Jumper Setting:**
  JP1 and/or JP10 must be set to "2-3 On: 5VSB". Refer to "USB Power Select" in this chapter for more information.

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

Important:
If you are using the Wake-On-USB Keyboard/Mouse function for 2 USB ports, the 5VSB power source of your power supply must support ≥1.5A. For 3 or more USB ports, the 5VSB power source of your power supply must support ≥2A.

Parallel Port



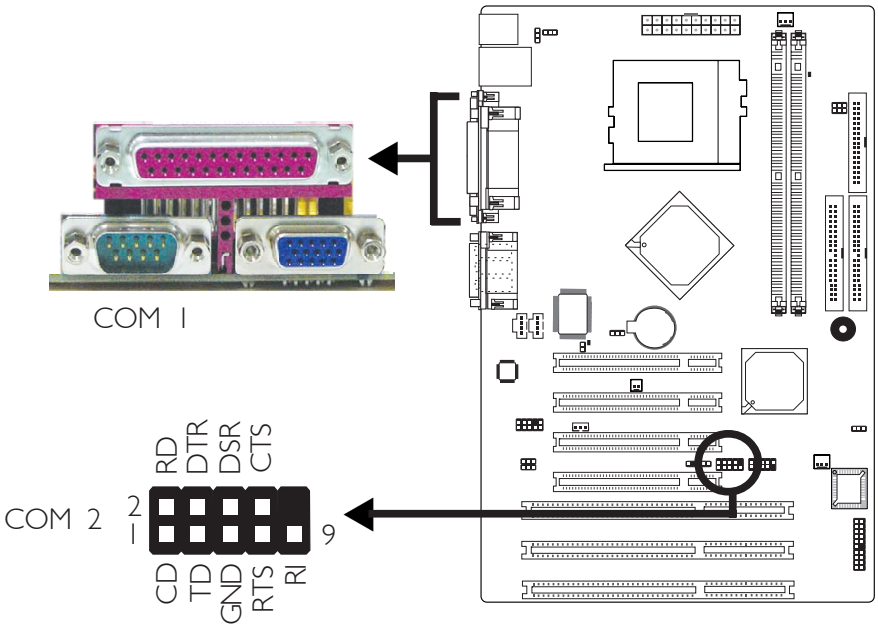
The system board has a standard parallel port (Burgundy) at location J9 for interfacing your PC to a parallel printer. It supports SPP, ECP and EPP.

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

BIOS Setting

Configure the parallel port in the Integrated Peripherals submenu of the BIOS. Refer to chapter 3 for more information.

COM (Serial) Ports



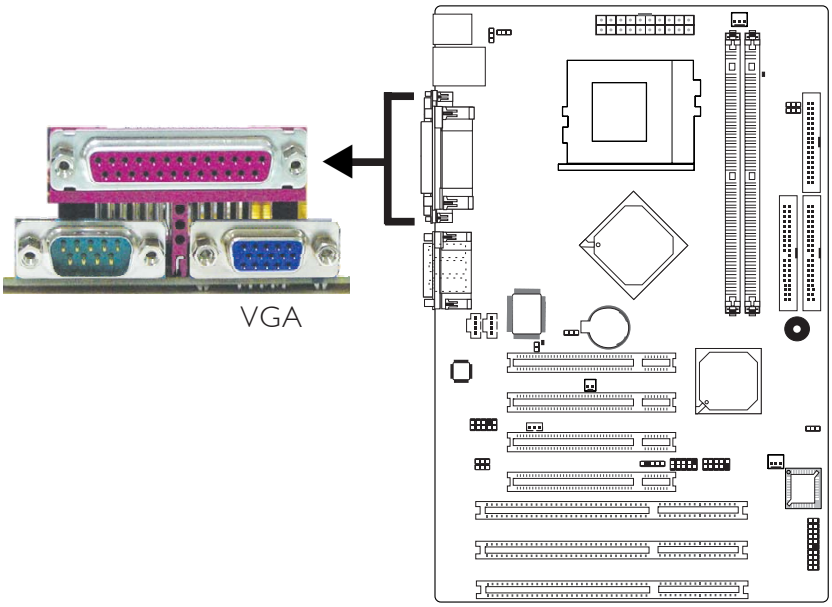
The system board is equipped with an onboard serial port at location J8 (COM 1). It is also equipped with a 9-pin connector at location J17 (COM 2). These serial ports are RS-232 asynchronous communication ports with 16C550A-compatible UARTs that can be used with modems, serial printers, remote display terminals, and other serial devices.

To connect COM 2, please refer to the following description. Your COM port may come mounted on a card-edge bracket. Install the card-edge bracket to an available slot at the rear of the system chassis then insert the connector that is attached to the COM port cable to J17.

BIOS Setting

Configure the serial ports in the Integrated Peripherals submenu of the BIOS. Refer to chapter 3 for more information.

VGA Port



The system board can only be used with an analog video monitor. Connect the monitor's 15-pin D-shell cable connector to the VGA port (Blue) at location J3. If your monitor supports analog video but does not have a 15-pin D-shell connector, see your monitor dealer for the adapter or optional cable. After you plug the monitor cable into the VGA port, gently tighten the cable screws to hold the connector in place. Some monitors have a switch that chooses between analog and TTL (or digital) operation. If your monitor has such a switch, set it for analog.

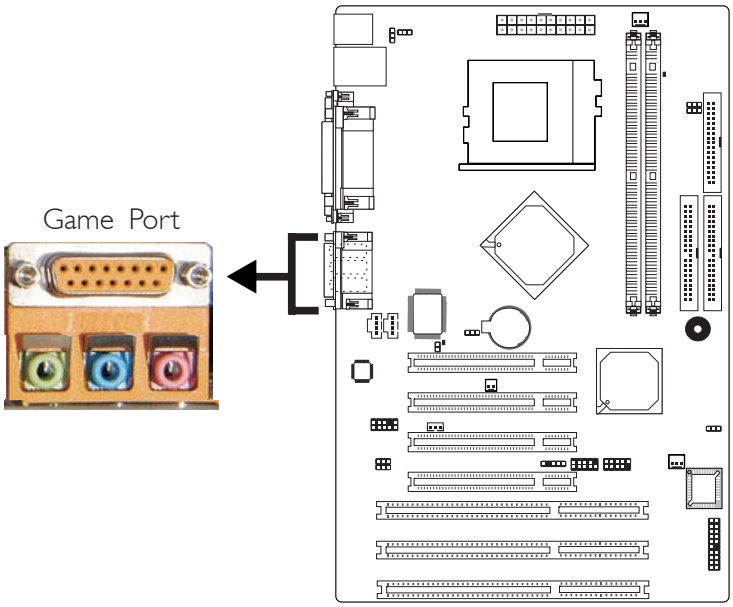
BIOS Setting

Configure the onboard VGA in the Advanced Chipset Features submenu of the BIOS.

Driver Installation

Install the graphics driver. Refer to chapter 4 for more information.

Game Port

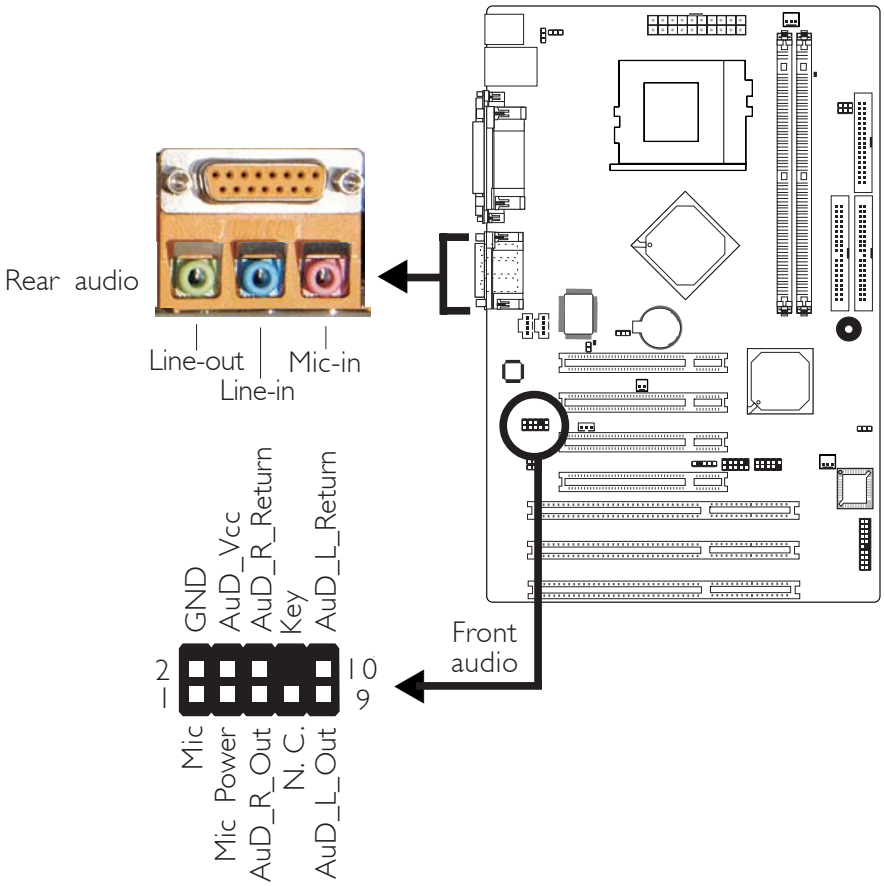


The Game/MIDI port is identical to that of a standard PC game adapter or game I/O port. Connect an analog joystick to the 15-pin D-sub connector (Gold) at location J10 of the system board. This port works well with any application that is compatible with the standard PC joystick.

BIOS Setting

Configure the game port in the Integrated Peripherals submenu of the BIOS. Refer to chapter 3 for more information.

Audio (Rear Audio and Front Audio)



Rear Audio

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 - J4)
This jack is used to connect external speakers for audio output from the system board.

Line-in Jack (Light Blue - J5)
This jack is used to connect any audio devices such as Hi-fi set, CD player, tape player, AM/FM radio tuner, synthesizer, etc.

Mic-in Jack (Pink - J6)
This jack is used to connect an external microphone.

Front Audio

The front audio connector (JP7) allows you to connect to the line-out and mic-in jacks that are at the front panel of your system. Using the line-out and mic-in jacks will disable the rear audio's line-out and mic-in functions.

Remove the jumper caps from pins 5-6 and pins 9-10 of JP7 prior to connecting the front audio cable connector. Make sure pin 1 of the cable connector is aligned with pin 1 of JP7. If you are not using this connector, make sure to replace the jumper caps back to their original pin locations.

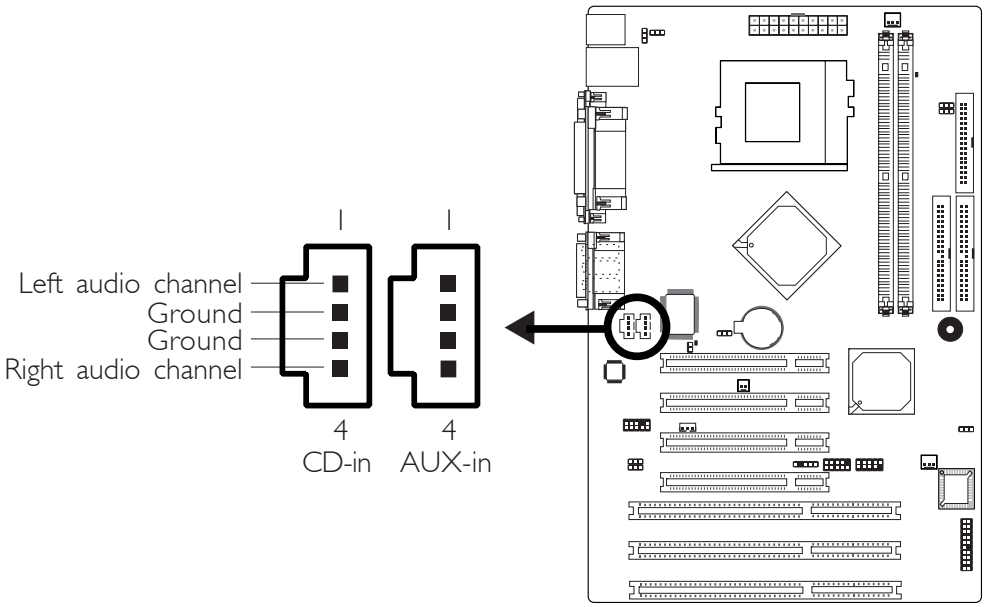
Pins 5-6 and 9-10 short (default)	The front audio is disabled. The rear audio is enabled.
Pins 5-6 and 9-10 open	The front audio is enabled. The rear audio is disabled.

Driver Installation

Install the audio drivers. Refer to chapter 4 for more information.

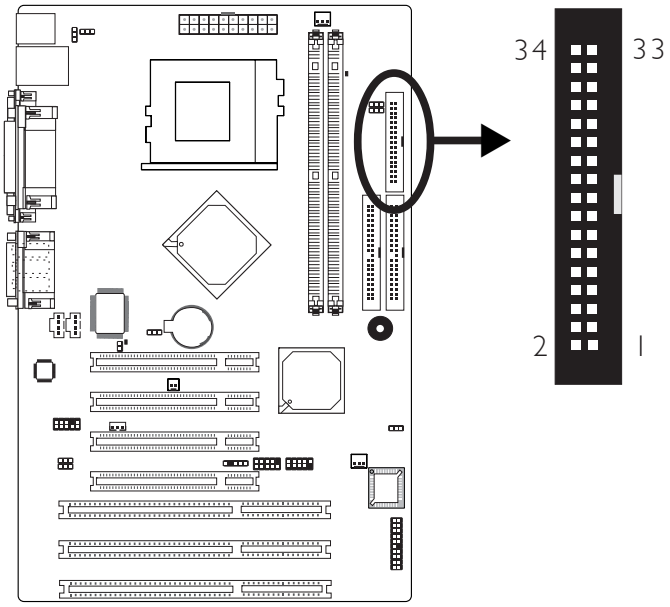
Internal I/O Connectors

Internal Audio Connectors



The CD-in (J11) and AUX-in (J12) connectors are used to receive audio from a CD-ROM drive, TV tuner or MPEG card.

Floppy Disk Drive Connector



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

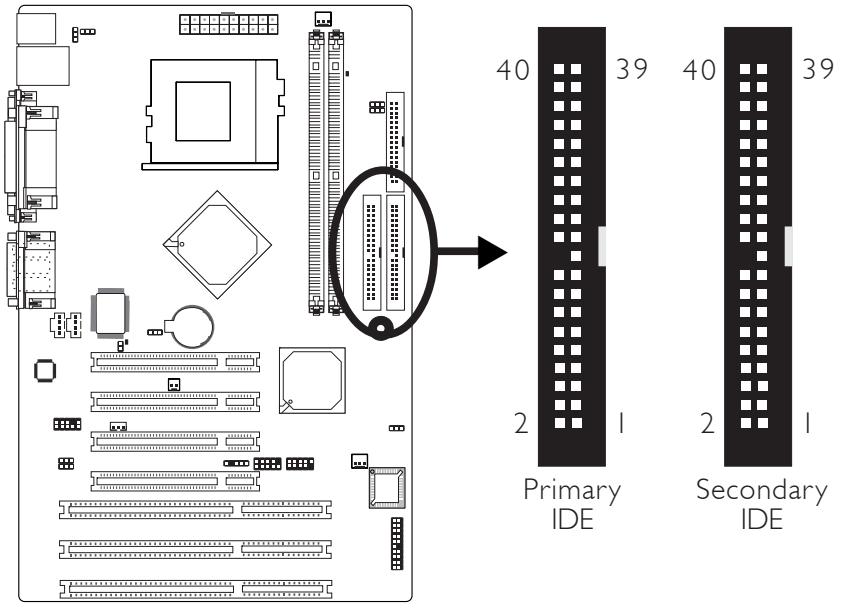
Connecting the Floppy Disk Drive Cable

Install one end of the floppy disk drive cable into the shrouded floppy disk header (J22) on the system board and the other end-most connector to the drive you want to designate as Drive A. If you are connecting another drive (Drive B), install the middle connector of the cable to the drive. The colored edge of the daisy chained ribbon cable should be aligned with pin 1 of J22.

BIOS Setting

Enable or disable this function in the Integrated Peripherals submenu of the BIOS. Refer to chapter 3 for more information.

IDE Disk Drive Connectors



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

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

Connecting the IDE Disk Drive Cable

Install one end of the IDE cable into the primary IDE header (J20) on the system board and the other connectors to the IDE devices.

If you are adding a third or fourth IDE device, use another IDE cable and install one end of the cable into the secondary IDE header (J23) on the system board and the other connectors to the IDE devices.

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

Adding a Second IDE Disk Drive

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

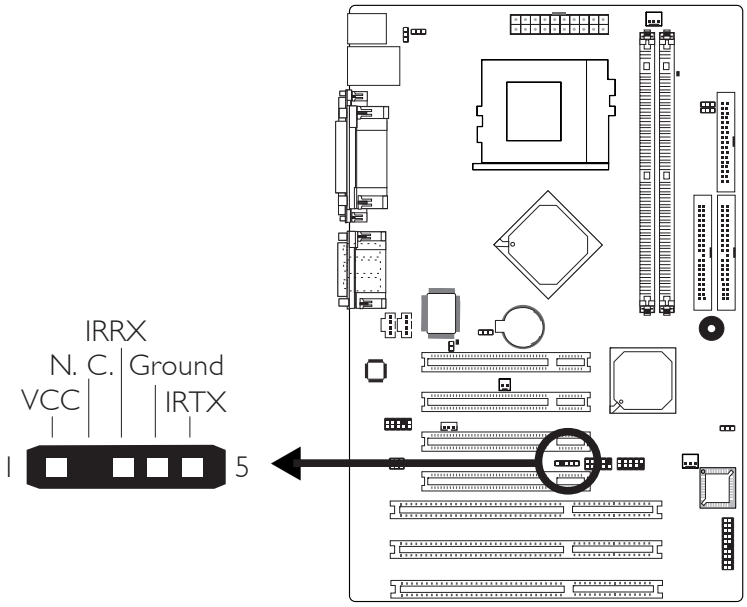
The system board supports Enhanced IDE or ATA-2, ATA/33, ATA/66 or ATA/100 hard drives. We recommend that you use hard drives from the same manufacturer. In a few cases, drives from two different manufacturers will not function properly when used together. The problem lies in the hard drives, not the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

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

BIOS Setting

Configure the onboard IDE in the Integrated Peripherals submenu of the BIOS. Refer to chapter 3 for more information.

IrDA Connector



The IrDA connector at location J16 is for connecting an IrDA module. Connect the cable connector from your IrDA module to J16.

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 connector to the IrDA connector according to their pin functions.

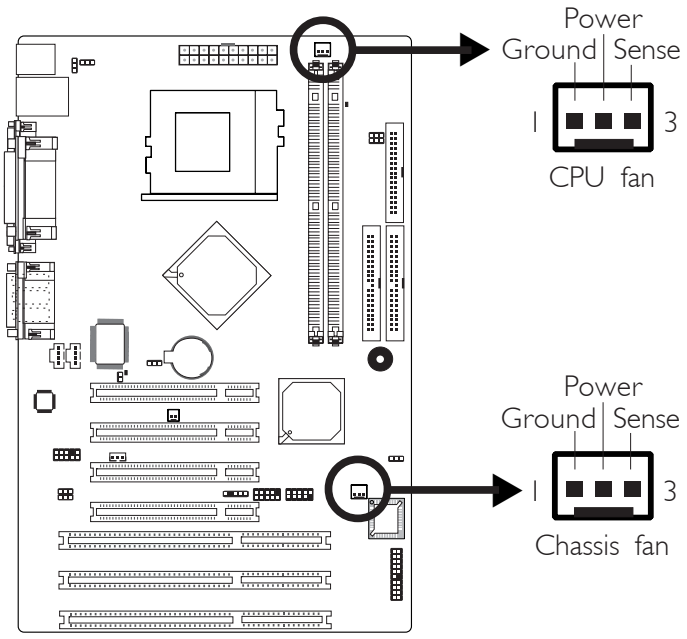
BIOS Setting

Configure IrDA in the Integrated Peripherals submenu of the BIOS.

Driver Installation

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

Cooling Fan Connectors

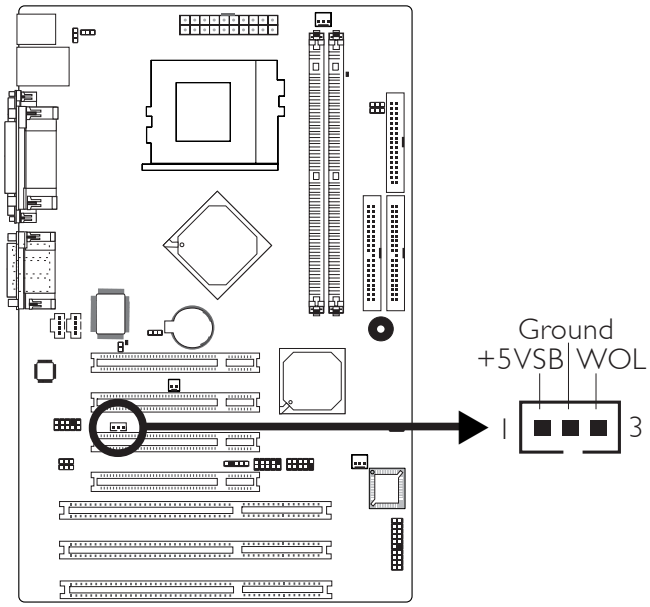


Connect the CPU fan's cable connector to the CPU fan connector (J18) on the system board. The chassis fan (J19) is used to connect an additional cooling fan. The cooling fan will provide adequate airflow throughout the chassis to prevent overheating the CPU and system board components.

BIOS Setting

The "PC Health Status" submenu of the BIOS will display the current speed of the cooling fans. Refer to chapter 3 for more information.

Wake-On-LAN Connector



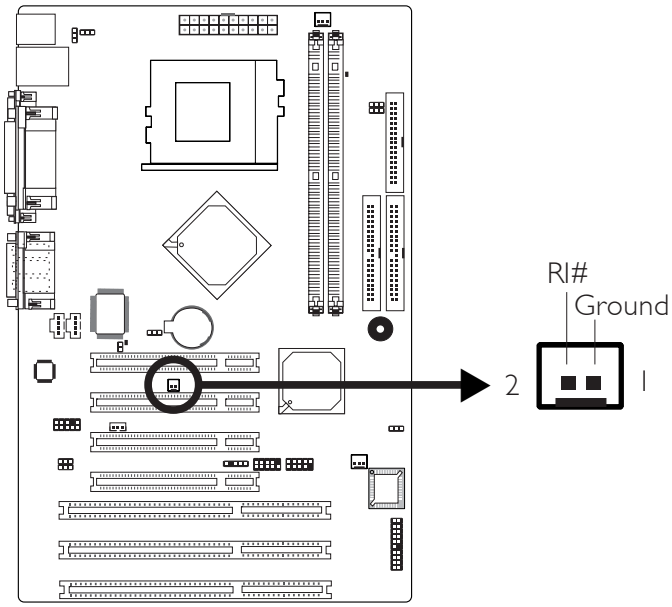
Your LAN card package should include a cable. Connect one end of the cable to the wakeup header on the card and the other end to location J13 on the system board. The network will detect Magic Packet and assert a wakeup signal to power-up the system. Refer to the add-in card's manual for details. Note: Your LAN card must support the remote wake up function.

Important:
The 5VSB power source of your power supply must support ≥720mA.

BIOS Setting

Enable the "Wake Up On LAN/Ring" field in the Power Management Setup submenu ("Wake Up Events" section) of the BIOS.

Wake-On-Ring Connector



The Wake-On-Ring connector is used to connect to an internal modem add-in card that has the same connector. It will allow the system that is in the Suspend mode or Soft Power Off mode to wake-up/power-on to respond to calls coming through the internal modem card.

To use this function, connect one end of the cable (that came with the card) to the card's wake-on-ring connector and the other end to location J14 on the system board.

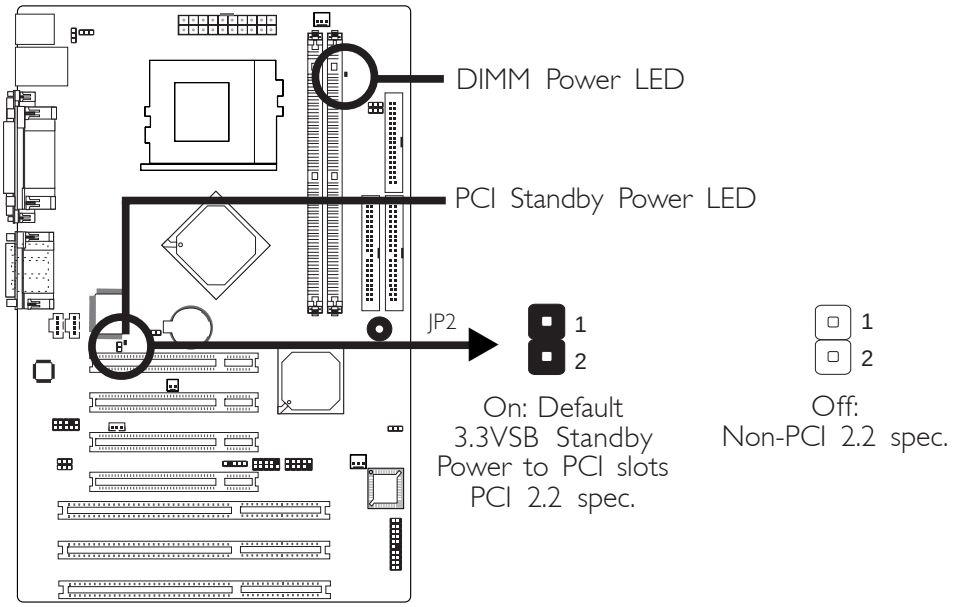
If you are using an external modem, the ring-on function will come through the serial port where the external modem is connected.

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

BIOS Setting

Enable the "Wake Up On LAN/Ring" field in the Power Management Setup submenu ("Wake Up Events" section) of the BIOS.

DIMM Power LED and PCI Standby Power LED



DIMM Power LED

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

PCI Standby Power LED

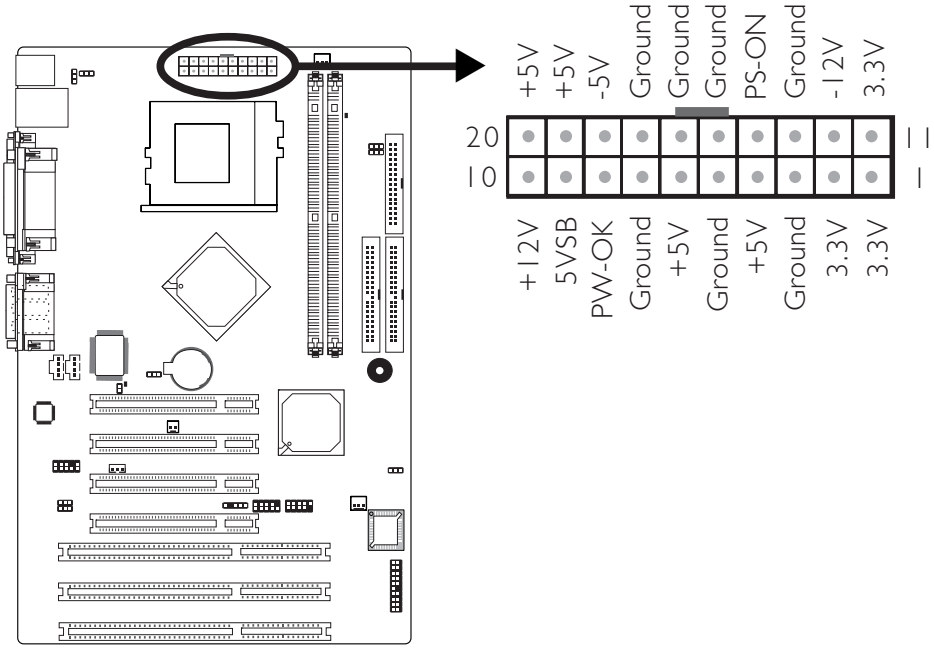
This LED will turn red when the system is in the power-on, Soft-Off or Suspend (Power On Suspend or Suspend to RAM) state.

3.3VSB Standby for PCI (Jumper JP2)

The default setting of jumper JP2 is On. It provides 3.3VSB Standby power to the PCI slots. If you are using a PCI modem card that does not comply to the PCI 2.2 specification, please set this jumper to Off. The PCI Standby Power LED's light will subsequently turn off.

Warning:
When the DIMM Power LED and/or PCI Standby Power LED lit red, it indicates that power is present on the DIMM sockets and/or PCI slots. Power-off the PC then unplug the power cord prior to installing any memory modules or add-in cards. Failure to do so will cause severe damage to the system board and components.

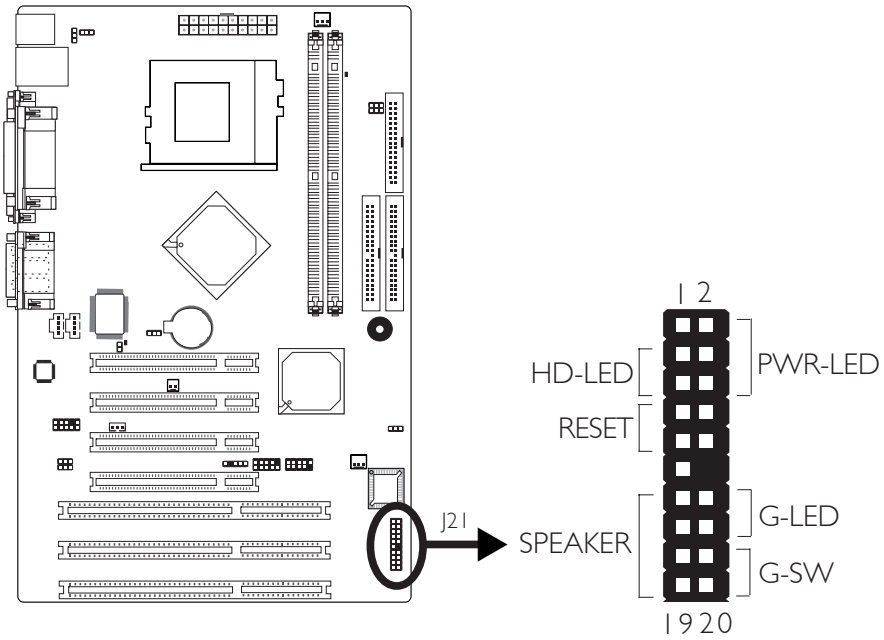
Power Connector



Use a power supply that complies with the ATX12V Power Supply Design Guide Version 1.1. An ATX12V power supply has a standard 20-pin ATX main power connector that must be inserted onto the PL1 connector.

The system board requires a minimum of 180 Watt power supply to operate. Your system configuration (amount of memory, add-in cards, peripherals, etc.) may exceed the minimum power requirement. To ensure that adequate power is provided, use a 300 Watt (or greater) power supply.

Front Panel Connector



HD-LED: Primary/Secondary IDE LED

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

RESET: Reset Switch

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

SPEAKER: Speaker Connector

This connects to the speaker installed in the system chassis.

G-SW: Green Switch

This switch will allow your system to enter the Suspend mode.

G-LED: Green LED

This LED will not light when the system's power is on or when the system is in the S3 (STR - Suspend To RAM) state. It will blink every second when the system is in the S1 (POS - Power On Suspend) state.

PWR-LED: Power/Standby LED

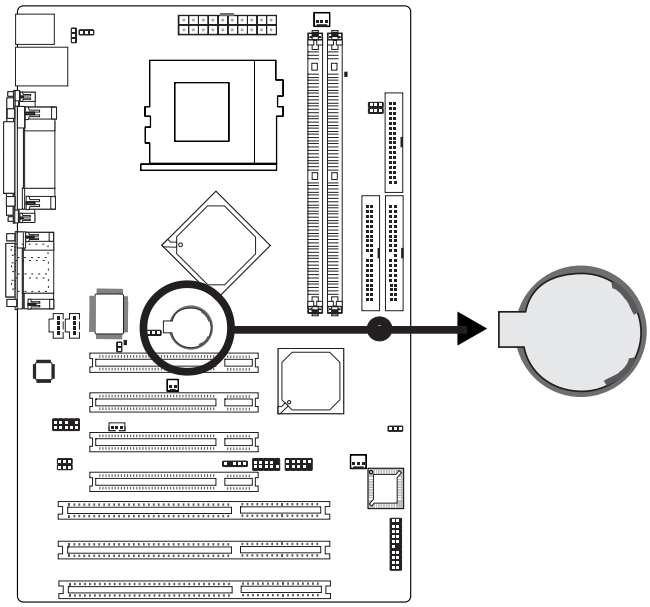
When the system's power is on, this LED will light. When the system is in the S1 (POS - Power On Suspend) or S3 (STR - Suspend To RAM) state, it will blink every second.

Note:

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

	Pin	Pin Assignment
HD-LED (Primary/Secondary IDE LED)	3 5	HDD LED Power HDD
G-LED (Green LED)	14 16	Green LED Power Ground
Reserved	8 10	N. C. N. C.
G-SW (Green switch)	18 20	Ground SMI
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

Battery



The lithium ion battery powers the real-time clock and CMOS memory. It is an auxiliary source of power when the main power is shut off.

Safety Measures

- 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.

Chapter 3 - BIOS Setup

Award BIOS Setup Utility

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

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

Press DEL to enter setup

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

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

CMOS Setup Utility - Copyright (C) 1984-2000 Award Software

Standard CMOS Features	Frequency/Voltage Control
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
F10 : Save & Exit Setup
↑↓→← : Select Item

Time, Date, Hard Disk Type...

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)	Fri, Nov 25 2005	Menu Level
Time (hh:mm:ss)	4 : 35 : 5	Change the day, month, year and century
▶ IDE Primary Master	Press Enter None	
▶ IDE Primary Slave	Press Enter None	
▶ IDE Secondary Master	Press Enter None	
▶ IDE Secondary Slave	Press Enter None	
Drive A	1.44M, 3.5 in.	
Drive B	None	
Video	EGA/VGA	
Halt On	All, But Keyboard	
Base Memory	640K	
Extended Memory	129024K	
Total Memory	130048K	

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

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

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.

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.

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>.

IDE HDD Auto Detection

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

IDE Primary/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".

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.

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.

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

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.

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.

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.

Extended Memory

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

Total Memory

Displays the total memory available in the system.

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

	Onboard LAN Control	Enabled
	Virus Warning	Disabled
	CPU Internal Cache	Enabled
	External Cache	Enabled
	CPU L2 Cache ECC Checking	Enabled
	Processor Serial Number	Enabled
	Quick Power On Self Test	Enabled
	First Boot Device	Floppy
	Second Boot Device	HDD-0
	Third Boot Device	LS120
	Boot Other Device	Enabled
	Swap Floppy Drive	Disabled
	Boot Up Floppy Seek	Disabled
	Boot Up NumLock Status	On
	Gate A20 Option	Normal
	Typematic Rate Setting	Disabled
X	Typematic Rate (Chars/Sec)	6
X	Typematic Delay (Msec)	250
	Security Option	Setup
	OS Select For DRAM > 64MB	Non-OS2
	HDD S.M.A.R.T. Capability	Disabled
	Full Screen LOGO Show	Disabled
	Small Logo (EPA) Show	Enabled

Item Help

Menu Level

Allows you to choose the VIRUS warning feature for IDE Hard Disk boot sector protection. If this function is enabled and someone attempt to write data into this area, BIOS will show a warning message on screen and alarm beep

ve ESC:Exit F1:General Help
F7:Optimized Defaults

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

Onboard LAN Control

By default, the onboard LAN is enabled. If you are not using this function, set this field to Disabled.

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 or the operating system may not install nor work.

CPU Internal Cache and External Cache

These fields speed up the memory access. The default value is enabled.

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.

Processor Serial Number

This field will appear only when you are using Intel's Pentium® III or later processor. These processors come with an individual "processor serial number" which by default is activated. Therefore, when connected to the Internet, the processor transmits the serial number online making it possible to track your online activity. This field provides you the option of disabling this function.

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.

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.

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.

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.

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.

Gate A20 Option

This field allows you to select how gate A20 is handled. Gate A20 is a device used to address memory above 1 Mbyte. Initially, gate A20 was handled via the keyboard controller. Today, while keyboards still provide this support, it is more common, and much faster, for the system chipset to provide support for gate A20. A20 refers to the first 64KB of extended memory.

Fast	The chipset controls Gate A20.
Normal	A pin in the keyboard controller controls Gate A20.

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.

Typematic Rate (Chars/Sec)

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

Typematic Delay (Msec)

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

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.

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.

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.

Full Screen Logo Show

This field is applicable only if you want a particular logo to appear during system boot-up.

Enabled The logo will appear in full screen during system boot-up.
Disabled The logo will not appear during system boot-up.

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.

Advanced Chipset Features

Phoenix - AwardBIOS CMOS Setup Utility
Advanced Chipset Features

		Item Help
DRAM Timing By SPD	Disabled	Menu Level
SDRAM Cycle Length	3	
DRAM Clock	133M	
DRAM FB Clock Delay	0.5 ns	
DRAM REF Clock Delay	0.0 ns	
System BIOS Cacheable	Disabled	
Video RAM Cacheable	Disabled	
I/O Recovery Time	Enabled	
Frame Buffer Size	8M	
OnChip USB	Enabled	
USB Keyboard Support	Disabled	
OnChip Sound	Auto	
OnChip Modem	Auto	
CPU-PCI Post Write	Enabled	
CPU-AGP Post Write	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.

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.

DRAM Timing By SPD

Enabled The EEPROM on a PC SDRAM DIMM that has SPD (Serial Presence Detect) data structure stores information about the module such as the memory type, memory size, memory speed, etc. When this field is enabled, the system will run according to the information in the EEPROM.

Disabled It allows you to configure the 2 fields that follow (SDRAM Cycle Length and DRAM Clock). The system will run according to the settings in these fields.

SDRAM Cycle Length

This field is used to set the clock cycle for the CAS latency.

DRAM Clock

This field allows you to set the DRAM clock.

DRAM FB Clock Delay

The options are 0.0 ns, 0.5 ns, 1.0 ns and 1.5 ns.

DRAM REF Clock Delay

The options are 0.0 ns, 0.5 ns, 1.0 ns and 1.5 ns.

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.

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.

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.

Frame Buffer Size

The options are 2M, 4M and 8M.

OnChip USB

This field is used to enable or disable the onboard USB controller supported by the chipset. If you are using a USB peripheral, make sure to set this field to Enabled.

USB Keyboard Support

This field will appear only if the "OnChip USB" field is set to Enabled. By default, USB Keyboard Support is Disabled. However, if you are using a USB keyboard under DOS, make sure to enable this function.

OnChip Sound

By default, this field is set to Auto - the onboard sound controller enabled. If you are using an audio add-in card, set this field to Disabled.

OnChip Modem

By default, this field is set to Auto - the onboard modem controller enabled. If you are using a modem add-in card, set this field to Disabled.

CPU-PCI Post Write

The options are Enabled and Disabled.

CPU-AGP Post Write

The options are Enabled and Disabled.

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.

Integrated Peripherals

Phoenix - AwardBIOS CMOS Setup Utility
Integrated Peripherals

	IDE DMA Transfer	Enabled
	OnChip IDE Channel0	Enabled
	OnChip IDE Channel1	Enabled
	IDE Prefetch Mode	Enabled
	Primary Master PIO	Auto
	Primary Slave PIO	Auto
	Secondary Master PIO	Auto
	Secondary Slave PIO	Auto
	Primary Master UDMA	Auto
	Primary Slave UDMA	Auto
	Secondary Master UDMA	Auto
	Secondary Slave UDMA	Auto
	Init Display First	PCI Slot
	IDE HDD Block Mode	Enabled
	Onboard FDD Controller	Enabled
	Onboard Serial Port 1	3F8/IRQ4
	Onboard Serial Port 2	2F8/IRQ3
	UART2 Mode	Standard
X	IR Function Duplex	Half
X	TX,RX Inverting Enable	No, Yes
	Onboard Parallel Port	378/IRQ7
	Onboard Parallel Mode	ECP/EPP
	ECP Mode Use DMA	3
	Parallel Port EPP Type	EPP1.7
	Onboard Legacy Audio	Enabled
	Sound Blaster	Disabled
	SB I/O Base Address	220H
	SB IRQ Select	IRQ 5
	SB DMA Select	DMA 1
	MPU-401	Disabled
	MPU-401 I/O Address	330-333H
	Game Port (200-207H)	Enabled

Item Help

Menu Level

ve ESC:Exit F1:General Help
:s F7:Optimized Defaults

The screen above list all the fields available in the Integrated Peripherals 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.

IDE DMA Transfer

This field is used to enable or disable the DMA transfer function of an IDE hard drive.

OnChip IDE Channel0 and OnChip IDE Channel1

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.

Primary Master/Slave PIO and 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.

Primary Master/Slave UDMA and 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.

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.

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.

Onboard FDD 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

The system board supports IrDA function for wireless connectivity between your computer and peripheral devices. You may not use IrDA (J16) and the COM 2 (J17) 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 J16 on the system board.

2. Set the "UART2 Mode Select" field to the type of IrDA standard supported by your IrDA peripheral/device (HPSIR 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 "IR Function Duplex" and "TX,RX Inverting Enable" fields appropriately.

IR Function Duplex

Half Data is completely transmitted before receiving data.
Full Transmits and receives data simultaneously.

TX,RX Inverting Enable

The options are No, Yes; Yes, No; Yes, Yes; No, No.

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.

Onboard Parallel Mode

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

Normal
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.

ECP Mode Use DMA

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

Parallel Port EPP Type

This field is used to select the EPP mode.

Onboard Legacy Audio

By default, this field is enabled allowing you to use the audio features in DOS mode. The following fields are configurable only when this field is set to Enabled.

Sound Blaster
This field is used to enable or disable the sound blaster.

SB I/O Base Address
This field is used to select the sound blaster's I/O base address.

SB IRQ Select
This field is used to select the sound blaster's IRQ.

SB DMA Select
This field is used to select the sound blaster's DMA.

MPU-401
This field is used to enable or disable MPU-401.

MPU-401 I/O Address
This field is used to select MPU-401's I/O address.

Game Port (200-207H)
This field is used to enable or disable the onboard game port.

Power Management Setup

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

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Power Management Setup

		Item Help
ACPI Function	Enabled	Menu Level
▶ Power Management	Press Enter	
ACPI Suspend Type	S1(POS)	
PM Control by APM	Yes	
Video Off Option	Suspend -> Off	
Video Off Method	V/H SYNC+Blank	
MODEM Use IRQ	3	
Soft-Off By PWRBTN	Instant-off	
State After Power Failure	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.

ACPI Function

This function should be enabled only in operating systems that support ACPI. Currently, only Windows® 98/2000/ME supports this function. When enabled, the system will ignore the settings in "Power Management". 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.

Power Management

Move the cursor to this field and press <Enter>. The "Power Management", "HDD Power Down", "Doze Mode" and "Suspend Mode" fields will appear.

Power Management

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

Min Saving	Minimum power saving time for Doze and Suspend mode = 1 hr.
Max Saving	Maximum power saving time for Doze and Suspend mode = 10 sec.
User Define	Allows you to set the power saving time in the "Doze Mode" and "Suspend Mode" fields.

HDD Power Down

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

Doze Mode

This is configurable only when the Power Management field is set to User Define. When the system enters the Doze mode according to the power saving time selected, the CPU clock will run at a slower speed (1/2 of full speed) while all other devices still operate at full speed.

Suspend Mode

This is configurable 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.

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. Refer to "Using the Suspend to RAM Function" in appendix A for more information.

PM Control by APM

Yes	An Advanced Power Management device will be activated to enhance the Max. Power Saving mode and stop the CPU's internal clock. Use this option in Windows® 95/98/2000/ME. (default)
No	The system BIOS will ignore APM when initiating the Power Management mode.

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.

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.

MODEM Use IRQ

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

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.

State After Power Failure

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.

Wake Up Events

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

USB Resume from S3

This field, when enabled, allows you to use a USB device to wake up a system that is in the S3 state.

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.

Wake Up 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.

RTC Alarm Resume

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.

IRQs Activity Monitoring

Move the cursor to this field and press <Enter>. The "Primary INTR" field, when set to On, will allow the system to respond and wake up to an IRQ activity that has been detected. When any of the "IRQ3" to "IRQ15" fields is 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.

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.

CMOS Setup Utility - Copyright (C) 1984-2000 Award Software
PnP/PCI Configurations

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

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.

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 and DMA resources in the "IRQ Resources" and "DMA Resources" fields respectively.

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.

DMA Resources

Move the cursor to this field and press <Enter>. The "DMA-0" to "DMA-7" fields will appear. Set each DMA address 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.

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.

Assign IRQ for VGA

When Enabled, the system automatically assigns an IRQ for the VGA card installed. Your VGA card will need an IRQ only when using the video capture function of the card. If you are not using this function and a new device requires an IRQ, you can set this field to Disabled. The IRQ (previously occupied by the VGA card) will be available for your new device.

Note:
When Disabled, a "Yellow" mark will appear in Windows® 95's Device Manager.

Assign IRQ for USB

When Enabled, the system automatically assigns an IRQ for the USB device connected to your system. However, if you are not using USB devices and an ISA slot requires an IRQ, set this field to Disabled. The IRQ previously occupied by the USB device will be available for the ISA slot.

Note:
When Disabled, a "Yellow" mark will appear in Windows® 95's Device Manager.

PC Health Status

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PC Health Status

		Item Help
Current CPU Temperature	37C/98F	Menu Level
Current System Temp.	27C/80F	
Current CPU Fan Speed	0 RPM	
Current Chassis Fan Speed	0 RPM	
Vcore	1.75 V	
3.3V	3.31 V	
5V	5.05 V	
12V	12.03 V	
CPU Fan Protection	Disabled	
CPU Temp. Prot. Function	Disabled	
CPU Temp. Prot. Alarm	60	

↑↓→← 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.

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

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

Vcore

This field shows the voltage of the processor.

3.3V, 5V and 12V

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 "VIA Hardware Monitor" utility. This utility is included in the CD that came with the system board. Refer to the "VIA Hardware Monitor" section in chapter 4 for more information.

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.

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.

Frequency/Voltage Control

CMOS Setup Utility - Copyright (C) 1984-2000 Award Software
Frequency/Voltage Control

		Item Help
Auto Detect DIMM/PCI Clk	Enabled	Menu Level
Spread Spectrum Modulated	Disabled	
CPU Clock	66MHz	

↑↓→← 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.

Auto Detect DIMM/PCI Clk

When enabled, the system will automatically send clock signals to existing DIMM or PCI devices.

Spread Spectrum Modulated

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

CPU Clock

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

Important:
Overclocking may result to the processor's or system's instability and are not guaranteed to provide better system performance.

If, in the "Clock By Slight Adjust" field, you selected an option other than the default setting and is unable to boot up the system, there are 2 methods of booting up the system and going back to its default setting.

Method 1:
Clear the CMOS data by setting JP3 to 2-3 On. All fields in the BIOS Setup will automatically be set to their default settings.

Method 2:
Press the <Insert> key and power button simultaneously, then release the power button first. Keep-on pressing the <Insert> key until the power-on screen appears. This will allow the system to boot according to the FSB of the processor. Now press the <Del> key to enter the main menu of the BIOS. Select "Frequency/Voltage Control" and set the "Clock By Slight Adjust" field to its default setting or an appropriate bus clock.

Note:
Use a PS/2 or AT (requires a DIN to mini DIN adapter) keyboard for method 2.

Load Fail-Safe Defaults

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

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

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

Load Optimized Defaults

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

Load Optimized Defaults (Y/N)? N

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

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.

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".

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.

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:

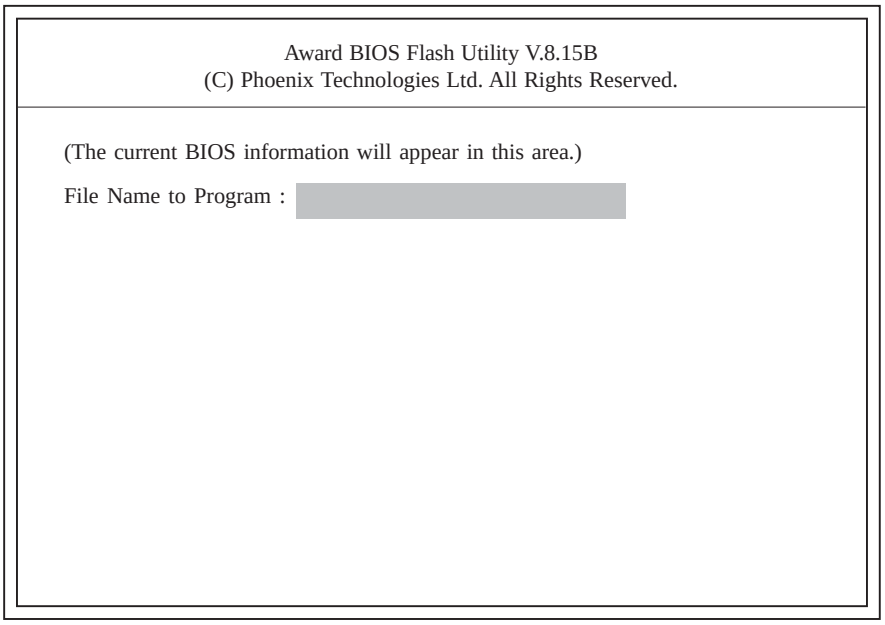
Quit Without Saving (Y/N)? N

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.

Updating the BIOS

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

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



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

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

Drivers, Utilities and Software Applications

VIA Hardware Monitor

The system board comes with the VIA 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 chassis 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® 95, Windows® 98, Windows® 98 SE, Windows® ME, Windows® 2000 or Windows NT® 4.0 operating system.

To install the utility, insert the CD into a CD-ROM drive. The autorun screen (Main Board Utility CD) will appear. Click the "VIA Hardware Monitor" button to install the utility. Refer to its "readme" file for instructions on using the utility.

VIA Service Pack

The CD in the system board package also comes with the VIA Service Pack. The service pack includes the following drivers.

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

To install the drivers, insert the CD into a CD-ROM drive. The autorun screen (Main Board Utility CD) will appear. Click the "VIA Service Pack" button. For installation instructions or information, click the "Read Me" button in the autorun screen.

VIA Service Pack Installation Notes

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

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

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

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

1. Insert the CD that came with the system board package into a CD-ROM drive. The autorun screen (Main Board Utility CD) will appear.
2. Click "VIA Service Pack".
3. The "Welcome" screen will appear. Click "Next". Please read the "VIA Service Pack readme" carefully before proceeding to step 4.
4. Follow the prompts on the screen to complete the installation.
5. Reboot the system for the drivers to take effect.

Audio Drivers and Software Applications

The CD in the system board package also includes audio drivers and audio playback software for Windows® 95, Windows® 98, Windows® 98 SE, Windows® ME, Windows NT® 4.0 and Windows® 2000 operating systems. For installation instructions or information about their corresponding "readme", click the "Read Me" button in the autorun screen. The autorun screen normally appears after the CD is inserted into a CD-ROM drive.

Onboard LAN Drivers for Windows

The onboard LAN drivers included in the CD does not support "Autorun". Once the system has detected the Realtek RTL8100 fast ethernet controller, it will prompt you to install the driver for the operating system you are using. The drivers are in the "RTL8100" root directory of the CD.

Graphics Drivers

1. Insert the CD that came with the system board package into a CD-ROM drive. The autorun screen (Main Board Utility CD) will appear.
2. Click "VIA VGA Driver".
3. Follow the prompts on the screen to complete installation.
4. Restart the system.

Microsoft DirectX 8.0 Driver

1. Insert the CD that came with the system board package into a CD-ROM drive. The autorun screen (Main Board Utility CD) will appear.
2. Click "Microsoft DirectX 8.0 Driver".
3. Click "Yes" to continue.
4. Follow the prompts on the screen to complete installation.
5. Restart the system.

Drivers and Utilities Installation Notes

1. "Autorun" ONLY supports the Windows® 95, Windows® 98, Windows® 98 SE, Windows® ME, Windows® 2000 and Windows NT® 4.0 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 - 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.

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.

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 B - Troubleshooting

Troubleshooting Checklist

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

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

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

Monitor/Display

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

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

The picture seems to be constantly moving.

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

The screen seems to be constantly wavering.

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

Power Supply

When the computer is turned on, nothing happens.

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

Floppy Drive

The computer cannot access the floppy drive.

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

Hard Drive

Hard disk failure.

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

Excessively long formatting period.

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

Parallel Port

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

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

Serial Port

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

1. Make sure that the serial device's power is turned on and that the device is on-line.
2. Verify that the device is plugged into the correct serial port on the rear of the computer.

3. Verify that the attached serial device works by attaching it to a serial port that is working and configured correctly. If the serial device does not work, either the cable or the serial device has a problem. If the serial device works, the problem may be due to the onboard I/O or the address setting.
4. Make sure the COM settings and I/O address are configured correctly.

Keyboard

Nothing happens when a key on the keyboard was pressed.

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

System Board

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