

G3C100-P Series

Rev. A+
System Board
User's Manual

935-G3C101-000
A81400418

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Caution

To avoid damage to the system:

- Use the correct AC input voltage range.

To reduce the risk of electric shock:

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

Battery:

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

FCC and DOC Statement on Class B

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

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

Notice:

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

Notice

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.

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Chapter 1 - Introduction

1.1 Features and Specifications

1.1.1 Features

Chipset

- VIA® CLE266 and VT8235
 - VIA® CLE266 (VT8623) north bridge with integrated AGP graphic core
 - VIA® VT8235 south bridge

Processor

- VIA® C3 up to 1.2GHz processor (EBGA packaged)
- VIA® Eden up to 1GHz low power processor (EBGA packaged)

System Memory

- Two 184-pin DDR SDRAM DIMM socket
- 2.5V unbuffered PC1600 (DDR200) or PC2100 (DDR266) DDR SDRAM DIMM
- Supports up to 2GB system memory using 64Mbit, 128Mbit, 256Mbit or 512Mbit x8/x16 technology

Expansion Slots

- 1 PCI slot for PCI expansion card or customized riser card for 1, 2 or 3 PCI slots expansion (for low profile PCI card only)

Onboard Graphics Features

- Graphics memory
 - Shares 16M/32M/64M frame buffer of the system memory
 - Optimized Share Memory Architecture (SMA)
- Graphics controller
 - 133MHz for internal graphic engine clock
 - Integrated 250MHz DAC
 - Microsoft® DirectX 7.0 and 8.0 compensation
 - High quality texture filter modes: nearest, linear, bi-linear and anisotropic

- Hardware MPEG2 decode engine
- Supports CRT with resolution up to 1920x1440 @ 60Hz refresh
- 3M triangles/sec setup engine
- Software drivers
 - Windows® 98SE/2000/ME/XP
 - Windows NT® 4.0

Extensive Display Support

- Direct TFT flat panel interface up to 24-bit data width; supports 18, 24 or 18+18 TFT panel with LVDS encoders
- Supports TFT panel with resolution up to 1600x1200

Onboard Audio Features

- AC'97 supported with full duplex, independent sample rate converter for audio recording and playback
- Standard AC'97 version 2.1
- Supports Microsoft® DirectSound
- 2-channel audio output

Onboard LAN Features

- VIA VT6103 ethernet Phy controller
- Single chip 100Base-TX/10Base-T Physical Layer Solution
- MII interface to ethernet controller
- 10/100 auto sensing
- IEEE 802.3 and 10BASE-T/100BASE-TX compliant physical layer interface
- IEEE 802.3u auto-negotiation

Compatibility

- PCI 2.2 and AC '97 compliant

IDE Interface

- Supports ATA/33, ATA/66, ATA/100 and ATA/133 hard drives
- PIO Mode 4 Enhanced IDE (data transfer rate up to 16.6MB/sec.)

IrDA Interface

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

USB Connectors

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

BIOS

- Award BIOS, Windows® 98SE/2000/ME/XP Plug and Play compatible
- Supports SCSI sequential boot-up
- Supports DMI 2.0 function
- 2Mbit flash memory
- Supports TFT panel BIOS core

Desktop Management Interface (DMI)

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

Rear Panel I/O Ports

- 1 mini-DIN-6 PS/2 mouse port
- 1 mini-DIN-6 PS/2 keyboard port
- 3 DB-9 serial ports
- 1 DB-15 VGA port
- 1 RJ45 LAN port
- 4 USB 2.0/1.1 ports
- 3 audio jacks: mic-in, line-in and speaker-out

I/O Connectors

- 1 connector for 2 additional external USB 2.0/1.1 ports
- 1 LVDS LCD panel connector
- 1 LCD/Inverter power connector
- 1 connector for 1 external serial port
- 1 front audio connector for speaker-out and mic-in jacks
- 1 CD-in internal audio connector
- 1 S/PDIF-out connector
- 1 connector for IrDA interface
- 1 parallel connector
- 1 40-pin IDE 1 connector for 3.5" HDD
- 1 44-pin IDE 2 connector for 2.5" HDD (2.0 pitch)
- 1 floppy connector (FPC connector type)
- 1 ATX power supply connector
- 2 fan connectors

1.1.2 System Health Monitor Functions

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

- Monitors CPU/system temperature
- Monitors CPU/VCC3/5V/12V/VBAT/5VSB voltages
- Monitors CPU fan and chassis fan speed
- Read back capability that displays temperature, voltage and fan speed

1.1.3 Intelligence

Watchdog Timer

The Watchdog Timer function allows your application to regularly “clear” the system at the set time interval. If the system hangs or fails to function, it will reset at the set time interval so that your system will continue to operate.

Dual Function Power Button

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

Wake-On-Ring

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



Important:

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

Wake-On-LAN

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



Important:

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

Wake-On-PS/2 Keyboard/Mouse

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



Important:

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

Wake-On-USB Keyboard

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



Important:

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

RTC Timer to Power-on the System

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

ACPI STR

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

With the Suspend to RAM function enabled, you can power-off the system at once by pressing the power button or selecting "Standby" when you shut down Windows® 98/2000/ME/XP without having to go through the sometimes tiresome process of closing files, applications and operating system. This is because the system is capable of storing all programs and data files during the entire

operating session into RAM (Random Access Memory) when it powers-off. The operating session will resume exactly where you left off the next time you power-on the system.



Important:

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

Virus Protection

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

1.2 Package Checklist

The system board package contains the following items:

- ☒ The system board
- ☒ A user's manual
- ☒ One IDE cable
- ☒ One "Main Board Utility" CD

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

2.1 System Board Layout

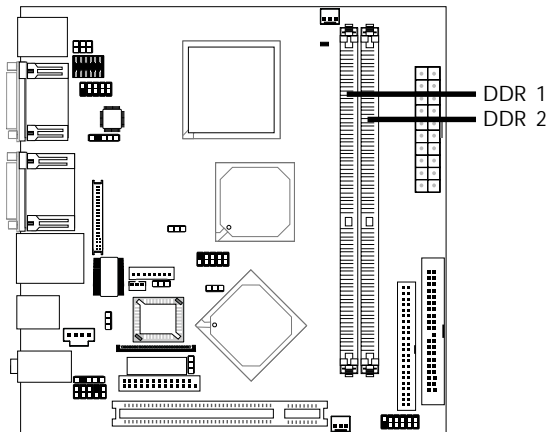




Warning:

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.

2.2 System Memory



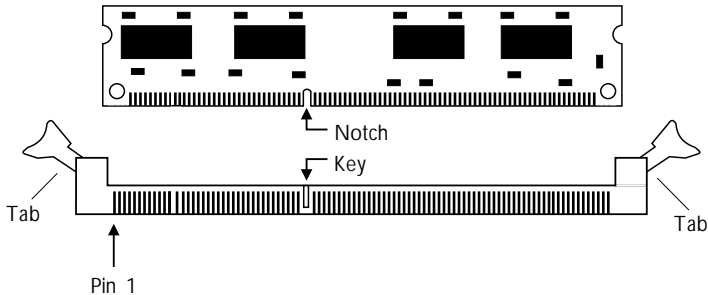
The system board supports DDR SDRAM DIMM. Double Data Rate SDRAM (DDR SDRAM) is a type of SDRAM that doubles the data rate through reading and writing at both the rising and falling edge of each clock. This effectively doubles the speed of operation therefore doubling the speed of data transfer.

BIOS Setting

Configure the memory in the Advanced Chipset Features submenu ("DRAM Clock/Drive Control" section) of the BIOS.

2.2.1 Installing the DIM Module

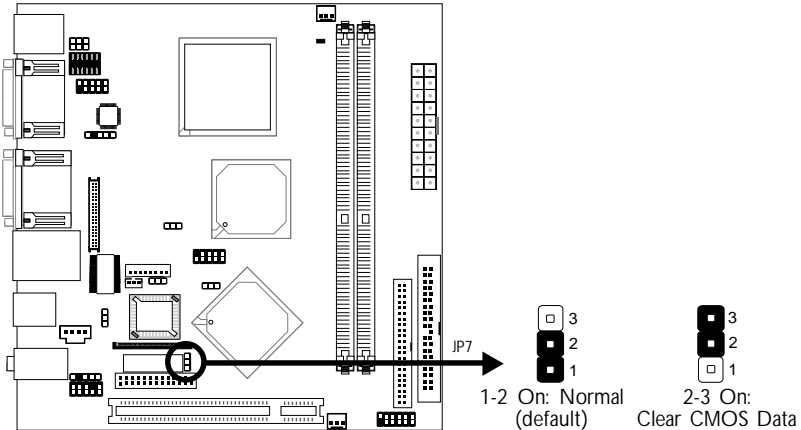
A DIM module simply snaps into a DIMM socket on the system board. Pin 1 of the DIM module must correspond with Pin 1 of the socket.



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

2.3 Jumper Settings

2.3.1 Clear CMOS Data



If you encounter the following,

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

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

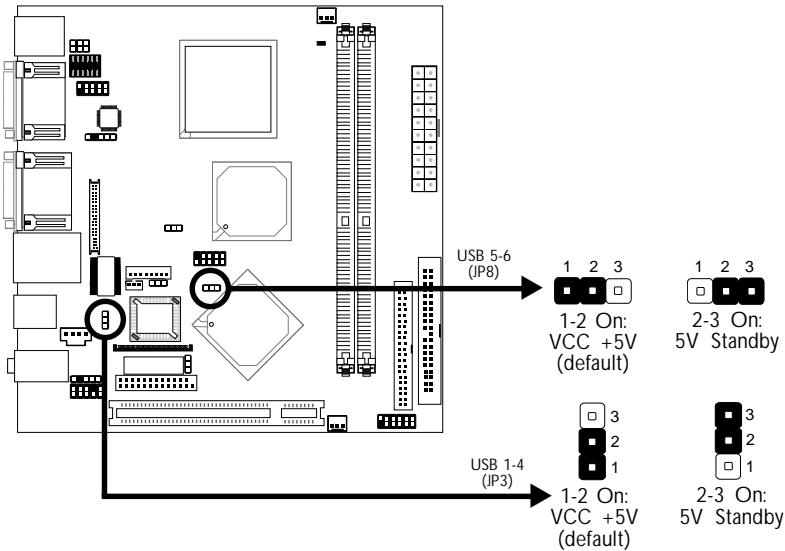
To load the default values stored in the ROM BIOS, please follow the steps below.

1. Power-off the system and unplug the power cord.
2. Set JP7 pins 2 and 3 to On. Wait for a few seconds and set JP7 back to its default setting, pins 1 and 2 On.
3. Now plug the power cord and power-on the system.

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

4. After powering-on the system, press to enter the main menu of the BIOS.
5. Select the Frequency/Voltage Control submenu and press <Enter>.
6. Set the "VIA C3 Clock Ratio" field to its default setting or an appropriate frequency ratio. 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>.

2.3.2 USB Power Select



JP3 (for USB 1-4) and JP8 (for USB 5-6) are used to select the power of the USB ports. Selecting 5V Standby will allow you to use the USB keyboard to wake up the system.

BIOS Setting:

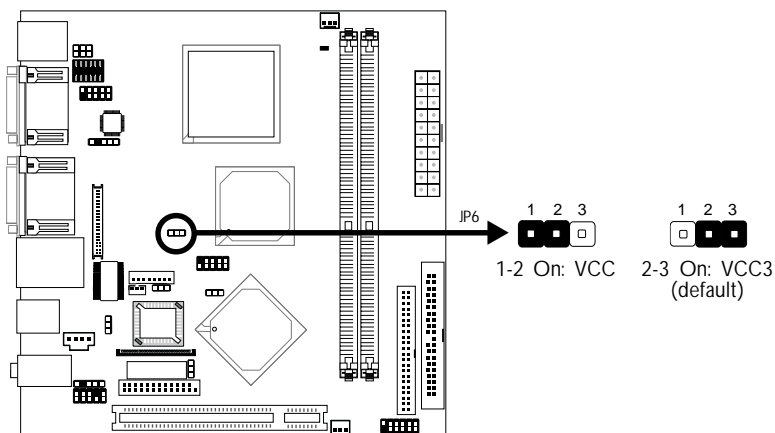
"USB Resume From S3" in the Power Management Setup submenu ("IRQ/Event Activity Detect" section) of the BIOS must be set to Enabled. Refer to chapter 3 for more information.



Important:

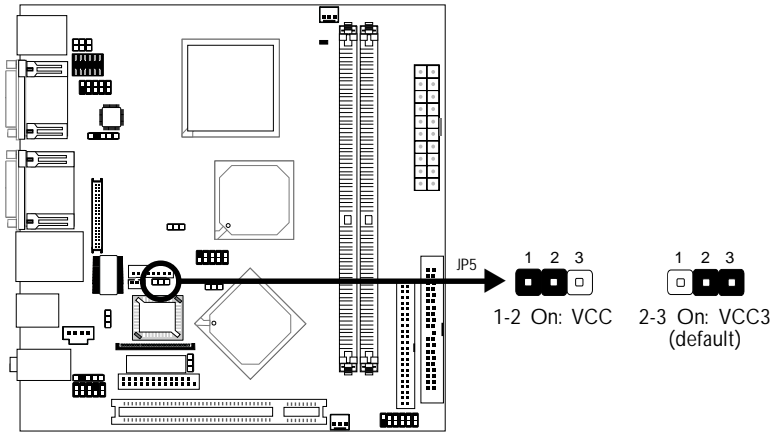
- If you are using the Wake-On-USB Keyboard function for 2 USB ports, the 5VSB power source of your power supply must support $\geq 1.5A$.
- If you are using the Wake-On-USB Keyboard function for 3 or more USB ports, the 5VSB power source of your power supply must support $\geq 2A$.

2.3.3 LCD Panel Power Select



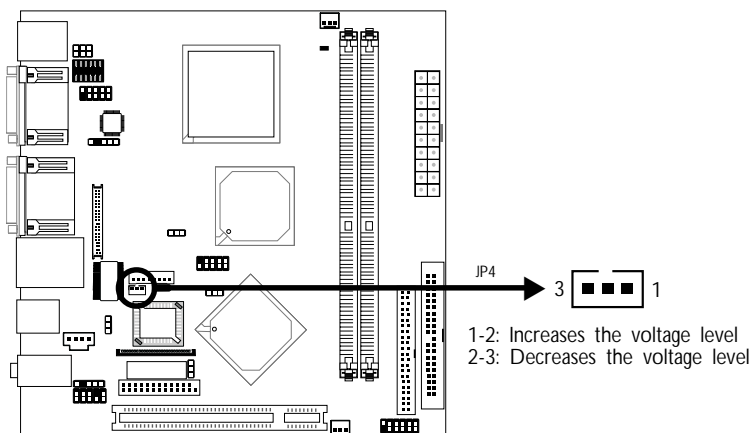
JP6 is used to select the power supplied to the LCD panel.

2.3.4 LCD Brightness Power Select



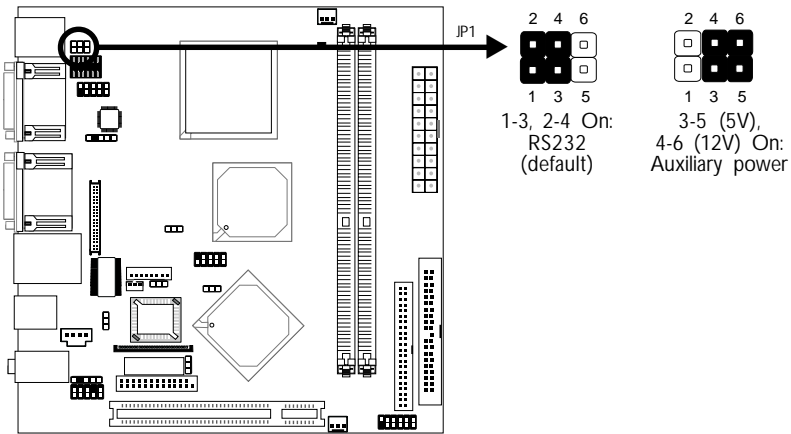
JP5 is used to select the power for the LCD's brightness.

2.3.5 LCD Brightness Control (Voltage Level Adjust)



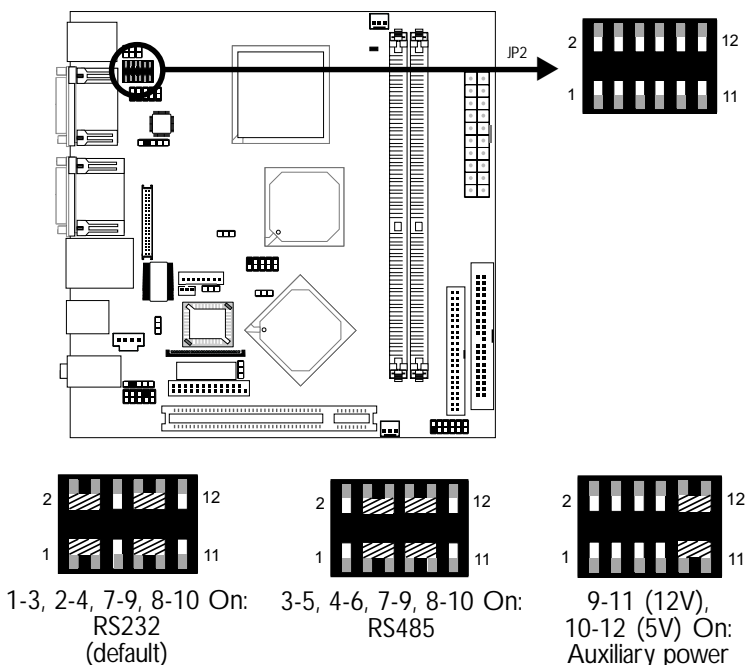
JP4 must be connected to the LCD Brightness Control button of the LCD Display Panel. It is used to adjust the brightness of the LCD Display Panel. Increasing or decreasing the voltage to control the LCD panel's brightness varies among Inverters. You must refer to the Inverter's specification to make the appropriate adjustment to the brightness of the LCD panel.

2.3.6 COM 2's RS232/AUX Select



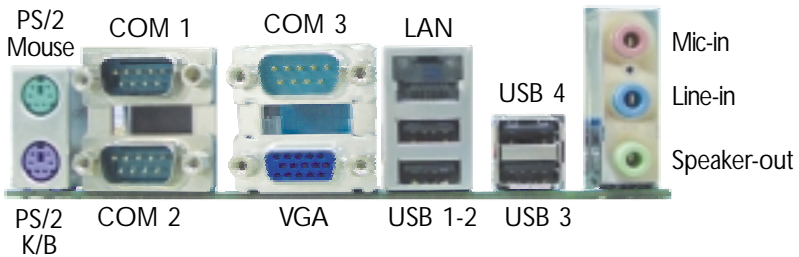
COM 2 is an RS-232 port. If the serial device connected to this port requires auxiliary power from the system board, set JP1 pins 3-5 and 4-6 to On. Otherwise, leave this jumper's setting at 1-3, 2-4 On.

2.3.7 COM 4's RS232/RS485/AUX Select



JP2 is used to set COM 4 to RS-232 or RS-485. If the serial device connected to this port requires auxiliary power from the system board, set JP2 pins 9-11 and 10-12 to On. This setting automatically sets COM 4 at RS-232.

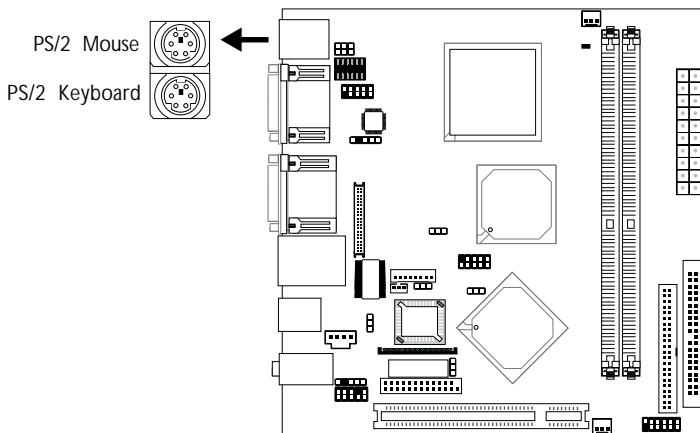
2.4 Rear Panel I/O Ports



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

- PS/2 mouse port
- PS/2 keyboard port
- 3 COM ports
- VGA port
- LAN port
- USB ports
- Mic-in jack
- Line-in jack
- Speaker-out jack

2.4.1 PS/2 Mouse and PS/2 Keyboard Ports



The system board is equipped with an onboard PS/2 mouse (Green) and PS/2 keyboard (Purple) ports - both at location CN1 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:

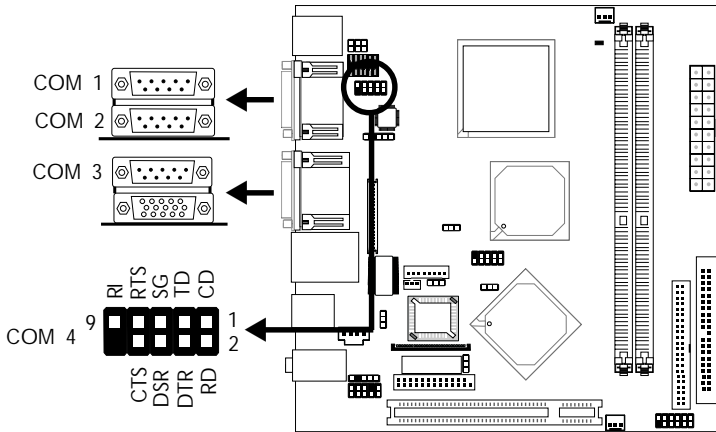
- BIOS Setting:
Configure the PS/2 wake up function in the Power Management Setup submenu ("IRQ/Event Activity Detect" section) of the BIOS. Refer to chapter 3 for more information.



Important:

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

2.4.2 Serial Ports



The system board is equipped with 3 onboard serial ports at locations CN4 (COM 1 and COM 2) and CN6 (COM 3). It is also equipped with a 9-pin connector at location CN7 for COM 4. These serial ports are RS-232 and/or RS-485 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 4, please refer to the following description. The serial port may be mounted on a card-edge bracket. Install the card-edge bracket to the system chassis then insert the cable connector to CN7. Make sure the colored stripe on the ribbon cable is aligned with pin 1 of CN7.



Important:

If the LCD Display Panel that is connected to the LVDS LCD Panel connector supports touch screen, DO NOT connect a serial device to COM 3 because the touch screen function is internally connected to COM 3.

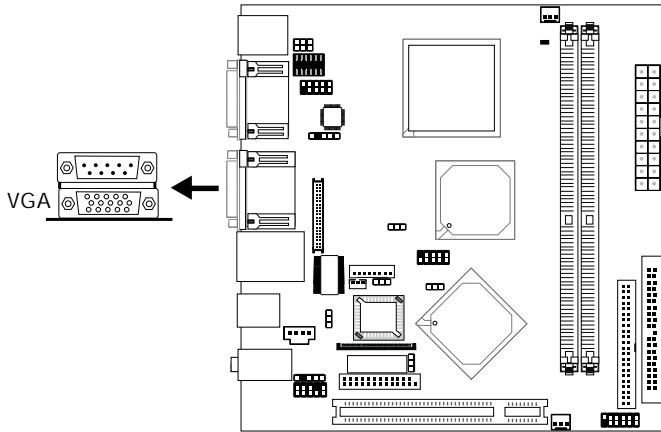
Jumper Setting

If the serial device connected to COM 2 and/or COM 4 requires auxiliary power from the system board, set JP1 and/or JP2 appropriately. Refer to “COM 2’s RS232/AUX Select” and “COM 4’s RS232/RS485/AUX Select” in this chapter for more information.

BIOS Setting

Select the serial ports’ I/O address in the Integrated Peripherals submenu (“Super IO Device” section) of the BIOS. Refer to chapter 3 for more information.

2.4.3 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 CN6. 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.

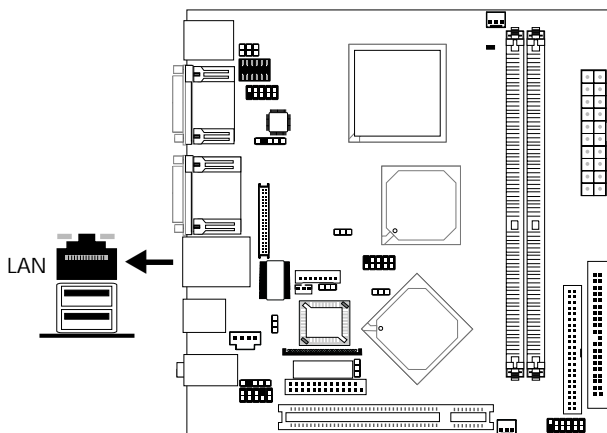
BIOS Setting

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

Driver Installation

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

2.4.4 RJ45 Fast-Ethernet Port



The system board is equipped with an onboard RJ45 fast-ethernet LAN port at location CN5. The port allows the system board to connect to a local area network by means of a network hub.

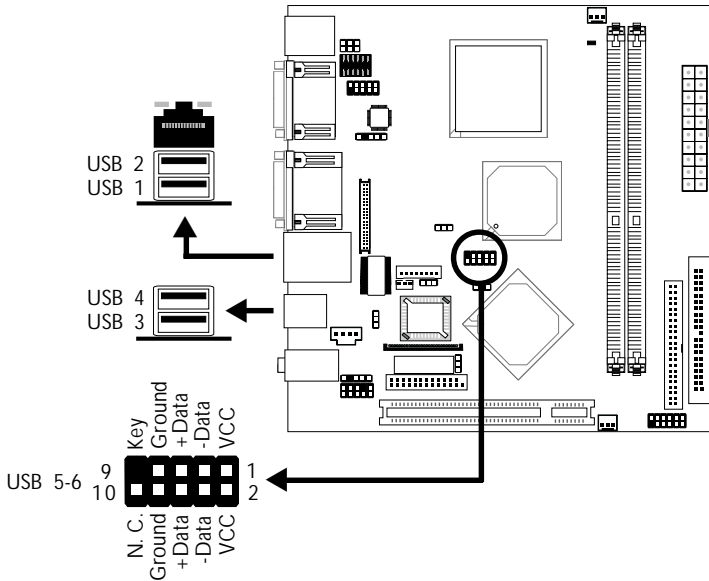
BIOS Setting

Enable or disable the onboard LAN in the Integrated Peripherals submenu ("VIA OnChip PCI Device" section) of the BIOS. Refer to chapter 3 for more information.

Driver Installation

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

2.4.5 Universal Serial Bus Connectors



The system board supports 6 USB 2.0/1.1 ports. USB allows data exchange between your computer and a wide range of simultaneously accessible external Plug and Play peripherals.

Four onboard USB 2.0/1.1 ports (Black) are at locations CN5 (USB 1-2) and CN3 (USB 3-4) of the system board.

The J6 connector (USB 5-6) allows you to connect 2 additional USB 2.0/1.1 ports. The additional USB ports may be mounted on a card-edge bracket. Install the card-edge bracket to the system chassis then insert the connector that is attached to the USB port cables to J6.

BIOS Setting

Configure the onboard USB in the Integrated Peripherals submenu ("VIA OnChip PCI Device" section) of the BIOS. Refer to chapter 3 for more information.

Driver Installation

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

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

Wake-On-USB Keyboard

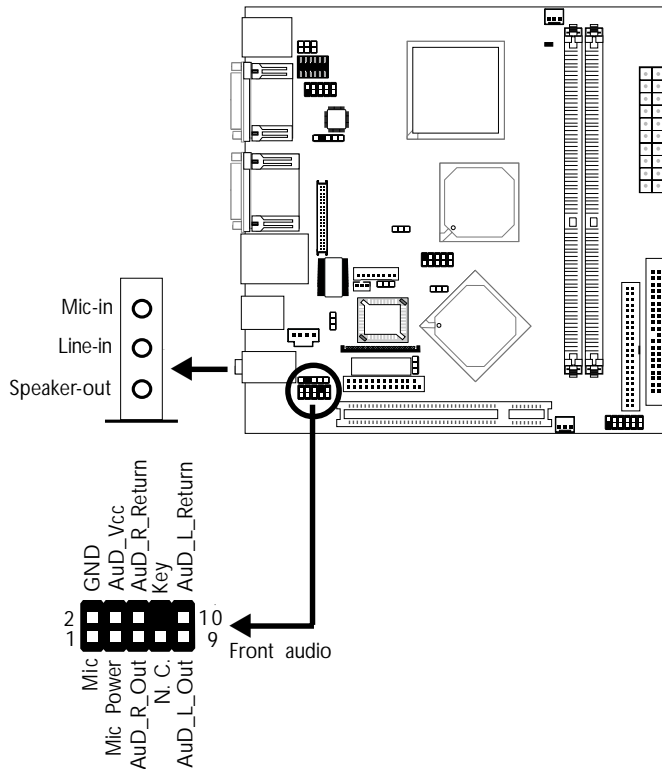
The Wake-On-USB Keyboard function allows you to use a USB keyboard to wake up a system from the S3 (STR - Suspend To RAM) state. To use this function:

- Jumper Setting:
JP3 and/or JP8 must be set to "2-3 On: 5V Standby". Refer to "USB Power Select" in this chapter for more information.
- BIOS Setting:
"USB Resume From S3" in the Power Management Setup submenu ("IRQ/Event Activity Detect" 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 function for 2 USB ports, the 5VSB power source of your power supply must support $\geq 1.5A$.*
- *If you are using the Wake-On-USB Keyboard function for 3 or more USB ports, the 5VSB power source of your power supply must support $\geq 2A$.*

2.4.6 Audio



Audio Jacks

The system board is equipped with 3 audio jacks at location CN2. A jack is a one-hole connecting interface for inserting a plug.

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

- Speaker-out Jack (Lime)

This amplified jack is used to connect external speakers for audio output from the system board. Using this jack disables the front audio's speaker-out function.

Front Audio

The front audio connector (J1) allows you to connect to the speaker-out and mic-in jacks that are at the front panel of your system. Using the speaker-out and mic-in jacks will disable the rear audio's speaker-out and mic-in functions.

Remove the jumper caps from pins 5-6 and pins 9-10 of J1 prior to connecting the front audio cable connector. Make sure pin 1 of the cable connector is aligned with pin 1 of J1. 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

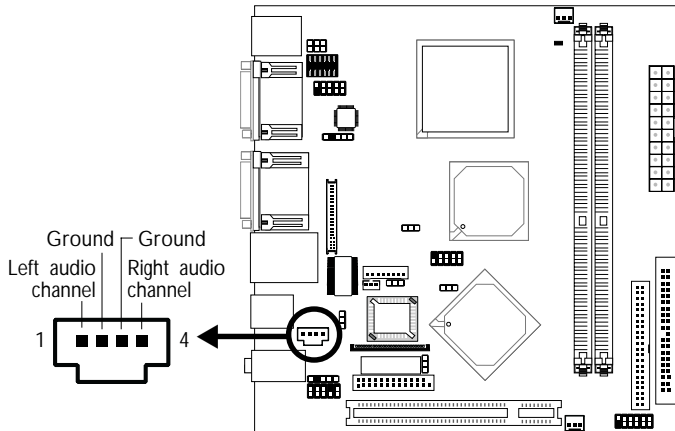
The front audio is enabled.
The rear audio is disabled.

Driver Installation

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

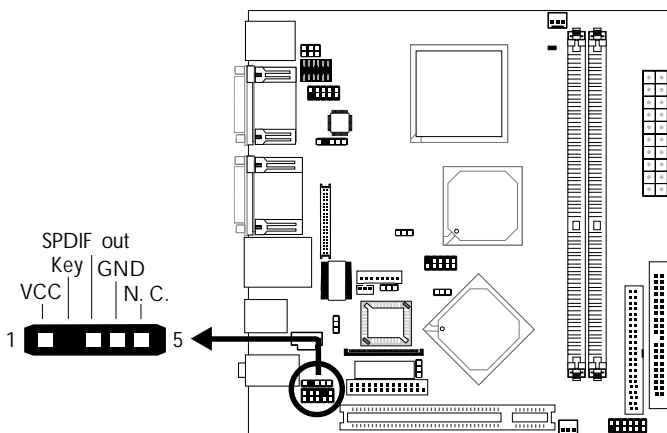
2.5 I/O Connectors

2.5.1 CD-in Internal Audio Connector



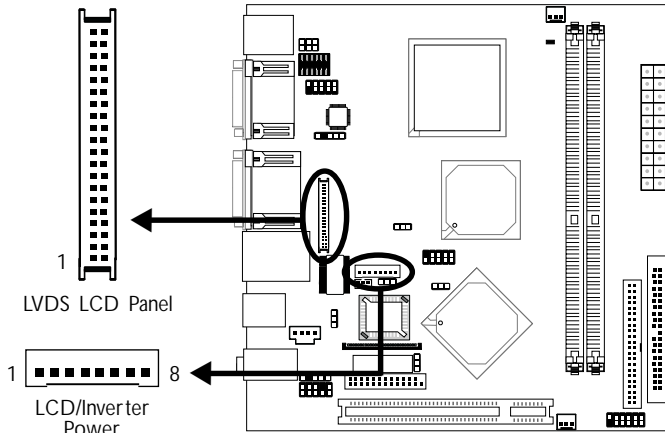
The CD-in (J2) connector is used to receive audio from a CD-ROM drive, TV tuner or MPEG card.

2.5.2 S/PDIF-out Connector



The S/PDIF-out connector (J3) is used to connect an external S/PDIF-out port. Your S/PDIF-out port may be mounted on a card-edge bracket. Install the card-edge bracket to the system chassis then connect the audio cable connector to J3. Make sure pin 1 of the audio cable connector is aligned with pin 1 of J3.

2.5.3 LVDS LCD Panel Connector and LCD/Inverter Power Connector



The system board allows you to connect a LCD Display Panel by means of the LVDS LCD panel connector (CN8) and the LCD/ Inverter power connector (J5). These connectors transmit video signals and power from the system board to the LCD Display Panel. Refer to the next page for the pin functions of these connectors.



Important:

CN8 consists of both COM 3 and LVDS signals. If the LCD Display Panel that is connected to CN8 supports touch screen, DO NOT connect a serial device to COM 3 because the touch screen function is internally connected to COM 3.

BIOS Setting

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

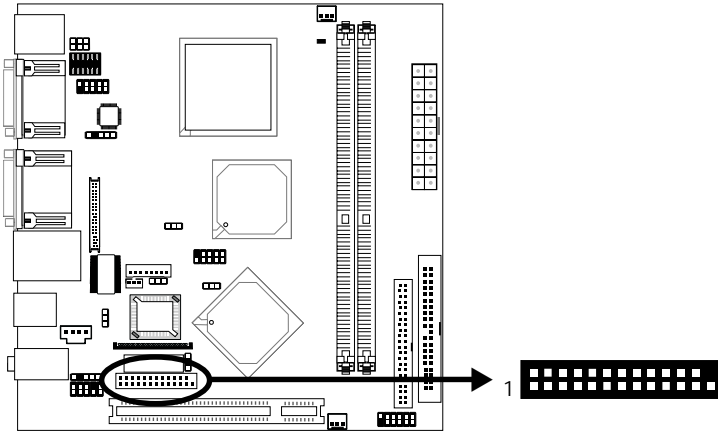
LVDS LCD Panel Connector

| Pins | Function | Pins | Function |
|------|------------|------|------------|
| 1 | GND | 21 | LVDS_Out0+ |
| 2 | GND | 22 | LVDS_Out4+ |
| 3 | LVDS_Out3+ | 23 | LVDS_Out0- |
| 4 | LVDS_Out7+ | 24 | LVDS_Out4- |
| 5 | LVDS_Out3- | 25 | GND |
| 6 | LVDS_Out7- | 26 | GND |
| 7 | GND | 27 | LVDS_CLK1+ |
| 8 | GND | 28 | LVDS_CLK2+ |
| 9 | LVDS_Out2+ | 29 | LVDS_CLK1- |
| 10 | LVDS_Out6+ | 30 | LVDS_CLK2- |
| 11 | LVDS_Out2- | 31 | GND |
| 12 | LVDS_Out6- | 32 | GND |
| 13 | GND | 33 | COM3_DTR |
| 14 | GND | 34 | COM3_TD |
| 15 | LVDS_Out1+ | 35 | COM3_RTS |
| 16 | LVDS_Out5+ | 36 | COM3_RI |
| 17 | LVDS_Out1- | 37 | COM3_RD |
| 18 | LVDS_Out5- | 38 | COM3_DSR |
| 19 | GND | 39 | COM3_CTS |
| 20 | GND | 40 | COM3_DCD |

LCD/Inverter Power Connector

| Pins | Function | Pins | Function |
|------|--------------------------------|------|---|
| 1 | +12V | 5 | Panel Power |
| 2 | +12V | 6 | Panel Inverter Brightness Voltage Control |
| 3 | Panel Backlight On/Off Control | 7 | GND |
| 4 | +3.3V | 8 | GND |

2.5.4 Parallel Port



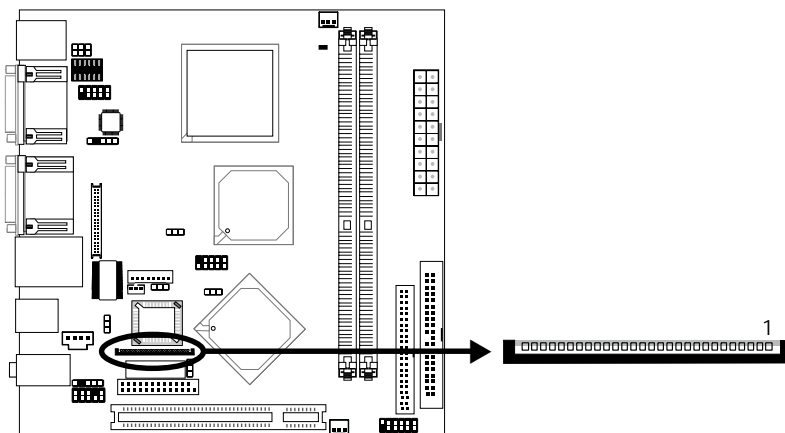
The system board is equipped with a 25-pin connector at location CN10 for connecting your PC to a parallel printer. It supports SPP, ECP and EPP.

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

BIOS Setting

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

2.5.5 Floppy Disk Drive Connector



The system board is equipped with a 26-pin FPC type floppy disk drive connector. Only connect a 1.44MB slim-type floppy disk drive. Floppy drives other than the one mentioned above are optional.

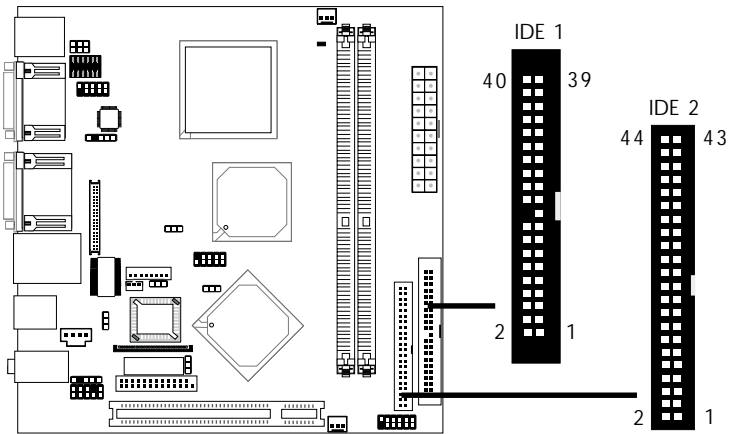
Connecting the Floppy Disk Drive Cable

Install one end of the floppy disk drive cable into the floppy disk connector (CN9) on the system board and the other end connector to the floppy drive. Pin 1 of the cable must align with pin 1 of CN9.

BIOS Setting

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

2.5.6 IDE Disk Drive Connectors



The system board is equipped with a 40-pin (IDE 1) and a 44-pin (IDE 2) IDE connectors. To prevent improper IDE cable installation, the IDE 1 connector has a keying mechanism. The connector on the IDE cable can be inserted into IDE 1 only if pin 1 of the cable connector is aligned with pin 1 of IDE 1.

The 40-pin IDE 1 connector is used for connecting 3.5" hard drives while the 44-pin IDE 2 connector is used for connecting 2.5" hard drives (2.0 pitch).

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

Connecting the IDE Disk Drive Cable

Install one end of the IDE cable into IDE 1 (CN12) or IDE 2 (CN11) on the system board and the other connectors to the IDE devices.

**Note:**

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

Adding a Second IDE Disk Drive

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

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

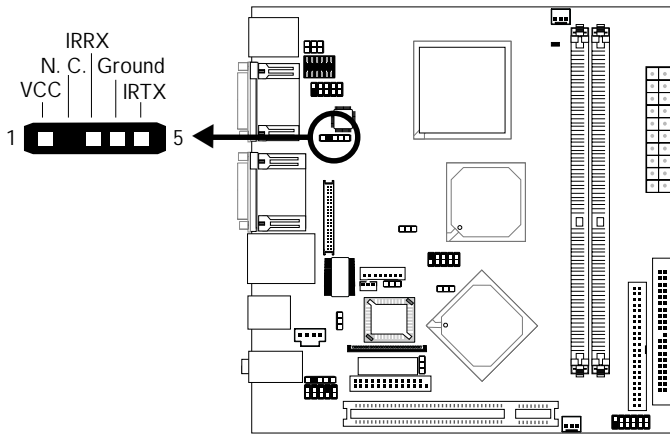
**Important:**

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

BIOS Setting

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

2.5.7 IrDA Connector



Connect your IrDA cable to connector J4 on the system board.



Note:

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

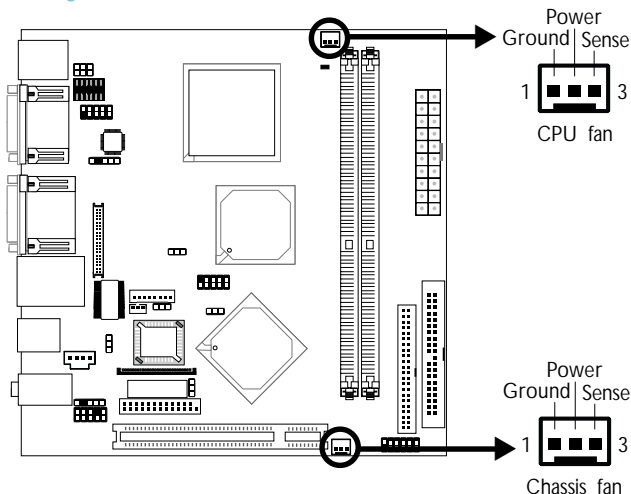
BIOS Setting

Set the "Serial Port 1 Mode" field in the Integrated Peripherals submenu ("Super IO Device" section) of the BIOS to the type of IrDA standard supported by your device.

Driver Installation

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

2.5.8 Cooling Fan Connectors

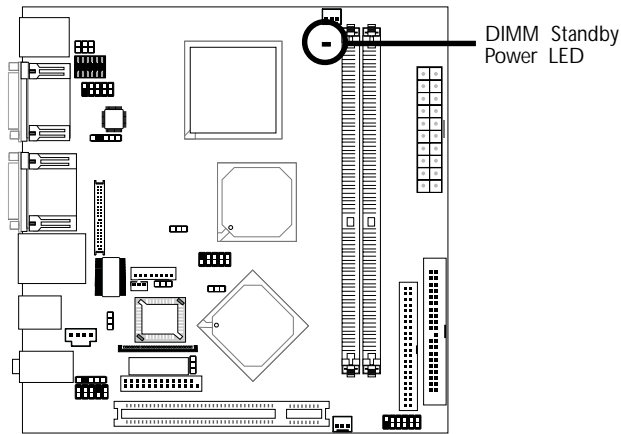


Connect the CPU fan's cable connector to the CPU fan connector (J7) on the system board. The chassis fan (J8) connector is used to connect an additional cooling fan. The cooling fans will provide adequate airflow throughout the chassis to prevent overheating the CPU and system board components.

BIOS Setting

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

2.5.9 DIMM Standby Power LED



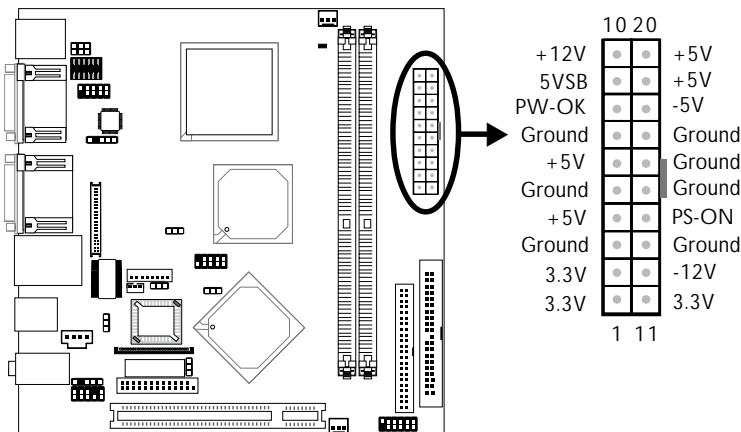
This DIMM Standby Power LED will turn red when the system's power is on or when it is in the Suspend state (Power On Suspend or Suspend to RAM). It will not light when the system is in the Soft-Off state.



Important:

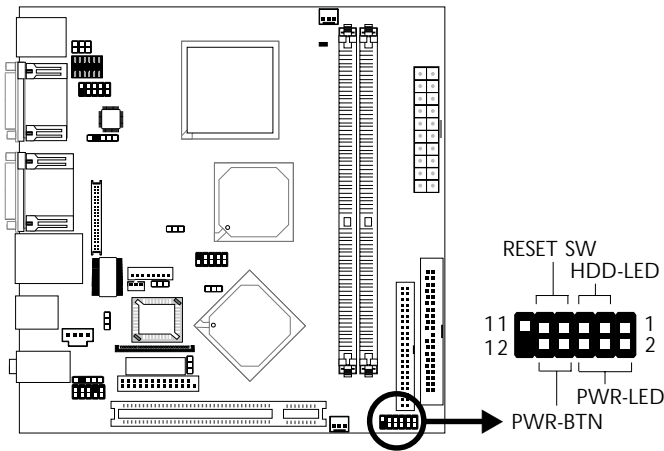
If the DIMM Standby Power LED is lighted, you must power-off the system then turn off the power supply's switch or unplug the power cord prior to installing any memory modules.

2.5.10 Power Connectors



The 20-pin ATX main power connector must be inserted onto the J10 connector. The system board requires a minimum of 90 Watt power supply to operate. We recommend that you use a power supply that complies with the ATX12V Power Supply Design Guide Version 1.1.

2.5.11 Front Panel Connectors



HDD-LED - HDD LED

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

RESET SW - Reset Switch

This switch allows you to reboot without having to power off the system.

PWR-BTN - Power Switch

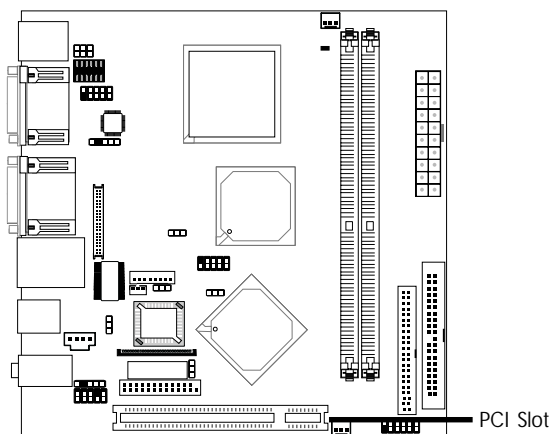
This switch is used to power on or off the system.

PWR-LED - Power/Standby LED

When the system's power is on, this LED will light. When the system is in the S1 (POS - Power On Suspend) state, it will blink every second. When the system is in the S3 (STR - Suspend To RAM) state, it will blink every 4 seconds.

| | Pin | Pin Assignment | | Pin | Pin Assignment |
|----------|-----|----------------|-----------|-----|----------------|
| N. C. | 1 | N. C. | Power-LED | 2 | LED Power |
| | | | | 4 | LED Power |
| | | | | 6 | Signal |
| HDD-LED | 3 | HDD Power | PWR-BTN | 8 | Ground |
| | 5 | Signal | | 10 | Signal |
| RESET SW | 7 | Ground | | | |
| | 9 | RST Signal | | | |
| N. C. | 11 | N. C. | Key | 12 | Key |

2.5.12 PCI Slot



You can install a PCI expansion card or a customized riser card designed for 1, 2 or 3 PCI slots expansion (for low profile PCI card only) into the PCI slot.

Chapter 3 - BIOS Setup

3.1 Award BIOS Setup Utility

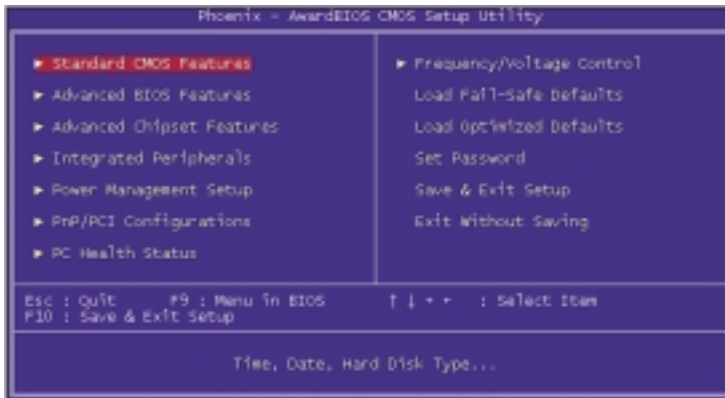
The Basic Input/Output System (BIOS) is a program that takes care of the basic level of communication between the processor and peripherals. In addition, the BIOS also contains codes for various advanced features found in this system board. This chapter explains the Setup Utility for the Award BIOS.

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 keys simultaneously.

When you press , the main menu screen will appear.



3.1.1 Standard CMOS Features

Use the arrow keys to highlight “Standard CMOS Features” and press <Enter>. A screen similar to the one below will appear.



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

3.1.1.1 Date

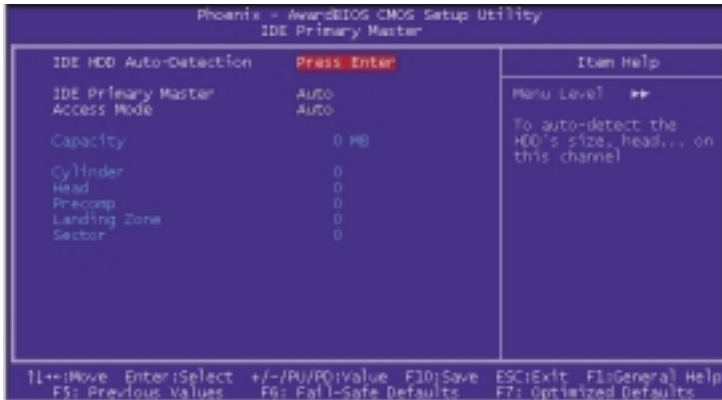
The date format is <day>, <month>, <date>, <year>. Day displays a day, from Sunday to Saturday. Month displays the month, from January to December. Date displays the date, from 1 to 31. Year displays the year, from 1999 to 2099.

3.1.1.2 Time

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

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

Move the cursor to the “IDE Primary Master”, “IDE Primary Slave” or “IDE Secondary Master” field, then press <Enter>.



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

IDE HDD Auto Detection

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

IDE Primary Master/Slave and IDE Secondary Master

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

Access Mode

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

Capacity

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

Cylinder

This field displays the number of cylinders.

Head

This field displays the number of read/write heads.

Precomp

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

Landing Zone

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

Sector

This field displays the number sectors per track.

3.1.1.4 Drive A

This field identifies the type of floppy disk drive installed.

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

3.1.1.5 Video

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

| | |
|----------------|--|
| <i>EGA/VGA</i> | Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SVGA and PGA monitor adapters. |
| <i>CGA 40</i> | Color Graphics Adapter. Power up in 40-column mode. |
| <i>CGA 80</i> | Color Graphics Adapter. Power up in 80-column mode. |
| <i>Mono</i> | Monochrome adapter. Includes high resolution monochrome adapters. |

3.1.1.6 Halt On

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

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

3.1.1.7 Base Memory

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

3.1.1.8 Extended Memory

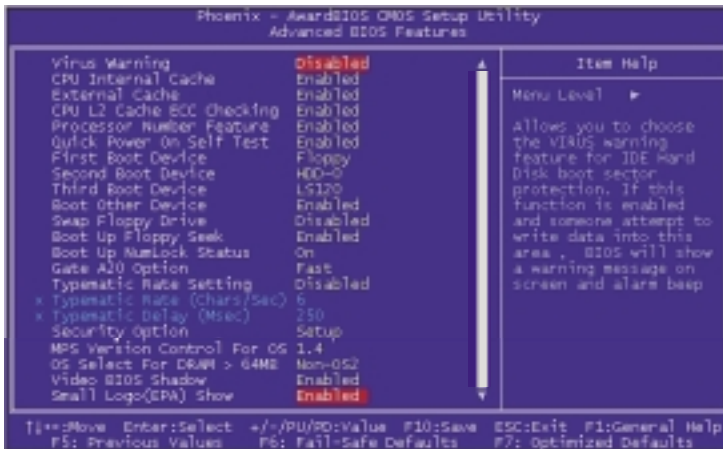
Displays the amount of extended memory detected during boot-up.

3.1.1.9 Total Memory

Displays the total memory available in the system.

3.1.2 Advanced BIOS Features

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



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

3.1.2.1 Virus Warning

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

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

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

operating systems like Windows® 98/2000/ME/XP or the operating system may not install nor work.

3.1.2.2 CPU Internal Cache and External Cache

These fields speed up the memory access. The default is Enabled, which provides better performance by enabling cache.

3.1.2.3 CPU L2 Cache ECC Checking

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

3.1.2.4 Quick Power On Self Test

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

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

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

3.1.2.6 Boot Up Floppy Seek

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

3.1.2.7 Boot Up NumLock Status

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

3.1.2.8 Gate A20 Option

This entry 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.

3.1.2.9 Typematic Rate Setting

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

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

3.1.2.10 Typematic Rate (Chars/Sec)

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

3.1.2.11 Typematic Delay (Msec)

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

3.1.2.12 Security Option

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

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

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

3.1.2.13 MPS Version Control for OS

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

3.1.2.14 OS Select for DRAM > 64MB

This field allows you to access the memory that is over 64MB in OS/2. The options are: Non-OS2 and OS2.

3.1.2.15 Video BIOS Shadow

Determines whether video BIOS will be copied to RAM. Video Shadow will increase the video speed. Note that some graphics boards require that this option be disabled. The default value is Enabled.

Enabled Video shadow is enabled.

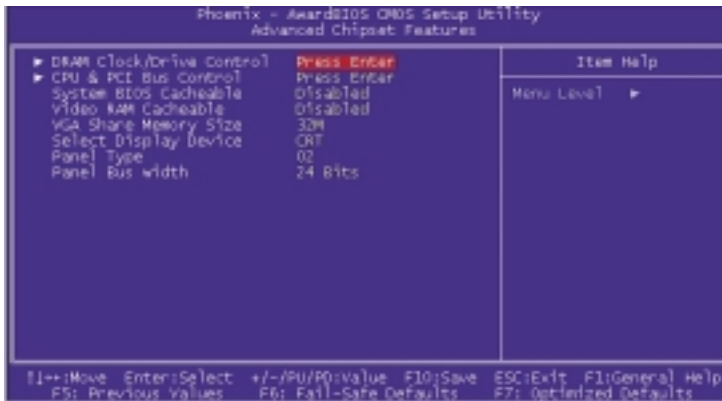
Disabled Video shadow is disabled.

3.1.2.16 Small Logo(EPA) Show

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

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

3.1.3 Advanced Chipset Features

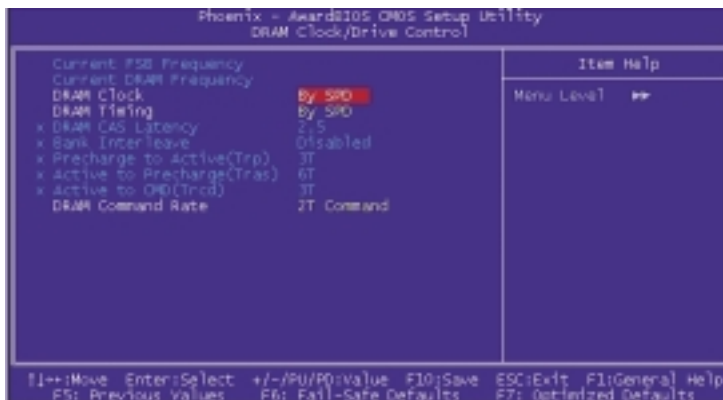


The settings on the screen are for reference only. Your version may not be identical to this one.

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

3.1.3.1 DRAM Clock/Drive Control

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



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

Current FSB Frequency

This field will show the detected FSB of the CPU.

Current DRAM Frequency

This field will show the detected frequency of the DRAM.

DRAM Clock

This field is used to select the clock speed of the DIMM.

By SPD

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

100 MHz

The memory clock speed will run at 200MHz.

133 MHz

The memory clock speed will run at 266MHz.

DRAM Timing

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

| | |
|---------------|--|
| <i>By SPD</i> | The EEPROM on a DIMM has SPD (Serial Presence Detect) data structure that stores information about the module such as the memory type, memory size, memory speed, etc. When this option is selected, the system will run according to the information in the EEPROM. This option is the default setting because it provides the most stable condition for the system. The "DRAM CAS Latency" to "Active to CMD (Trcd)" fields will show the default settings by SPD. |
| <i>Manual</i> | If you want your system to run at a performance better than the one "by SPD", select "Manual" then select the best option in the "DRAM CAS Latency" to "Active to CMD (Trcd)" fields. |

DRAM CAS Latency

This field is used to select the clock cycles for the CAS latency.

Bank Interleave

The options are 2 Bank, 4 Bank and Disabled.

Precharge to Active (Trp)

The options are 2T and 3T.

Active to Precharge (Tras)

The options are 5T and 6T.

Active to CMD (Trcd)

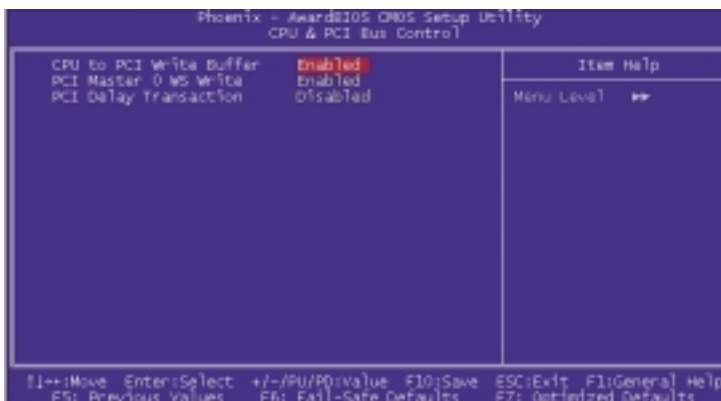
The options are 2T and 3T.

DRAM Command Rate

The options are 1T Command and 2T Command.

3.1.3.2 CPU & PCI Bus Control

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



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

CPU to PCI Write Buffer

- Enabled* Writes from the CPU to the PCI bus are buffered to offset the speed difference between the CPU and PCI bus.
- Disabled* Writes are not buffered therefore the CPU must wait until the write cycle is complete before starting another write cycle.

PCI Master 0 WS Write

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

PCI Delay Transaction

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

3.1.3.3 System BIOS Cacheable

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

3.1.3.4 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, set this field to Disabled.

3.1.3.5 VGA Share Memory Size

This field is used to select the memory size that will be shared by the VGA.

3.1.3.6 Select Display Device

This field is used to select the type of display device in use.

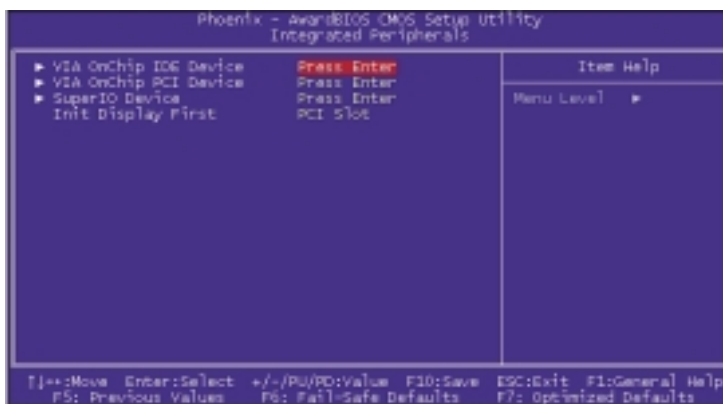
3.1.3.7 Panel Type

This field is used to select the type of LCD panel.

3.1.3.8 Panel Bus Width

This field is used to select the RGB data bus width of the LCD panel.

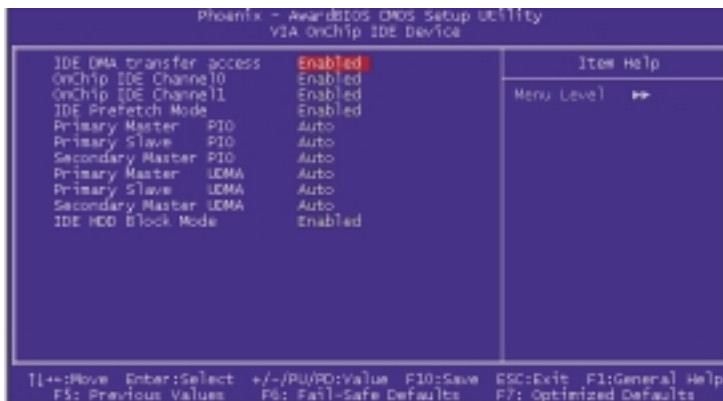
3.1.4 Integrated Peripherals



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

3.1.4.1 VIA OnChip IDE Device

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



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

IDE DMA Transfer Access

The options are Enabled and Disabled.

OnChip IDE Channel 0 and OnChip IDE Channel 1

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 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 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.

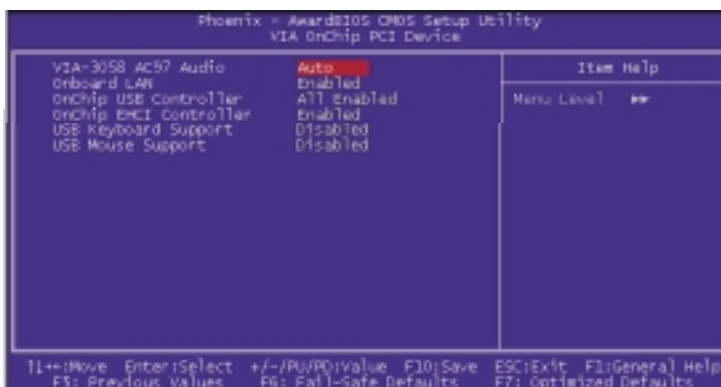
IDE HDD Block Mode

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

Disabled The IDE HDD uses the standard mode.

3.1.4.2 VIA OnChip PCI Device

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



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

VIA-3058 AC97 Audio

Auto Select this option when using the onboard audio codec.

Disabled Select this option when using a PCI sound card.

Onboard LAN

Enabled Enables the onboard LAN.

Disabled Disables the onboard LAN.

OnChip USB Controller

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

OnChip EHCI Controller

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

USB Keyboard Support

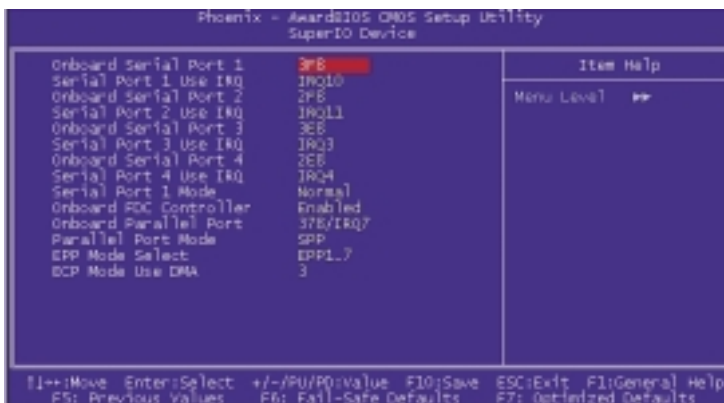
If you are using a USB keyboard under DOS, set this field to Enabled.

USB Mouse Support

This field is used to enable or disable the USB mouse.

3.1.4.3 Super IO Device

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



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

Onboard Serial Port 1, Onboard Serial Port 2, Onboard Serial Port 3 and Onboard Serial Port 4

3F8, 2F8, 3E8, 2E8 Allows you to manually select an I/O address for the serial port.

Disabled Disables the serial port.



Note:

The touch screen is internally connected to COM 3. If the LCD Display Panel supports touch screen, leave the "Onboard Serial Port 3" field in its default setting because a default address has already been assigned to this port. Make sure COM 3 is not attached with a serial device.

Serial Port 1 Use IRQ, Serial Port 2 Use IRQ, Serial Port 3 Use IRQ and Serial Port 4 Use IRQ

These fields are used to select an IRQ for the onboard serial port 1, 2, 3 or 4.

Serial Port 1 Mode

COM 1 functions as either a serial port or IrDA. You cannot use both at the same time.

- Normal* This option sets COM 1 as serial port.
- IrDA* This option sets COM 1 as IrDA.

Onboard FDC Controller

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

Onboard Parallel Port

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

Parallel Port Mode

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

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

EPP Mode Select

This is used to select the EPP mode.

ECP Mode Use DMA

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

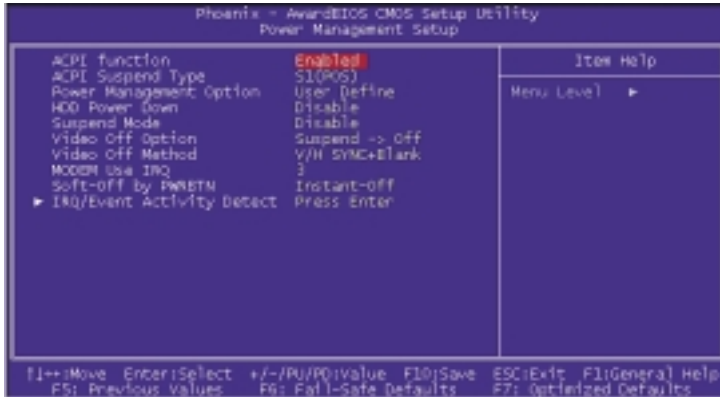
3.1.4.4 Init Display First

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

- | | |
|-----------------|--|
| <i>AGP</i> | When the system boots, it will first initialize the AGP. |
| <i>PCI Slot</i> | When the system boots, it will first initialize PCI. |

3.1.5 Power Management Setup

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



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

3.1.5.1 ACPI Function

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

3.1.5.2 ACPI Suspend Type

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

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

3.1.5.3 Power Management Option

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

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

3.1.5.4 HDD Power Down

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

3.1.5.5 Suspend Mode

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

3.1.5.6 Video Off Option

| | |
|--------------------------|---|
| <i>Always On</i> | The system BIOS will never turn off the screen. |
| <i>Suspend -> Off</i> | The screen is off when the system is in the Suspend mode. |

3.1.5.7 Video Off Method

This determines the manner in which the monitor is blanked.

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

3.1.5.8 MODEM Use IRQ

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

3.1.5.9 Soft-Off by PWRBTN

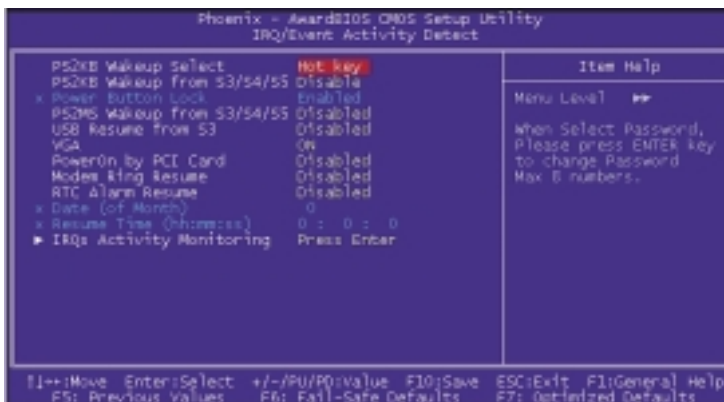
This field allows you to select the method of powering off your system.

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

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

3.1.5.10 IRQ/Event Activity Detect

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



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

PS2KB Wakeup Select

Hot Key This option allows you to select the key you would like to use to power-on the system in the “PS2KB Wakeup from S3/S4/S5” field.

Password This option allows you to use a password to wake up the system from the S3/S4/S5 state. Select this option and press <Enter>. Enter your password. You can enter up to 8 characters. Type in exactly the same password to confirm, then press <Enter>.

**Important:**

If you forgot the password, you must power-off the system, unplug the power cord and clear the CMOS data by setting JP7 pins 2 and 3 to On. Refer to chapter 2 for more information.

PS2KB Wakeup From S3/S4/S5

The options in this field will allow you to use a PS/2 keyboard to wake up the system from the S3/S4/S5 state.

Power Button Lock

Enabled Locks the power button. You have to use the keyboard to wake up the system. This field is not configurable if the "PS2KB Wakeup From S3/S4/S5" field is disabled.

Disabled Unlocks the power button.

PS2MS Wakeup from S3/S4/S5

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

Disabled Disables the PS/2 mouse wake up function.

Enabled Enables the PS/2 mouse wake up function.

USB Resume from S3

This function, when enabled, allows you to use a USB keyboard or USB mouse to wake up a system that is in the S3 (STR - Suspend To RAM) state.

VGA

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

PowerOn By PCI Card

Enabled 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 system. Access to the LAN card or PCI card will cause the system to wake up. Refer to the card's documentation for more information.

Disabled The system will not wake up despite access to the PCI card.

Modem Ring Resume

This field allows you to enable the Wake-On-Ring function. When enabled, it will remotely wake up the system via an external modem.

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.

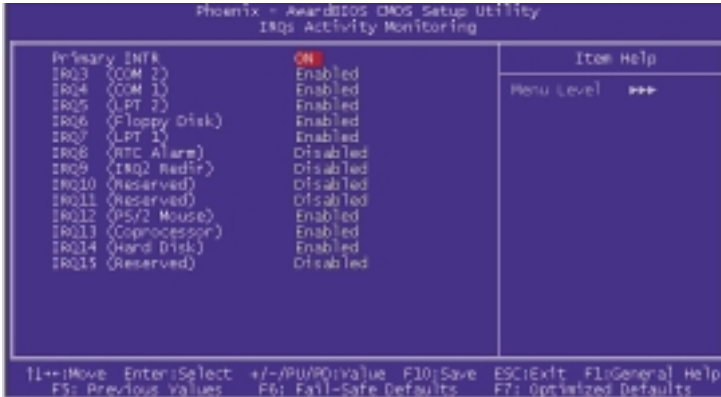
1-31 Select a date you would like the system to power-on. The system will power-on on the set date, and time set in the "Resume Time (hh:mm:ss)" field.

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 following screen will appear.

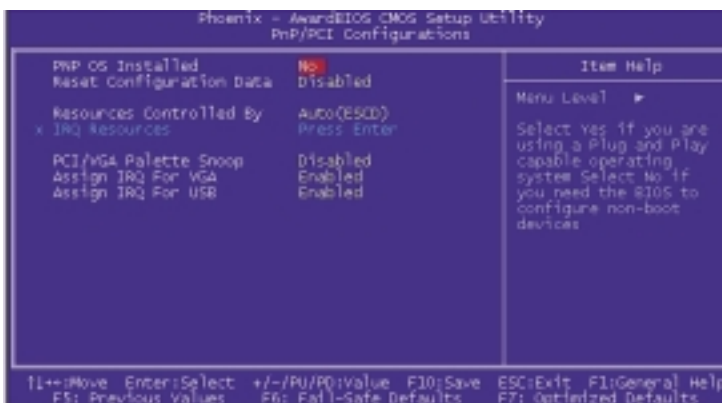


The settings on the screen are for reference only. Your version may not be identical to this one.

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

3.1.6 PnP/PCI Configurations

This section shows how to configure 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.



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

3.1.6.1 PNP OS Installed

The default setting is “No”. The BIOS will detect the Plug and Play devices for some compatible resources.

3.1.6.2 Reset Configuration Data

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

Disabled The BIOS will not reset the configuration data.

3.1.6.3 Resources Controlled By

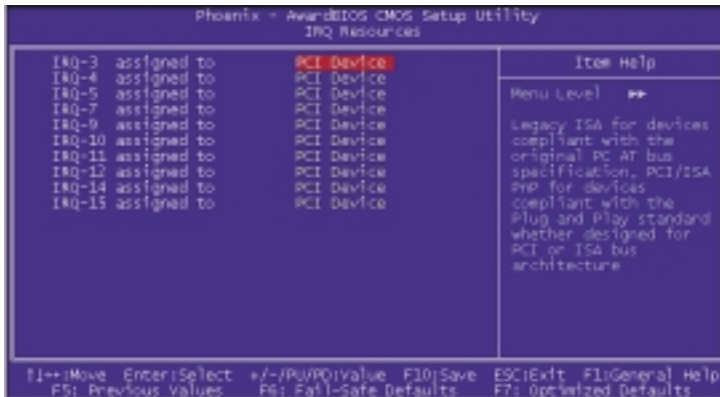
The Award Plug and Play BIOS has the capability to automatically configure all of the boot and Plug and Play compatible devices.

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

Manual Choose the specific IRQ resources in the “IRQ Resources” field.

3.1.6.4 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 PCI Device or Reserved.



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

3.1.6.5 PCI/VGA Palette Snoop

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

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

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

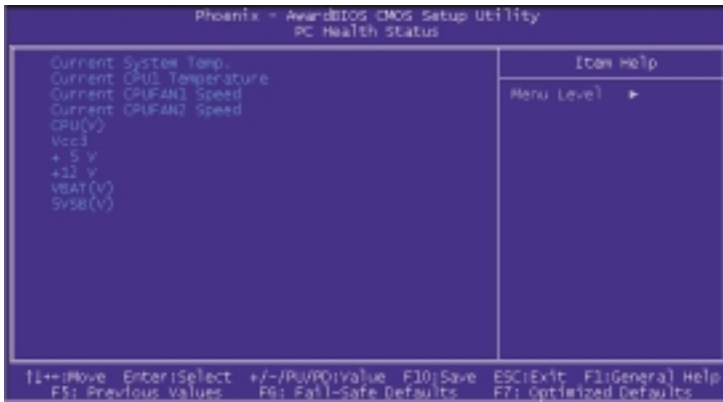
3.1.6.6 Assign IRQ for VGA

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.

3.1.6.7 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 a new device requires an IRQ, set this field to Disabled. The IRQ previously occupied by the USB device will be available for the new device.

3.1.7 PC Health Status



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

3.1.7.1 Current System Temp., Current CPU1 Temperature, Current CPU FAN1 Speed and Current CPU FAN2 Speed

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

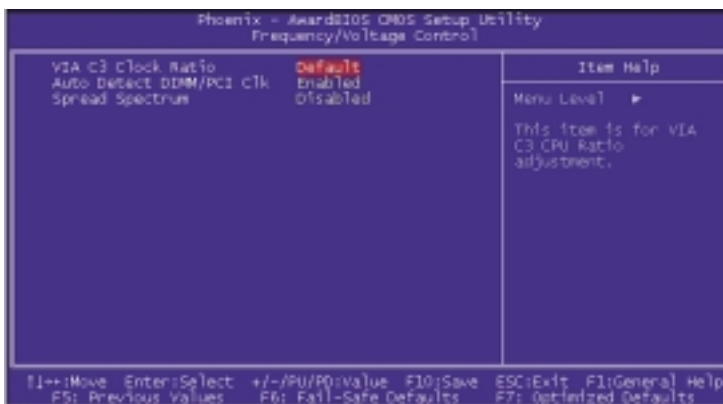
3.1.7.2 CPU(V)

This field shows the detected voltage of the processor.

3.1.7.3 VCC3, +5V, +12V, VBAT(V) and 5VSB(V)

These fields show the output voltage of the power supply.

3.1.8 Frequency/Voltage Control



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

3.1.8.1 VIA C3 Clock Ratio

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

3.1.8.2 Auto Detect DIMM/PCI Clk

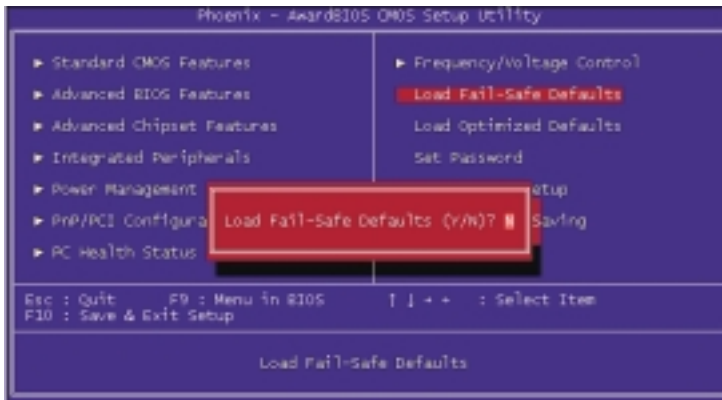
When enabled, the system will automatically send clock signals to existing DIMM or PCI devices.

3.1.8.3 Spread Spectrum

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

3.1.9 Load Fail-Safe Defaults

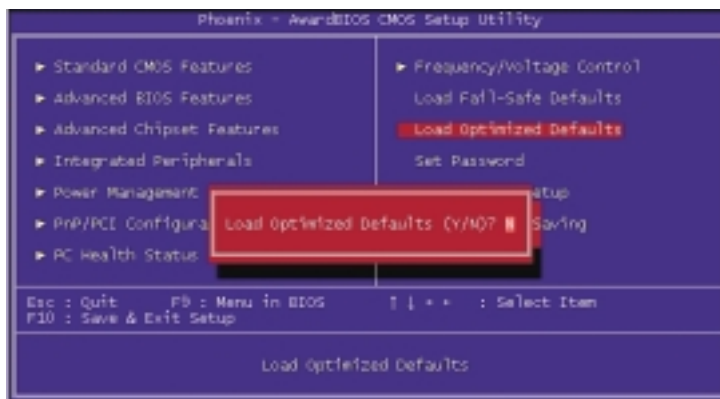
The “Load Fail-Safe Defaults” option loads the troubleshooting default values permanently stored in the ROM chips. These settings are not optimal and turn off all high performance features. You should use these values only if you have hardware problems. Highlight this option in the main menu and press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



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

3.1.10 Load Optimized Defaults

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



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

3.1.11 Set Password

If you want to protect your system and setup from unauthorized entry, set a 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 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 Password” and press <Enter>.



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

Confirm Password:

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

3.1.12 Save & Exit Setup

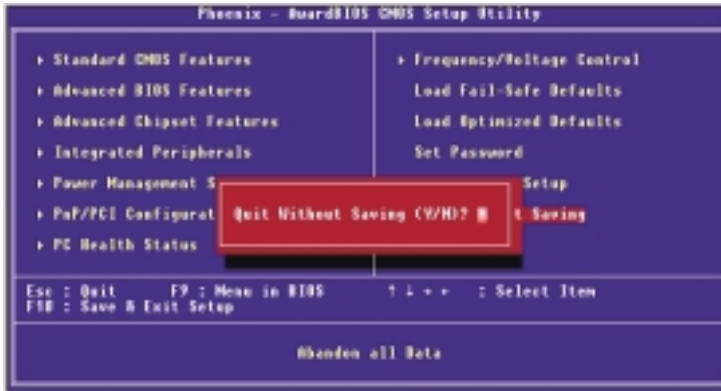
When all the changes have been made, highlight “Save & Exit Setup” and press <Enter>.



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

3.1.13 Exit Without Saving

When you do not want to save the changes you have made, highlight “Exit Without Saving” and press <Enter>.

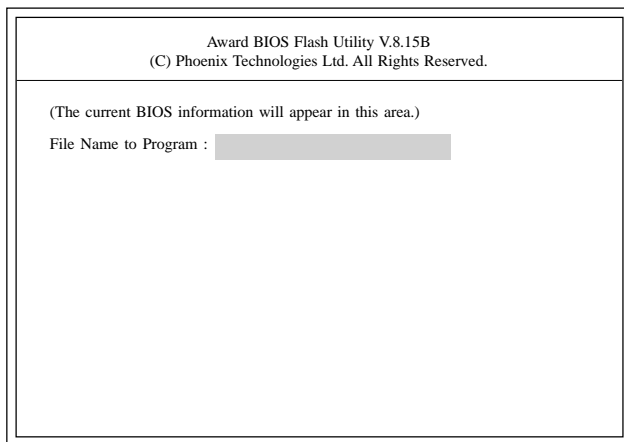


Type “Y” and press <Enter>. The system will reboot and you will once again see the initial diagnostics on the screen. If you wish to make any changes to the setup, press <Ctrl> <Alt> <Esc> simultaneously or after memory testing is done.

3.2 Updating the BIOS

To update the BIOS, you will need the new BIOS file and a flash utility, AWDFLASH.EXE. Please contact technical support or your sales representative for the files.

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

4.1 Desktop Management Interface (DMI)

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

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

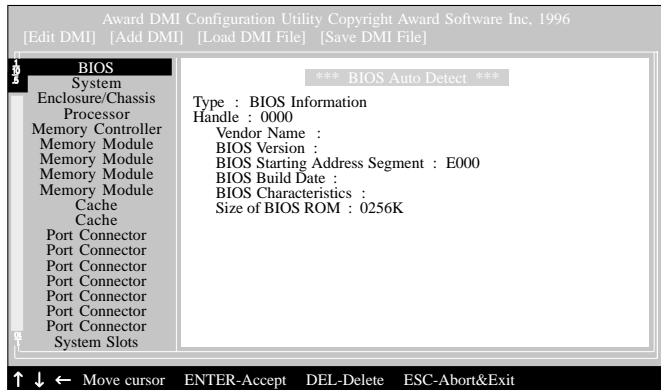
4.1.1 Running the DMI Utility

To run the DMI utility, type: DMICFG.EXE. Please contact technical support or your sales representative for the utility.

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

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

4.1.2 Using the DMI Utility



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

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

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

Edit DMI

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

Add DMI

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

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

Load DMI File

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

Press [Enter] to select DMI file for load

Press <Enter>.

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

Do you want to execute? (Y/N)

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

Save DMI File

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

Press [Enter] to select DMI file for save

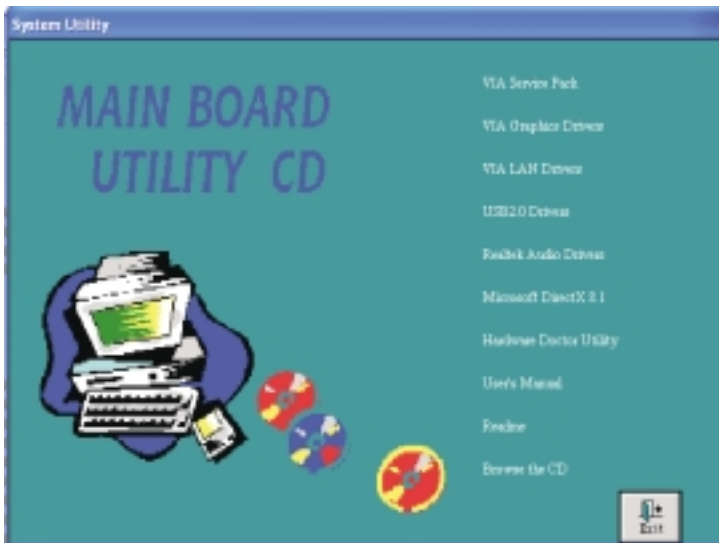
Press <Enter>.

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

4.2 Drivers, Utilities and Software Applications

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

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



4.2.1 VIA® Service Pack

The VIA® Service Pack contains the following drivers.

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

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

1. Click “VIA Service Pack” on the main screen. The following screen will appear.



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

VIA® Service Pack Installation Notes

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

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



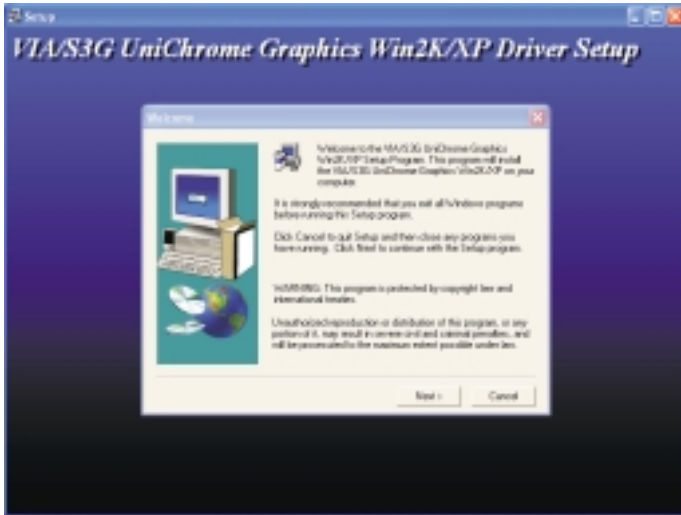
Important:

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

4.2.2 VIA Graphics Drivers

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

1. Click "VIA Graphics Drivers" on the main screen. The following screen will appear.



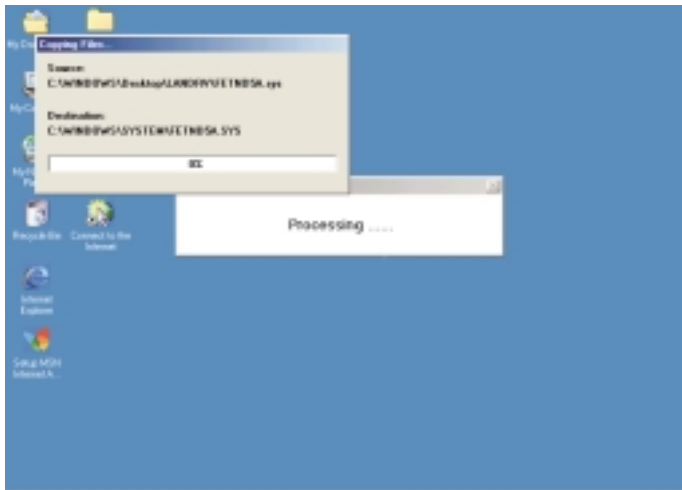
2. Follow the prompts on the screen to complete installation.
3. Restart the system.

4.2.3 VIA LAN Drivers

The LAN drivers for Windows® 98, Windows® 98 SE, Windows® ME, Windows® 2000 and Windows® XP support "Autorun".

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

1. Click "VIA LAN Drivers" on the main menu. The following screen will appear.



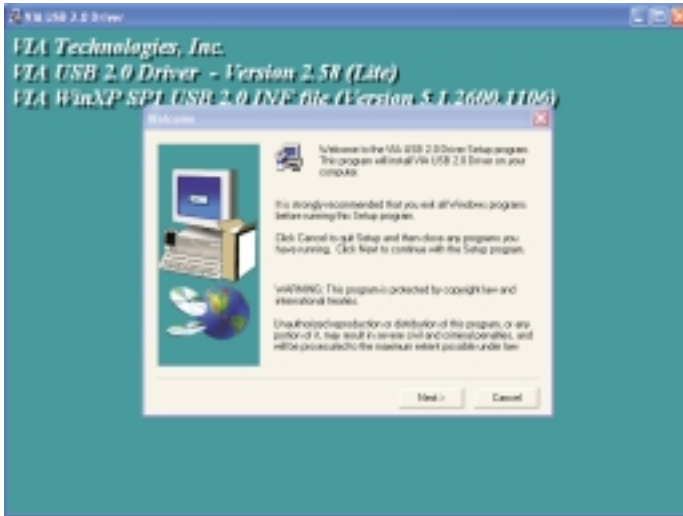
2. Follow the prompts on the screen to complete installation.
3. Reboot the system for the driver to take effect.

The LAN driver for Windows NT® 4.0 does not support "Autorun". Once the system has detected the fast ethernet controller, it will prompt you to install the driver for Windows NT® 4.0. The driver is in the "LAN" root directory of the CD. Please refer to README for the exact location of the drivers.

4.2.4 USB 2.0 Drivers

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

1. Click “USB 2.0 Drivers” on the main menu. The following screen will appear.



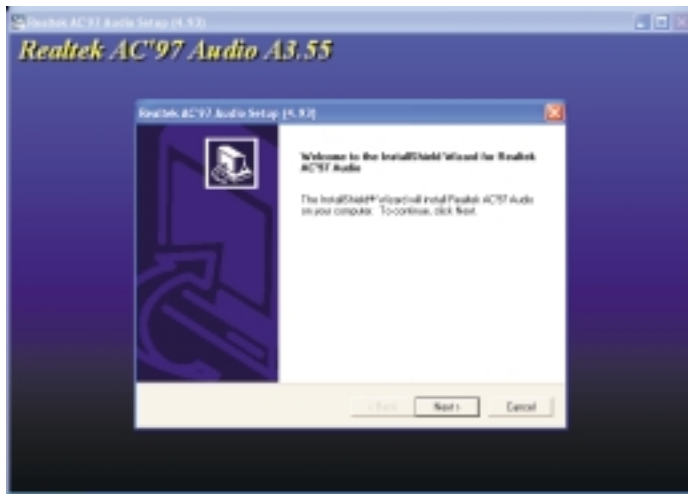
2. Follow the prompts on the screen to complete installation.
3. Restart the system.

4.2.5 Realtek Audio Drivers

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

To install the driver, please follow the steps below.

1. Click "Realtek Audio Drivers" on the main menu. The following screen will appear.



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

4.2.6 Microsoft DirectX 8.1

To install, please follow the steps below.

1. Click “Microsoft DirectX 8.1” on the main screen. The screen below will appear.



2. Click “Yes” to continue.
3. Follow the prompts on the screen to complete installation.
4. Restart the system.

4.2.7 Hardware Doctor Utility

Hardware Doctor Utility is capable of monitoring the system's hardware conditions such as the temperature of the CPU and system, voltage, and speed of the cooling 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.

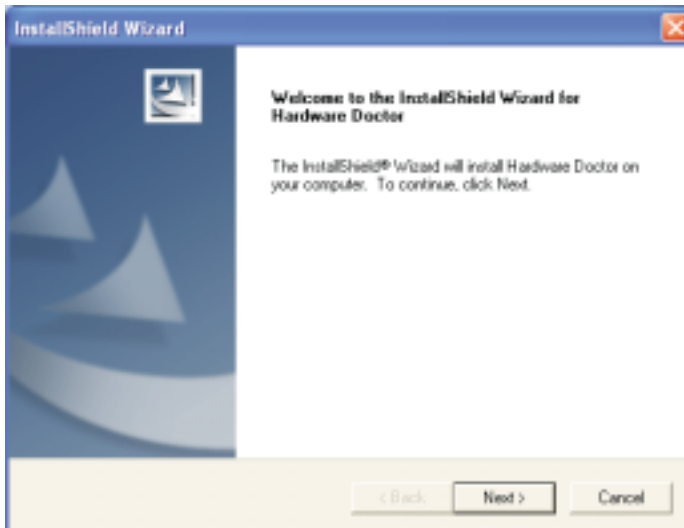


Note:

Use this utility only in Windows® 98SE, Windows® ME, Windows® 2000, Windows NT® 4.0 or Windows® XP operating system.

To install the utility, please follow the steps below.

1. Click "Hardware Doctor Utility". The screen below will appear.



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

4.3 Installation Notes

1. "Autorun" ONLY supports the Windows® 98, Windows® 98 SE, Windows® ME, Windows® 2000, Windows NT® 4.0 and Windows® XP operating systems. If after inserting the CD, "Autorun" did not automatically start (which is, the Main Board Utility CD screen did not appear), please go directly to the root directory of the CD and double-click "Setup".
2. All steps or procedures to install software drivers are subject to change without notice as the softwares are occassionally updated. Please contact technical support or your sales representative for the latest version of the drivers or software applications.

Appendix A - Watchdog Timer

A.1 Watchdog Timer

The following parameters are references for setting the time interval of the Watchdog Timer function. The system will regularly be “cleared” according to the set time interval. If the system hangs or fails to function, it will also reset according to the time interval so that your system will continue to operate.

```
mov dx,02e <Enter>
mov al,87 <Enter>
out dx,al <Enter>
out dx,al <Enter>
mov dx,02e <Enter>
mov al,07 <Enter>
out dx,al <Enter>
inc dx <Enter>
inc al <Enter>
out dx,al <Enter>
dec dx <Enter>
mov al,f6 <Enter>
out dx,al <Enter>
inc dx <Enter>
mov al,xy <Enter>
out dx,al <Enter>
```

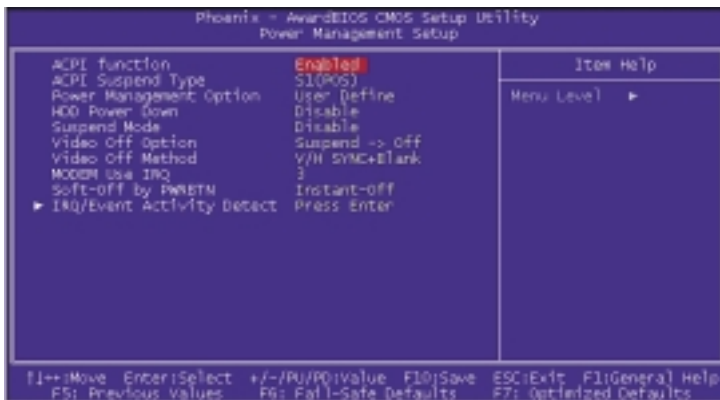
“XY” is the Watchdog Time count value for the “00h to “FFh” range wherein the time can be set from 0 sec. to 255 sec.

Appendix B - Using the Suspend to RAM Function

B.1 Using the Suspend to RAM Function

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

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



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

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

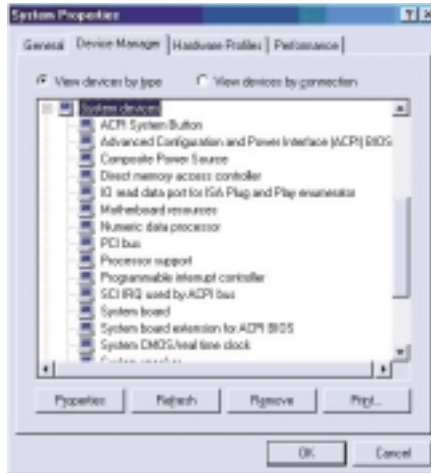
[drive]:>setup /p j

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

Using the Suspend to RAM Function

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

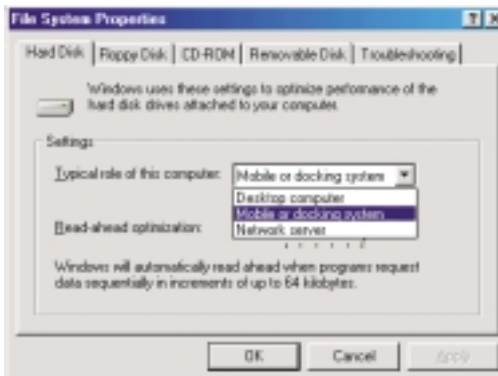
To check whether ACPI was properly installed, double-click the System icon. In the System Properties dialog box, click the "Device Manager" tab. In "View devices by type", click "System devices".



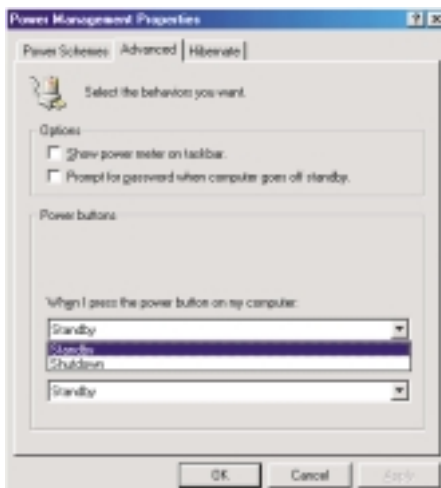
8. Double-click the System icon. In the System Properties dialog box, click the Performance tab.



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



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

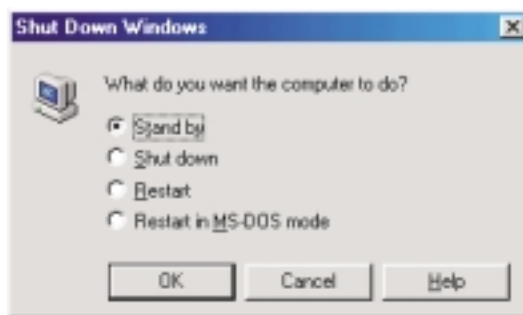


..... Using the Suspend to RAM Function

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

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

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



Important:

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

Appendix C - 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.

C.1 POST Beep

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

C.2 Error Messages

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

CMOS BATTERY HAS FAILED

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



Caution:

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

CMOS CHECKSUM ERROR

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

DISPLAY SWITCH IS SET INCORRECTLY

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

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

FLOPPY DISK(S) fail (80)

Unable to reset floppy subsystem.

FLOPPY DISK(S) fail (40)

Floppy type mismatch.

Hard Disk(s) fail (80)

HDD reset failed.

Hard Disk(s) fail (40)

HDD controller diagnostics failed.

Hard Disk(s) fail (20)

HDD initialization error.

Hard Disk(s) fail (10)

Unable to recalibrate fixed disk.

Hard Disk(s) fail (08)

Sector Verify failed.

Keyboard is locked out - Unlock the key

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

Keyboard error or no keyboard present

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

Manufacturing POST loop

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

BIOS ROM checksum error - System halted

The checksum of ROM address F0000H-FFFFFH is bad.

Memory test fail

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

Appendix D - Troubleshooting

D.1 Troubleshooting Checklist

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

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

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

Monitor/Display

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

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

The picture seems to be constantly moving.

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

The screen seems to be constantly wavering.

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

Power Supply

When the computer is turned on, nothing happens.

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

Floppy Drive

The computer cannot access the floppy drive.

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

Hard Drive

Hard disk failure.

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

Excessively long formatting period.

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

Parallel Port

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

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

Serial Port

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

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

Keyboard

Nothing happens when a key on the keyboard was pressed.

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

System Board

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