System Board
User's Manual

935-975X01-100G
92310723

Copyright

Trademarks

FCC and DOC Statement on Class B

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

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

Notice:

1. The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

2. Shielded interface cables must be used in order to comply with the emission limits.

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About this Manual

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

Warranty

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

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

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

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

Static Electricity Precautions

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

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

Important:
Electrostatic discharge (ESD) can damage your processor, disk drive and other components. Perform the upgrade instruction procedures described at an ESD workstation only. If such a station is not available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the system chassis. If a wrist strap is unavailable, establish and maintain contact with the system chassis throughout any procedures requiring ESD protection.

Safety Measures

To avoid damage to the system:

- Use the correct AC input voltage range.

To reduce the risk of electric shock:

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

Battery:

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

About the Package

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

- ☑ The system board
- ☑ A user's manual
- ☑ One IDE cable
- ☑ One FDD cable
- ☑ Two Serial ATA data cables
- ☑ One Serial ATA power cable
- ☑ One Intel RAID floppy diskette
- ☑ One eSATA driver floppy diskette
- ☑ One I/O shield
- ☑ One "Mainboard Utility" CD

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

Before Using the System Board

Before using the system board, prepare basic system components.

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

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

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

Chapter 1 - Introduction

Specifications

Processor	• LGA 775 socket for: - Intel® Pentium® D - Intel® Pentium® 4 - Intel® Core™2 (Conroe family) • Supports Intel Enhanced Memory 64 Technology (EMT64T) • Supports Enhanced Intel SpeedStep Technology (EIST) • Supports Intel Hyper-Threading Technology • Supports 1066/800MHz FSB
Chipset	• Intel® 975X Express Chipset - North bridge: Intel® 975X - South bridge: Intel® ICH7R
System Memory	• Four 240-pin DDR2 DIMM sockets • Supports DDR2 533 and DDR2 667 DIMMs • Supports dual channel (128-bit wide) memory interface • Supports up to 8GB system memory • Supports up to 10.7GB/s bandwidth • Supports unbuffered ECC/non-ECC x8 and x16 DIMMs
Expansion Slots	• 2 PCI Express x16 slots - CrossFire mode: The two x16 slots each operate at x8 bandwidth. - Single VGA mode: Supports only one x16 slot operating at x16 bandwidth. • 1 PCI Express x1 slot • 1 PCI Express x4 slot • 2 PCI slots
BIOS	• Award BIOS • 8Mbit flash memory
Power Management	• ACPI and OS Directed Power Management • ACPI STR (Suspend to RAM) function • Wake-On-PS/2 Keyboard/Mouse • Wake-On-USB Keyboard/Mouse • Wake-On-LAN • Wake-On-Ring • RTC timer to power-on the system • AC power failure recovery
Hardware Monitor	• Monitors CPU / system / north bridge temperature and overheat alarm • Monitors Vcore/Vdimm/Vnb/VCC5/12V/V5sb/Vbat voltages • Monitors the speed of the cooling fans • CPU Overheat Protection function monitors CPU temperature and fan during system boot-up - automatic shutdown upon system overheat

Audio	• Realtek ALC882 High Definition audio CODEC • 8-channel audio output • True stereo line level outputs • S/PDIF interface
LAN	• Realtek RTL8111B PCIE Gigabit LAN • Fully compliant to IEEE 802.3 (10BASE-T), 802.3u (100BASE-TX) and 802.3ab (1000BASE-T) standards
IDE	• Supports up to UltraDMA 100Mbps IDE devices
Serial ATA	• Intel chipset supports: - Four SATA ports - SATA speed up to 3Gb/s - RAID 0, RAID 1, RAID 0+1 and RAID 5 • JMB360 chip supports: - One eSATA (external SATA) port - SATA speed up to 3Gb/s
Rear Panel I/O	• 1 mini-DIN-6 PS/2 mouse port • 1 mini-DIN-6 PS/2 keyboard port • 1 parallel port • 1 optical S/PDIF-out port • 1 RCA S/PDIF-out port • 1 eSATA port • 1 IEEE 1394 port • 1 RJ45 LAN port • 4 USB 2.0/1.1 ports • Line-in, line-out (front R/L) and mic-in jacks • Center/subwoofer, rear R/L and side R/L jacks
Internal I/O	• 2 connectors for 4 additional external USB 2.0 ports • 1 connector for 1 external IEEE 1394 port • 2 connectors for 2 external serial ports • 1 front audio connector for line-out and mic-in jacks • 1 CD-in internal audio connector • 1 connector for IrDA interface • 4 Serial ATA connectors • 1 40-pin IDE connector • 1 90° floppy connector • 1 24-pin ATX power connector • 1 8-pin 12V power connector • 1 4-pin 5V/12V power connector (FDD type) • 1 front panel connector • 3 fan connectors • EZ touch switches (power switch and reset switch)
PCB	• 6 layers, ATX form factor • 24.4cm (9.6") x 30.5cm (12")

Features

HYPER-THREADING TECHNOLOGY

The system board supports Intel processors with Hyper-Threading Technology. Enabling the functionality of Hyper-Threading Technology for your computer system requires **ALL** of the following platforms.

Components:

- CPU - an Intel® Pentium® 4 Processor with HT Technology
- Chipset - an Intel® chipset that supports HT Technology
- BIOS - a BIOS that supports HT Technology and has it enabled
- OS - an operating system that includes optimizations for HT Technology

For more information on Hyper-Threading Technology, go to: www.intel.com/info/hyperthreading.

ATI CROSSFIRE

The ATI CrossFire™ technology supported by the system board drives your PC to a new peak of performance. By connecting a Radeon CrossFire Edition graphics card and a standard PCI Express graphics card, the power of these multiple GPUs (Graphics Processing Units) within the system will accelerate your gaming performance and improve image quality.

PCI EXPRESS™

PCI Express is a high bandwidth I/O infrastructure that possesses the ability to scale speeds by forming multiple lanes. The system board currently supports the physical layer of x1 and x16 lane widths. The x1 PCI Express lane supports transfer rate of 2.5 Gigabytes (250MBbps) per second. The PCI Express architecture also provides a high performance graphics infrastructure by enhancing the capability of a x16 PCI Express lane to provide 4 Gigabytes per second transfer rate.

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

DDR2 is a higher performance DDR technology whose data transfer rate delivers bandwidth of 4.3 GB per second and beyond. That is twice the speed of the conventional DDR without increasing its power consumption. DDR2 SDRAM modules work at 1.8V supply compared to 2.6V memory voltage for DDR modules. DDR2 also incorporates new innovations such as the On-Die Termination (ODT) as well as larger 4-bit pre-fetch against DDR which fetches 2 bits per clock cycle.

The onboard Realtek ALC882 is a High Definition audio codec and the 6 audio jacks at the rear I/O panel provides 8-channel audio output for advanced 7.1-channel super surround sound audio system. ALC882 also supports S/PDIF output, allowing digital connections with DVD systems or other audio/video multimedia.

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

The JMB360 chip supports eSATA (External Serial ATA). eSATA is a hot pluggable interface that allows connecting an external Serial ATA device. It is up to 6 times faster than existing external storage solutions like USB 2.0 and/or 1394 devices. The system board supports one eSATA port with speed of up to 3Gb/s.

Serial ATA is a storage interface that is compliant with SATA 1.0 specification. The Intel chipset supports 4 Serial ATA ports with speed of up to 3Gb/s. Serial ATA improves hard drive performance faster than the standard parallel ATA whose data transfer rate is 100MB/s.

The Intel chipset allows configuring RAID on the Serial ATA drives. It supports RAID 0, RAID 1, RAID 0+1 and RAID 5.

The Realtek RTL8111B PCI Express Gigabit LAN chip supports up to 1Gbps data rate.

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

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.

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

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 ≥720mA.

WAKE-ON-LAN This feature allows the network to remotely wake up a Soft Power Down (Soft-Off) PC. It is supported via the onboard LAN port or 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 ≥720mA.

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

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

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

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

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

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® 2000/XP supports the ACPI function. ACPI when enabled in the Power Management Setup will allow you to use the Suspend to RAM function.

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

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

POWER FAILURE RECOVERY When power returns after an AC power failure, you may choose to either power-on the system manually or let the system power-on automatically.

Français

Processeur	• LGA 775 socket pour: - Intel® Pentium® D - Intel® Pentium® 4 - Intel® Core™2 (famille de Conroe) • Les Appuis Intel Ont augmenté La Technologie De la Mémoire 64 (EMT64T) • Les Appuis Ont augmenté La Technologie D'Intel SpeedStep (EIST) • Appuis Intel Hyper-Filetant La Technologie (Intel Hyper-Threading) • Soutient 1066/800MHz FSB
Chipset	• Intel® 975X Express chipset - Pont nord: Intel® 975X - Pont sud: Intel® ICH7R
Mémoire Système	• 4 sockets DIMM DDR2 240-pin • Supporte les modules DIMM DDR2 533 et DDR2 667 • Supporte l'interface de mémoire deux canaux (128-bit) • Supporte jusqu'à 8GB de mémoire système • Supporte jusqu'à 10.7GB/s bande passante • Supporte non-tamponnés DIMM ECC/non-ECC x8 et x16
Logements d'Extension	• 2 PCI Express x16 slots - Mode CrossFire: Chaque slot x16 fonctionne à la bande passante x8. - Mode Single VGA: Chaque slot x16 fonctionne à la bande passante x16. • 1 PCI Express x1 slot • 1 PCI Express x4 slot • 2 PCI slots
BIOS	• Award BIOS • Mémoire Flash 8Mbit
Gestion de Puissance	• ACPI et OS Directed Power Management • ACPI STR (Suspend to RAM) fonction • Réveil-Sur-PS/2 Clavier/Souris • Réveil-Sur-USB Clavier/Souris • Eveil Sonnerie • Réveil Par Le Réseau • Minuterie RTC pour allumer le système • Récupération après Défaillance d'Alimentation CA
Fonctions de Moniteur de Matériel	• Gère l'alarme de température et de surchauffe de CPU / système / pont nord • Gère l'alarme de voltage et d'échec de Vcore/Vdimm/Vnb/VCC5/12V/V5sb/Vbat • Gère la vitesse de ventilateur du ventilateur • Protection du CPU - supporte la mise hors circuit automatique en cas de surchauffage du système

1 Introduction

Audio	• Realtek ALC882 8-canaux Définition Élevée audio CODEC • Sorties de niveau de lignes stéréo vraies • Interface entrée/sortie S/PDIF
LAN	• Realtek RTL8111B PCIE Gigabit LAN • Entièrement conforme IEEE 802.3 (10BASE-T), 802.3u (100BASE-TX) et 802.3ab (1000BASE-T) standard
IDE	• Supporte des disques durs jusqu'à UltraDMA 100Mbps
Serial ATA	• Le jeu de puces d'Intel soutient: - 4 ports de Série ATA - Vitesse SATA jusqu'à 3Gb/s - RAID 0, RAID 1, RAID 0+1 et RAID 5 • Le jeu de puces d'JMB360 soutient: - 1 port de eSATA - Vitesse SATA jusqu'à 3Gb/s
Panneau Arrière I/O	• 1 port souris PS/2 • 1 port clavier PS/2 • 1 port parallèle DB-25 • 1 port optique S/PDIF • 1 port RCA S/PDIF • 1 port eSATA • 1 port IEEE 1394 • 1 port RJ45 LAN • 4 ports USB 2.0/1.1 • Line-in, line-out et mic-in prises audio • Center/subwoofer, rear R/L et side R/L prises audio
Interne I/O	• 2 connecteurs pour 4 ports USB 2.0 supplémentaires • 1 connecteur pour 1 IEEE 1394 • 2 connecteurs pour 2 série • 1 connecteur audio de l'avant pour la sortie ligne/l'entrée micro • 1 connecteur CD-in audio internes • 1 connecteur IrDA • 4 connecteurs Serial ATA • 1 connecteur IDE • 1 connecteur de 90° FDD • 1 connecteur d'alimentation ATX 24-pin • 1 connecteur d'alimentation ATX 8-pin 12V • 1 prises d'alimentation 4-broches 5V/12V (type-FDD) • 1 connecteur devant panneau • 3 connecteurs de ventilateurs • EZ interrupteurs (bouton de power et reset)
PCB	• Facteur de forme de ATX • 24.4cm (9.6") x 30.5cm (12")

Deutsch

Prozessor	• LGA 775 CPU Einfaßung für: - Intel® Pentium® D - Intel® Pentium® 4 - Intel® Core™2 (Conroe familie) • Unterstützungen Intel Erhöhten Technologie Des Gedächtnis-64 (EMT64T) • Unterstützungen Erhöhten Intel SpeedStep Technologie (EIST) • Unterstützungen Intel, das Technologie Hyper-Verlegt (Intel Hyper-Threading) • Stützt 1066/800MHz FSB
Chipset	• Intel® 975X Express chipset - Nordbrücke: Intel® 975X - Südbrücke: Intel® ICH7R
Systemspeicher	• 4 240-pin-Steckplätze DDR2 DIMM • Unterhält die Moduln DDR2 533 und DDR2 667 DIMMs • Unterhält 128-bit – Speiher mit den zwei Kanälen • Unterhält bis zum 8GB-Systemspeicher • Unterhält bis zum 10.7GB/s-Bandbreite. • Unterhält nur DIMMs ohne Dämpfer ECC/non-ECC x8 und x16 DIMMs
Expansion Schlitz	• 2 PCI Express x16-Einbauplätzen - CrossFire Modus: Beide x16 Steckplätze arbeiten mit x8 Bandbreite. - Single VGA Modus: Beide x16 Steckplätze arbeiten mit x16 Bandbreite. • 1 PCI Express x1-Einbauplätzen • 1 PCI Express x4-Einbauplätzen • 2 PCI-Einbauplätzen
BIOS	• Award BIOS • Flash-Speicher 8Mbit
Energie Management	• ACPI und OS Directed Power Management • ACPI STR (Suspend to RAM) funktion • Wecken bei Betätigung der PS/2 Tastatur/Maus • Wecken bei USB-Tastatur/Maus • Wecken bei Klingeln • Wecken des Systems durch das Netzwerk • RTC-Taktgeber zum Einschalten des Systems • Wiederherstellung der Wechselstromversorgung nach einem Ausfall
Kleinteilmonitor	• Überwachung der Temperatur des CPU / Systems / Nordbrücke sowie Warnsignal bei Überhitzung • Überwachung der Spannungen des Vcore/Vdimm/Vnb/VCC5/12V/V5sb/Vbat • Überwachung der Geschwindigkeit des Ventilators • Prozessor-Shutz - Die Ausschaltung bei der Überhitzung – die automatische Ausschaltung des Computers bei der Überhitzung

1 Introduction

Audio	• Realtek ALC882 8-Kanal-Hohe-Definition-audio-CODEC • Naturgetreue Stereo-Leitungspegel-Ausgabe • S/PDIF-In/Aus-Schnittstelle
LAN	•Realtek RTL8111B PCIE Gigabit LAN • Völlig gefällig zu IEEE 802.3 (10BASE-T), 802.3u (100BASE-TX) und 802.3ab (1000BASE-T) standards
IDE	• Unterstützung der Festplatten bis zum UltraDMA 100Mbps
Serial ATA	• Intel chipset stützt: - 4 serielle Serial ATA-Ports - SATA bis zu 3Gb/s schnell - RAID 0, RAID 1, RAID 0+1 und RAID 5 •JMB360 chipset stützt: - 1 eSATA-Port - SATA bis zu 3Gb/s schnell
Porte an der Rückwand	• 1 Mini-DIN-6-Anschluß für eine PS/2-Maus • 1 Mini-DIN-6-Anschluß für eine PS/2-Tastatur • 1 DB-25-Parallelanschluß • 1 S/PDIF optischen-Anschlüsse • 1 S/PDIF RCA-Anschlüsse • 1 eSATA-Anschlüsse • 1 IEEE-1394-Anschlüsse • 1 RJ45 LAN-Anschlüsse • 4 USB 2.0/1.1-Anschlüsse • Line-in, line-out und mic-in Audio-Anschlußbuchsen • Center/subwoofer, rear R/L und side R/LAudio-Anschlußbuchsen
Internes I/O	• 2 Anschlußfassung für 4 zusätzliche externe USB 2.0-Anschlüsse • 1 Anschluß für eine externe IEEE 1394 Schnittstelle • 2 Anschluß für 2 externe serieller Schnittstelle • 1 Frontaudioanschluß für die externe Ausgangsleitung und den Mikrofoneingang • 1 interne Audioanschlüsse (CD-in) • 1 IrDA-Anschluß • 4 Serial-ATA-Anschlüsse • 1 IDE-Anschlüsse • 1 90° Floppy-Anschlüsse • 1 Anschlußstecker für das ATX-Netzgerät 24-pin • 1 Anschlußstecker für das ATX-Netzgerät 8-pin 12V • 1 4-polige 5V/12V Netzstecker (für FDD) • 1 Frontabdeckung Stecker • 3-ventilator-Anschlüsse • EZ Umschaltern (der Knopf der Speisung und des Auslasses)
PCB	• ATX Formfaktor • 24.4cm (9.6") x 30.5cm (12")

Español

Procesador	• LGA 775 Zócalo de la CPU para: - Intel® Pentium® D - Intel® Pentium® 4 - Intel® Core™2 (familia de Conroe) • Las Ayudas Intel Realzaron Tecnología De la Memoria 64 (EMT64T) • Las Ayudas Realzaron La Tecnología De Intel SpeedStep (EIST) • Ayudas Intel Hiperactivo-Que rosca Tecnología (Intel Hyper-Threading) • Apoya 1066/800MHz FSB
Chipset	• Intel® 975X Express chipset - Puente norte: Intel® 975X - Puente sur: Intel® ICH7R
Memoria de Sistema	• 4 240-pin mortajas DDR2 DIMM • Soporta los módulos DIMM DDR2 533 y DDR2 667 • Soporta memoria de dos canales (128-bit) • Soporta hasta 8GB de memoria sistémica • Soporta hasta 10.7GB/s de ancho de banda • Soporta sólo unbuffered ECC/non-ECC x8 y x16 DIMM
Ranuras de Expansión	• 2 slots PCI Express x16 - Modo CrossFire: Los slots x16 operan con un ancho de banda x8. - Modo Single VGA: Los slots x16 operan con un ancho de banda x16. • 1 slot PCI Express x1 • 1 slot PCI Express x4 • 2 slots PCI
BIOS	• Award BIOS • Memoria instante 8Mbit
Gerencia de la Energía	• ACPI y OS Directed Power Management • ACPI STR (Suspend to RAM) función • PS/2 Teclado/Ratón de Wake-On • USB Teclado/Ratón de Wake-On • Wake-On-Ring • Wake-On-LAN • Temporizador de RTC para encender el sistema • Recuperación de Fracaso de Energía AC
Monitor del Hardware	• Monitores de los CPU / sistema / Puente norte temperaturas y alarma acalorada. • Monitores de voltajes de Vcore/Vdimm/Vnb/VCC5/12V/V5sb/Vbat • Vigila la velocidad del abanico del abanido • Protección del procesador - Desconección en caso de recalentamiento –el ordenador se desconecta automáticamente en caso de recalentamiento

Audio	• Realtek ALC882 8-canal Alta Definición audio CODEC • Auténtico salidas de nivel de línea estéreo • Interfáz de S/PDIF-in/out
LAN	•Realtek RTL8111B PCIE Gigabit LAN • Completamente a IEEE 802.3 (10BASE-T), 802.3u (100BASE-TX) y 802.3ab (1000BASE-T) estándar
IDE	• Soporta las unidades duras hasta de UltraDMA 100Mbps
Serial ATA	• El chipset de Intel apoya: - 4 puertos de Serial ATA - SATA se acelera a 3Gb/s - RAID 0, RAID 1, RAID 0+1 y RAID 5 • El chipset de JMB360 apoya: - 1 puerto eSATA - SATA se acelera a 3Gb/s
Panel Trasero I/O	• 1 puerto de ratón mini-DIN-6 PS/2 • 1 puerto de teclado mini-DIN-6 PS/2 • 1 puerto paralelo de DB-25 • 1 puerto de S/PDIF óptico • 1 puerto de S/PDIF RCA • 1 puerto eSATA • 1 puerto de IEEE 1394 • 1 puerto de RJ45 LAN • 4 puertos de USB 2.0/1.1 • Line-in, line-out (front R/L) y mic-in enchufes de audio • Center/subwoofer, rear R/L y side R/L enchufes de audio
Conectador Interno	• 2 conectors para 4 puertos de USB 2.0/1.1 externo adicional • 1 conector para un puerto de IEEE 1394 • 2 conectors para 2 puertos de serie • 1 conectador audio delantero para la salida extrema de linea y el micro • 1 conector de CD-in audio interno • 1 conector de IrDA • 4 conectores de Serial ATA • 1 conector de IDE • 1 conector de 90° FDD • 1 conectore de 24-pin fuente de alimentación de ATX • 1 conectore de 8-pin 12V fuente de alimentación de ATX • 1 4-fichas conectadores de energía de 5V/12V (FDD-tipo) • 1 conector de conectador del panel delantero • 3 conectores de abanicos • EZ conmutadores (conmutadores de alimentación y reset)
PCB	• ATX forme el factor • 24.4cm (9.6") x 30.5cm (12")

Русский язык

Процессор	• LGA 775 гнездо для: - Intel® Pentium® D - Intel® Pentium® 4 - Intel® Core™2 (Семья Conroe) • Поддержки Intel Увеличили Технологию Памяти 64 (EMT64T) • Поддержки Увеличили Технологию Intel SpeedStep (EIST) • Поддержки Intel Гипер-Prodeva4 нитку Технологию (Intel Hyper-Threading) • Поддерживает 1066/800MHz FSB
Чипсет	• Intel® 975X курьерский Чипсет - Северный мост: Intel® 975X - Южный мост: Intel® ICH7R
Оперативная Память	• 4 240-pin гнезда DDR2 DIMM • Поддерживает модули DIMM DDR2 533 и DDR2 667 • Поддерживает двухканальную память (128-бит) • Поддерживает до 8ГБ системной памяти • Поддерживает до 10.7GB/s пропускной способностью • Поддерживает только небуфф ECC/non-ECC x8 и x16 DIMM
Слоты	• 2 PCI Express x16 слотов - Режим CrossFire: Каждый слот x16 работает с пропускной способностью x8. - Режим Single VGA – Каждый слот x16 работает с пропускной способностью x16. • 1 PCI Express x1 слотов • 1 PCI Express x4 слотов • 2 PCI слотов
BIOS	• Award BIOS • 8Mbit внезапная память
управление силы	• ACPI и OS Directed Power Management • ACPI STR (Suspend to RAM) • Активизация На Движение Мыши • Активизация На Нажатие Кнопки USB Клавиатуры • Активизация На Входящий Звонок • Активизация На Сетевое Событие • RTC Таймер для Включения Системы • Скачки Напряжения
монитор оборудования	• Мониторинг температуры процессора / системы / Северный мост • Мониторинг напряжений Vcore/Vdimm/Vnb/VCC5/12V/V5sb/Vbat • Мониторинг скорости вращения вентилятора • Защита процессора - Выключение при перегреве – автоматическое выключение компьютера при перегреве

тональнозвуково	• Realtek ALC882 8-канал Высокое Определение CODEC • Настоящий линейный стерео выход • интерфейса S/PDIF-in и S/PDIF-out
LAN	• Realtek RTL8111B PCIE Gigabit LAN • Поддерживает IEEE 802.3 (10BASE-T), 802.3u (100BASE-TX) и 802.3ab (1000BASE-T)
IDE	• Поддерживает жесткие диски до UltraDMA 100Mbps
Serial ATA	• Chipset Intel поддерживает - 4 SATA порта - Скорость SATA до 3 ГБ/с - RAID 0, RAID 1, RAID 0+1 и RAID 5 • Chipset JMB360 поддерживает - 1 eSATA порта - Скорость SATA до 3 ГБ/с
задняя панель I/O	• 1 мини-DIN-6 PS/2 порт для мыши • 1 мини-DIN-6 PS/2 порт для клавиатуры • 1 DB-25 параллельный порт • 1 S/PDIF оптического порт • 1 S/PDIF RCA порт • 1 eSATA порт • 1 IEEE 1394 порта • 1 RJ45 LAN порт • 4 USB 2.0/1.1 порта • Mic-in, line-in и line-out гнезда для звука • Center/subwoofer, rear R/L и side R/L гнезда для звука
внутренне I/O	• 2 разъем для 4-х дополнительных внешних USB 2.0 портов • 1 разъем для внешнего IEEE 1394 порта • 2 разъем для 2 внешнего серийный порт • 1 передний аудио разъем для внешнего линейного выхода и микрофона • 1 внутренних звуковых разъема (CD-in) • 1 разъем для интерфейса IrDA • 4 Serial ATA разъема • 1 IDE разъема • 1 разъем 90º FDD • 1 разъема питания ATX 24-pin • 1 разъема питания ATX 8-pin 12V • 1 4-штырьковых разъемов питания 5V/12V (типа FDD) • 1 Фронт панель разъем • 3 Разъемы для вентилятора • EZ переключатели (кнопка питания и сброса)
PCB	• фактор формы ATX • 24.4cm (9.6") x 30.5cm (12")

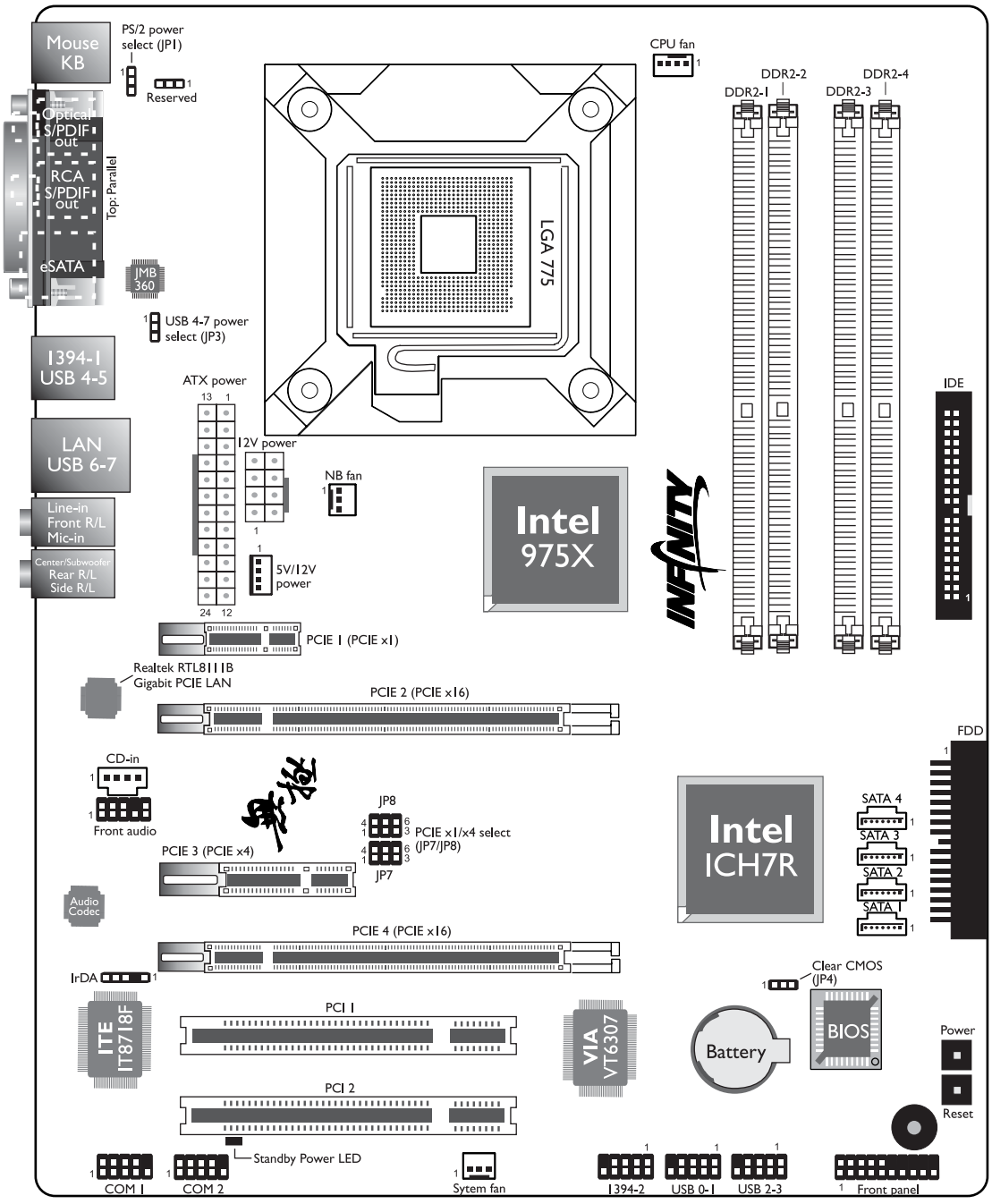
日本語

プロセッサ	プロセッサ・ソケット: LGA 775 -Intel® Pentium® D -Intel® Pentium® 4 -Intel® Core™2 (Conroe 家族) サポートIntel Enhanced Memory 64 Technology (EMT64T) サポート Enhanced Intel SpeedStep Technology (EIST) サポート Intel Hyper-Threading Technology サポート 1066/800MHz FSB
チップセット	Intel®チップセット -ノースブリッジ: Intel® 975X -サウスブリッジ: Intel® ICH7R
システムメモリ	240ピンDDR2 DIMM ソケット x 4 サポート DDR2 533 または DDR2 667 DIMM デュアルチャネル (128ビット幅) メモリインターフェース対応 最大 8GB までのシステムメモリに対応 最大 10.7GB/s の帯域で動作 x8と16x、ECC/non-ECC unbuffered DIMM
拡張スロット	PCI Express x16 スロット x 2 -CrossFire モード: それぞれの x16 スロットが x8 の帯域で動作 -シングル VGA モード: それぞれの x16 スロットが x16 の帯域で動作 PCI Express x1 スロット x 1 PCI Express x4 スロット x 1 PCIスロット x 2
BIOS	Award BIOS 8Mビット フラッシュメモリ
電源管理機能	ACPIおよびOS自主電源管理 ACPI STR (サスペンド・トゥ・ラム) 機能 ウェイクオンPS/2キーボード/マウス ウェイクオンUSB キーボード/マウス ウェイクオンLAN (WOL) ウェイクオンリング (Wake-On-Ring) システムパワーオン用RTCタイマー AC電源問題発生時のリカバリ機能
ハードウェアモニタ	CPU/システム/ノースブリッジ温度のモニタリング Vcore/Vdimm/Vnb/VCC5/12V/V5sb/Vbat 電圧のモニタリング 冷却ファン速度のモニタリング CPUオーバーヒート保護機能によるシステムブートアップ中のCPU温度モニタリング
オーディオ	Realtek ALC882 8チャネルオーディオCODEC トゥルー・ステレオ・ラインレベル出力 S/PDIF-入力/出力インターフェース

LAN	Realtek RTL8111B ギガビットイーサネットコントローラ IEEE 802.3 (10BASE-T)、802.3u (100BASE-TX)および802.3ab (1000BASE-T)基準に完全準拠
IDE	UltraDMA 100Mbpsまでのハードドライブをサポート
シリアルATA (SATA)	Intel チップセット - 4つのSATAポートをサポート - SATA速度は最大 3Gb/s - RAID 0, RAID 1, RAID 0+1 および RAID 5 JMB360 チップセット - 1つの eSATAポートをサポート - SATA速度は最大 3Gb/s
リアパネルI/O	mini-DIN-6 PS/2マウスポート x 1 mini-DIN-6 PS/2キーボードポート x 1 パラレルポート x 1 光学 S/PDIF x 1 RCA S/PDIF x 1 eSATA ポート x 1 IEEE 1394 ポート x 1 RJ45 LAN ポート x 1 USB 2.0/1.1 ポート x 4 ライン入力、ライン出力 (フロントR/L) およびマイク入力端子 センタ/サブウーファ、リアR/LおよびサイドR/L端子
内部I/O	4ポート外部USB2.0ポート用コネクタ x 2 IEEE 1394 コネクタ x 1 外部シリアルポート用コネクタ x 2 ライン出力およびマイク入力端子用フロントオーディオコネクタ x 1 CD入力内部オーディオコネクタ x 1 IrDAインターフェース用コネクタ x 1 SATAコネクタ x 4 40ピンIDEコネクタ x 1 フロッピーコネクタ x 1 24ピンATX電源コネクタ x 1 8ピン12V ATX電源コネクタ x 1 4-ピン 5V/12V 電源コネクタ x 1 (FDD タイプ) フロントパネルコネクタ x 1 ファンコネクタ x 3 EZタッチスイッチ (電源スイッチとリセットスイッチ)
PCB	6層PCB, ATX フォームファクタ 24.4 cm (9.6") x 30.5 cm (12")

Chapter 2 - Hardware Installation

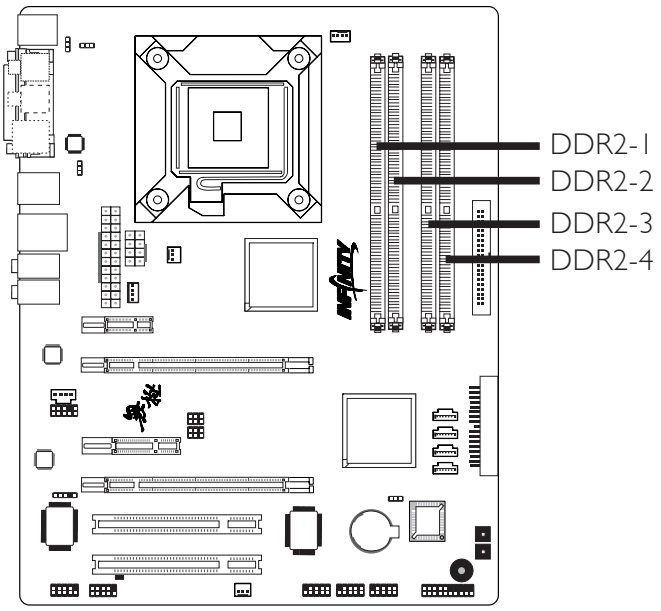
System Board Layout



Warning:

Electrostatic discharge (ESD) can damage your system board, processor, disk drives, add-in boards, and other components. Perform the upgrade instruction procedures described at an ESD workstation only. If such a station is not available, you can provide some ESD protection by wearing an antistatic wrist strap and attaching it to a metal part of the system chassis. If a wrist strap is unavailable, establish and maintain contact with the system chassis throughout any procedures requiring ESD protection.

System Memory



The system board supports 240-pin DDR2 DIMM sockets. The four DDR2 DIMM sockets on the system board are divided into 2 channels:

Channel A - DDR2_1 and DDR2_2
Channel B - DDR2_3 and DDR2_4

The system board supports the following memory interface.

Single Channel (SC)

Data will be accessed in chunks of 64 bits (8B) from the memory channels.

Virtual Single Channel (VSC)

If both channels are populated with different memory configurations, the MCH defaults to Virtual Single Channel.

Dual Channel (DC)

Dual channel provides better system performance because it doubles the data transfer rate.

Dynamic Mode Addressing

This mode minimizes the overhead of opening/closing pages in memory banks allowing for row switching to be done less often.

Single Channel	DIMMs are on the same channel. DIMMs in a channel can be identical or completely different. Not all slots need to be populated.
Virtual Single Channel	DIMMs of different memory configurations are on different channels. Odd number of slots can be populated.
Dual Channel	DIMMs of the same memory configuration are on different channels.
Dynamic Mode Addressing	In single channel, requires even number or rows (side of the DIMM) populated. This mode can be enabled with 1 SS, 2 SS or 2 DS.
	In VSC mode, both channels must have identical row structure.

BIOS Setting

Configure the system memory in the Genie BIOS Setting submenu ("DRAM Timing and Config" section) of the BIOS.

The table below lists the various optimal operating modes that should be configured for the memory channel operation.

Config	DDR2_1	DDR2_2	DDR2_3	DDR2_4
No memory	E	E	E	E
Single channel A	P	E	E	E
Single channel A	P	P	E	E
Single channel A	E	P	E	E
Single channel B	E	E	P	E
Single channel B	E	E	P	P
Single channel B	E	E	E	P
Virtual single channel	E	P(**)	E	P(**)
Virtual single channel	E	P	P	E
Virtual single channel	E	P(**)	P	P(**)
Virtual single channel	P	E	E	P
Virtual single channel	P(**)	E	P(**)	E
Virtual single channel	p(**)	E	P(**)	P
Virtual single channel	P	P(**)	E	P(**)
Virtual single channel	P(**)	P	P(**)	E
Virtual single channel	P(**)	P(**)	P(**)	P(**)
Dual channel	E	P(*)(2,4)	E	P(*)(2,4)
Dual channel	P(*)(1,3)	E	P(*)(1,3)	E
Dual channel	P(*)(1,3)	P(*)(2,4)	P(*)(1,3)	P(*)(2,4)

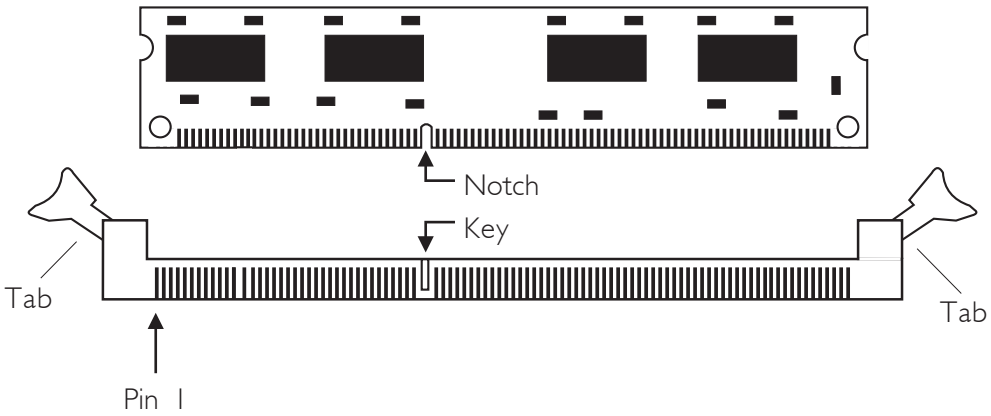
Continued on the next page...

Config	DDR2_1	DDR2_2	DDR2_3	DDR2_4
Dynamic Mode Addressing	E	P(*)(2,4) DS	E	P(*)(2,4) DS
Dynamic Mode Addressing	P(*)(1,3) DS	E	P(*)(1,3) DS	E
Dynamic Mode Addressing	P(*)(1,3) DS	P(*)(2,4) DS	P(*)(1,3) DS	P(*)(2,4) DS
Dynamic Mode Addressing	E	P(*)(2,4) SS	E	P(*)(2,4) SS
Dynamic Mode Addressing	P(*)(1,3) SS	E	P(*)(1,3) SS	E
Dynamic Mode Addressing	P(*)(1,3) SS	P(*)(2,4) SS	P(*)(1,3) SS	P(*)(2,4) SS

P - denotes populated
E - denotes empty
* - denotes DIMMs are identical
** - denotes DIMMs are not identical
SS - denotes Single Sided DIMM
DS - denotes Double Sided DIMM
1, 2, 3 or 4 - denotes the DDR DIMM slot

Installing the DIMM

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



1. Pull the "tabs" which are at the ends of the socket to the side.
2. Position the DIMM above the socket with the "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.

CPU

Overview

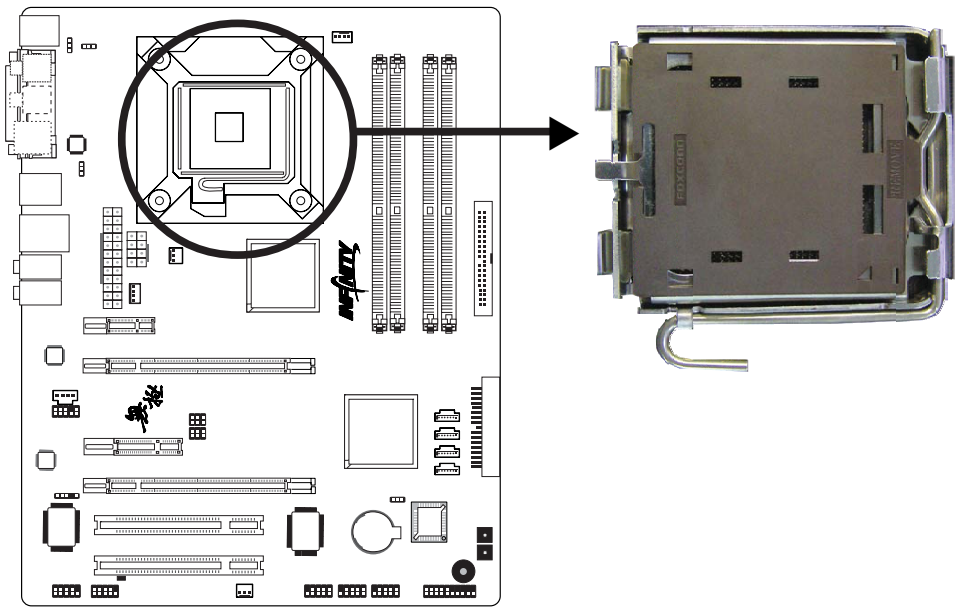
The system board is equipped with a surface mount LGA 775 socket. This socket is exclusively designed for installing a LGA 775 packaged Intel CPU.

Important:

1. *Before you proceed, make sure (1) the LGA775 socket comes with a protective cap, (2) the cap is not damaged and (3) the socket's contact pins are not bent. If the cap is missing or the cap and/or contact pins are damaged, contact your dealer immediately.*
2. *Make sure to keep the protective cap. RMA requests will be accepted and processed only if the LGA775 socket comes with the protective cap.*

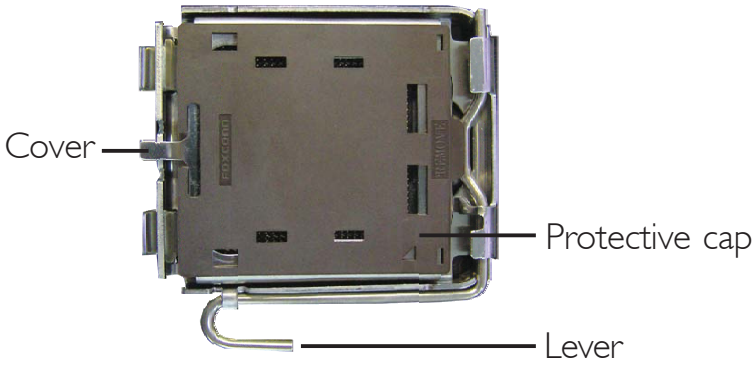
Installing the CPU

1. Make sure the PC and all other peripheral devices connected to it has been powered down.
2. Disconnect all power cords and cables.
3. Locate the LGA 775 CPU socket on the system board.

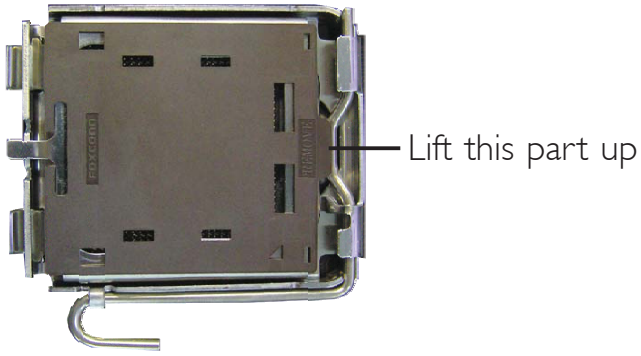


Important:
The CPU socket must not come in contact with anything other than the CPU. Avoid unnecessary exposure. Remove the protective cap only when you are about to install the CPU.

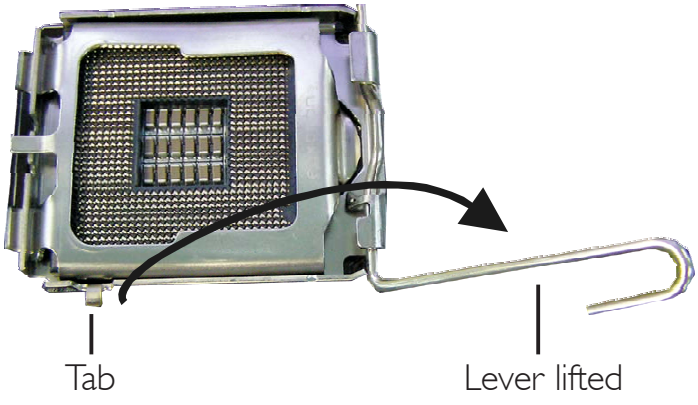
4. The CPU socket comes with a cover that is attached with a removable protective cap. The cap is used to protect the CPU socket against dust and harmful particles. Remove the protective cap only when you are about to install the CPU.



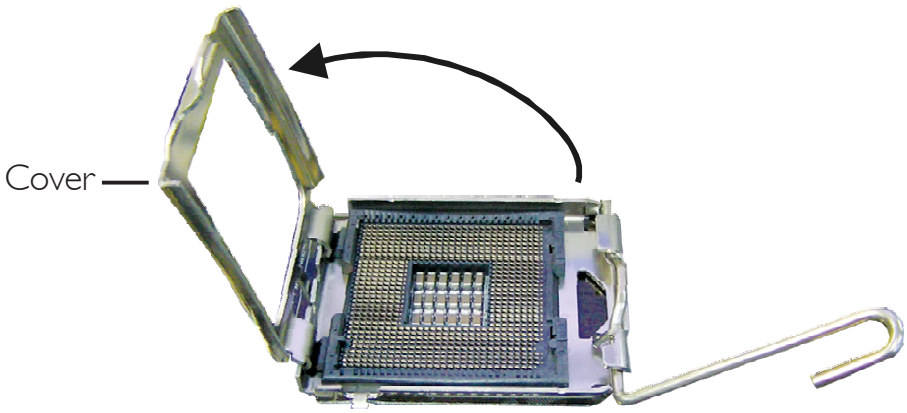
5. Lift the protective cap from the location pointed below to detach the cap from the cover.



6. Unlock the socket by pushing the lever down, moving it away from the side tab of the socket, then lifting it up.

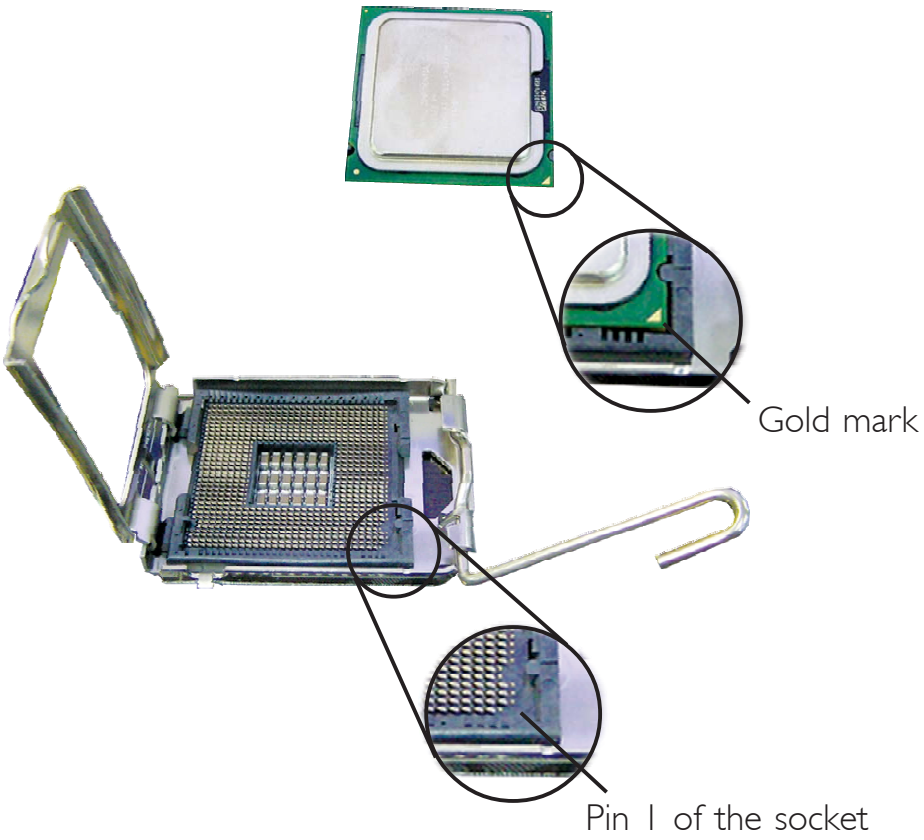


7. Now lift the cover.



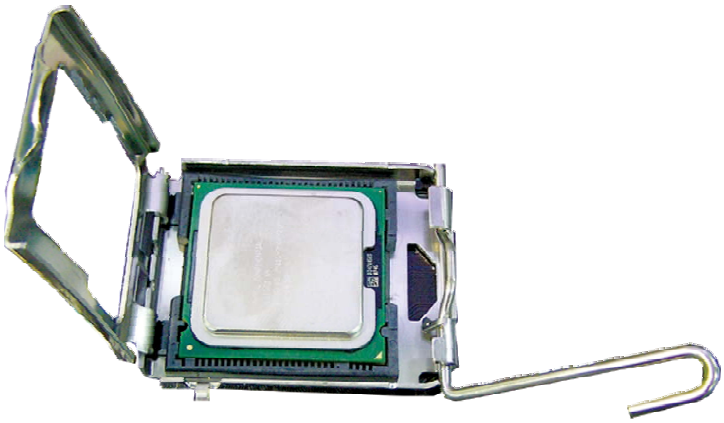
8. Position the CPU above the socket. The gold mark on the CPU must align with pin 1 of the CPU socket.

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

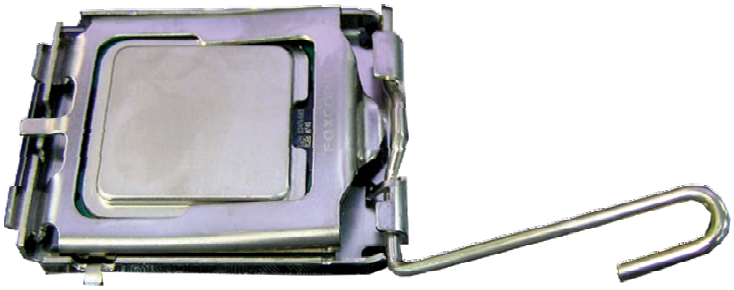


9. Insert the CPU into the socket until it is seated in place. The CPU will fit in only one orientation and can easily be inserted without exerting any force.

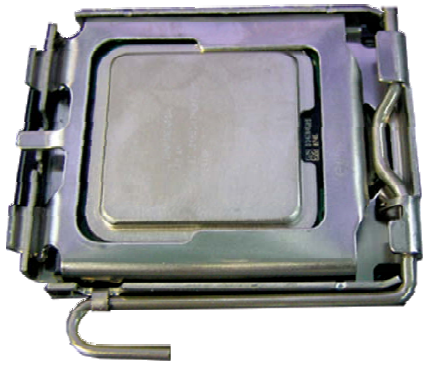
Important:
Do not force the CPU into the socket. Forcing the CPU into the socket may bend the pins and damage the CPU.



10. Once the CPU is in place, move the cover down.



11. Push the lever down to lock the socket. The lever should hook onto the side tab to indicate that the CPU is completely secured in the socket.



Installing the Fan and Heat Sink

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

Note:

- *Use only certified fan and heat sink.*
- *The fan and heat sink package usually contains the fan and heat sink assembly, and an installation guide. If the installation procedure in the installation guide differs from the one in this section, please follow the installation guide in the package.*

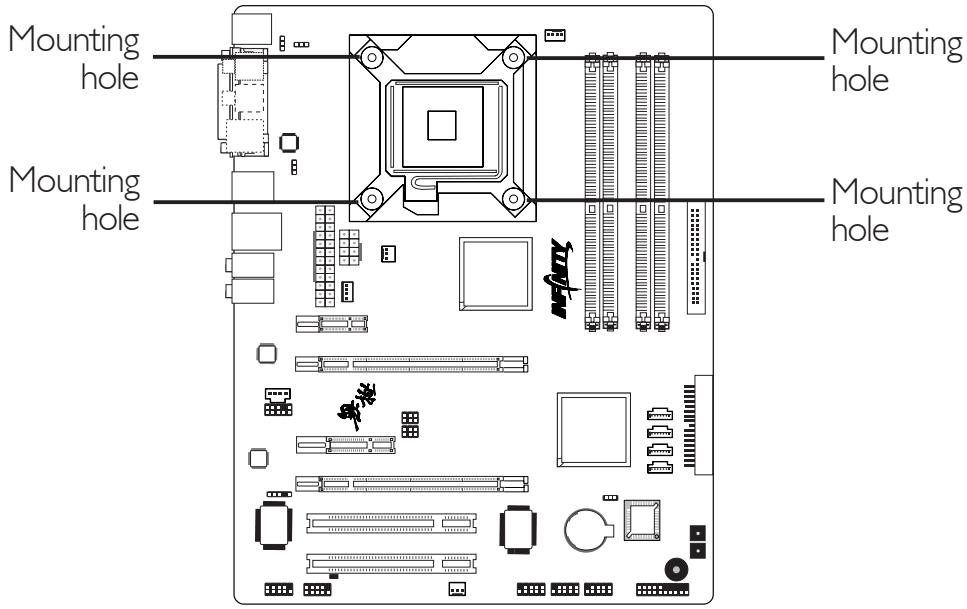
1. Before you install the fan / heat sink, you must apply a thermal paste onto the top of the CPU. The thermal paste is usually supplied when you purchase the CPU or fan heat sink assembly. Do not spread the paste all over the surface. When you later place the heat sink on top of the CPU, the compound will disperse evenly.

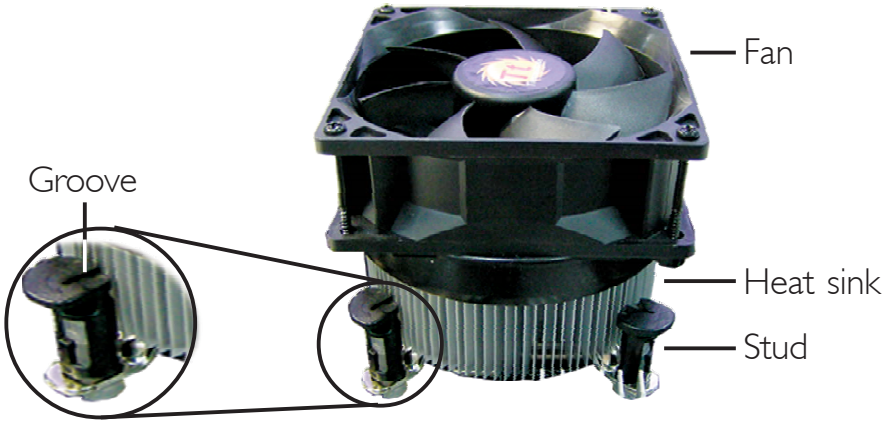
   Do not apply the paste if the fan / heat sink already has a patch of thermal paste on its underside. Peel the strip that covers the paste before you place the fan / heat sink on top of the CPU.

2. Place the heat sink on top of the CPU. The 4 studs around the heat sink which are used to secure the heat sink onto the system board must match the 4 mounting holes around the socket.

   Position each stud so that the groove faces the heat sink then push it down firmly until it clicks into place.

Note:
You will not be able to secure the fan and heat sink assembly in place if the groove is not facing the heat sink.

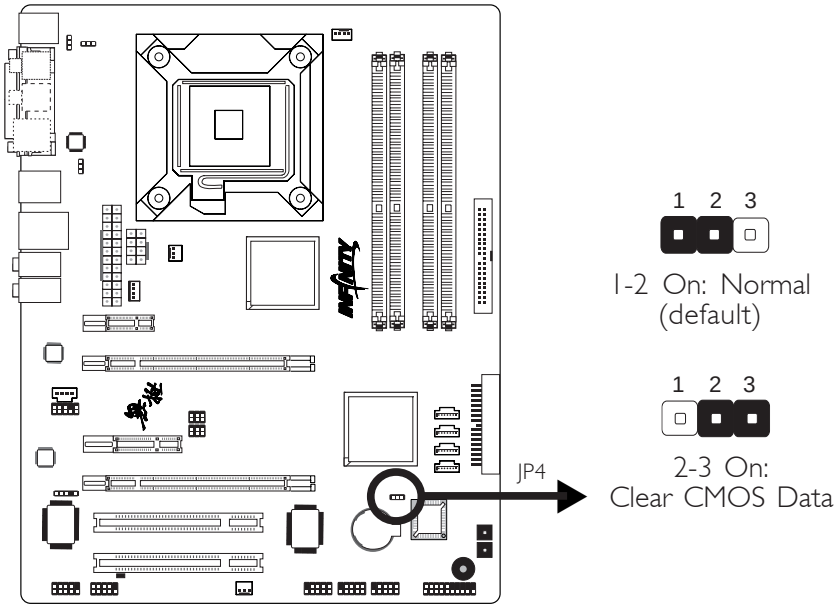




3. Connect the CPU fan's cable connector to the CPU fan connector on the system board.

Jumper Settings

Clear CMOS Data



If you encounter the following,

a) *CMOS data becomes corrupted.*
b) *You forgot the supervisor or user password.*
c) *You are unable to boot-up the computer system because the processor's clock/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 JP4 pins 2 and 3 to On. Wait for a few seconds and set JP4 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 clock/ratio in the BIOS, please proceed to step 4.

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

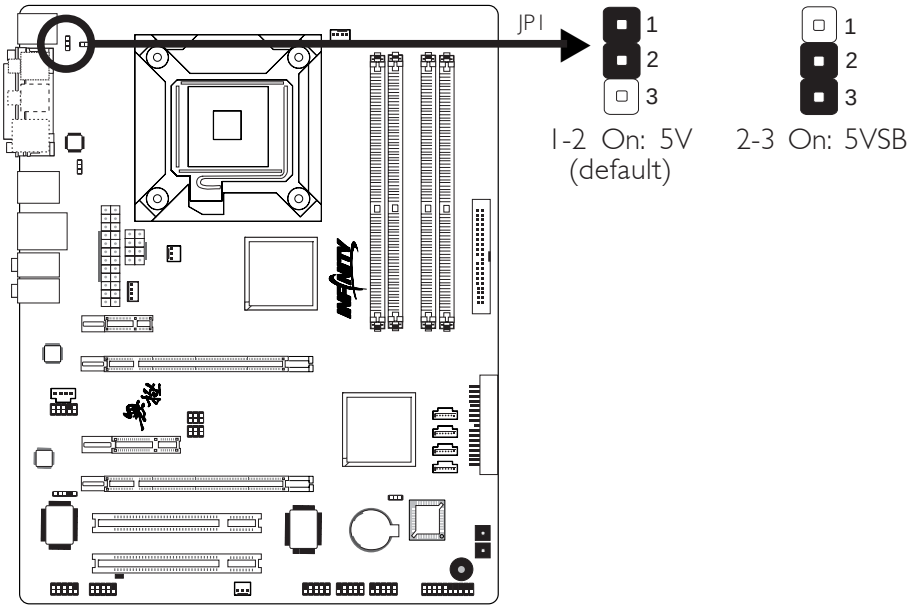
5. Select the Genie BIOS Setting submenu and press <Enter>.

6. Set the processor's clock/ratio to its default setting or an appropriate bus clock or ratio. Refer to the Genie BIOS Setting section in chapter 3 for more information.

7. Press <Esc> to return to the main menu of the BIOS setup utility. Select "Save & Exit Setup" and press <Enter>.

8. Type <Y> and press <Enter>.

PS/2 Power Select



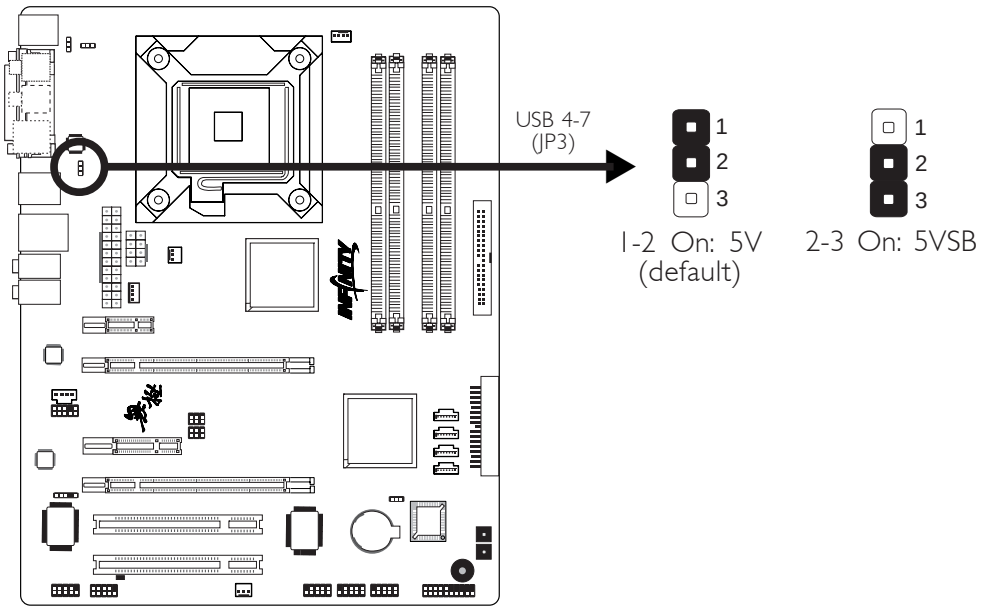
JP1 is used to select the power of the PS/2 keyboard/mouse port. Selecting 5VSB will allow you to use the PS/2 keyboard or PS/2 mouse to wake up the system.

BIOS Setting

Configure the PS/2 keyboard/mouse wake up function in the Power Management Setup submenu of the BIOS. Refer to chapter 3 for more information.

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

USB Power Select

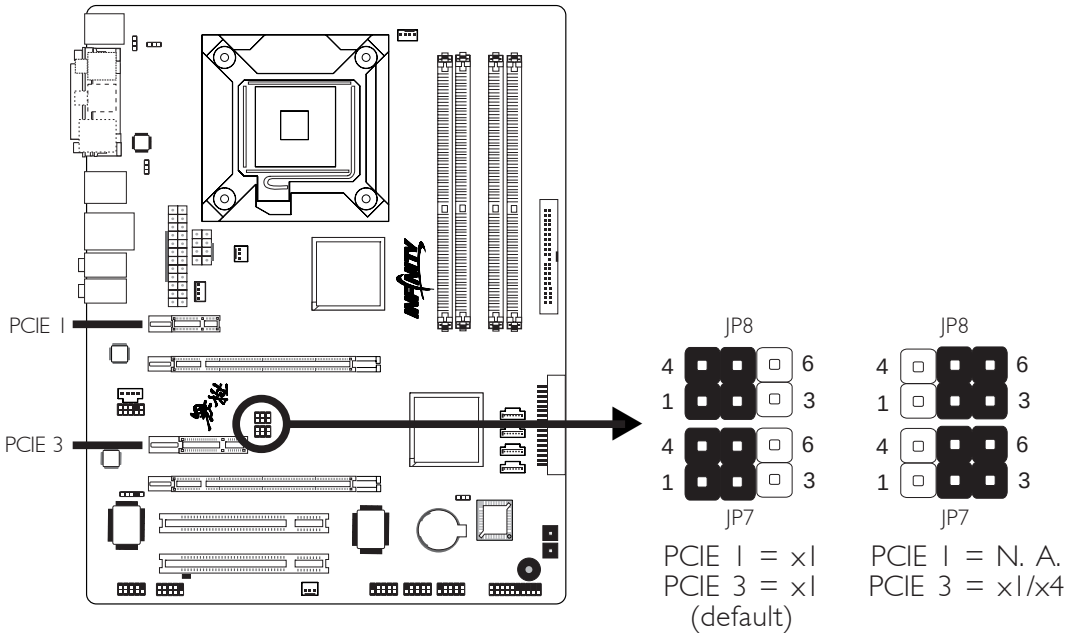


JP3 is used to select the power of the USB 4-7 ports. Selecting 5VSB will allow you to use the USB keyboard or USB mouse to wake up the system.

Important:

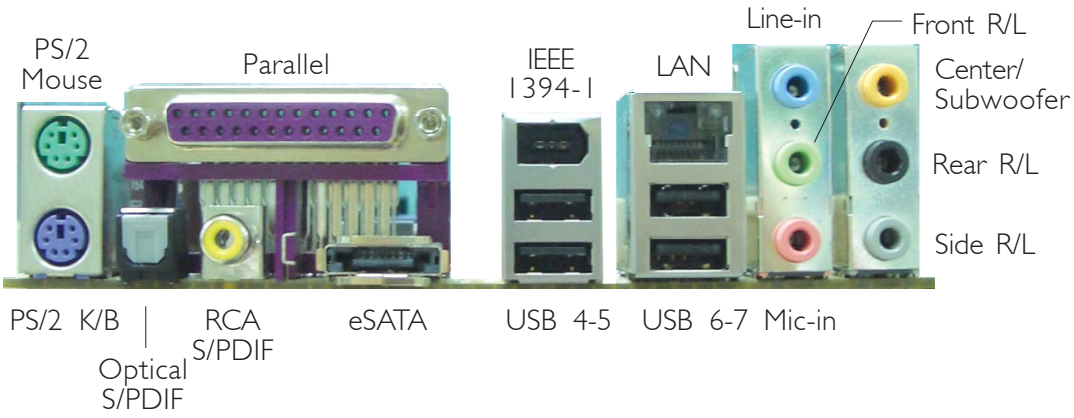
If you are using the Wake-On-USB Keyboard/Mouse function for 2 USB ports, the 5VSB power source of your power supply must support ≥1.5A. For 3 or more USB ports, the 5VSB power source of your power supply must support ≥2A.

PCIE x1/x4 Select



JP7 and JP8 are used to set the PCIE 1 and PCIE 3 slots to x1 and/or x4 bandwidth.

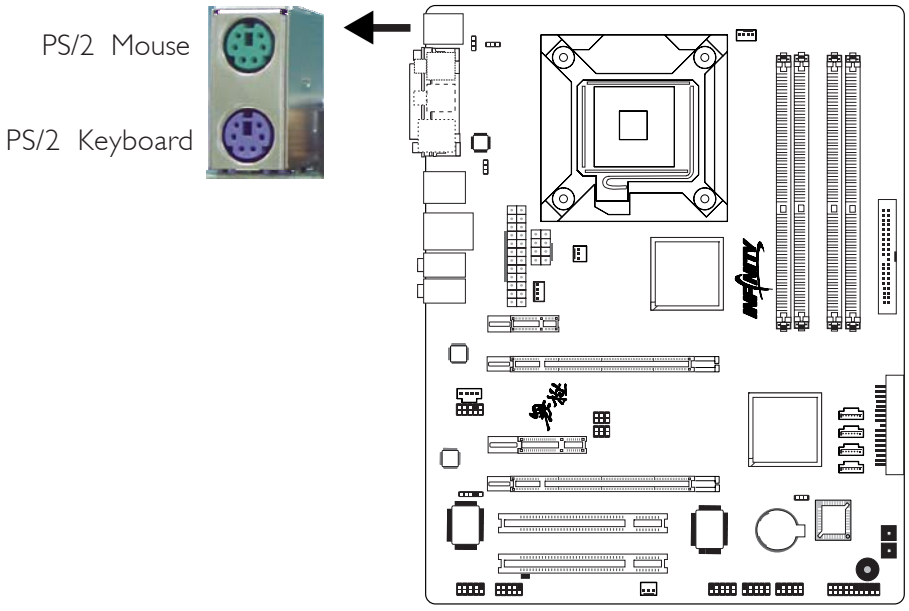
Rear Panel I/O Ports



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

- PS/2 mouse port
- PS/2 keyboard port
- Parallel port
- Optical S/PDIF port
- RCA S/PDIF port
- eSATA port
- IEEE 1394-1 port
- USB ports
- LAN port
- Line-in port
- Front R/L port
- Mic-in port
- Center/Subwoofer port
- Rear R/L port
- Side R/L port

PS/2 Mouse and PS/2 Keyboard



The system board is equipped with an onboard PS/2 mouse (Green) and PS/2 keyboard (Purple) ports - both at location CN26 of the system board. The PS/2 mouse port uses IRQ12. If a mouse is not connected to this port, the system will reserve IRQ12 for other expansion cards.

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

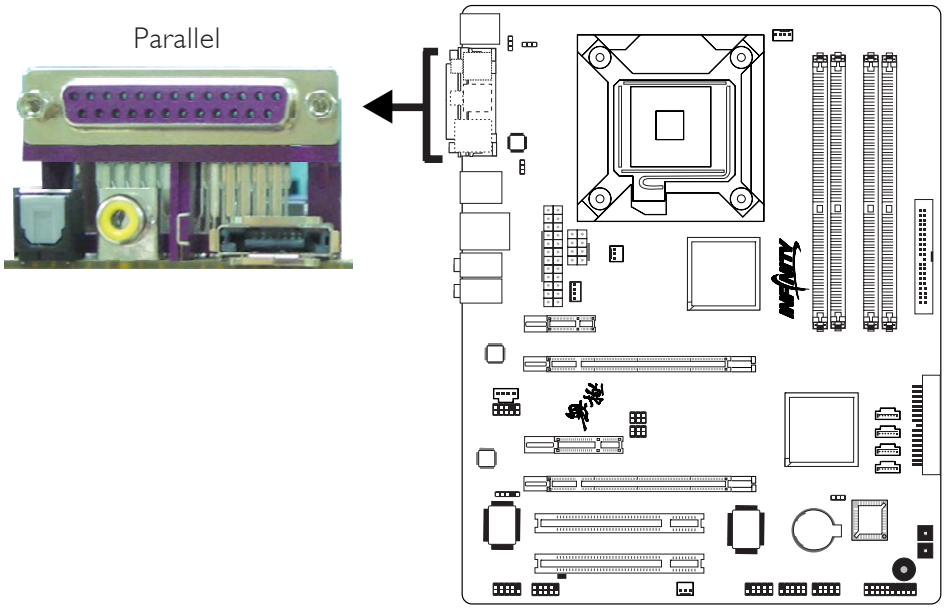
Wake-On-PS/2 Keyboard/Mouse

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

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

- **BIOS Setting:**
  Configure the PS/2 wake up function in the Power Management Setup submenu of the BIOS. Refer to chapter 3 for more information.

Parallel Port



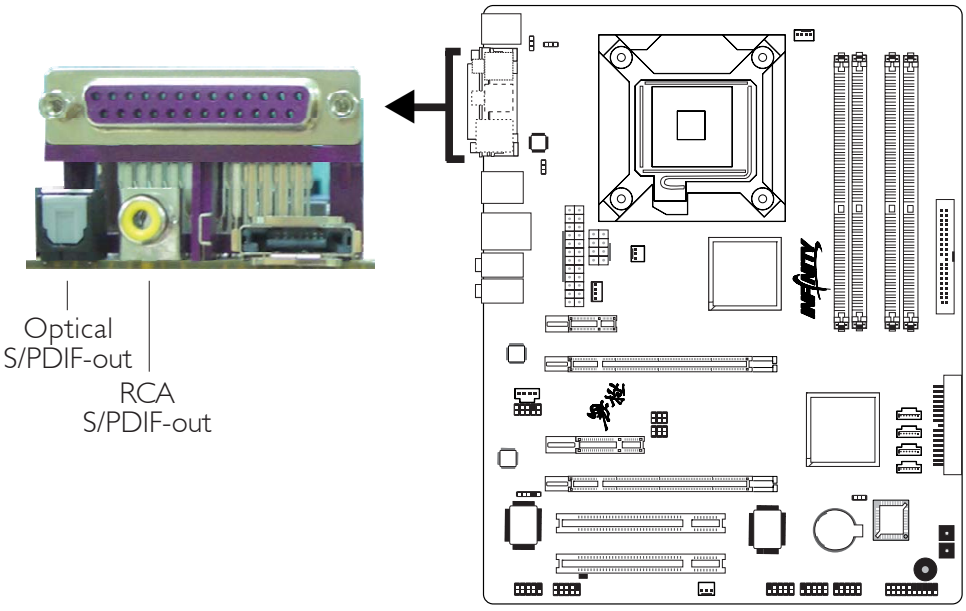
The system board has a standard parallel port (Burgundy) at location CN27 for interfacing your PC to a parallel printer. It supports SPP, ECP and EPP.

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

BIOS Setting

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

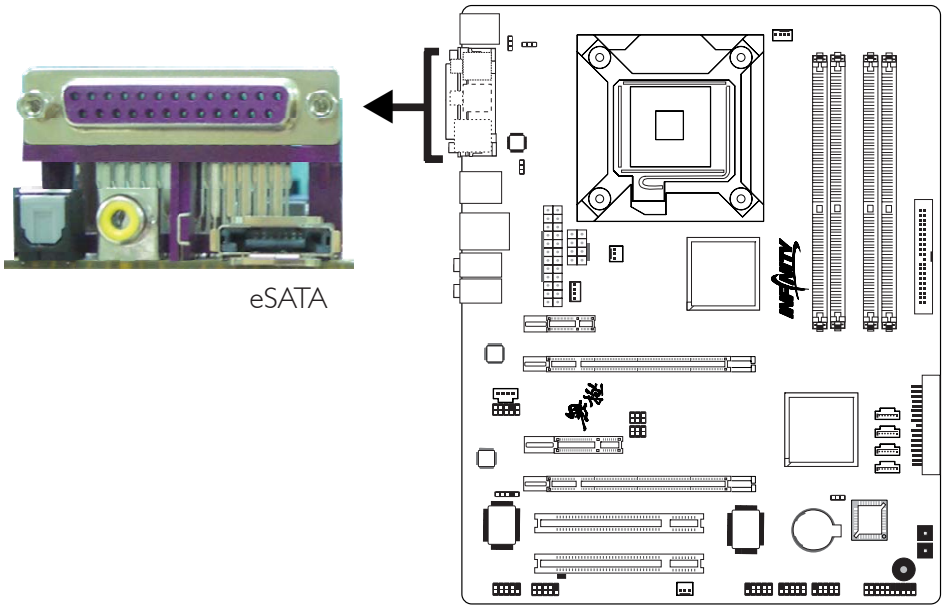
S/PDIF



The system board is equipped with an onboard optical S/PDIF-out port and a coaxial RCA S/PDIF-out port at locations CN7 and CN4 respectively. S/PDIF ports are used to connect audio output devices.

Important:
DO NOT use optical S/PDIF-out and coaxial RCA S/PDIF-out at the same time.

eSATA Port



The eSATA port at location CN35 is a hot pluggable interface used to connect an external Serial ATA device providing data transfer rate up to 3Gb/s.

BIOS Setting

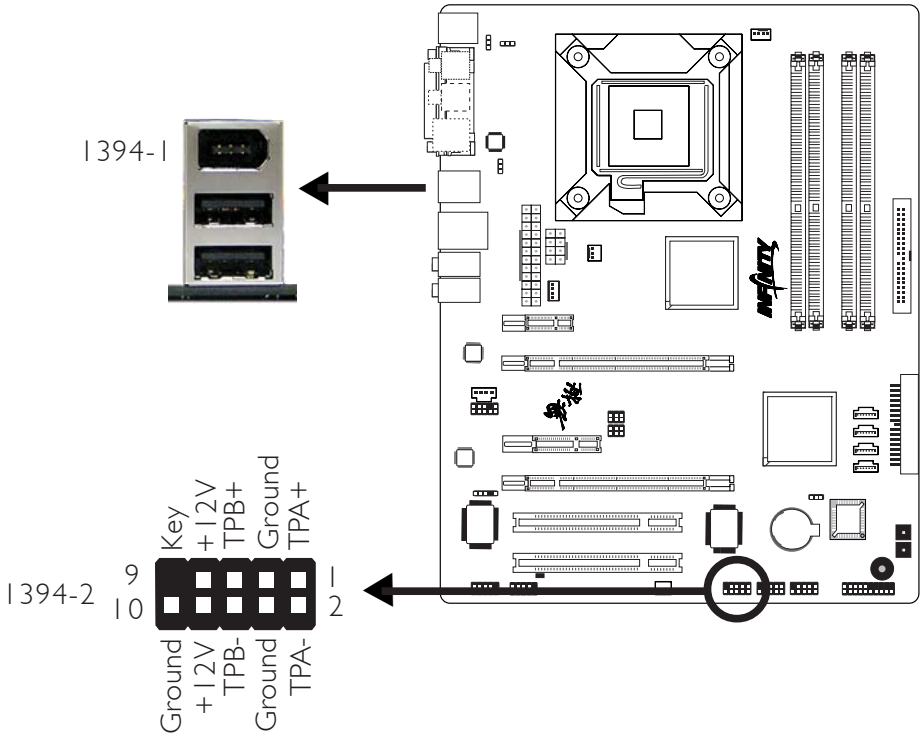
Configure the eSATA port in the Advanced Chipset Features submenu ("PCI Express Root Port Func" section) of the BIOS. Refer to chapter 3 for more information.

Driver Installation

Install the eSATA driver that is in the provided CD. Refer to chapter 4 for more information.

If you intend to boot from the eSATA drive, you need to install Windows® XP or Windows® 2000 in the drive. The provided floppy diskette includes the eSATA driver required to complete Windows installation in the eSATA drive.

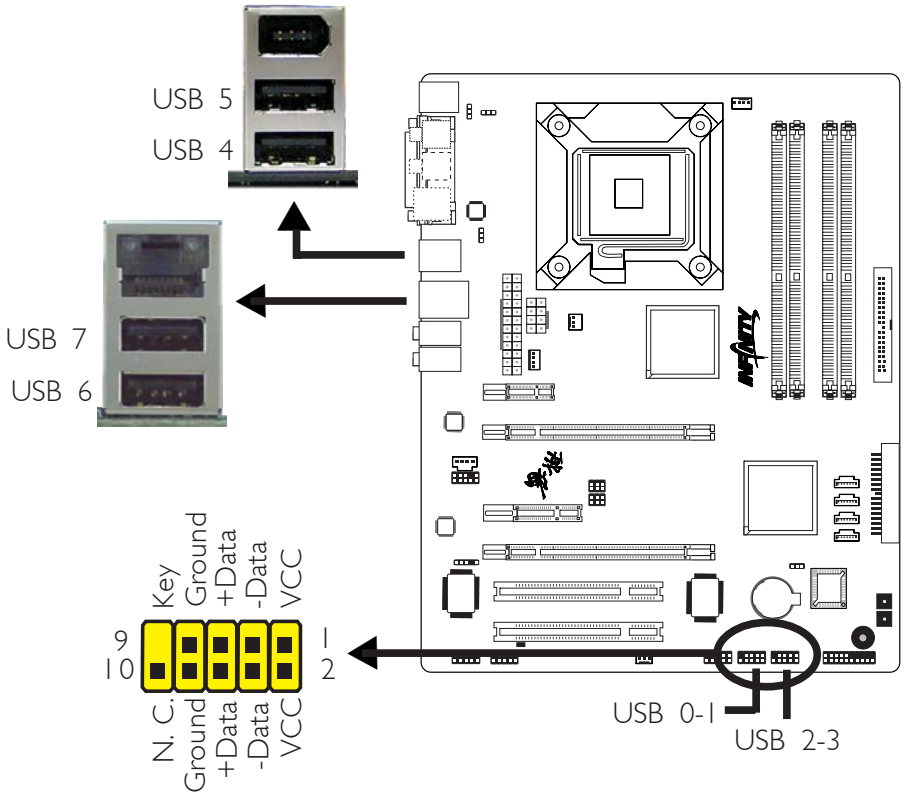
IEEE 1394



The onboard IEEE 1394 port is at location CN21 (IEEE 1394-1) of the system board.

The IEEE 1394 connector at location J11 (1394_2) is for connecting an additional 1394 device. Your 1394 port may come mounted on a card-edge bracket. Install the card-edge bracket to an available slot at the rear of the system chassis then insert the connector that is attached to the 1394 port cable to J11. Make sure pin 1 of the cable connector is aligned with pin 1 of J11.

USB (Universal Serial Bus)



The system board supports 8 USB 2.0/1.1 ports. Four onboard USB 2.0/1.1 ports (Black) are at locations CN21 (USB 4-5) and CN1 (USB 6-7) of the system board.

The J5 (USB 0-1) and J4 (USB 2-3) connectors allow you to connect 4 additional USB 2.0/1.1 ports. Your USB ports may come mounted on a card-edge bracket. Install the card-edge bracket to an available slot at the rear of the system chassis then insert the connector that is attached to the USB port cables to J4 or J5. Make sure pin 1 of the cable connector is aligned with pin 1 of J4 or J5.

BIOS Setting

Configure the onboard USB in the Integrated Peripherals submenu ("Onboard 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.

Refer to chapter 4 for more information about installing the USB 2.0 driver.

Wake-On-USB Keyboard/Mouse

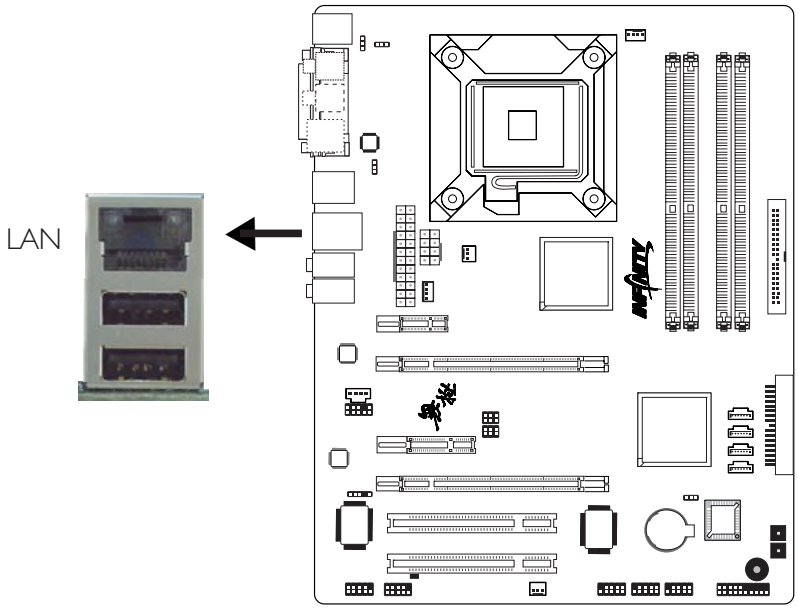
The Wake-On-USB Keyboard/Mouse function allows you to use a USB keyboard or USB mouse to wake up a system from the S3 (STR - Suspend To RAM) state. To use this function:

- **Jumper Setting:**
  JP3 must be set to "2-3 On: 5VSB". Refer to "USB Power Select" in this chapter for more information.

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

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

RJ45 LAN



The onboard LAN port is at location CN1 of the system board. LAN allows the system board to connect to a local area network by means of a network hub.

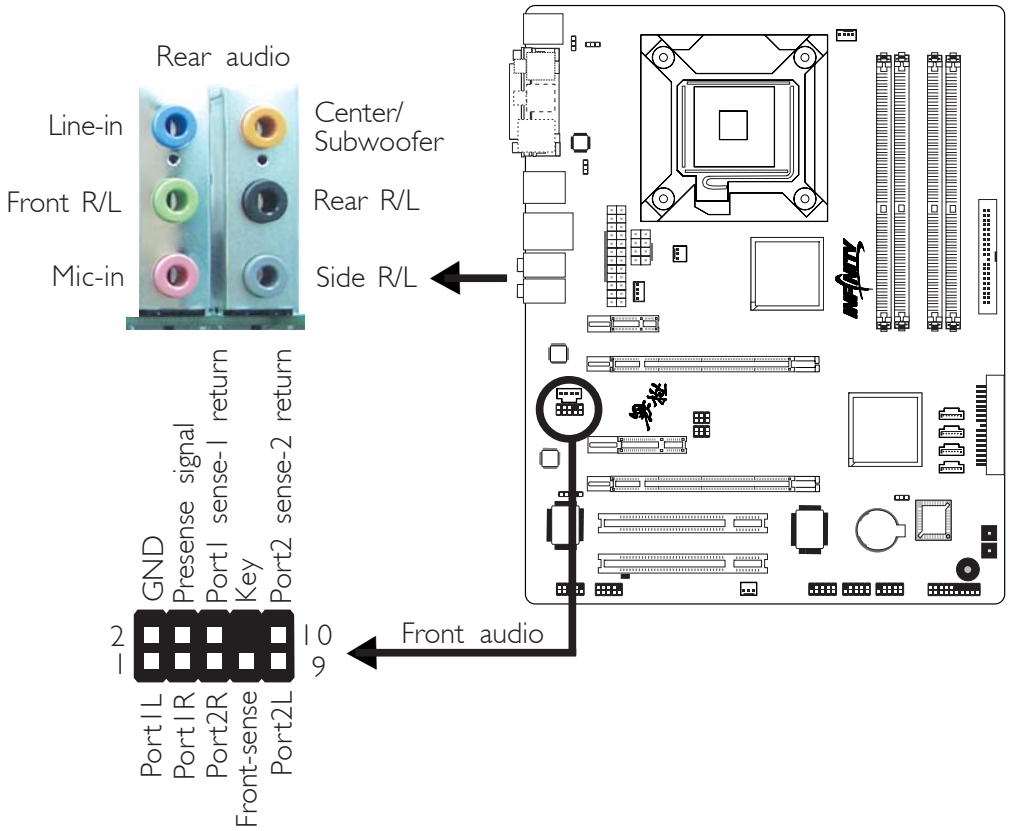
BIOS Setting

Configure the onboard LAN in the Advanced Chipset Features submenu ("PCI Express Root Port Func" section) of the BIOS. Refer to chapter 3 for more information.

Driver Installation

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

Audio



Rear Panel Audio

Line-in (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.

Line-out - Front Right/Left Jack (Lime)
This jack is used to connect to the front right and front left speakers of the audio system.

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

Center/Subwoofer Jack (Orange)
This jack is used to connect to the center and subwoofer speakers of the audio system.

Rear Right/Left Jack (Black)
This jack is used to connect to the rear right and rear left speakers of the audio system.

Side Right/Left Jack (Gray)
This jack is used to connect to the side left and side right speakers of the audio system.

BIOS Setting

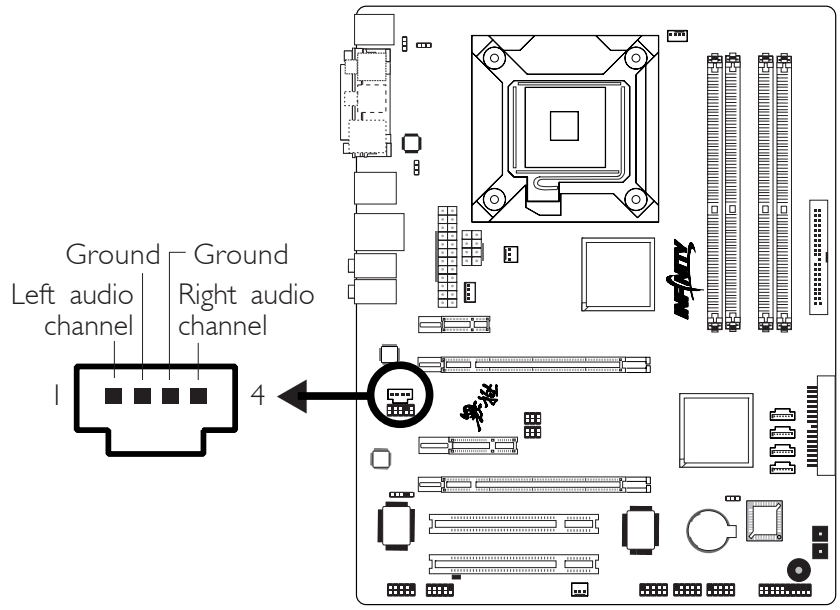
Configure the onboard audio in the Integrated Peripherals submenu ("Onboard Device" section) of the BIOS. Refer to chapter 3 for more information.

Driver Installation

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

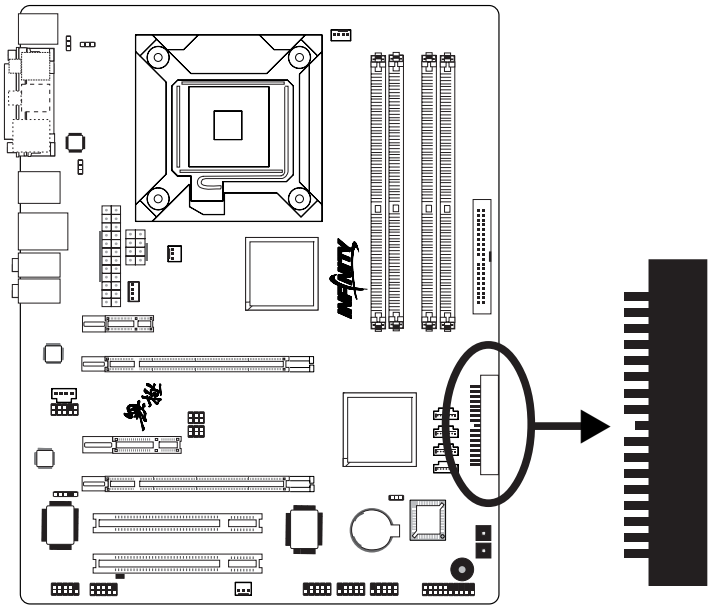
Internal I/O Connectors

CD-in Connector



The CD-in connector at location J1 is used to receive audio from a CD-ROM drive, TV tuner or MPEG card.

Floppy Disk Drive Connector



The 90° floppy disk drive connector supports a standard floppy disk drive. To prevent improper floppy cable installation, the floppy disk header has a keying mechanism. The 34-pin connector on the floppy cable can be placed into the header only if pin 1 of the connector is aligned with pin 1 of the header.

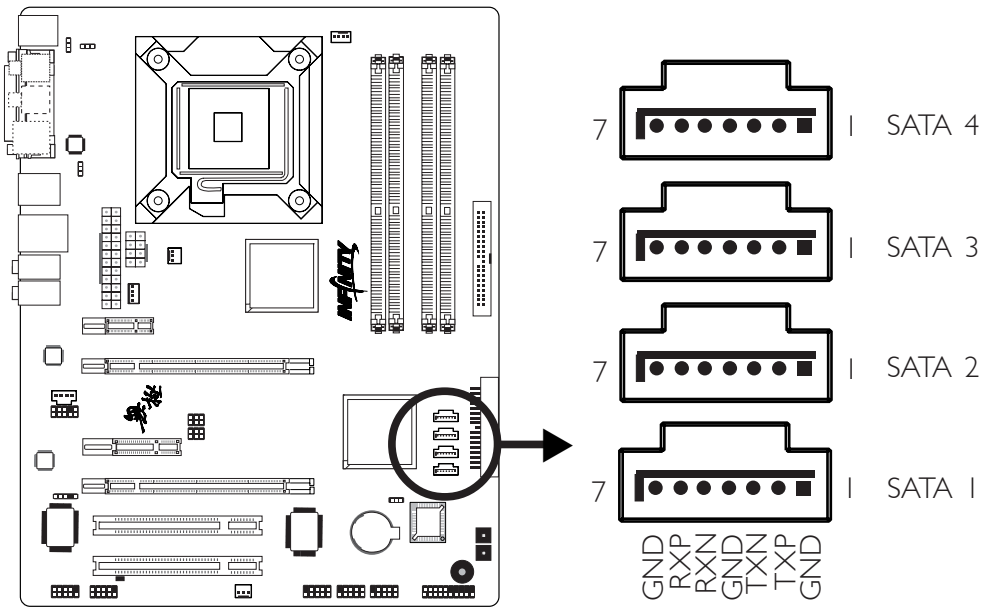
Connecting the Floppy Disk Drive Cable

Install one end of the floppy disk drive cable into the shrouded floppy disk header (J18) on the system board and the other end-most connector to the floppy drive. The colored edge of the daisy chained ribbon cable should be aligned with pin 1 of J18.

BIOS Setting

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

Serial ATA Connectors



- SATA speed up to 3Gb/s
- RAID 0, RAID 1, RAID 0+1 and RAID 5

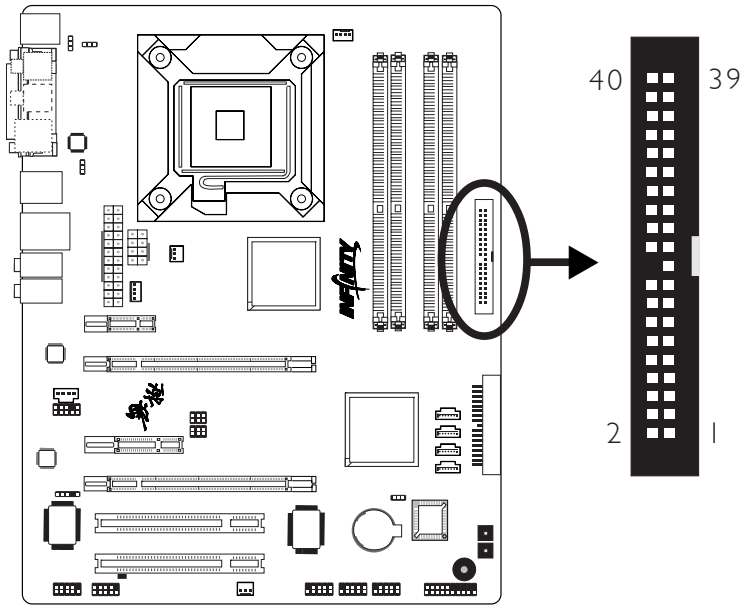
Connecting Serial ATA Cables

Connect one end of the Serial ATA cable to SATA 1 (J15), SATA 2 (J22), SATA 3 (J23) or SATA 4 (J24) and the other end to your Serial ATA device.

Configuring RAID

The system board allows configuring RAID on Serial ATA drives. Refer to chapter 5 for steps in configuring RAID.

IDE Disk Drive Connectors



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

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

Connecting the IDE Disk Drive Cable

Install one end of the IDE cable into the IDE header (J14) on the system board and the other connectors to the IDE devices.

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

Adding a Second IDE Disk Drive

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

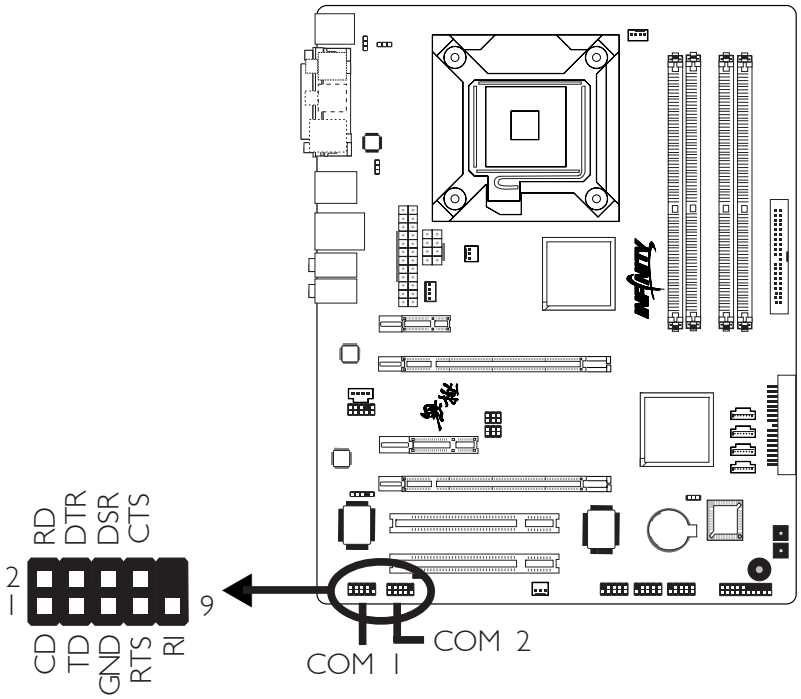
The system board supports Enhanced IDE or ATA-2, ATA/33, ATA/66 or ATA/100 hard drives. We recommend that you use hard drives from the same manufacturer. In a few cases, drives from two different manufacturers will not function properly when used together. The problem lies in the hard drives, not the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

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

BIOS Setting

Configure the onboard IDE in the Integrated Peripherals submenu ("Onboard IDE/SATA Device" section) of the BIOS. Refer to chapter 3 for more information.

Serial (COM) Connector



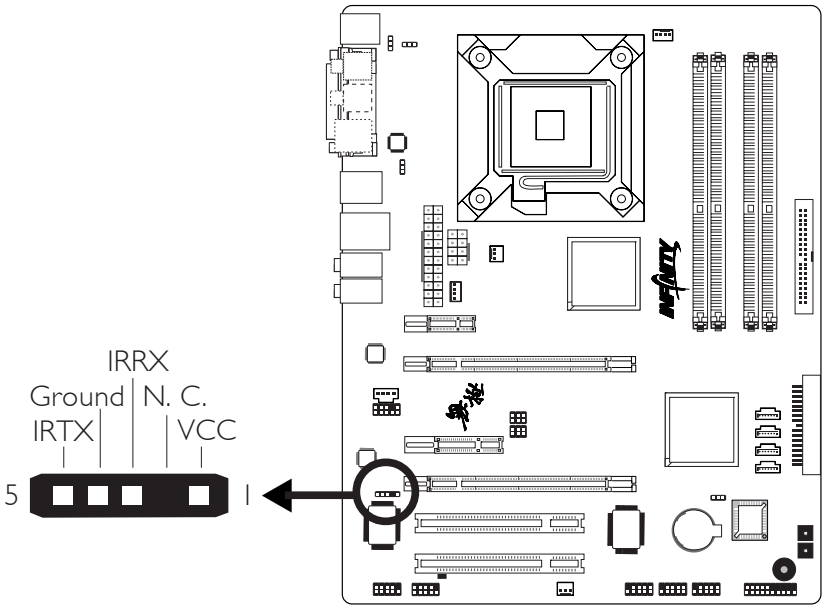
The two 9-pin connectors at locations J3 (COM 1) and J6 (COM 2) are for connecting serial ports. The serial port cable is an optional item and must be purchased separately. Your serial ports may come mounted on a card-edge bracket. Install the card-edge bracket to an available slot at the rear of the system chassis then insert the connector that is attached to the serial port cable to J3 or J6. Make sure the colored stripe on the ribbon cable is aligned with pin 1 of J3 or J6.

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

BIOS Setting

Configure the onboard serial in the Integrated Peripherals submenu ("Super IO Device" section) of the BIOS. Refer to chapter 3 for more information.

IrDA Connector



The IrDA connector at location J19 is for connecting an IrDA module. Connect the cable connector from your IrDA module to J19.

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

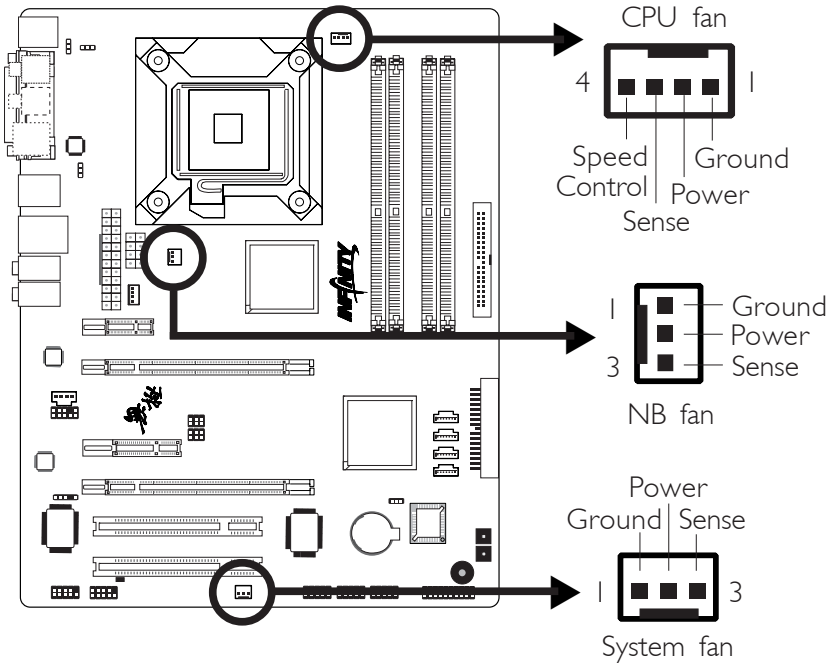
BIOS Setting

Configure IrDA in the Integrated Peripherals submenu ("Super IO Device" section) of the BIOS.

Driver Installation

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

Cooling Fan Connectors

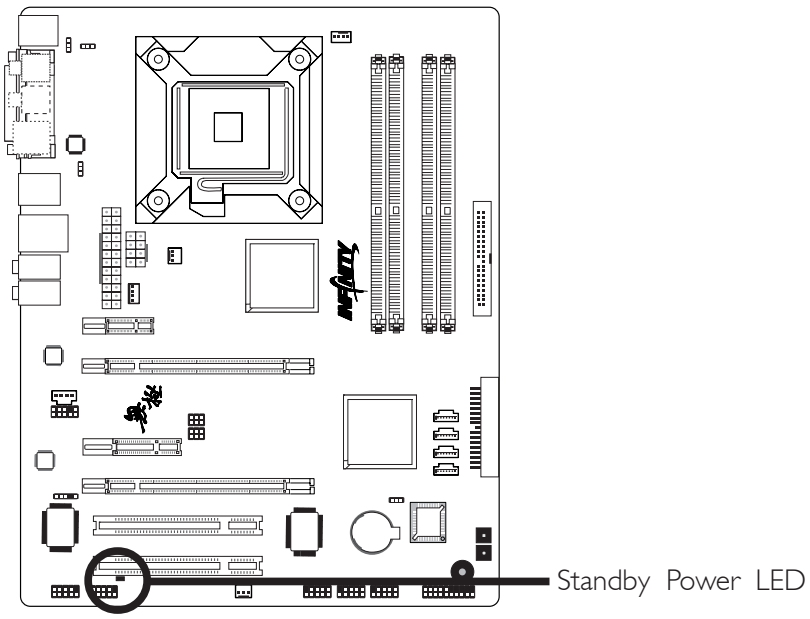


Connect the CPU fan's cable connector to the CPU fan connector (J16) on the system board. NB fan (J20) and System fan (J17) are used to connect additional cooling fans. The cooling fans will provide adequate airflow throughout the chassis to prevent overheating the CPU and system board components.

BIOS Setting

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

Standby Power LED



Standby Power LED

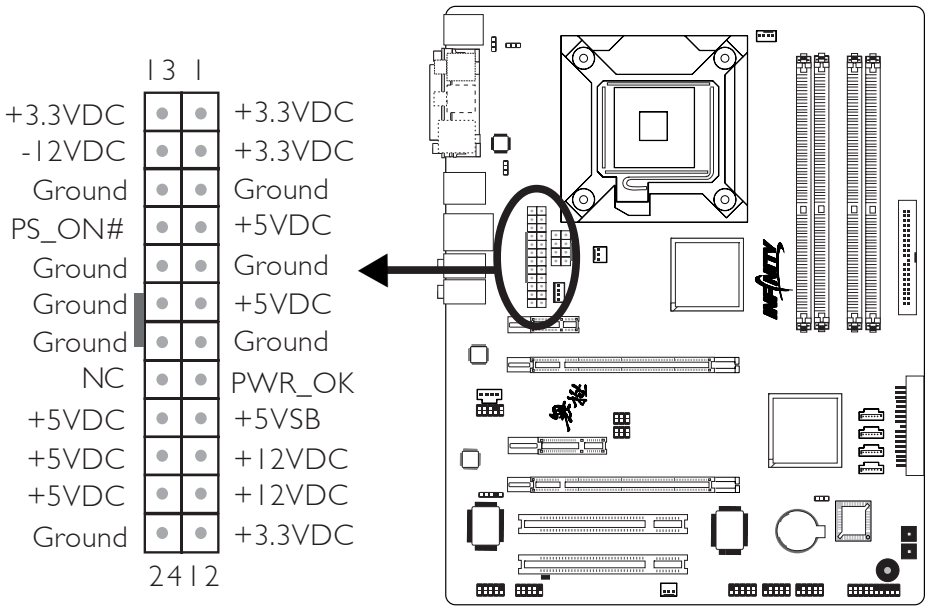
This LED will light when the system is in the standby mode.

Warning:

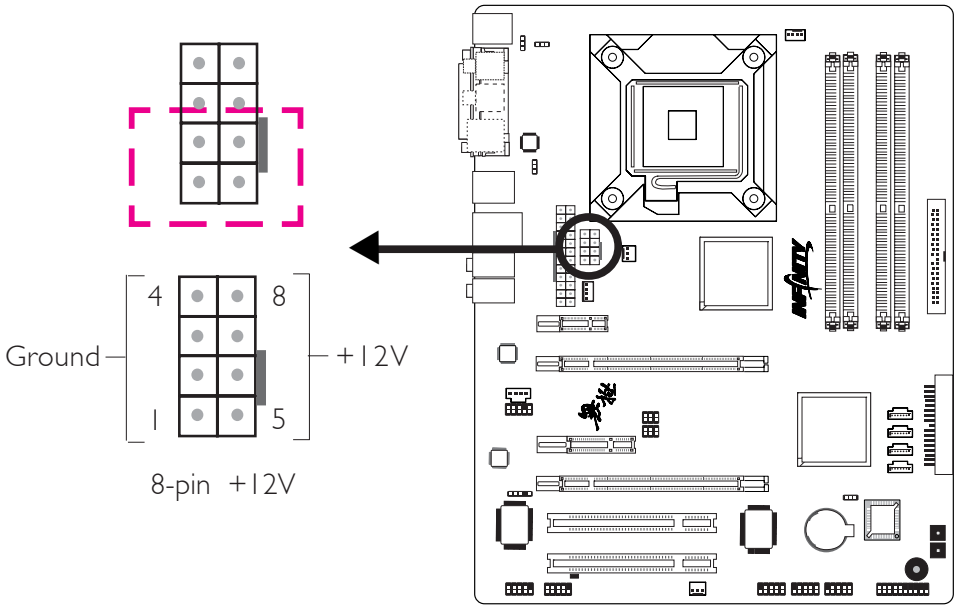
When the Standby Power LED lit red, it indicates that power is present on the PCI slots. Power-off the PC then unplug the power cord prior to installing any add-in cards. Failure to do so will cause severe damage to the motherboard and components.

Power Connectors

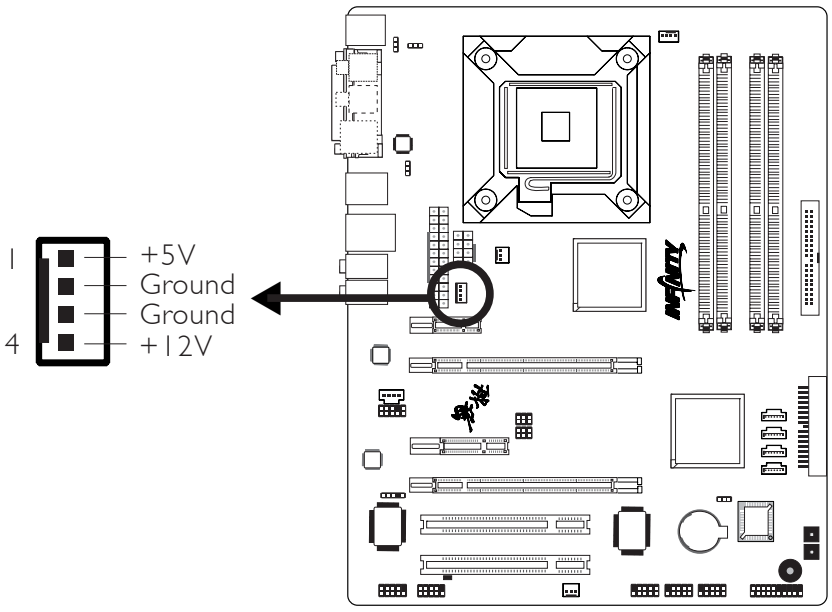
Use a power supply that complies with the ATX12V Power Supply Design Guide Version 1.1. An ATX12V power supply unit has a standard 24-pin ATX main power connector that must be inserted onto CN10.



Your power supply unit may come with an 8-pin or 4-pin +12V power connector. The +12V power enables the delivery of more +12VDC current to the processor's Voltage Regulator Module (VRM). If available, it is preferable to use the 8-pin power; otherwise connect a 4-pin power connector to CN5 as shown below.



The FDD-type power connector is an additional power connector. If you are using two graphics cards, we recommend that you plug a power cable from your power supply unit onto the 5V/12V power connector at location J7. This will provide more stability to the entire system. The system board will still work even if the additional power connector is not connected.



The system board requires a minimum of 300 Watt power supply to operate. Your system configuration (CPU power, amount of memory, add-in cards, peripherals, etc.) may exceed the minimum power requirement. To ensure that adequate power is provided, **we strongly recommend that you use a minimum of 400 Watt (or greater) power supply.**

Important:

Insufficient power supplied to the system may result in instability or the add-in boards and peripherals not functioning properly. Calculating the system's approximate power usage is important to ensure that the power supply meets the system's consumption requirements.

Restarting the PC

Normally, you can power-off the PC by:

1. Pressing the power button at the front panel of the chassis.
   or
2. Pressing the power switch that is on the system board (note: not all system boards come with this switch).

If for some reasons you need to totally cut off the power supplied to the PC, switch off the power supply or unplug the power cord. Take note though that if you intend to restart it at once, please strictly follow the steps below.

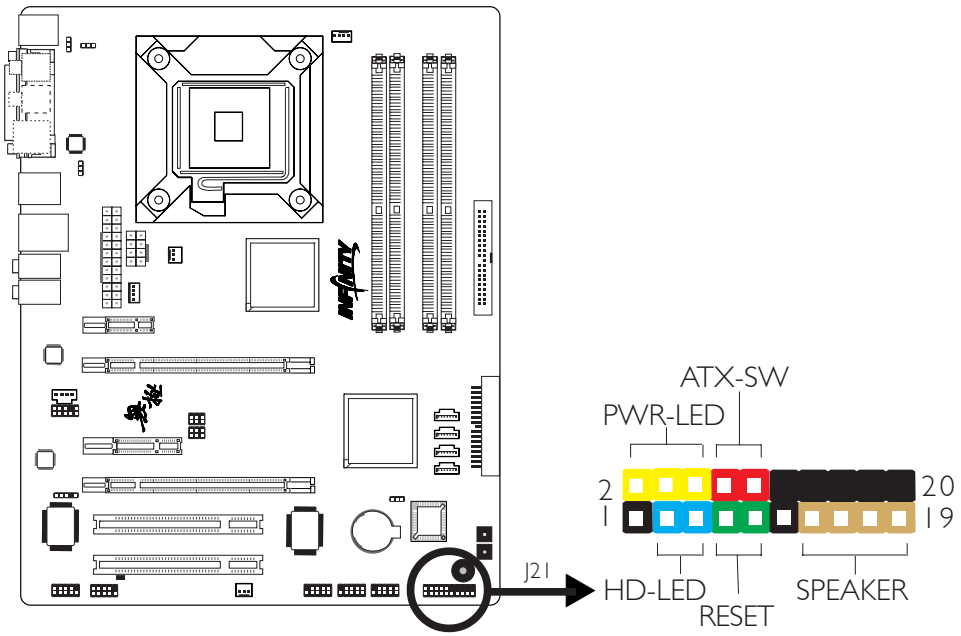
1. The time where power is totally discharged varies among power supplies. It's discharge time is highly dependent on the system's configuration such as the wattage of the power supply, the sequence of the supplied power as well as the number of peripheral devices connected to the system. Due to this reason, we strongly recommend that you wait for the Standby Power LED (refer to the "LEDs" section in this chapter for the location of the Standby Power LED) to lit off.

2. After the Standby Power LED has lit off, wait for 6 seconds before powering on the PC.

   If the system board is already enclosed in a chassis which apparently will not make the Standby Power LED visible, wait for 15 seconds before you restore power connections. 15 seconds is approximately the time that will take the LED to lit off and the time needed before restoring power.

The above will ensure protection and prevent damage to the motherboard and components.

Front Panel Connectors



HD-LED: Primary/Secondary IDE LED

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

RESET: Reset Switch

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

SPEAKER: Speaker Connector

This connects to the speaker installed in the system chassis.

ATX-SW: ATX Power Switch

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

PWR-LED: Power/Standby LED

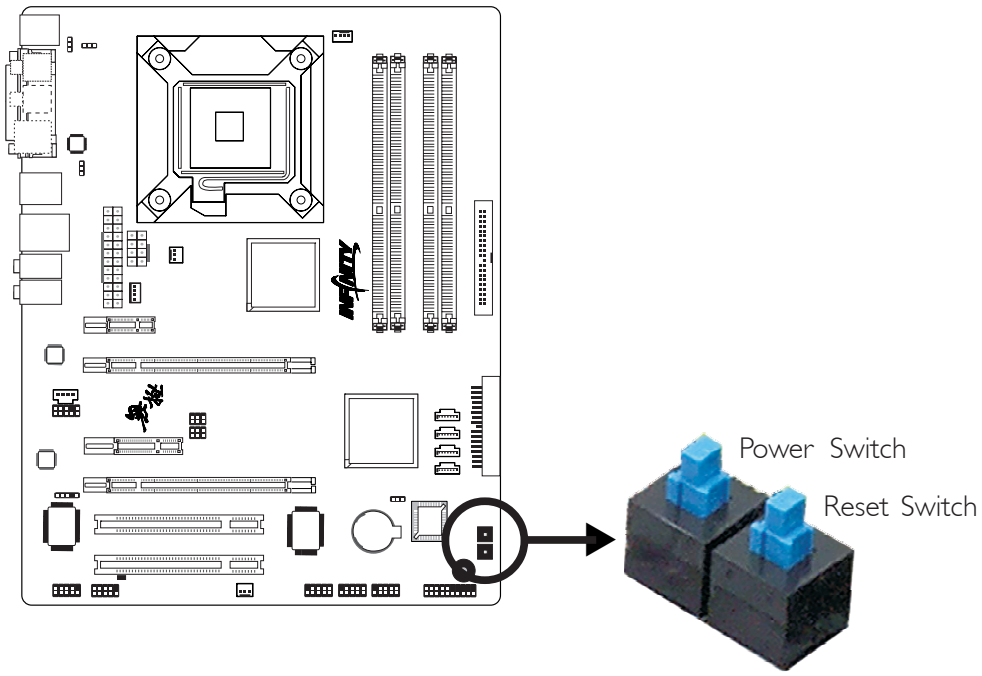
When the system's power is on, this LED will light. When the system is in the S1 (POS - Power On Suspend) or S3 (STR - Suspend To RAM) state, it will blink every second.

Note:

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

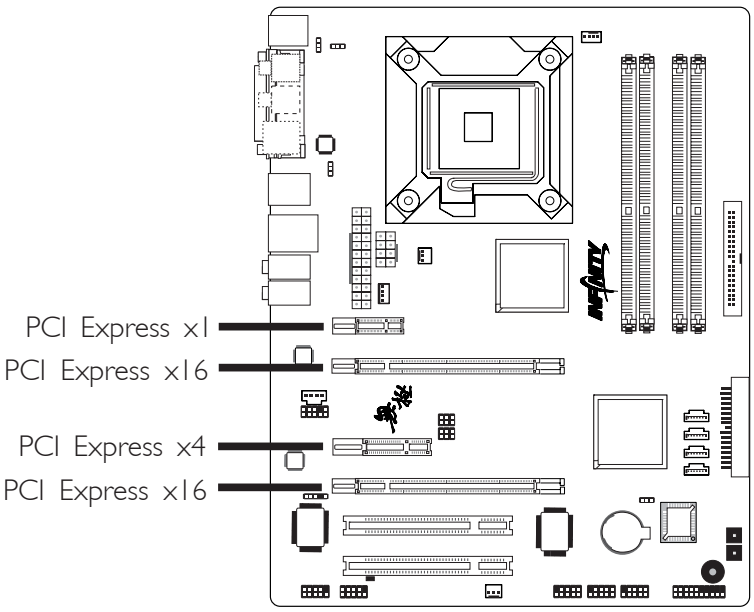
	Pin	Pin Assignment
HD-LED (Primary/Secondary IDE LED)	3 5	HDD LED Power HDD
Reserved	14 16	N. C. N. C.
ATX-SW (ATX power switch)	8 10	PWRBT+ PWRBT-
Reserved	18 20	N. C. N. C.
RESET (Reset switch)	7 9	Ground H/W Reset
SPEAKER (Speaker connector)	13 15 17 19	Speaker Data N. C. Ground Speaker Power
PWR-LED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

EZ Touch Switches



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

PCI Express Slots



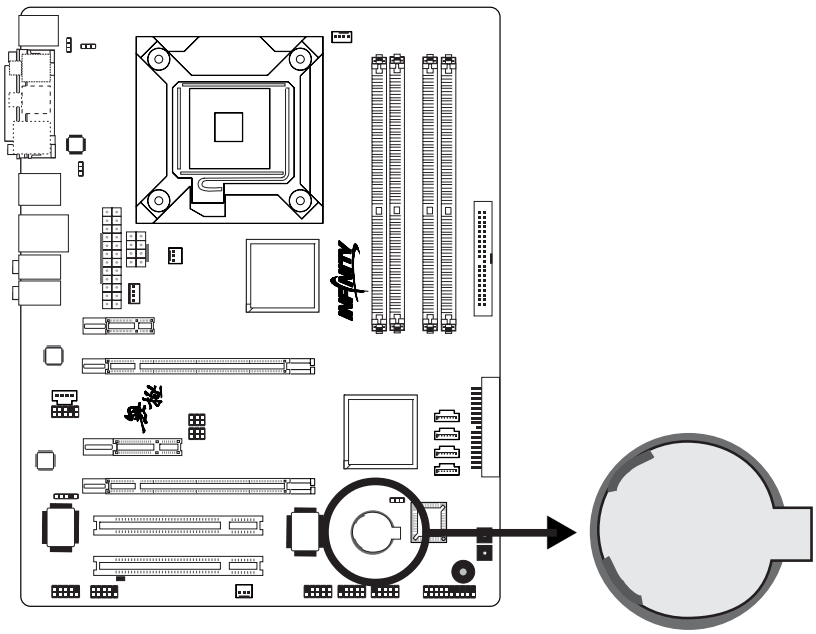
PCI Express x16

Install PCI Express x16 graphics card, that comply to the PCI Express specifications, into the PCI Express x16 slot. To install a graphics card into the x16 slot, align the graphics card above the slot then press it down firmly until it is completely seated in the slot. The retaining clip of the slot will automatically hold the graphics card in place.

PCI Express x1/x4

Install PCI Express x1 cards such as network cards or other cards that comply to the PCI Express specifications into the PCI Express x1 slot.

Battery



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

Safety Measures

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

Chapter 3 - BIOS Setup

Award BIOS Setup Utility

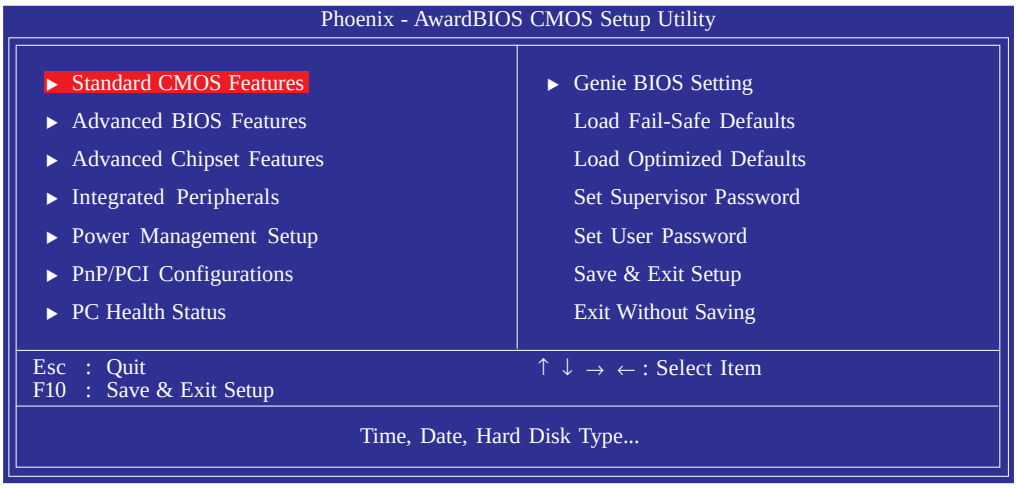
The Basic Input/Output System (BIOS) is a program that takes care of the basic level of communication between the processor and peripherals. In addition, the BIOS also contains codes for various advanced features found in this system board. This chapter explains the Setup Utility for the Award BIOS.

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

Press DEL to enter setup

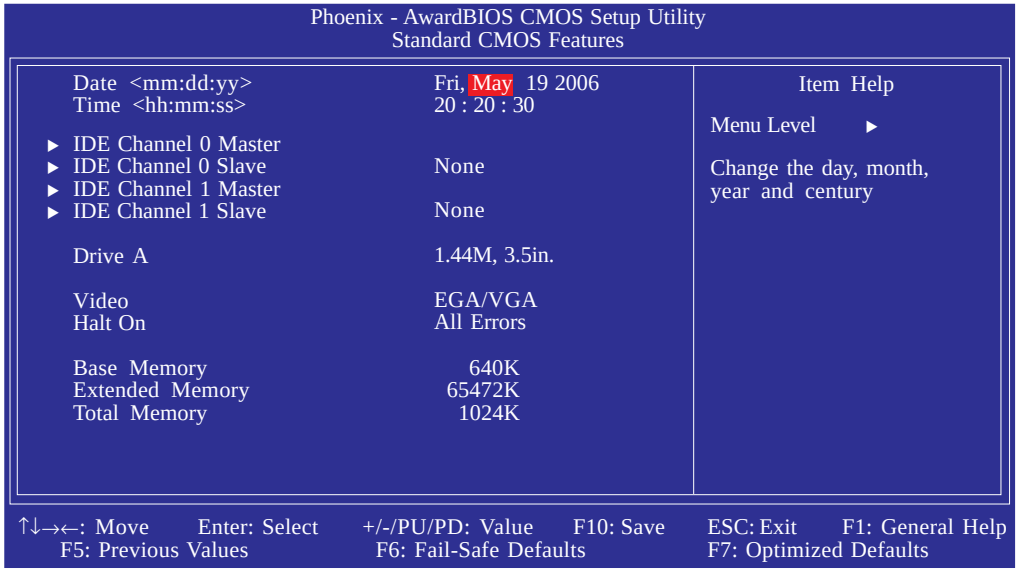
If the message disappears before you respond, restart the system or press the "Reset" button. You may also restart the system by pressing the <Ctrl> <Alt> and <Del> keys simultaneously.

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



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.

Date

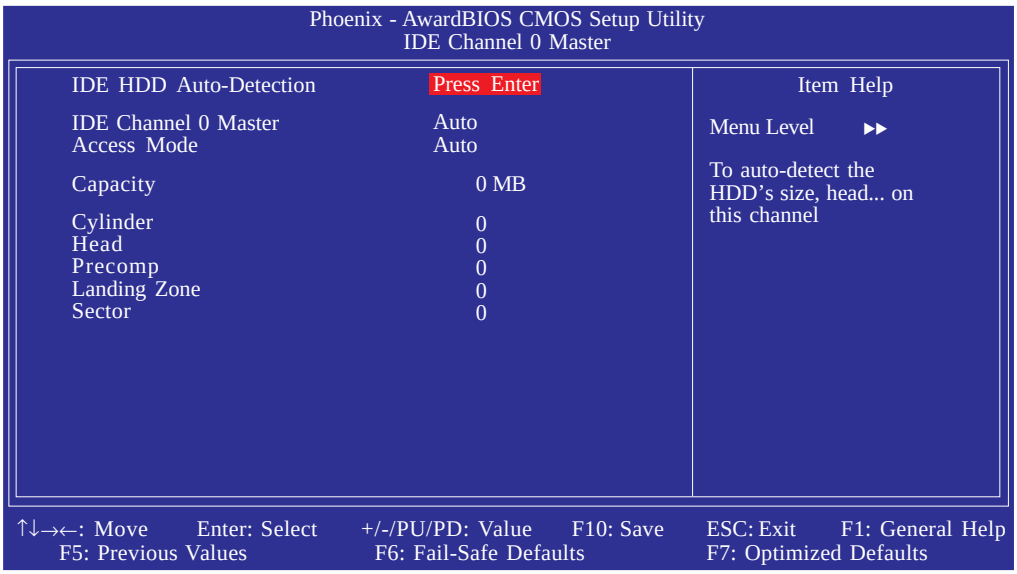
The date format is <day>, <month>, <date>, <year>. Day displays a day, from Sunday to Saturday. Month displays the month, from January to December. Date displays the date, from 1 to 31. Year displays the year, from 1994 to 2079.

Time

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

IDE Channel 0 Master, IDE Channel 0 Slave, IDE Channel 1 Master and IDE Channel 1 Slave

To configure the IDE drives, move the cursor to a field then 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 HDD Auto-Detection

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

IDE Channel 0 Master/Slave and IDE Channel 1 Master/Slave

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 CHS 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.

Drive A

These fields identify the types of floppy disk drives installed.

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

Video

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

EGA/VGA Enhanced Graphics Adapter/Video Graphics Array. For EGA, VGA, SVGA and PGA monitor adapters.

CGA 40 Color Graphics Adapter. Power up in 40-column mode.

CGA 80 Color Graphics Adapter. Power up in 80-column mode.

Mono Monochrome adapter.

Halt On

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

No Errors The system boot will not stop for any errors detected.

All Errors The system boot will stop whenever the BIOS detects a non-fatal error.

All, But Keyboard The system boot will not stop for a keyboard error; it will stop for all other errors.

All, But Diskette The system boot will not stop for a disk error; it will stop for all other errors.

All, But Disk/Key The system boot will not stop for a disk or keyboard error; it will stop for all other errors.

Base Memory

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

Extended Memory

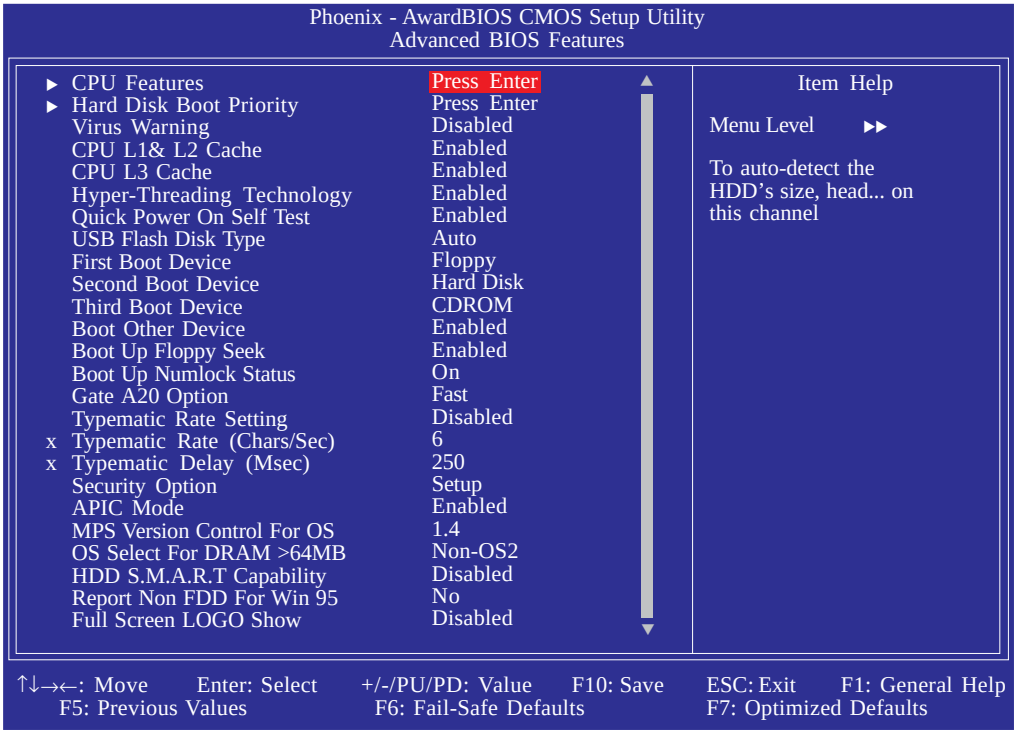
Displays the amount of extended memory detected during boot-up.

Total Memory

Displays the total memory available in the system.

Advanced BIOS Features

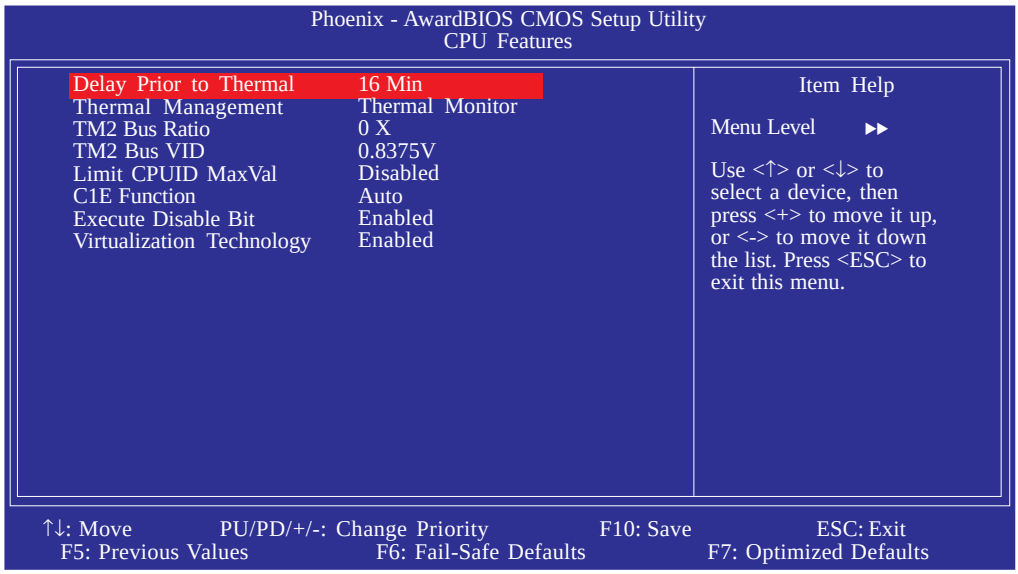
The Advanced BIOS Features allows you to configure your system for basic operation. Some entries are defaults required by the system board, while others, if enabled, will improve the performance of your system or let you set some features according to your preference.



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

CPU Features

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.

Delay Prior To Thermal

This field is used to select the time that would force the CPU to a 50% duty cycle when it exceeds its maximum operating temperature therefore protecting the CPU and the system board from overheating to ensure a safe computing environment..

Thermal Management

Select a "thermal monitor" in this field to enable the CPU's speedstep function. Restart the system then go to the operating system's "Control Panel". Double-click "Power Options". The "Power Options Properties" dialog box will appear. In the "Power Schemes" menu, select "Portable/Laptop". Speedstep reduces the CPU's frequency and voltage in accordance to its load.

Thermal Monitor 1	On die throtting.
Thermal Monitor 2	Ratio and VID transition.

TM2 Bus Ratio

This field is used to select the bus ratio of the throttled performance state that will be initiated when the on-die sensor turns from cool to hot.

TM2 Bus VID

This field is used to select the voltage of the throttled performance state that will be initiated when the on-die sensor turns from cool to hot.

Limit CPUID MaxVal

The CPUID instruction of some newer CPUs will return a value greater than 3. The default is Disabled because this problem does not exist in the Windows series operating systems. If you are using an operating system other than Windows, this problem may occur. To avoid this problem, enable this field to limit the return value to 3 or lesser than 3.

C1E Function

The options are Auto and Disabled.

Execute Disable Bit

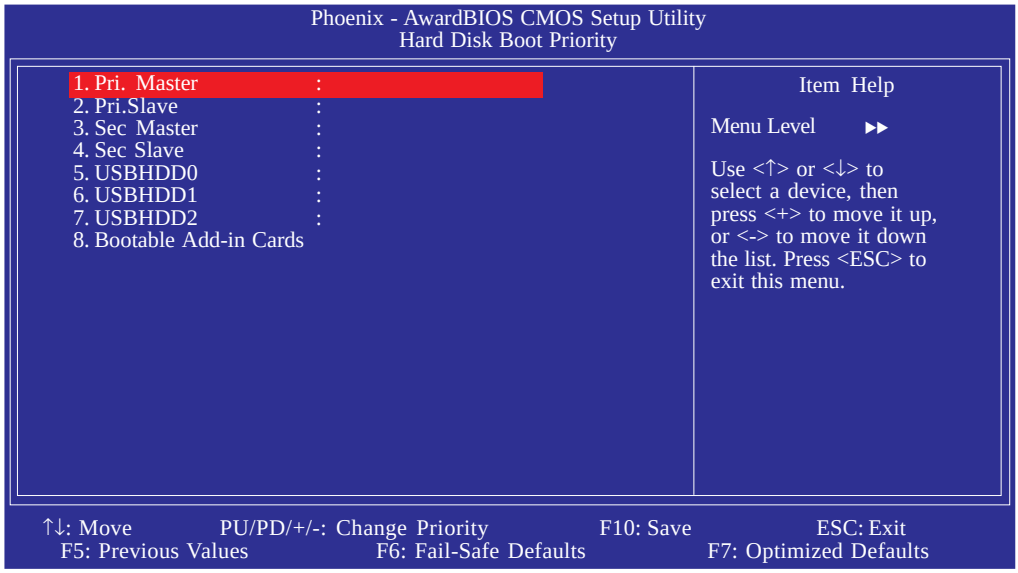
When this field is set to Disabled, it will force the XD feature flag to always return to 0.

Virtualization Technology

When this field is set to Enabled, the VMM can utilize the additional hardware capabilities provided by Vanderpool Technology.

Hard Disk Boot Priority

This field is used to select the boot sequence of the hard drives. Move the cursor to this field then press <Enter>. Use the Up or Down arrow keys to select a device then press <+> to move it up or <-> to move it down the list.



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

Virus Warning

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

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

Many disk diagnostic programs which attempt to access the boot sector table will cause the warning message to appear. If you are running such a program, we recommend that you first disable this field. Also, disable this field if you are installing or running certain operating systems like Windows®95/98/2000 or the operating system may not install nor work.

CPU L1 and L2 Cache

This field is used to speed up the memory access. Enable the external cache for better performance.

CPU L3 Cache

This field is used to enable or disable the CPU's L3 cache.

Hyper-Threading Technology

This field is used to enable the functionality of the Intel® Pentium® 4 Processor with Hyper-Threading Technology and will appear only when using this processor.

Quick Power On Self Test

This field speeds up Power On Self Test (POST) whenever the system is powered on. The BIOS will shorten or skip some check items during POST. To attain the shortest POST time, select "Fast".

USB Flash Disk Type

Auto	Automatically detects the USB device.
HDD	Emulates the USB flash disk to HDD mode.
Floppy	Emulates the USB flash disk to floppy mode.

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.

Boot Up Floppy Seek

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

Boot Up NumLock Status

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

Gate A20 Option

This 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.

Typematic Rate Setting

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

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

Typematic Rate (Chars/Sec)

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

Typematic Delay (Msec)

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

Security Option

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

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

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

APIC Mode

Leave this field in its default setting.

MPS Version Control for OS

This field is used to select the MPS version that the system board is using.

OS Select for DRAM > 64MB

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

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

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

Report No FDD For WIN 95

The options are Yes and No.

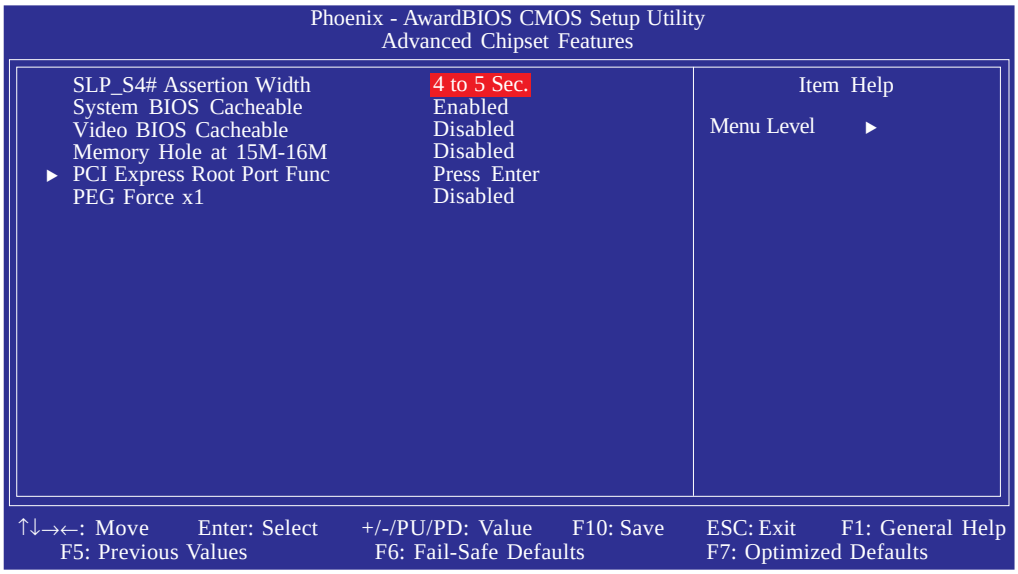
Full Screen Logo Show

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

Enabled The logo will appear in full screen during system boot-up.

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

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.

SLP_S4# Assertion Width

The options are 1 to 2 Sec., 2 to 3 Sec., 3 to 4 Sec. and 4 to 5 Sec.

System BIOS Cacheable

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

Video BIOS Cacheable

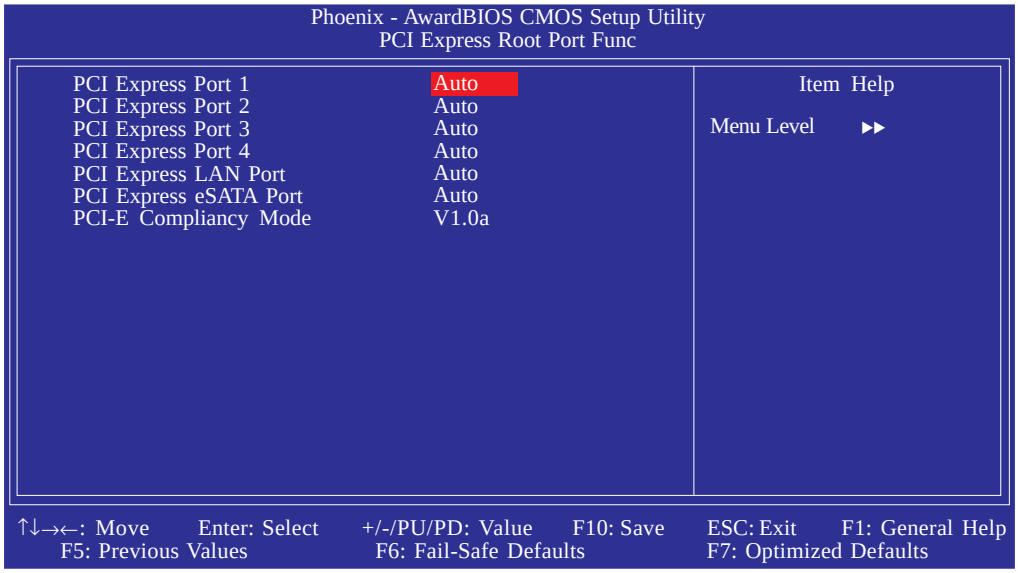
As with caching the system BIOS, enabling the Video BIOS cache will allow access to video BIOS addresssed at C0000H to C7FFFH to be cached, if the cache controller is also enabled. The larger the range of the Cache RAM, the faster the video performance.

Memory Hole At 15M-16M

In order to improve system performance, certain space in memory can be reserved for ISA cards. This memory must be mapped into the memory space below 16MB. When enabled, the CPU assumes the 15-16MB memory range is allocated to the hidden ISA address range instead of the actual system DRAM. When disabled, the CPU assumes the 15-16MB address range actually contains DRAM memory. If more than 16MB of system memory is installed, this field must be disabled to provide contiguous system memory.

PCI Express Root Port Func

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.

PCI Express Port 1 to PCI Express Port 4

These fields are used to enable or disable the PCI Express port function.

PCI Express LAN Port

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

PCI Express eSATA Port

This field is used to enable or disable the eSATA port.

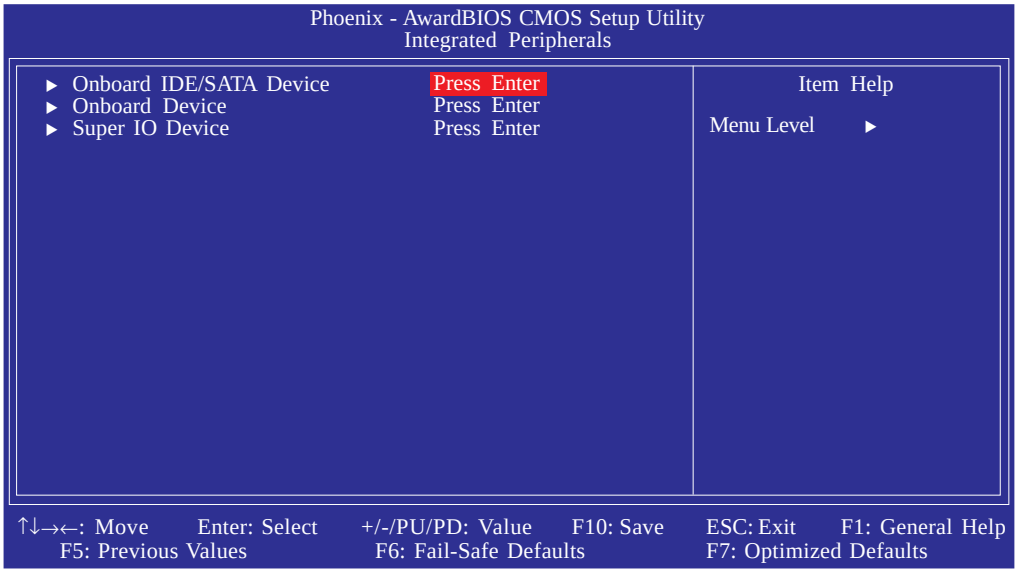
PCI-E Compliancy Mode

This field is used to select the mode for the PCI Express add-in card.

PEG Force x1

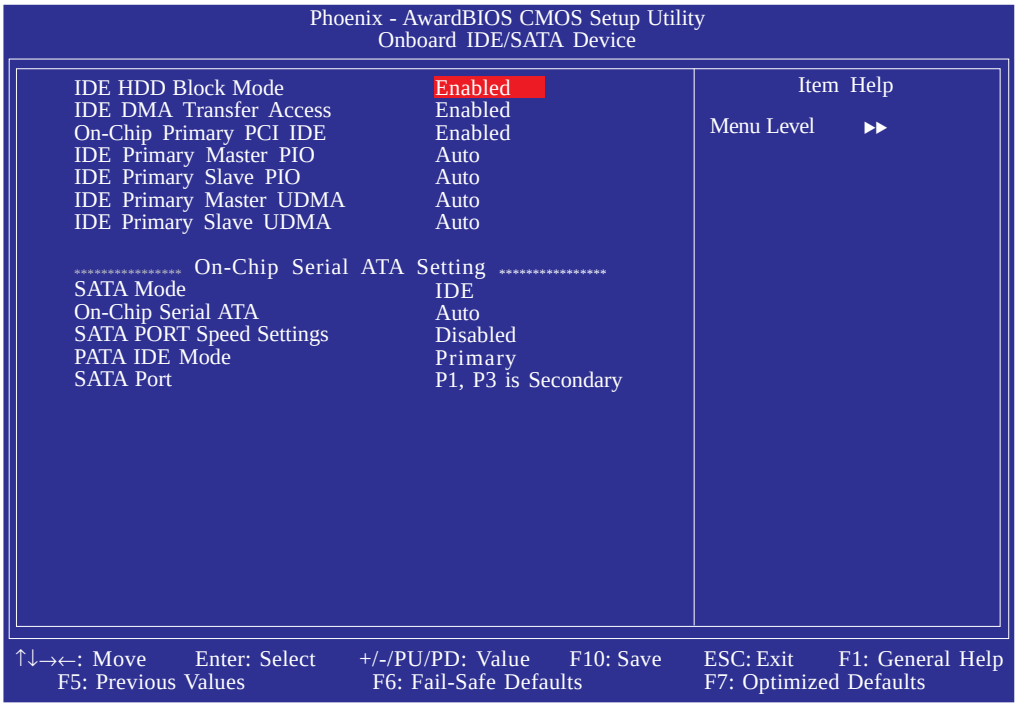
The options are Enabled and Disabled.

Integrated Peripherals



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

Onboard IDE/SATA Device



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

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.

IDE DMA Transfer Access

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

On-Chip Primary PCI IDE

This field allows you to enable or disable the primary IDE controller. The default is Enabled. Select Disabled if you want to add a different hard drive controller.

IDE Primary Master/Slave PIO

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

Auto The BIOS will automatically set the system according to your hard disk drive's timing.

Mode 0-4 You can select a mode that matches your hard disk drive's timing. Caution: Do not use the wrong setting or you will have drive errors.

IDE Primary Master/Slave UDMA

This field allows 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.

SATA Mode

IDE	This option configures the Serial ATA drives in IDE mode.
RAID	This option enables the RAID function for Serial ATA drives.
AHCI	This option configures the Serial ATA drives in AHCI mode.

On-Chip Serial ATA

Disabled	Disables the onboard SATA.
Auto	The system will detect the existing SATA and IDE drives then automatically set them to the available master/slave mode.
Combined Mode	This option allows you to use both IDE and SATA drives; allowing a maximum of 4 drives.
Enhanced Mode	This option allows you to use both IDE and SATA drives; allowing a maximum of 6 drives.
SATA Only	This option automatically sets the SATA drives to Primary Master and Secondary Master modes. Since both drives are in master mode, you cannot set the IDE drives to Master mode.

SATA Port Speed Settings

Force GEN 1	SATA will run at 1.5Gb/s which is the first generation SATA speed.
Force GEN 2	SATA will run at 3Gb/s which is the second generation SATA speed.

PATA IDE Mode

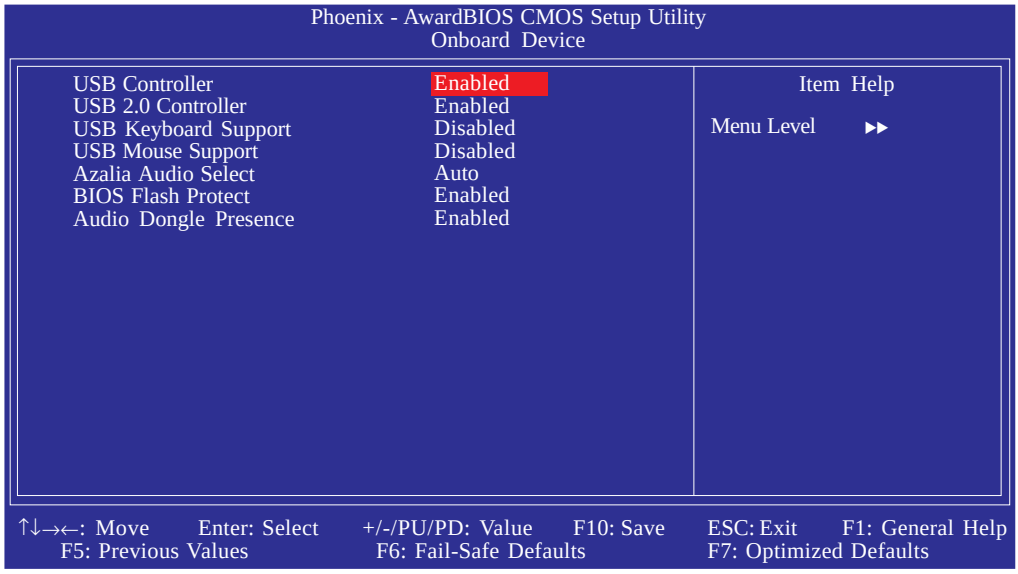
Primary	IDE 1 serves as Primary Master and Primary Slave channel. SATA 1 and SATA 3 serve as Secondary Master and Secondary Slave channel. SATA 0 and SATA 2 are disabled.
Secondary	IDE 1 serves as Secondary Master and Secondary Slave channel. SATA 0 and SATA 2 serve as Primary Master and Primary Slave channel. SATA 1 and SATA 3 are disabled.

SATA Port

If the "PATA IDE Mode" field is set to Primary, this field will show "P1, P3 is Secondary"; meaning SATA 0 and SATA 2 are Secondary.

If the "PATA IDE Mode" field is set to Secondary, this field will show "P0, P2 is Primary"; meaning SATA 1 and SATA 3 are Primary.

Onboard Device



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

USB Controller

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

USB 2.0 Controller

This field is used to enable or disable USB 2.0.

USB Keyboard Support

Due to the limited space of the BIOS ROM, the support for legacy USB keyboard (in DOS mode) is by default set to Disabled. With more BIOS ROM space available, it will be able to support more advanced features as well as provide compatibility to a wide variety of peripheral devices.

If a PS/2 keyboard is not available and you need to use a USB keyboard to install Windows (installation is performed in DOS mode) or run any program under DOS, set this field to Enabled.

USB Mouse Support

Due to the limited space of the BIOS ROM, the support for legacy USB mouse (in DOS mode) is by default set to Disabled. With more BIOS ROM space available, it will be able to support more advanced features as well as provide compatibility to a wide variety of peripheral devices.

If a PS/2 mouse is not available and you need to use a USB mouse to install Windows (installation is performed in DOS mode) or run any program under DOS, set this field to Enabled.

Azalia Audio Select

Auto	The system automatically detects the onboard audio.
Disabled	Disables the onboard audio.

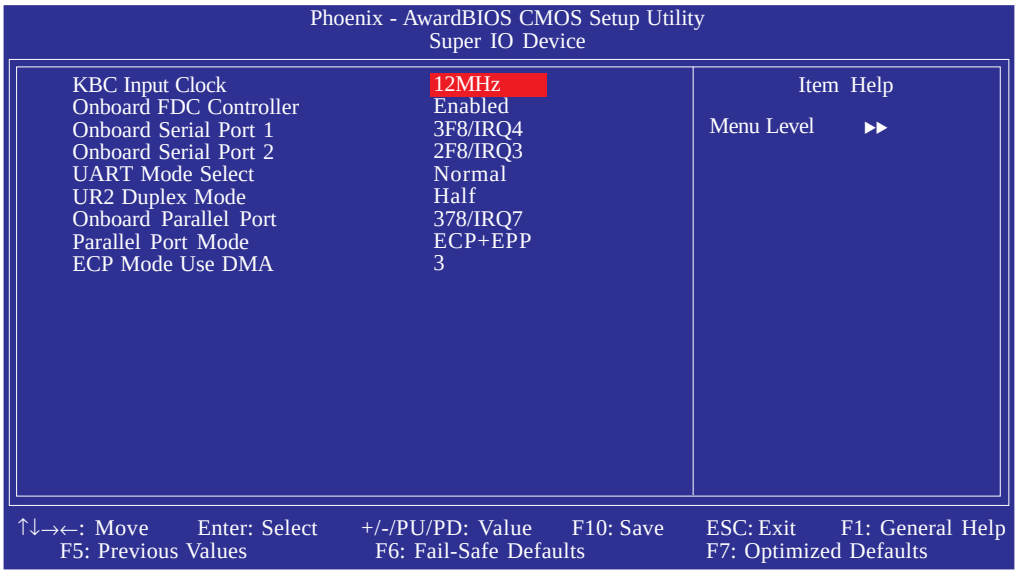
BIOS Flash Protect

Enabled	This option will protect the system from unnecessary updating or flashing of the BIOS. When enabled, it secures the BIOS therefore any updates to the BIOS will not take effect.
Disabled	Disables the "BIOS flash protect" function, allowing you to update or flash the BIOS any time needed.

Audio Dongle Presence

The options are Enabled and Disabled.

Super IO Device



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

KBC Input Clock

This is used to select the input clock of your keyboard. The options are: 8MHz and 12MHz. The default is 12MHz.

Onboard FDC Controller

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

Onboard Serial Port 1 and Onboard Serial Port 2

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

UART Mode Select

This field is used to select the type of IrDA standard supported by your IrDA device. For better transmission of data, your IrDA peripheral device must be within a 30° angle and within a distance of 1 meter.

UR2 Duplex Mode

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

Onboard Parallel Port

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

Parallel Port Mode

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

Normal
Allows normal speed operation but in one direction only.

"ECP (Extended Capabilities Port)"
Allows parallel port to operate in bidirectional mode and at a speed faster than the normal mode's data transfer rate.

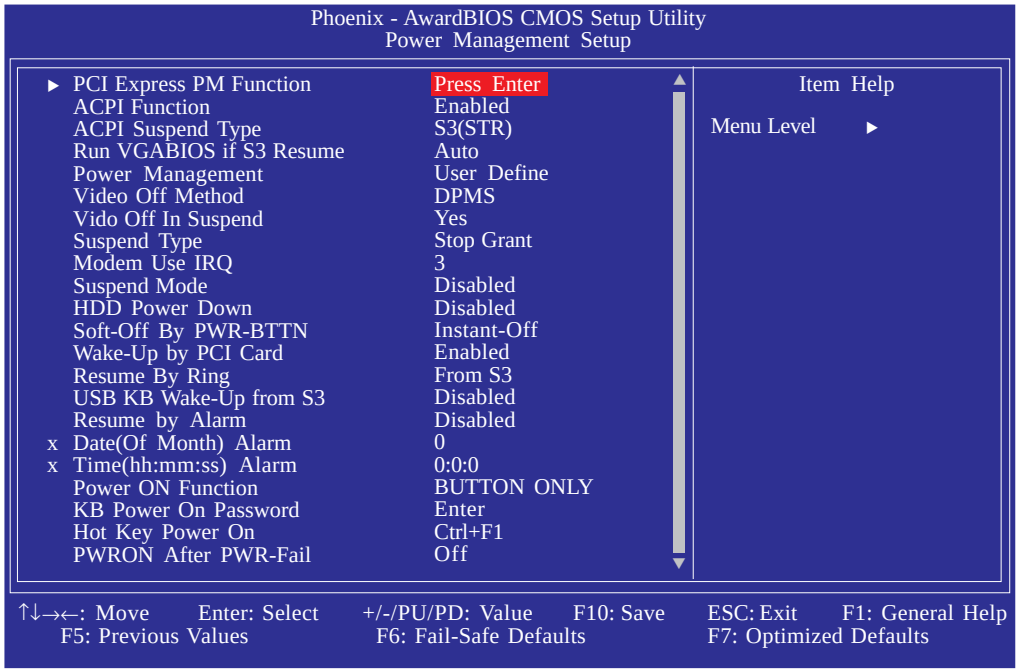
"EPP (Enhanced Parallel Port)"
Allows bidirectional parallel port operation at maximum speed.

ECP Mode Use DMA

This field is used to select a DMA channel for the parallel port. The options are 1 and 3. Default setting: 3.

Power Management Setup

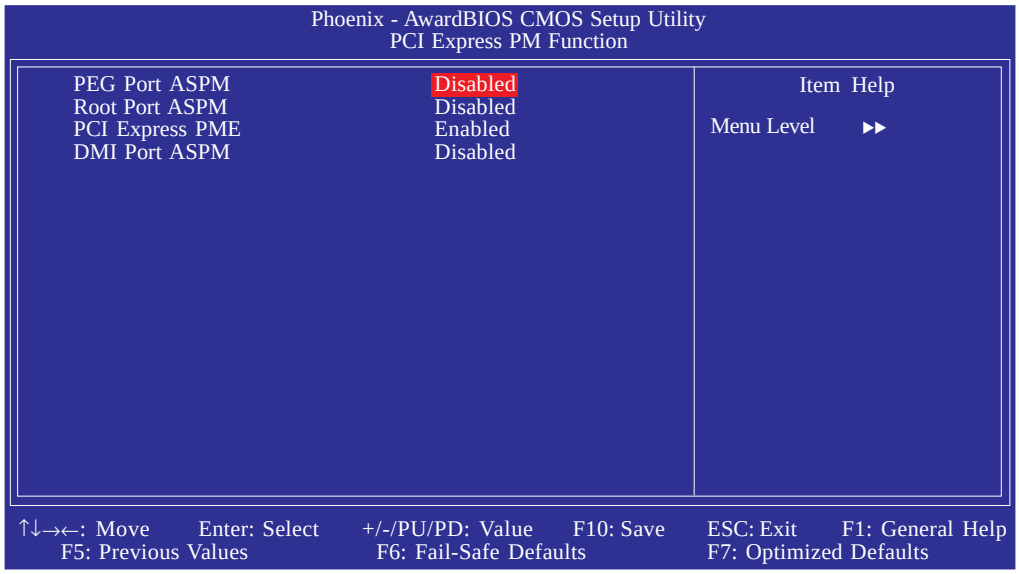
The Power Management Setup allows you to configure your system to most effectively save energy.



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

PCI Express PM Function

Move the cursor to this filed 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.

PEG Port ASPM

The options are Disabled, L0s and L1/L0s.

Root Port ASPM

The options are Disabled, L0s, L1 and L1/L0s.

PCI Express PME

The options are Enabled and Disabled.

DMI Port ASPM

The options are L0s and Disabled.

ACPI Function

By default, the ACPI function is enabled. This function should be enabled only in operating systems that support ACPI.

ACPI Suspend Type

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

S3(STR)	Enables the Suspend to RAM function.
Auto	This option is applicable only when you are using the Windows®XP operating system. S3 will automatically be enabled since this function is supported by the system board.

Run VGABIOS if S3 Resume

When this field is set to Auto, the system will initialize the VGA BIOS when it wakes up from the S3 state. This can be configured only if the "ACPI Suspend Type" field is set to "S3(STR)". When this feature is disabled, the system resume time is shortened but system will need an AGP driver to initialize the VGA card. Therefore, if the AGP driver of the card does not support the initialization feature, the display may work abnormally or not function after resuming from S3.

Power Management

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

Min Saving	Minimum power saving time for the "HDD Power Down" = 15 min.
Max Saving	Maximum power saving time for the "HDD Power Down" = 1 min.
User Define	Allows you to set the power saving time in the "HDD Power Down" field.

Video Off Method

This determines the manner in which the monitor is blanked.

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

Video Off In Suspend

This field is used to activate the video off feature when the system enters the Suspend mode. The options are Yes and No.

Suspend Type

The options are Stop Grant and PwrOn Suspend.

MODEM Use IRQ

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

Suspend Mode

This is configurable only when the Power Management field is set to "User Define". When the system enters the power saving time set in this field, the CPU and onboard peripherals will be shut off.

HDD Power Down

This is selectable only when the Power Management field is set to User Define. When the system enters the HDD Power Down mode according to the power saving time selected, the hard disk drive will be powered down while all other devices remain active.

Soft-Off by PWR-BTTN

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

Delay 4 Sec. Regardless of whether the Power Management function 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.

Wake-Up 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.

Resume By Ring

When this field is set to Enabled, the system will power-on to respond to calls coming from an external modem.

USB KB Wake-Up From S3

This field, when enabled, allows you to use a USB keyboard to wake up a system that is in the S3 (STR - Suspend To RAM) state. This can be configured only if the "ACPI Suspend Type" field is set to "S3(STR)".

Resume By Alarm

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

Day (of Month) Alarm

0	The system will power-on everyday according to the time set in the "Time (hh:mm:ss) Alarm" 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 "Time (hh:mm:ss) Alarm" field.

Time (hh:mm:ss) of Alarm

This is used to set the time you would like the system to power-on.

Power On Function

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

Button only	Default setting. Uses the power button to power on the system.
Password	When this option is selected, set the password you would like to use to power-on the system in the "KB Power On Password" field.
Hot Key	When this option is selected, select the function key you would like to use to power-on the system in the "Hot Key Power On" field.
Mouse Click	Click the PS/2 mouse to wake up the system.
Any Key	Press any key to power-on the system.
Keyboard 98	When this option is selected, press the "wake up" key of the Windows® 98 compatible keyboard to power-on the system.

KB Power On Password

Move the cursor to this field and press <Enter>. Enter your password. You can enter up to 5 characters. Type in exactly the same password to confirm, then press <Enter>.

The power button will not function once a keyboard password has been set in this field. You must type the correct password to power-on the system. If you forgot the password, power-off the system and remove the battery. Wait for a few seconds and install it back before powering-on the system.

Hot Key Power On

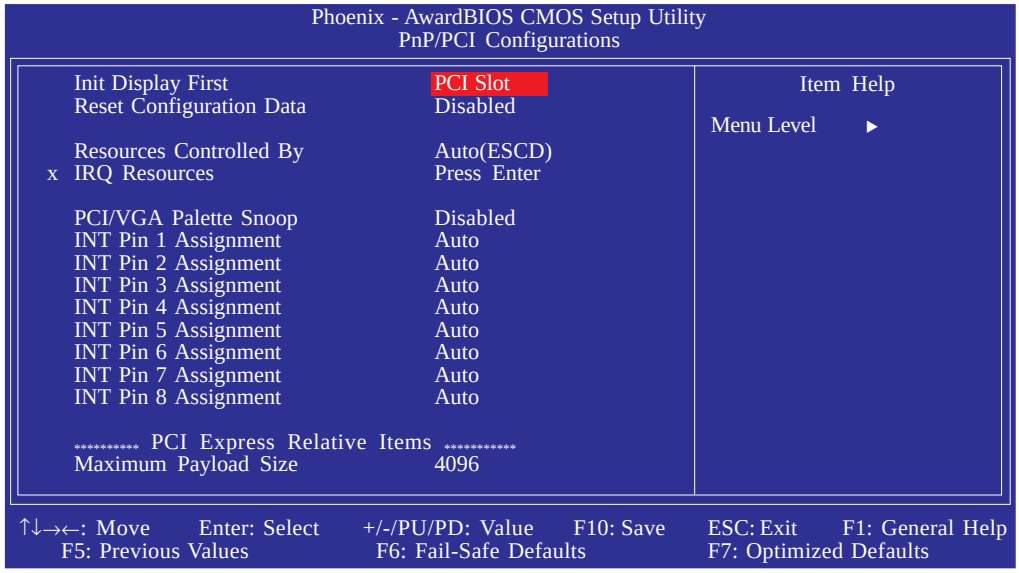
This field is used to select a function key that you would like to use to power-on the system.

PWRON After PWR-Fail

Off	When power returns after an AC power failure, the system's power is off. You must press the Power button to power-on the system.
On	When power returns after an AC power failure, the system will automatically power-on.
Former-Sts	When power returns after an AC power failure, the system will return to the state where you left off before power failure occurs. If the system's power is off when AC power failure occurs, it will remain off when power returns. If the system's power is on when AC power failure occurs, the system will power-on when power returns.

PnP/PCI Configurations

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



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

Init Display First

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

PCIEx When the system boots, it will first initialize the PCI Express x16 graphics card.

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

Reset Configuration Data

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

Disabled The BIOS will not reset the configuration data.

Resources Controlled By

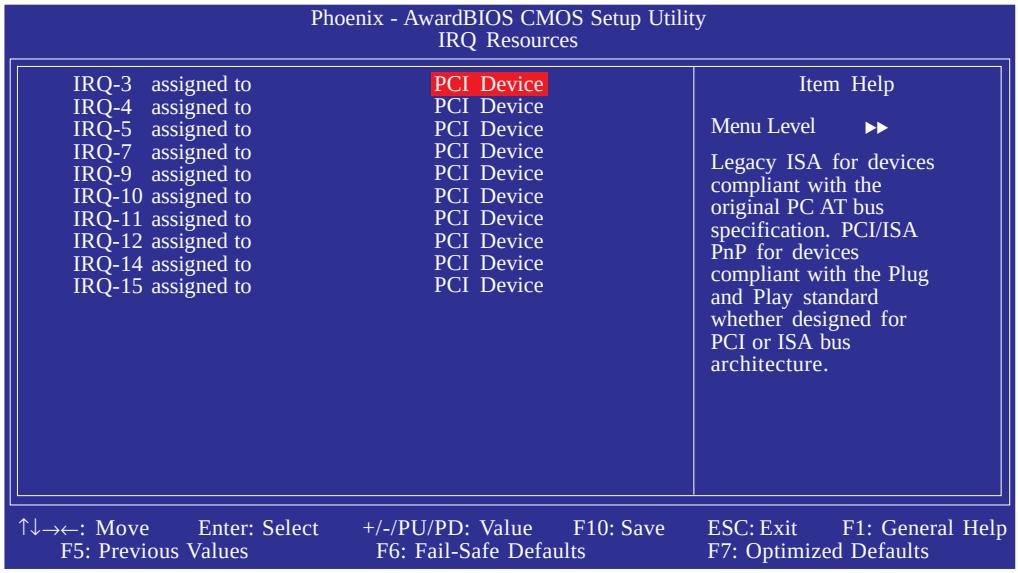
The Award Plug and Play BIOS has the capability to automatically configure all of the boot and Plug and Play compatible devices.

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

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

IRQ Resources

Move the cursor to this field and press <Enter>. This field is used to set each system interrupt to either Reserved or PCI Device.



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

PCI/VGA Palette Snoop

This field determines whether the MPEG ISA/VESA VGA cards can work with PCI/VGA or not.

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

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

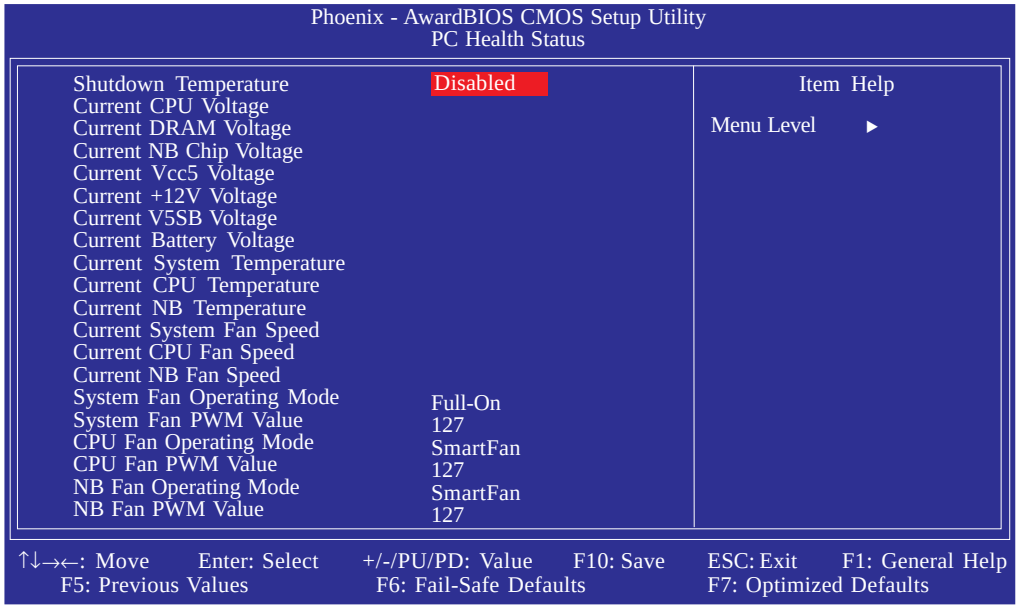
INT Pin 1 Assignment to INT Pin 8 Assignment

By default, a device is automatically assigned to each INT. You can also manually assign an INT for each device.

Maximum Payload Size

This field is used to select the maximum TLP payload size of the PCI Express devices. The unit is byte.

PC Health Status



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

Shutdown Temperature

You can prevent the system from overheating by selecting a temperature in this field. If the system detected that its temperature exceeded the one set in this field, it will automatically shutdown.

Current CPU Voltage to Current Battery Voltage

These fields will show the monitored output voltages.

Current System Temperature to Current NB Temperature

These fields will show the current temperature of the internal system, CPU and NB chip.

Current System Fan Speed to Current NB Fan Speed

These fields will show the current fan speed of the monitored cooling fans in RPM (Rotation Per Minute).

System Fan Operating Mode

Full-On The system fan will rotate at full speed.
Fan-PWM This option will allow you to enter the system fan's PWM value in the field below (System Fan PWM Value).

System Fan PWM Value

This field is used to select the system fan's speed. The higher the value entered in this field, the faster the speed of the system fan.

CPU Fan Operating Mode

Smart Fan The CPU speed will rotate according to the CPU's temperature. The higher the temperature, the faster the speed of rotation
Full-On The CPU fan will rotate at full speed.
Fan-PWM This option will allow you to enter the CPU fan's PWM value in the field below (CPU Fan PWM Value).

CPU Fan PWM Value

This field is used to select the CPU fan's speed. The higher the value entered in this field, the faster the speed of the CPU fan.

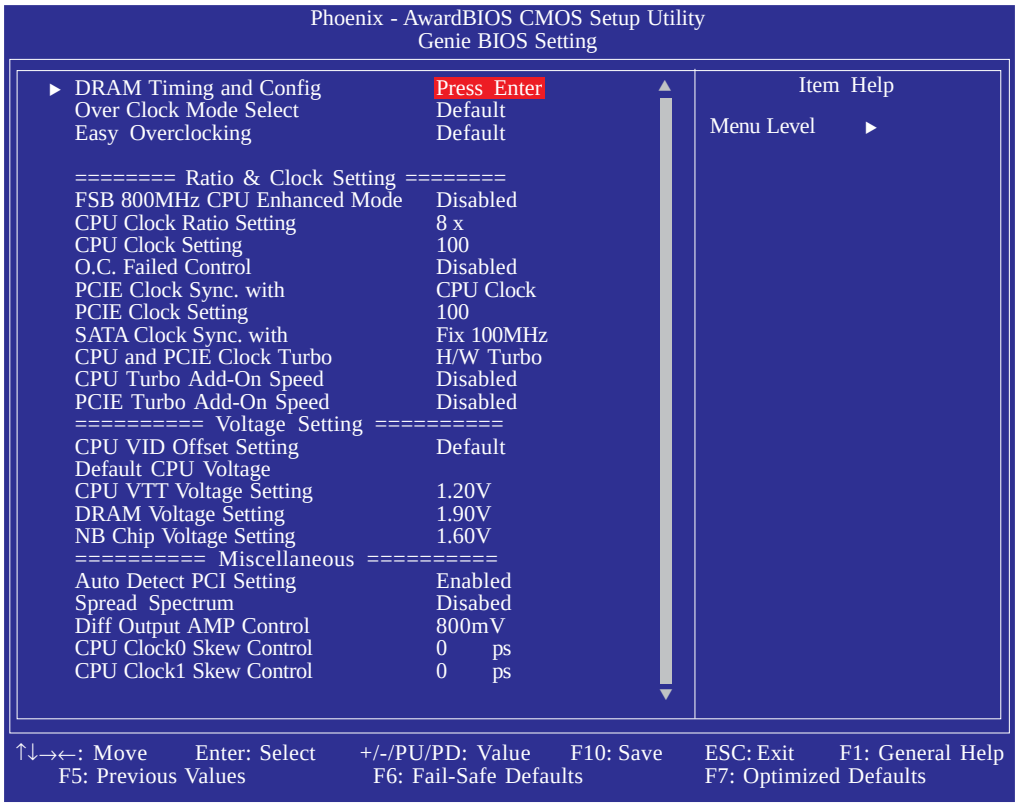
NB Fan Operating Mode

Smart Fan The north bridge fan's speed will rotate according to the its temperature. The higher the temperature, the faster the speed of rotation
Full-On The north bridge fan will rotate at full speed.
Fan-PWM This option will allow you to enter the north bridge fan's PWM value in the field below (NB Fan PWM Value).

NB Fan PWM Value

This field is used to select the north bridge fan's speed. The higher the value entered in this field, the faster the speed of the north bridge fan.

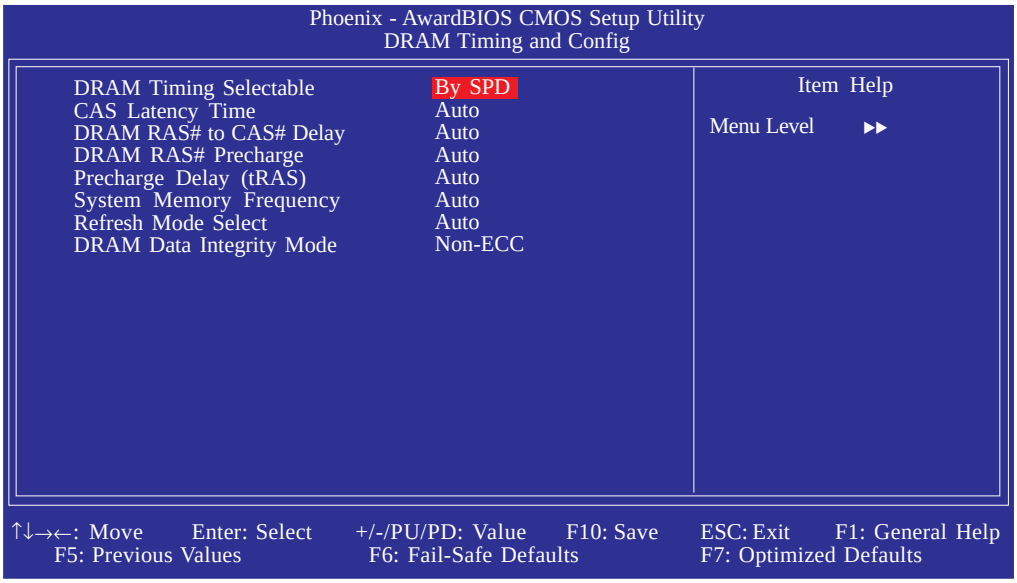
Genie BIOS Setting



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

DRAM Timing and Config

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.

DRAM Timing

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

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

Manual 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 fields that follow.

CAS Latency Time (Tcl)

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

DRAM RAS# to CAS# Delay

This field is used to select the latency between the DRAM active command and the read/write command.

DRAM RAS# Precharge

This field is used to select the idle clocks after issuing a precharge command to the DRAM.

Precharge Delay (tRAS)

The options are Auto, Vt16, Vt17, Vt18 and 4 to15.

System Memory Frequency

This field is used to select the frequency of the system memory.

Refresh Mode Select

The options are Auto, 7.8 us and 15.6 us.

DRAM Data Integrity Mode

The ECC (Error Checking and Correction) function is supported only in x72 (72-bit) PC SDRAM DIMMs. If you are using x64 (64-bit) PC SDRAM DIMMs, set this field to Non-ECC.

Non-ECC	Uses x64 PC SDRAM DIMM.
ECC	This option allows the system to recover from memory failure. It detects single-bit and multiple-bit errors, then automatically corrects single-bit error.

Over Clock Mode Select

This field is used to select the overclocking mode.

Easy Overclocking

This field is used to select an overclock speed of the CPU.

FSB 800MHz CPU Enhanced Mode

If you are using an 800MHz FSB CPU and you intend to use its Enhanced mode, set this field to Enabled.

CPU Clock Ratio Setting

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

Important:
The frequency ratio of some processors may have been locked by the manufacturer. If you are using this kind of processor, setting an extended ratio for the processor will have no effect. The system will instead use its factory default ratio.

CPU Clock Setting

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

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

O. C. Failed Control

If after overclocking, the system failed to function properly, the system will automatically adjust the CPU clock according to the value selected in this field. The adjusted clock speed is the actual CPU clock minus the value selected in this field.

PCIE Clock Sync With

CPU Clock	PCI Express clock is synchronous with CPU FSB clock.
O.C. Mode	Active PCI Express clock.

PCIE Clock Setting

This field is used to select the bus clock of the PCI Express. It allows you to adjust the bus clock by 1MHz increment.

SATA Clock Sync. with

PCIE Clock SATA clock is synchronous with PCI Express clock.
Fix 100MHz SATA clock is fixed at 100MHz.

CPU and PCIE Clock Turbo

The options are H/W Turbo and S/W Turbo.

CPU Turbo Add-On Speed

This field is used to select an add-on speed for the CPU.

PCIE Turbo Add-On Speed

This field is used to select an add-on speed for the PCI Express.

CPU VID Offset Setting

This field is used to select the CPU's Vcore. If you want to use the CPU's default core voltage, leave this field in its default setting. The CPU's Vcore will be generated according to the CPU VID configuration.

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

Default CPU Voltage

This field will show the CPU's default voltage.

CPU VTT Voltage Setting

This field is used to select the voltage supplied to the CPU.

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

DRAM Voltage Setting

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

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

NB Chip Voltage Setting

This field allows you to manually select higher voltage supplied to the north bridge chip.

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

Auto Detect PCI Clk

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

Spread Spectrum

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

Diff Output AMP Control

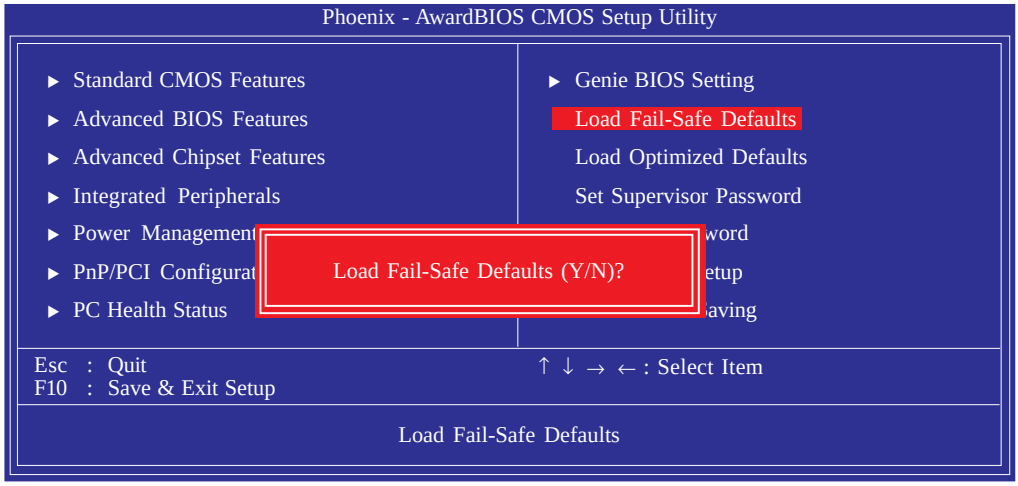
This field is used to select an output AMP value.

CPU Clock0 Skew Control and CPU Clock1 Skew Control

Thse fields are used to select a skew control value of the CPU clock.

Load Fail-Safe Defaults

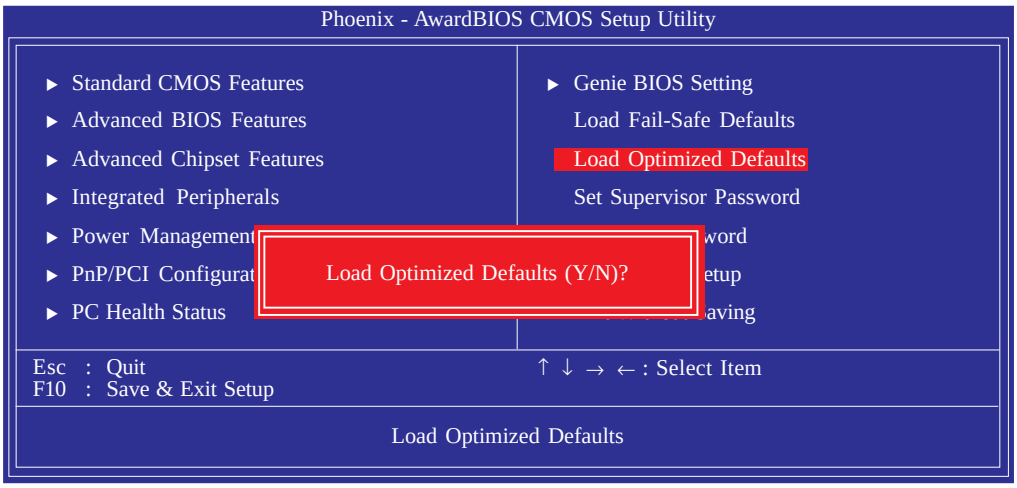
The "Load Fail-Safe Defaults" option loads the troubleshooting default values permanently stored in the ROM chips. These settings are not optimal and turn off all high performance features. You should use these values only if you have hardware problems. Highlight this option in the main menu and press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



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

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>.

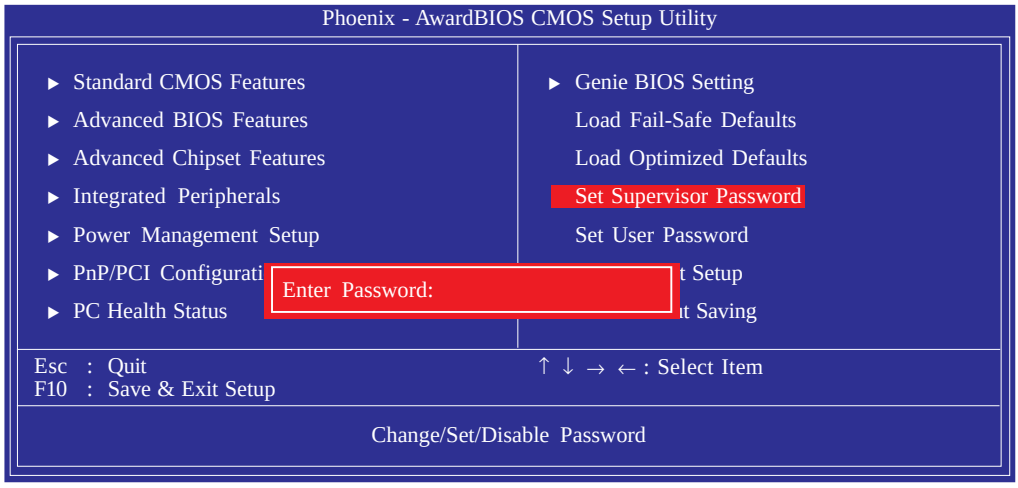


Type <Y> and press <Enter> to load the Setup default values.

Set Supervisor Password

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

Use the arrow keys to highlight "Set Supervisor Password" and press <Enter>.



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

Confirm Password:

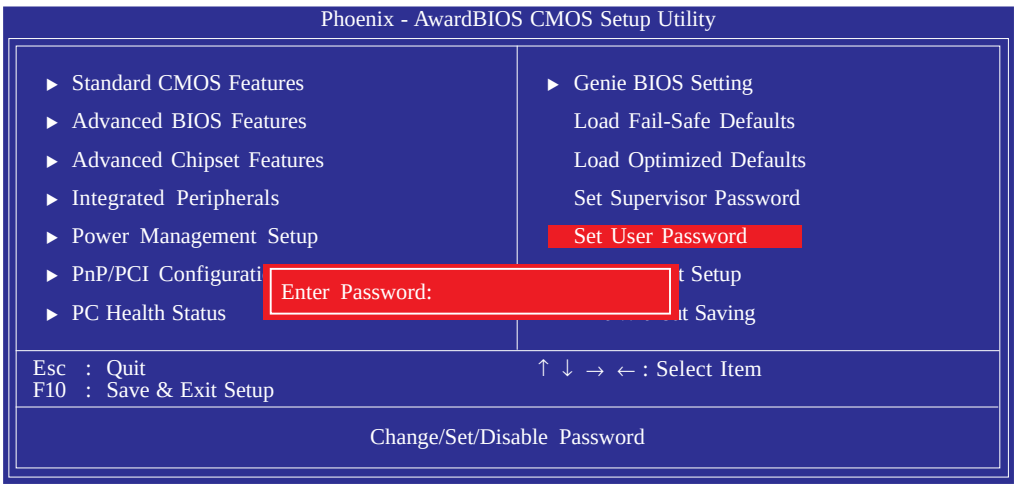
You are asked to verify the password. Type in exactly the same password. If you type in a wrong password, you will be prompted to enter the correct password again. To delete or disable the password function, highlight "Set Supervisor Password" and press <Enter>, instead of typing in a new password. Press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

Set User Password

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

Using user's password to enter Setup allows a user to access only "Set User Password" that appears in the main menu screen. Access to all other options is denied.

Use the arrow keys to highlight "Set User Password" and press <Enter>.



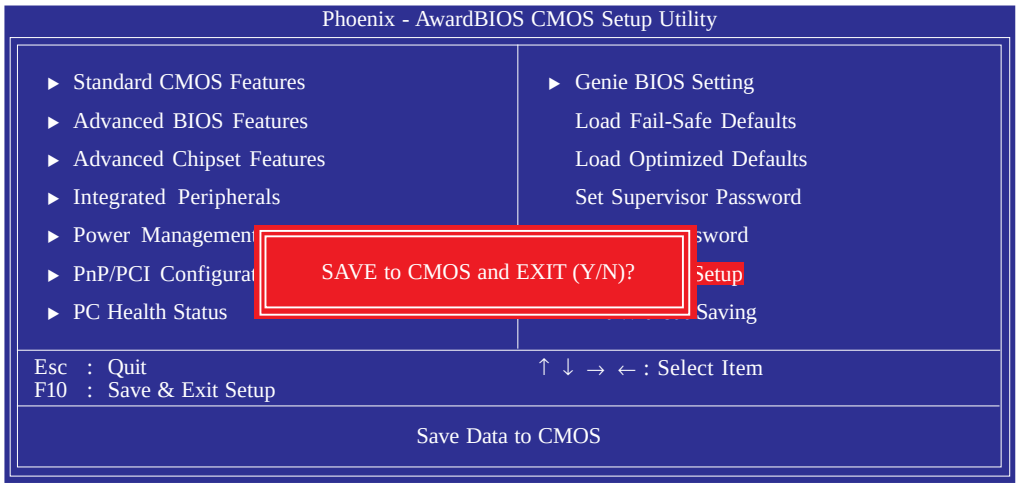
Type in the password. You are limited to eight characters. When done, the message below will appear:

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 User Password" and press <Enter>, instead of typing in a new password. Press the <Esc> key to return to the main menu.

Save & Exit Setup

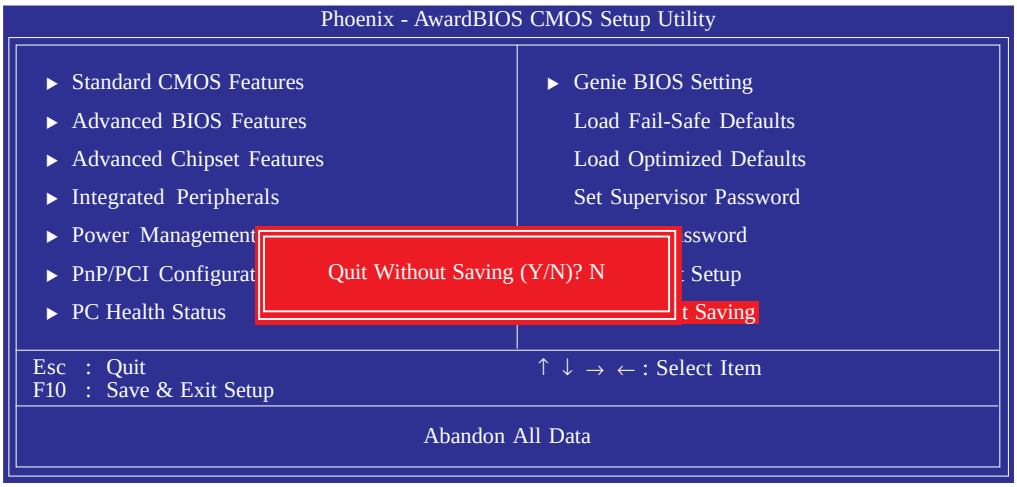
When all the changes have been made, highlight "Save & Exit Setup" and press <Enter>.



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 <Del> after memory testing is done.

Exit Without Saving

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



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

Intel RAID BIOS

The Intel RAID BIOS utility is used to configure and manage RAID on Serial ATA drives.

After you power up the system and all drives have been detected, the Intel RAID BIOS status message screen will appear. Press the <Ctrl> and <I> keys simultaneously to enter the utility. The utility allows you to build a RAID system on Serial ATA drives.

Refer to chapter 5 for steps in configuring RAID.

Important:
Before creating RAID, make sure you have installed the Serial ATA drives and connected the data cables otherwise you won't be able to enter the RAID BIOS utility.

Updating the BIOS

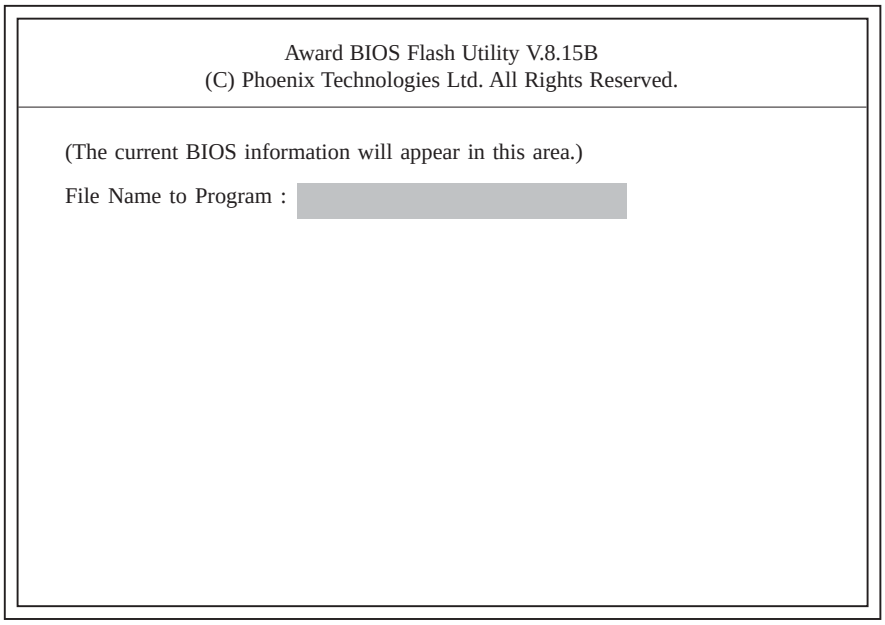
To update the BIOS, you will need the new BIOS file and a flash utility, AWDFLASH.EXE. You can download them from DFI's web site or contact technical support or your sales representative.

1. Save the new BIOS file along with the flash utility AWDFLASH.EXE to a floppy disk.

2. Reboot the system and enter the Award BIOS Setup Utility to set the first boot drive to "Floppy".

3. Save the setting and reboot the system.

4. After the system booted from the floppy disk, execute the flash utility by typing AWDFLASH.EXE. The following screen will appear.



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

6. The following will appear:

   Do You Want to Save BIOS (Y/N)

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

7. The following will then appear:

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

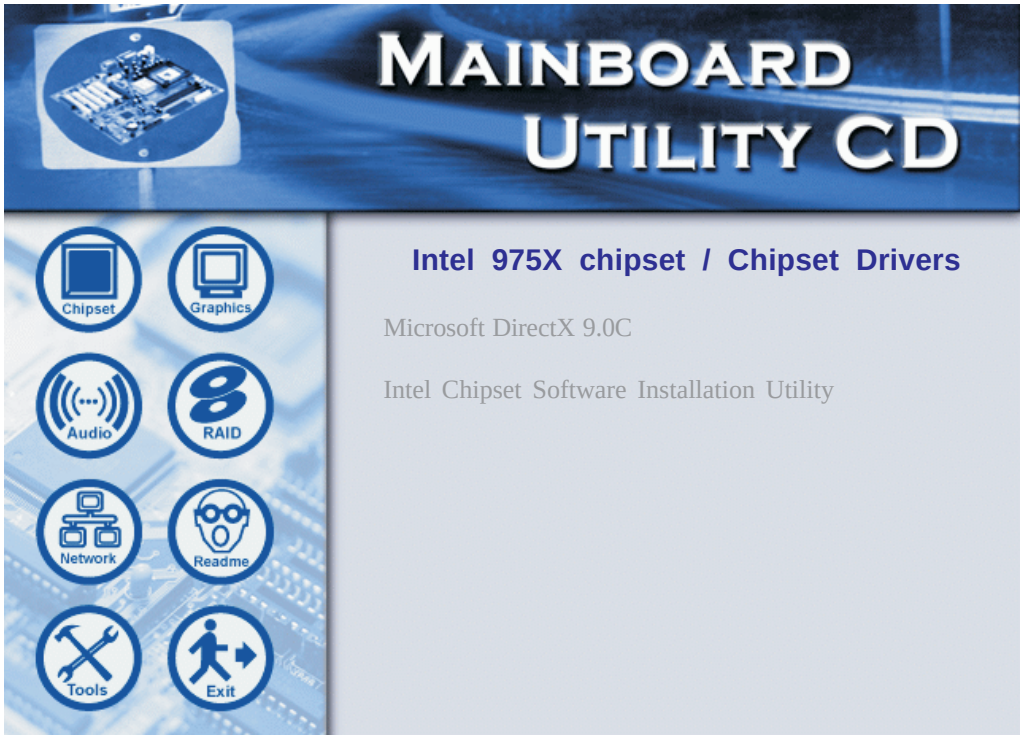
8. Press <Y> to flash the new BIOS.

Chapter 4 - Supported Software

Drivers, Utilities and Software Applications

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 (Mainboard Utility CD) will appear. If after inserting the CD, "Autorun" did not automatically start (which is, the Mainboard Utility CD screen did not appear), please go directly to the root directory of the CD and double-click "Setup".



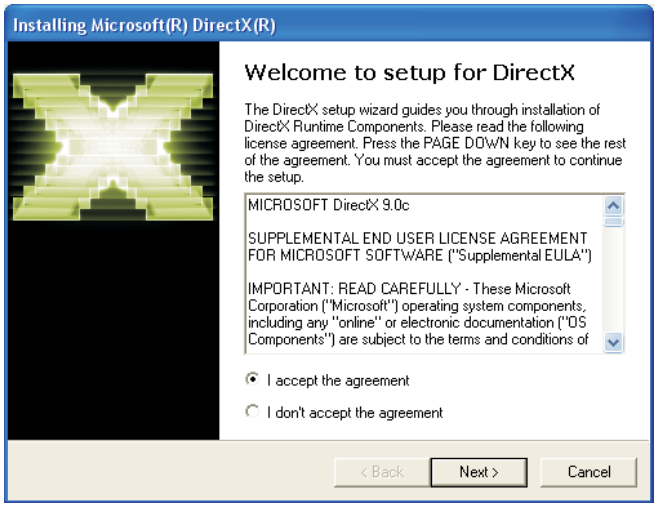
Important:
You must first install Microsoft DirectX 9.0C prior to installing any drivers.

Microsoft DirectX 9.0C

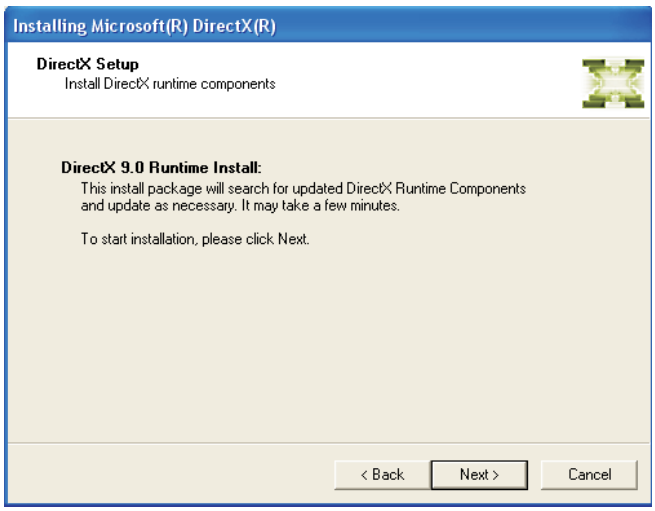
When you insert the CD, the default menu that will appear is the Chipset Drivers menu. If in any case it is not, click the "CHIPSET" icon that is on the left side of the autorun screen.

1. Click "Microsoft DirectX 9.0C" on the main menu.

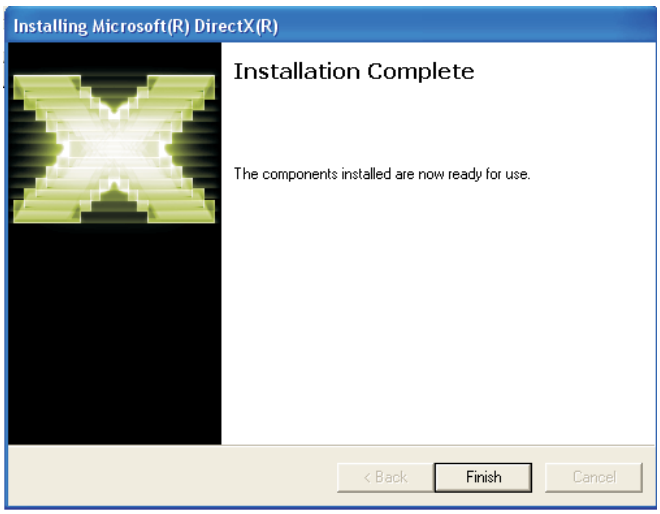
2. Click "I accept the agreement" then click Next.



3. You are now ready to install DirectX. Click Next.



4. Click Finish. Reboot the system for DirectX to take effect.



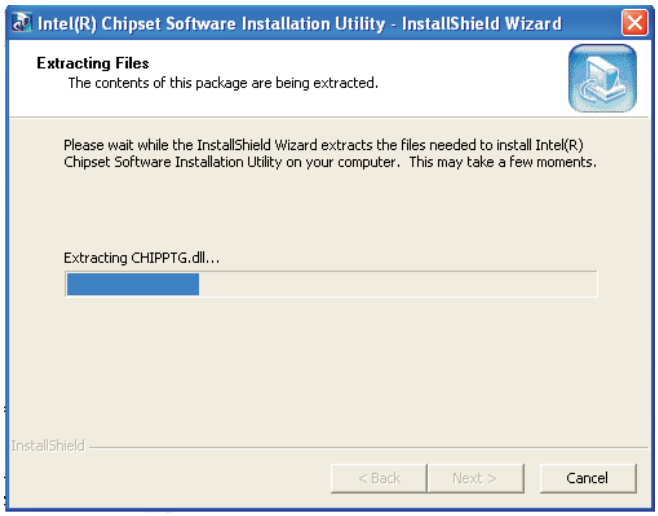
Intel Chipset Software Installation Utility

The Intel Chipset Software Installation Utility is used for updating Windows® INF files so that the Intel chipset can be recognized and configured properly in the system.

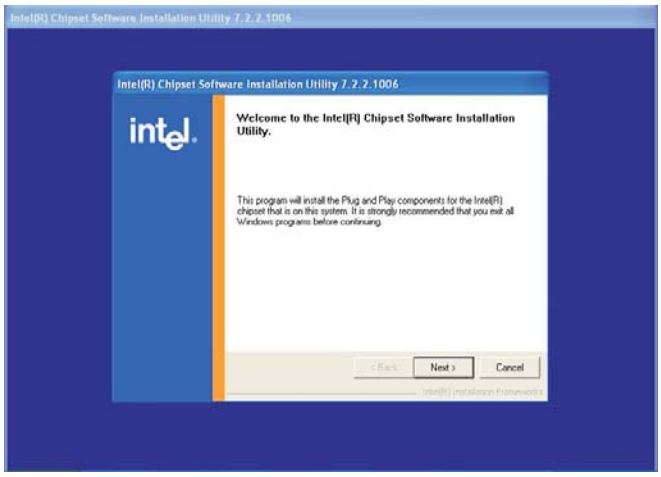
On the left side of the autorun screen, click the "CHIPSET" icon.

1. Click "Intel Chipset Software Installation Utility" on the main menu.

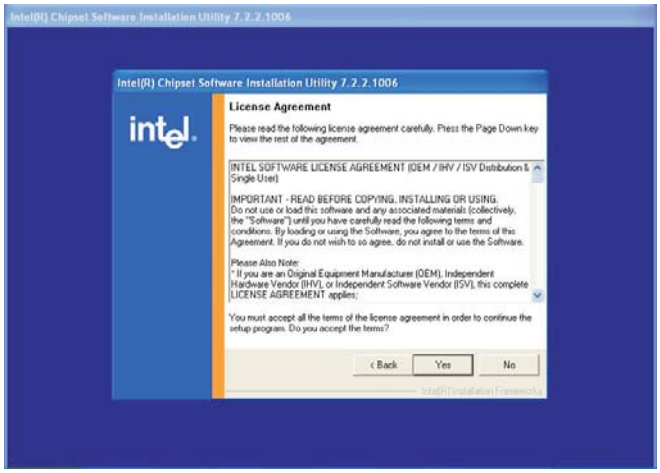
2. The installation wizard will extract the files needed to install the utility. After all files have been extracted, click Next.



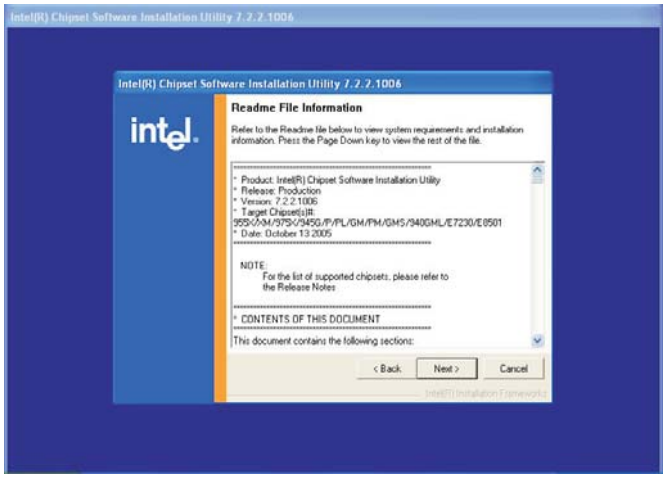
3. You are now ready to install the utility. Click Next.



4. Read the license agreement then click Yes.

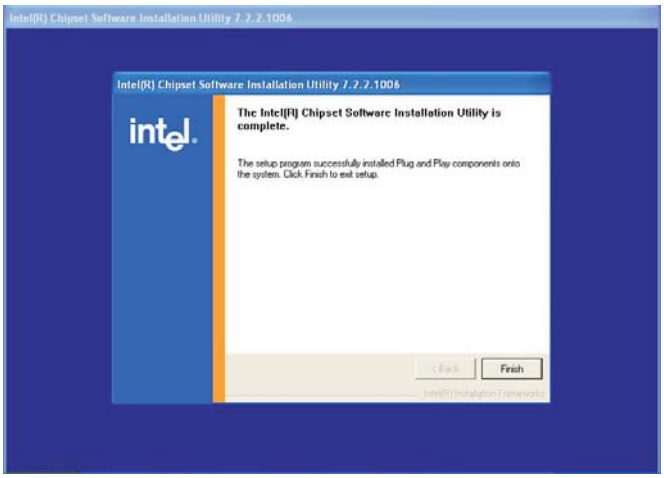


5. Go through the readme document to view system requirements and installation information then click Next.



6. Follow the prompts on the screen to complete installation. Click Finish.

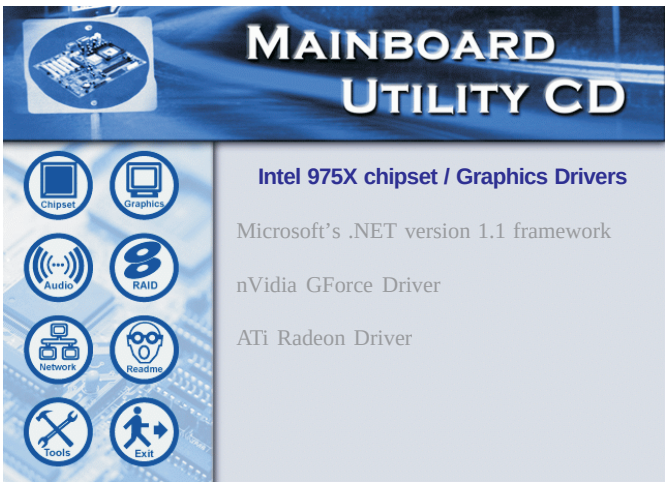
7. Reboot the system for the utility to take effect.



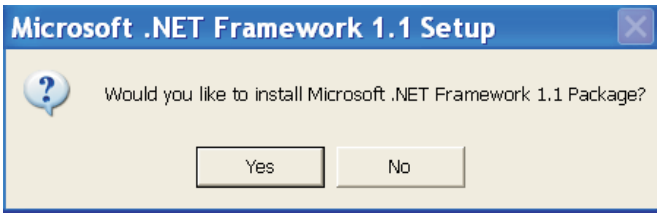
Microsoft's .NET version 1.1 Framework

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

1. Click "Microsoft's .NET version 1.1 Framework" on the main menu.



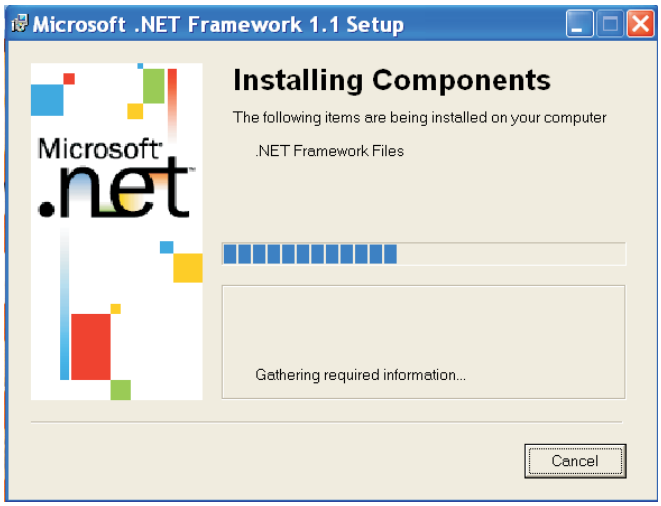
2. Click "Yes" to install the Framework package.



3. Setup is currently installing the files onto your computer.

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

5. Restart the system to allow the new driver installation to take effect.



Graphics Drivers

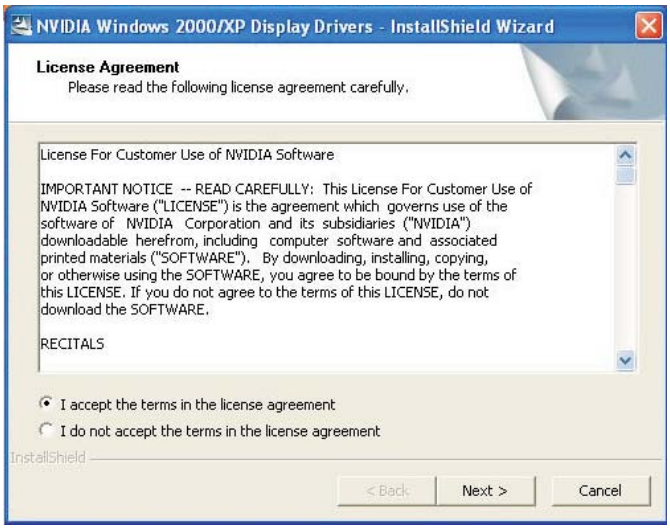
On the left side of the autorun screen, click the "GRAPHICS" icon.

The CD provides both nVidia and ATI drivers. Select the driver according to the graphics card you are using.

nVidia GForce Drivers

1. Click "nVidia GForce Drivers" on the main menu.

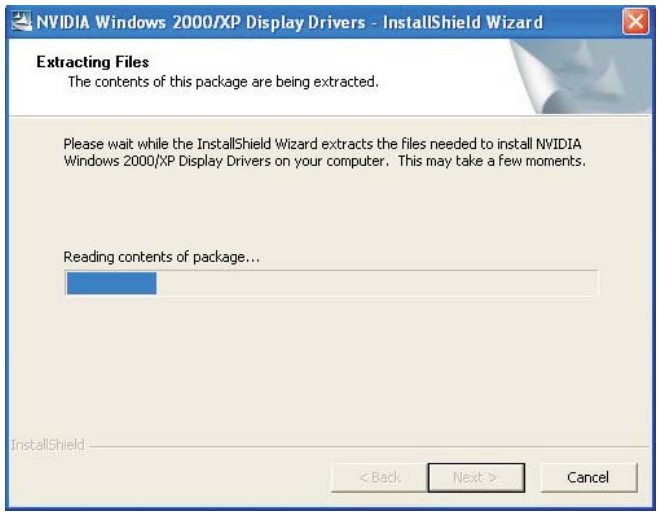
   Read the license agreement then click "I accept the terms in the license agreement". Click Next.



2. The installation wizard will extract the files needed to install the driver. After all files have been extracted, click Next.

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

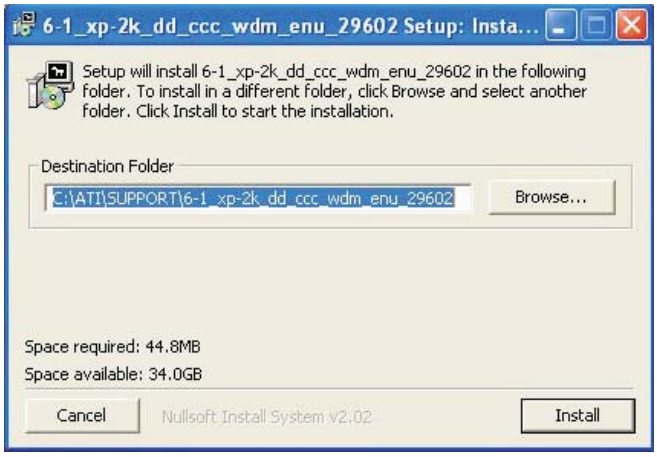
4. Reboot the system for the driver to take effect.



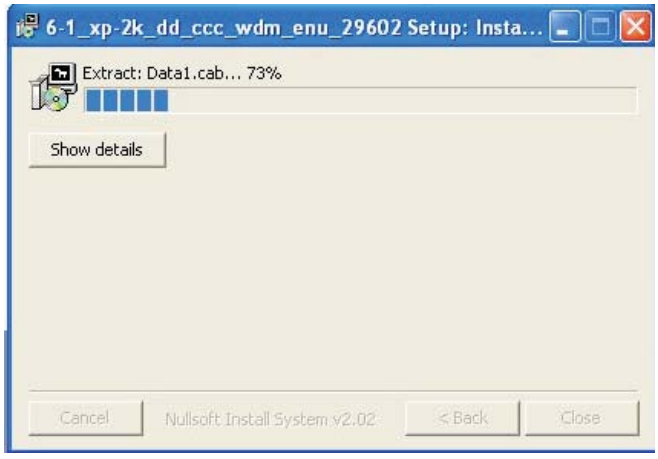
ATI Radeon Drivers

1. Click "ATI Radeon Drivers" on the main menu.

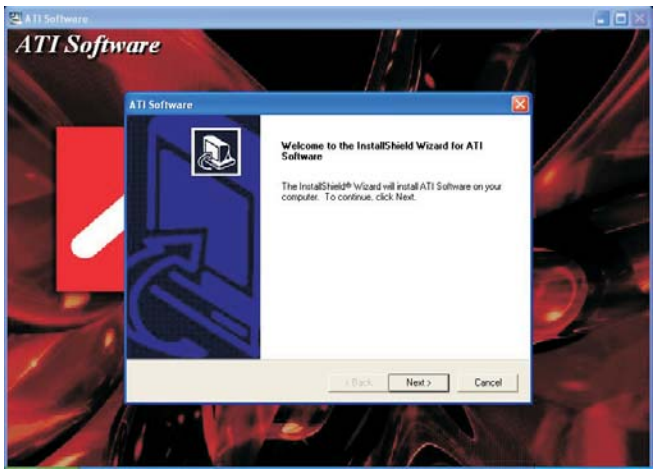
   Click Install to install to the destination folder or click Browse to select another folder.



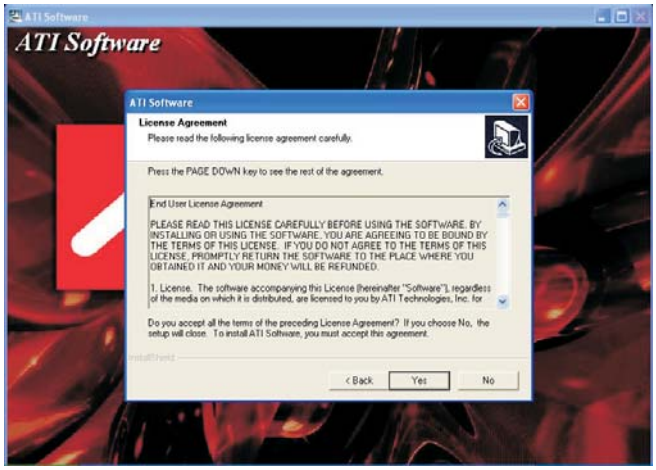
2. The installation wizard will extract the files needed to install the driver. After all files have been extracted, click Next.



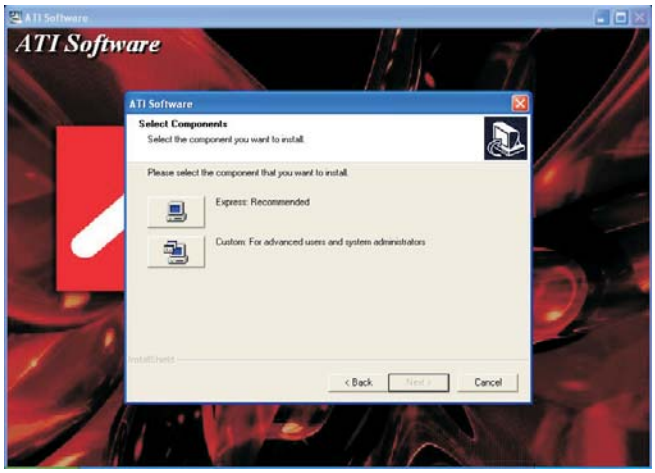
3. Setup is now ready to install the driver. Click Next.



4. Read the license agreement then click Yes.

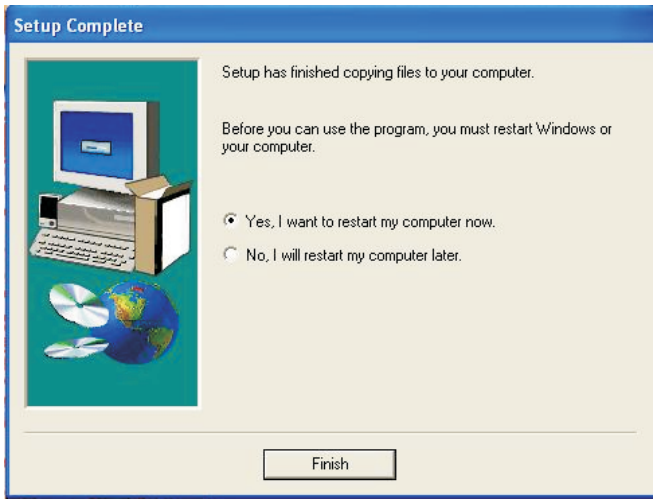


5. Select the component you want to install then click Next.



6. Click "Yes, I want to restart my computer now" then click Finish.

   Restarting the system will allow the new driver installation to take effect.

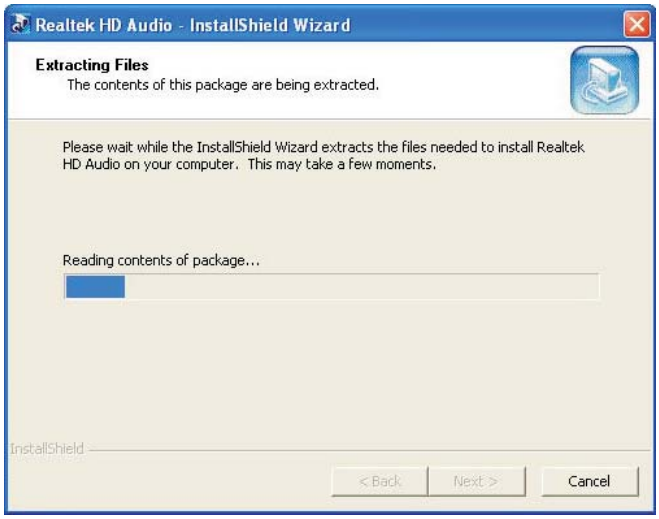


Realtek Audio Drivers

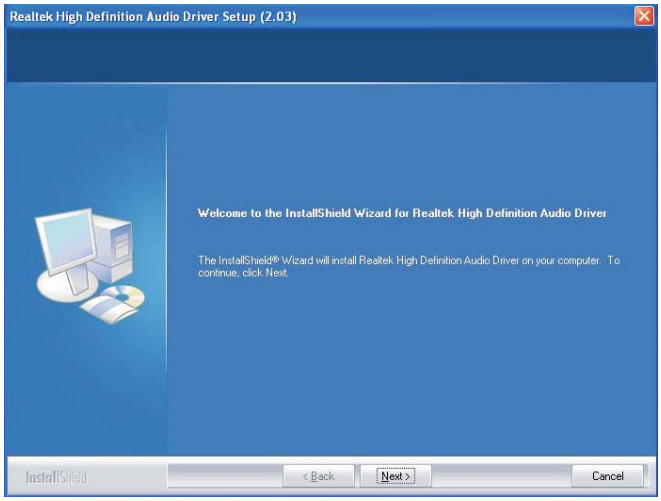
On the left side of the autorun screen, click the "AUDIO" icon.

1. Click "Realtek Audio Drivers" on the main menu.

2. The installation wizard will extract the files needed to install Realtek HD audio. After all files have been extracted, click Next.



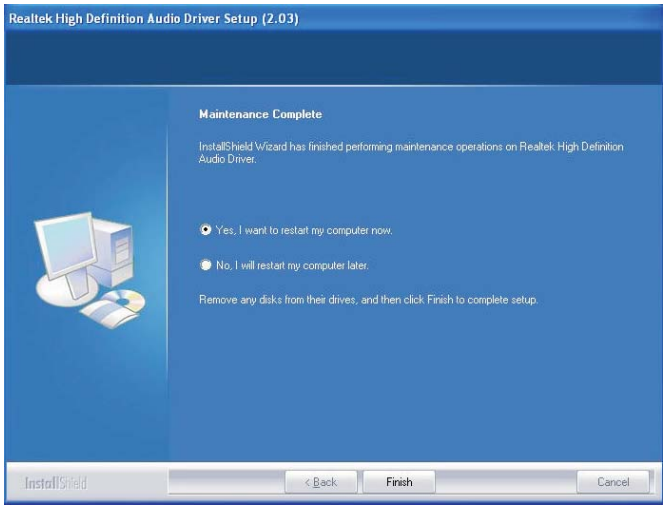
3. Setup is now ready to install the driver. Click Next.



4. Setup is intalling and configuring the new software installation.

5. Click "Yes, I want to restart my computer now" then click Finish.

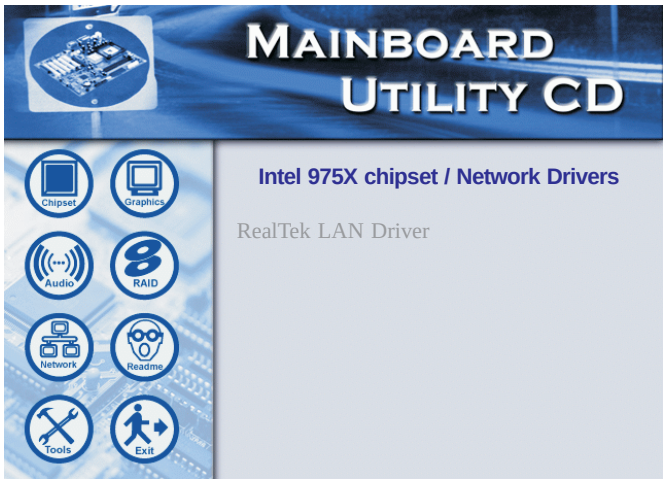
   Restarting the system will allow the new software installation to take effect.



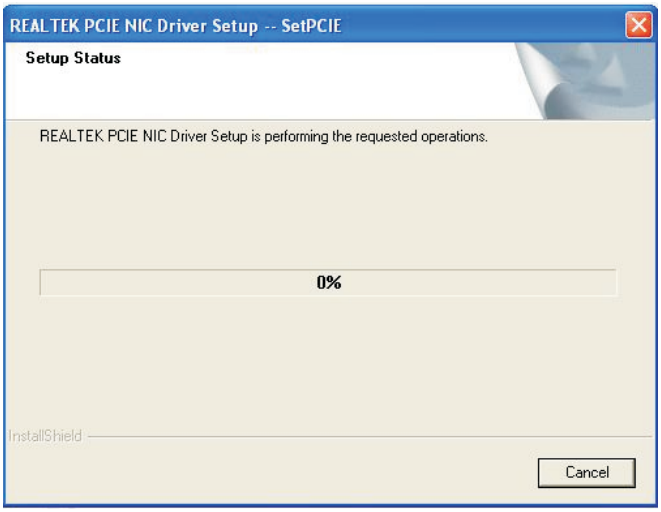
Realtek LAN Drivers

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

1. Click "Realtek LAN Driver" on the main menu.



2. Setup is preparing to install the driver.
3. Follow the prompts on the screen to complete installation.
4. Click Finish. Reboot the system for the driver to take effect.

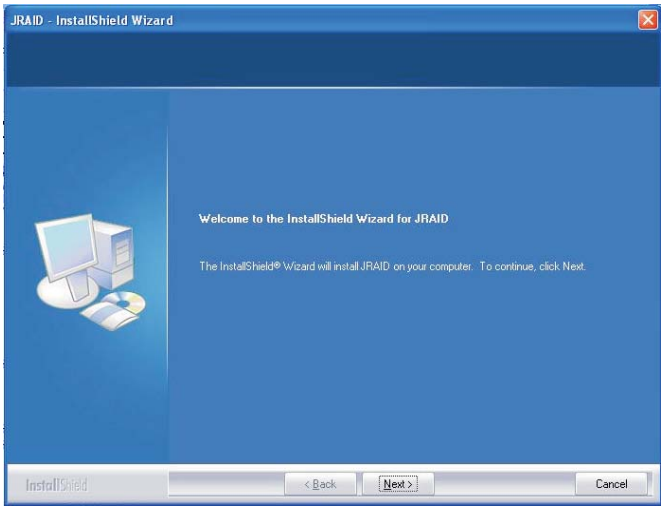


JMicron eSATA Drivers

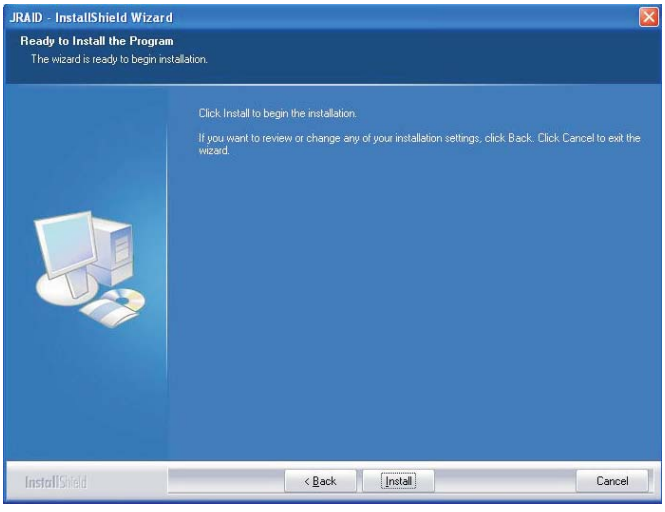
On the left side of the autorun screen, click the "TOOLS" icon.

1. Click "JMicron eSATA Drivers" on the main menu.

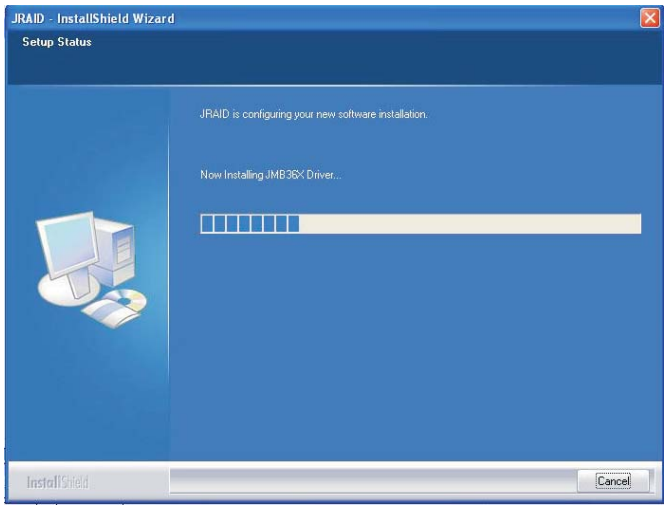
2. Setup is preparing to install the driver. Click Next.



3. Setup is now ready to install the driver. Click Install.

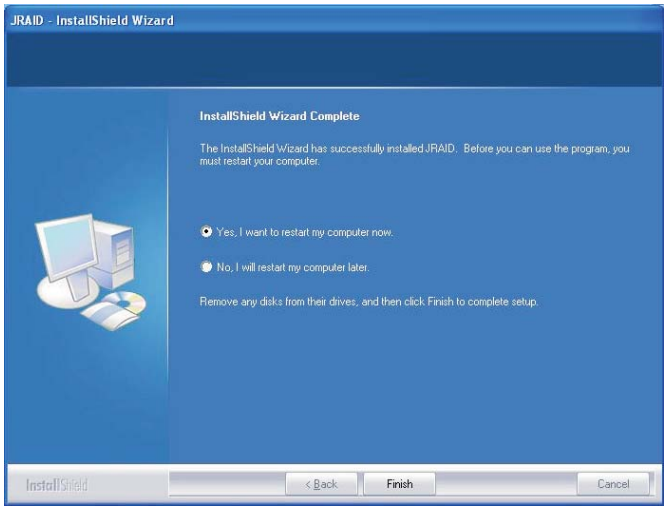


4. Setup is intalling and configuring the new software installation.



5. Click "Yes, I want to restart my computer now" then click Finish.

   Restarting the system will allow the new software installation to take effect.



Installing the eSATA Driver While in the Process of Installing Windows® XP or Windows® 2000

If you intend to boot from the eSATA drive, you need to install Windows® XP or Windows® 2000 in the drive. The provided floppy diskette includes the eSATA driver required to complete Windows installation in the eSATA drive.

The steps below will instruct you on installing the eSATA driver while in the process of installing Windows® XP or Windows® 2000.

1. Start Windows Setup by booting from the installation CD.
2. Press <F6> when prompted at the beginning of Windows setup.
3. Now the following steps are extremely crucial because there is an essential file that must be installed here. Press <S> to select "Specify Additional Device".
4. At this point you will be prompted to insert a floppy disk containing the eSATA driver. Insert the provided driver diskette.
5. Locate for the drive where you inserted the diskette then select the eSATA driver. Press <Enter> to install the driver.
6. If you need to install other devices, please do so at this time otherwise please proceed to the next step.
7. Follow the prompts on the screen to complete installation.
8. After installing the operating system, if in any case necessary, create the hard drives' partition.

ITE Hardware Monitor

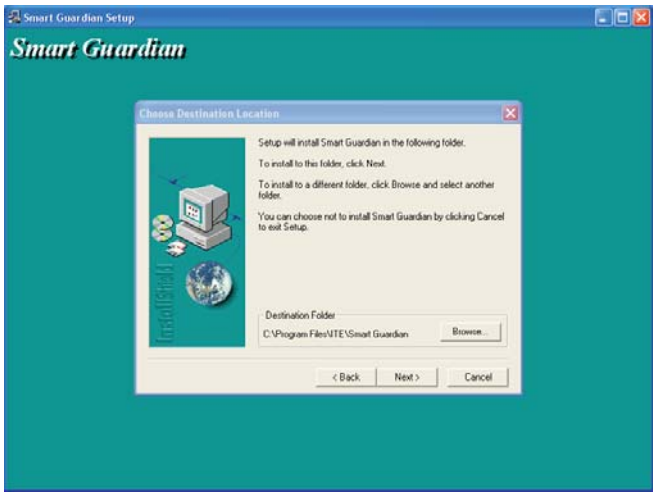
The system board comes with the ITE Hardware Monitor utility. This utility is capable of monitoring the system's temperature, fan speed, voltage, etc. and allows you to manually set a range (Highest and Lowest Limit) to the items being monitored. If the settings/values are over or under the set range,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

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

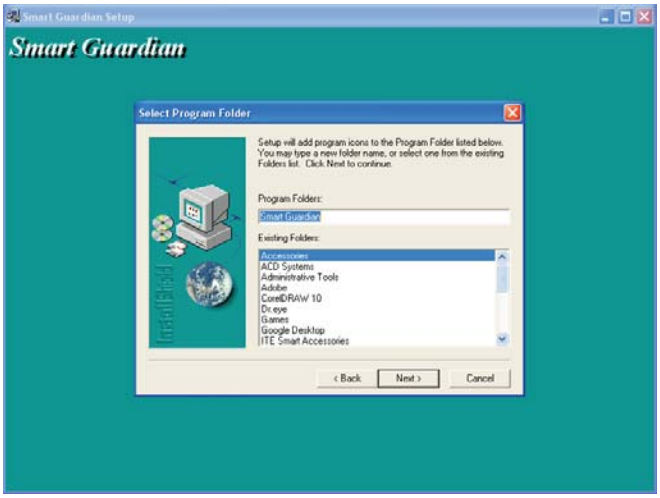
1. Click "ITE Hardware Monitor" on the main menu.

2. Setup will prepare the installation wizard.

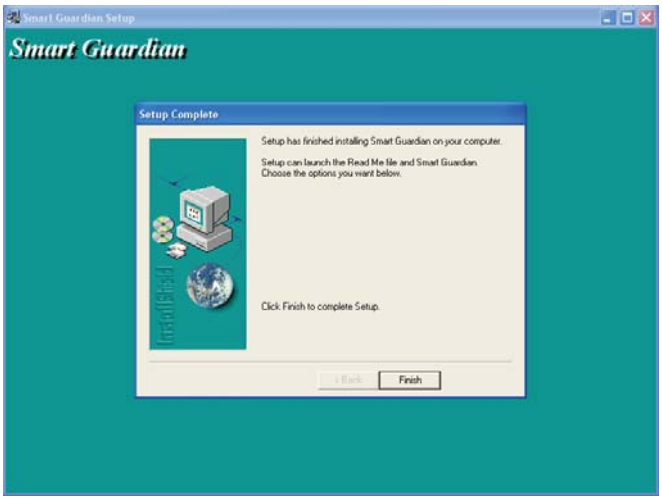
3. You are now ready to install Smart Guardian. Click Next to install or click Browse to select another folder.



4. Click Next to add the program icon to the Program Folder.



5. Click Finish. Reboot the system for the driver to take effect.



USB 2.0 Drivers

Windows® XP

If your Windows® XP CD already includes Service Pack 1, the USB 2.0 driver will automatically install when you install the operating system. If the CD does not include Service Pack 1, it is available for download at Microsoft's Windows Update website.

Windows® 2000

If your Windows® 2000 CD already includes Service Pack 4, the USB 2.0 driver will automatically install when you install the operating system. If the CD does not include Service Pack 4, it is available for download at Microsoft's Windows Update website.

Installation Notes

1. "Autorun" ONLY supports the Windows® 2000, Windows NT® 4.0 and Windows® XP operating systems. If after inserting the CD, "Autorun" did not automatically start (which is, the Main Board Utility CD screen did not appear), please go directly to the root directory of the CD and double-click "Setup".

2. All steps or procedures to install software drivers are subject to change without notice as the softwares are occassionally updated. Please go to DFI's web site at "http://www.dfi.com/support1/download2.asp" for the latest version of the drivers or software applications.

Chapter 5 - RAID

The Intel chipset allows configuring RAID on Serial ATA drives. It supports RAID 0, RAID 1, RAID 0+1 and RAID 5.

RAID Levels

RAID 0 (Striped Disk Array without Fault Tolerance)

RAID 0 uses two new identical hard disk drives to read and write data in parallel, interleaved stacks. Data is divided into stripes and each stripe is written alternately between two disk drives. This improves the I/O performance of the drives at different channel; however it is not fault tolerant. A failed disk will result in data loss in the disk array.

RAID 1 (Mirroring Disk Array with Fault Tolerance)

RAID 1 copies and maintains an identical image of the data from one drive to the other drive. If a drive fails to function, the disk array management software directs all applications to the other drive since it contains a complete copy of the drive's data. This enhances data protection and increases fault tolerance to the entire system. Use two new drives or an existing drive and a new drive but the size of the new drive must be the same or larger than the existing drive.

RAID 0+1 (Striping and Mirroring)

RAID 0+1 is a combination of data striping and data mirroring providing the benefits of both RAID 0 and RAID 1. Use four new drives or an existing drive and three new drives for this configuration.

RAID 5

RAID 5 stripes data and parity information across hard drives. It is fault tolerant and provides better hard drive performance and more storage capacity.

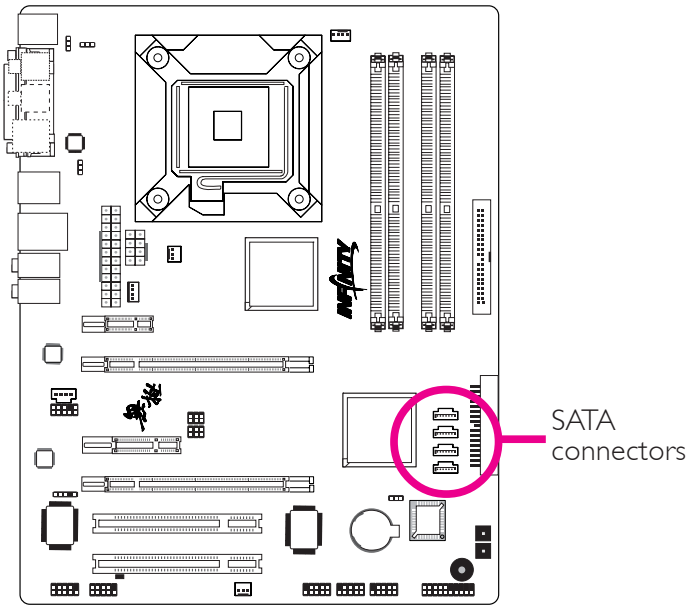
Settings

To enable the RAID function, the following settings are required.

1. Connect Serial ATA drives.
2. Configure Serial ATA in the Award BIOS.
3. Configure Serial ATA in the Intel RAID BIOS.
4. Install the RAID driver.

Step 1: Connect Serial ATA Drives

Connect one end of the Serial ATA cable to a SATA connector and the other end to your Serial ATA device.

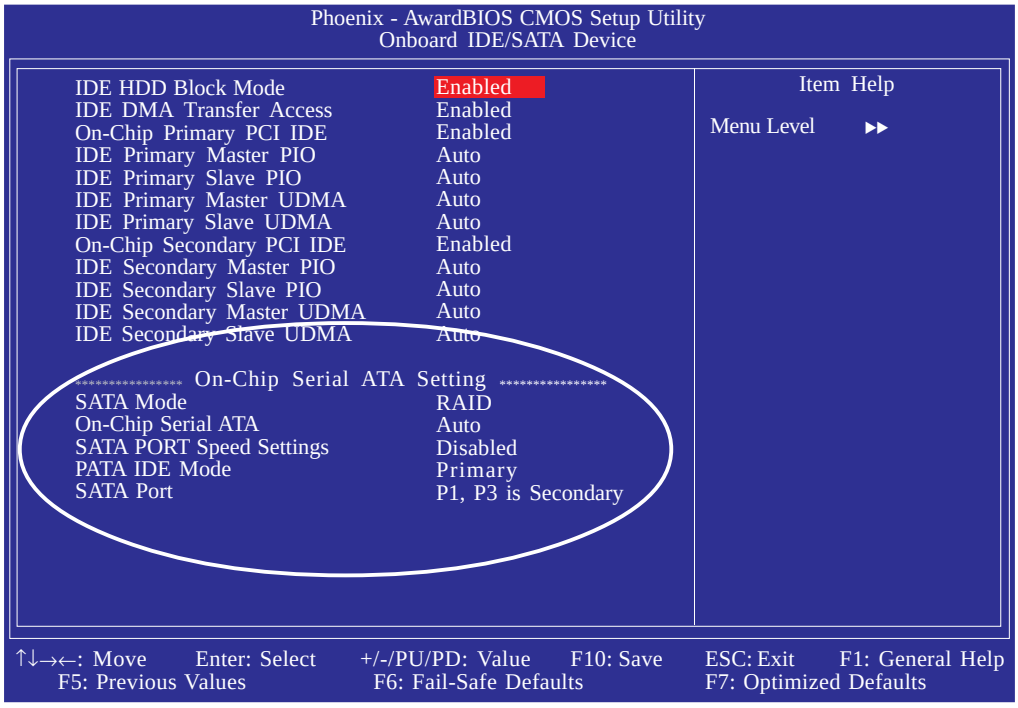


Important:

1. *Make sure you have installed the Serial ATA drives and connected the data cables otherwise you won't be able to enter the RAID BIOS utility.*
2. *Treat the cables with extreme caution especially while creating RAID. A damaged cable will ruin the entire installation process and operating system. The system will not boot and you will lost all data in the hard drives. Please give special attention to this warning because there is no way of recovering back the data.*

Step 2: Configure Serial ATA in the Award BIOS

1. Power-on the system then press <Del> to enter the main menu of the Award BIOS.
2. Select the Integrated Peripherals submenu -> Onboard IDE/SATA Device section of the BIOS.
3. Set the "SATA Mode" field to RAID.
4. Configure Serial ATA in the "On-Chip Serial ATA" to "SATA Port" fields.



5. Press <Esc> to return to the main menu of the BIOS setup utility. Select "Save & Exit Setup" and press <Enter>.
6. Type <Y> and press <Enter>.
7. Reboot the system.

Step 3: Configure Serial ATA in the Intel RAID BIOS

When the system powers-up and all drives have been detected, the Intel RAID BIOS status message screen will appear. Press the <Ctrl> and <I> keys simultaneously to enter the utility. The utility allows you to build a RAID system on Serial ATA drives.

Step 4: Install the RAID Driver

If you are in the process of installing Windows® XP or Windows® 2000 on RAID configured drives, you will need the provided RAID driver floppy diskette. If you are installing the driver on existing Windows® XP or Windows® 2000, install the RAID driver that is in the provided CD.

Installing the RAID Driver While in the Process of Installing Windows® XP or Windows® 2000

The steps below will instruct you on installing the RAID driver while in the process of installing Windows® XP or Windows® 2000 on RAID configured drives.

1. Start Windows Setup by booting from the installation CD.
2. Press <F6> when prompted at the beginning of Windows setup.
3. Now the following steps are extremely crucial because there is an essential file that must be installed here. Press <S> to select "Specify Additional Device".
4. At this point you will be prompted to insert a floppy disk containing the RAID driver. Insert the provided RAID driver diskette.
5. Locate for the drive where you inserted the diskette then select Intel ICH7R RAID Controller. Press <Enter> to install the driver.

6. If you need to install other devices, please do so at this time otherwise please proceed to the next step.

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

8. After installing the operating system, if in any case necessary, create the hard drives' partition.

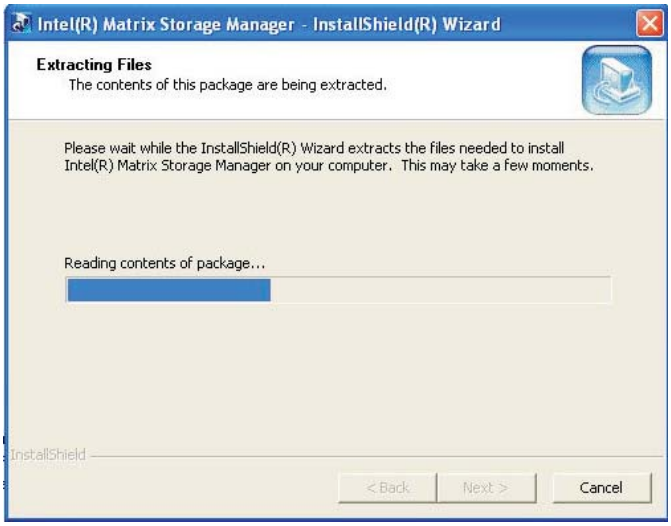
Intel Matrix Storage Manager

Intel Matrix Storage Manager is a utility that allows RAID volume management (create, delete, migrate) from within the Windows operating system. It will also display useful SATA device and RAID volume information.

To install the utility, insert the provided CD into a CD-ROM drive. On the left side of the autorun screen, click the "TOOLS" icon.

1. Click "RAID/AHCI Software - Intel Matrix Storage Manager" on the main menu.

2. The installation wizard is extracting the files needed to install the utility. After all files have been extracted, click Next.



3. Go through the readme document to view system requirements and installation information then click Next.

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

Chapter 6 - ATI CrossFire Technology

ATI's CrossFire technology drives your PC to a new peak of performance. By connecting a Radeon CrossFire Edition graphics card and a standard PCI Express graphics card, the power of these multiple GPUs (Graphics Processing Units) within the system will accelerate your gaming performance and improve image quality.

How CrossFire Works

CrossFire's key objective is to maximize the speed of a multi-GPU system. This is achieved by dividing the rendering workload to each of the two GPUs. When each GPU has completed its assigned tasks for a given frame, the Compositing Engine on the CrossFire Edition graphics card combines the results from each GPU (according to the selected operating mode) then sends the final frames out to the display device. The result will be a complete frame rendered at up to twice the performance of a single graphics card.

Features

Regardless of the type of operating mode used, the completed frames from both GPUs are sent to the Compositing Engine on the CrossFire Edition graphics card, which then sends them on to the display device.

- **Supertile Mode**

  Supertiling divides your screen image into subsections like "tiles" in alternating tile pattern such that half of the tiles are assigned to each of the two GPUs.

- **Scissor Mode**

  In Scissor mode, each frame is split into two sections, either horizontal or vertical, with each section being processed by one GPU.

- **Alternate Frame Rendering (AFR)**

  In AFR mode, all even frames are rendered on one GPU, while all odd frames are rendered on the other.

- **Super AA (Anti-Aliasing)**

  The Super AA mode provides even higher quality anti-aliasing on multi-GPU systems. It works by having each GPU render the same frame with anti-aliasing enabled but using different sample locations for each. When both versions of the frame are completed, they are blended in the CrossFire Compositing engine. The resulting image is twice the number of samples, so 4x and 6x AA become 8x and 12x Super AA respectively.

Graphics Cards Requirements

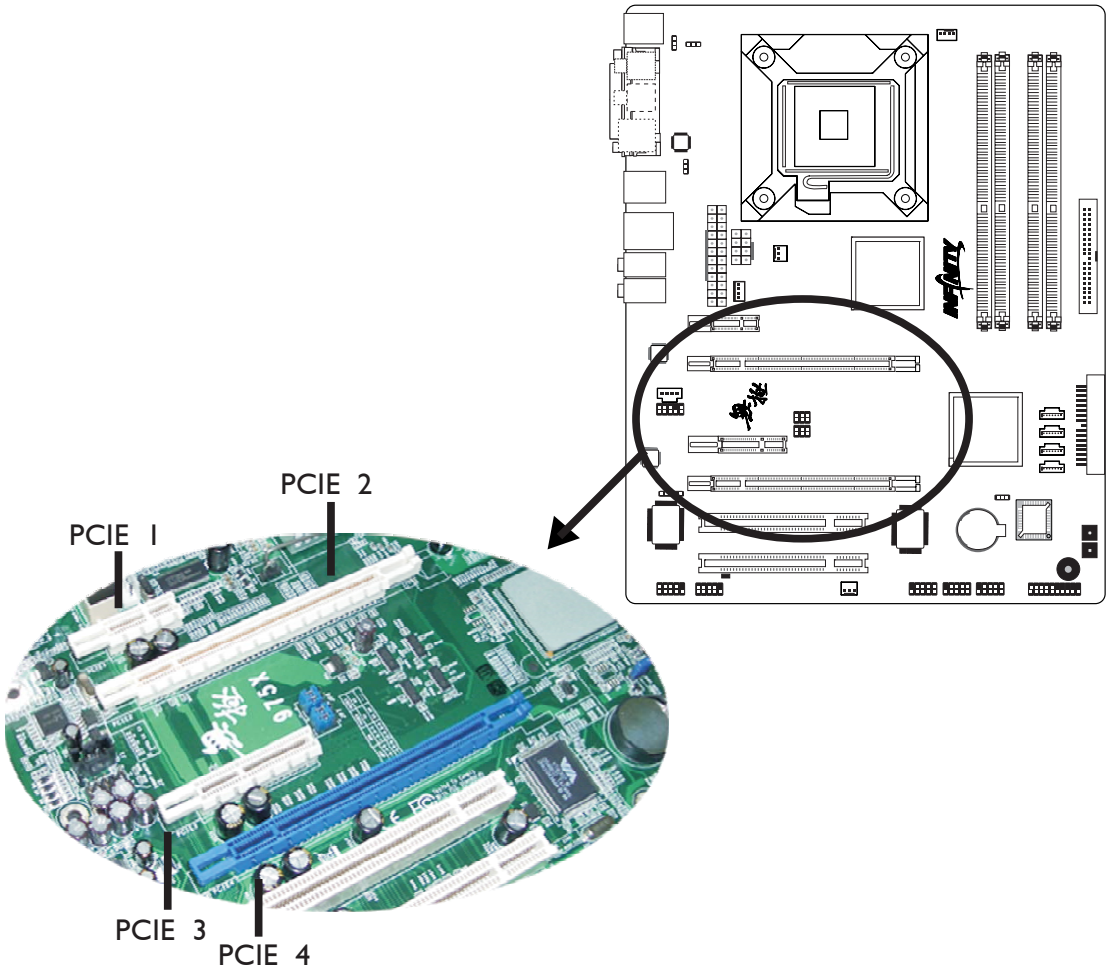
1. One Radeon® X850 / Radeon® X800 CrossFire Edition graphics card.
2. One standard PCI Express Radeon® X850 or Radeon® X800 graphics card.

   The Radeon® X850 CrossFire Edition card works with any standard PCI Express Radeon X850 graphics card (Radeon X850 PRO, Radeon X850 XT or Radeon X850 XT Platinum Edition) from ATI or any of its partners including cards previously sold.

   The Radeon® X800 CrossFire Edition card works with any standard PCI Express Radeon X800 graphics card (Radeon X800, Radeon X800 PRO, Radeon X800 XL, Radeon X800 XT or Radeon X800 XT Platinum Edition) from ATI or any of its partners.

Note:
If the clock speed of the CrossFire Edition graphics card and standard PCI Express graphics card are different, both cards will operate at their individual clock speeds.

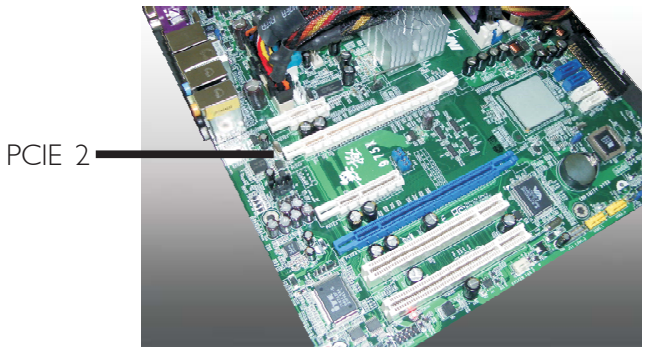
The PCI Express Slots



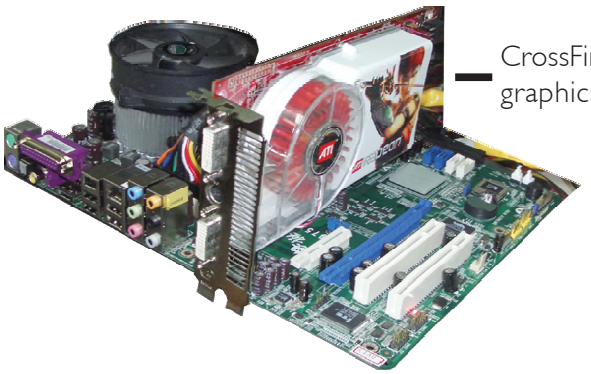
- PCIE 2 and PCIE 4 are PCI Express x16 slots
  - CrossFire mode: The two x16 slots each operate at x8 bandwidth.
  - Single VGA mode: Supports only one x16 slot operating at x16 bandwidth.
- PCIE 1 is a PCI Express x1 slot
- PCIE 3 are PCI Express x4 slot

CrossFire Setup

1. Power-off the system and monitor then unplug the power cord.
2. Remove the screw of the bracket that is opposite the PCIE 2 slot then remove the bracket.

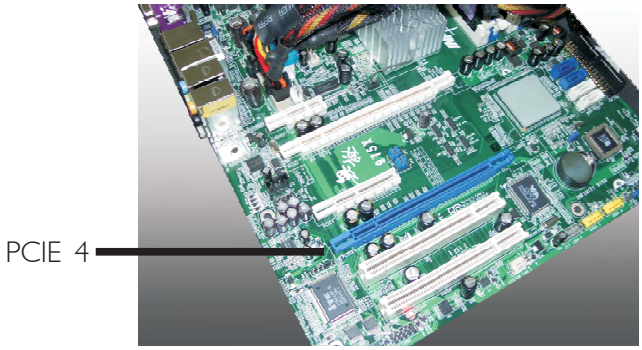


3. Align the CrossFire Edition graphics card (Master) above the PCIE 2 slot then press it down firmly until it is completely seated in the slot.



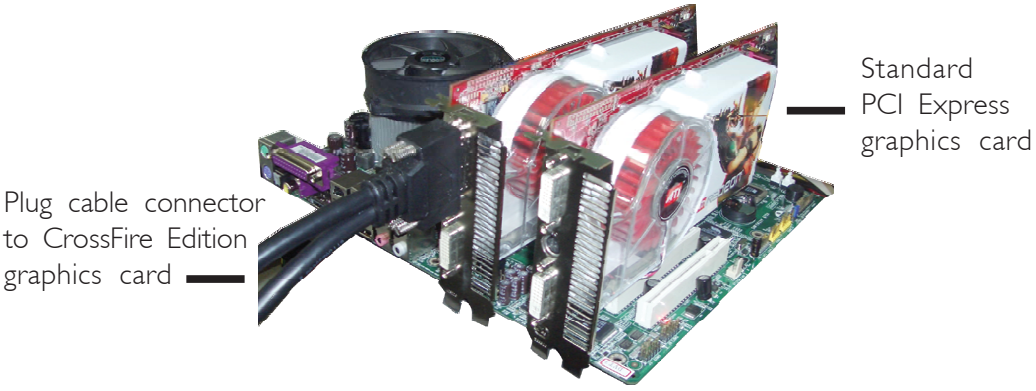
4. Secure the graphics card with the screw you removed in step 2.

5. Remove the screw of the bracket that is opposite the PCIE 4 slot then remove the bracket.



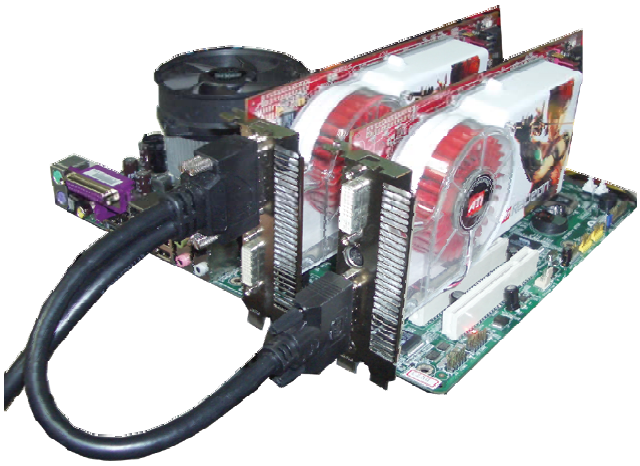
6. The CrossFire Edition graphics card comes with a cable. Plug the cable connector to a connector on the CrossFire Edition graphics card as shown below.

7. Align the standard PCI Express graphics card (Slave) above the PCIE 4 slot then press it down firmly until it is completely seated in the slot.



8. Secure the graphics card with the screw you removed in step 5.

9. Now plug the other cable connector to the DVI-I connector on the standard PCI Express graphics card then the last cable connector to a display device.



10. Connect auxiliary power source from the power supply unit to the graphics cards.

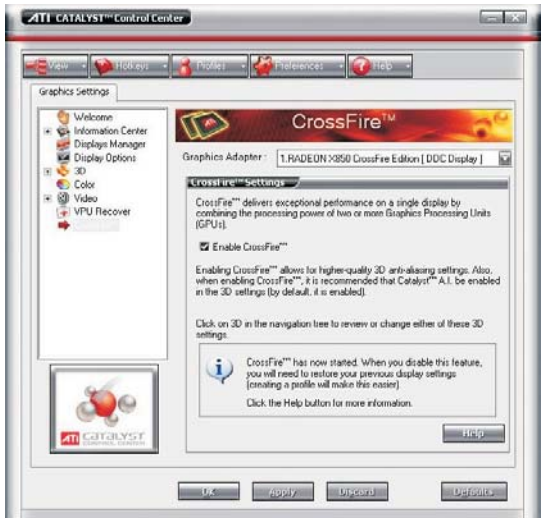
11. Install the graphics cards' drivers then restart the system for the drivers to take effect.

12. When you enter the operating system, you will notice the ATI Catalyst Control Center icon added onto your desktop. Double-click this icon.

13. Click the View tab then select Custom View.

14. In the Graphics Settings menu (left side of screen), click CrossFire. The CrossFire Settings screen will appear on the main window. Click "Enable CrossFire" then click "Yes" to continue.

15. The screen on the right indicates that CrossFire has been enabled. Make sure to restart the PC for CrossFire to take effect.



Appendix A - System Error Message

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

POST Beep

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

Error Messages

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

CMOS BATTERY HAS FAILED

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

Caution:

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

CMOS CHECKSUM ERROR

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

DISPLAY SWITCH IS SET INCORRECTLY

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

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

FLOPPY DISK(S) fail (80)
Unable to reset floppy subsystem.

FLOPPY DISK(S) fail (40)
Floppy type mismatch.

Hard Disk(s) fail (80)
HDD reset failed.

Hard Disk(s) fail (40)
HDD controller diagnostics failed.

Hard Disk(s) fail (20)
HDD initialization error.

Hard Disk(s) fail (10)
Unable to recalibrate fixed disk.

Hard Disk(s) fail (08)
Sector Verify failed.

Keyboard is locked out - Unlock the key
The BIOS detects that the keyboard is locked. Keyboard controller is pulled low.

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

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

BIOS ROM checksum error - System halted
The checksum of ROM address F0000H-FFFFFH is bad.

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

Appendix B - Troubleshooting

Troubleshooting Checklist

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

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

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

Monitor/Display

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

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

The picture seems to be constantly moving.

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

The screen seems to be constantly wavering.

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

Power Supply

When the computer is turned on, nothing happens.

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

Floppy Drive

The computer cannot access the floppy drive.

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

Hard Drive

Hard disk failure.

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

Excessively long formatting period.

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

Parallel Port

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

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

Serial Port

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

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

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

Keyboard

Nothing happens when a key on the keyboard was pressed.

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

System Board

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