SR330-N

System Board
User's Manual

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.

Table of Contents

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 local ordinance.

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
- ☑ One IDE cable
- ☑ One FDD cable
- ☑ One USB cable
- ☑ One Serial ATA data cable
- ☑ One Serial ATA power cable
- ☑ One "Main Board Utility" CD
- ☑ One I/O shield
- ☑ One QR (Quick Reference)

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	• Intel® Core™2 Duo mobile processor - 800/533MHz system data bus • Intel® Celeron® M 500 series processor for mobile Intel® 965 Express chipset • Processor socket: mPGA478P

Chipset	• Intel® chipset
	  - Intel® GME965 Express chipset
	  - Intel® 82801HBM I/O Controller Hub (ICH8M)

System Memory	• Two 240-pin DDR2 DIMM sockets • Supports 533MHz and 667MHz DDR2 SDRAM • Supports maximum of 4GB system memory
Expansion Slots	• 1 PCI Express x16 slot • 1 PCI Express x4 slot • 2 PCI slots

Graphics	• Internal graphics feature
	  - Mobile Intel® Graphics Media Accelerator X3100
	  - Dynamic Video Memory Technology 4.0
	  - Microsoft DirectX 9x
	  - OpenGL 1.5
	• Integrated graphics interface
	  - Analog CRT
	    - Integrated 300MHz RAMDAC
	    - Analog monitor supports up to QXGA (2048x1536@60Hz)
	  - LVDS
	    - 25MHz-112MHz single/dual channel, TFT panel type support
	    - Single/Dual channel LVDS interface support:
	      2 x 24 bpp panel supports up to WUXGA (1920X1200@65Hz) or UXGA (1600x1200@75Hz)
	  - DVI (supports DVI-D signal only)
	    - DVI 1.0 support for external digital monitor

Audio	• Realtek ALC262 2-channel High Definition Audio • Two 24-bit stereo DACs and three 20-bit stereo ADCs • S/PDIF input/output interface
LAN	• Two Realtek RTL8111C PCI Express Gigabit controllers • Supports 10Mbps, 100Mbps and 1Gbps data transmission • IEEE 802.3 (10/100Mbps) and IEEE 802.3ab (1Gbps) compliant
Serial ATA	• Three Serial ATA ports, compliant with SATA 1.0a specification • Data transfer rate up to 3Gb/s • Supports Advanced Host Controller Interface (AHCI)
IDE	• Supports up to two IDE devices • Supports Ultra ATA 100/66/33

Rear Panel I/O Ports	• 1 mini-DIN-6 PS/2 mouse port • 1 mini-DIN-6 PS/2 keyboard port • 2 DB-9 serial ports • 1 DB-15 VGA port • 1 DVI-I port (DVI-D signal only) • 2 RJ45 LAN ports • 4 USB 2.0/1.1 ports • Mic-in, line-in and line out jacks
I/O Connectors	• 3 connectors for 6 additional external USB 2.0/1.1 ports • 2 connectors for external serial ports • 1 LCD brightness control connector • 1 LVDS LCD panel connector • 1 LCD/inverter power connector • 1 LCD AUX power connector • 1 DIO connector • 1 front audio connector for line-out and mic-in jacks • 1 CD-in internal audio connector • 1 S/PDIF connector • 3 Serial ATA connectors • 1 IrDA connector • 1 40-pin IDE connector • 1 FDD connector • 1 parallel connector • 1 24-pin ATX power connector • 1 front panel connector • 1 chassis intrusion connector • 3 fan connectors
BIOS	• Award BIOS • 8Mbit SPI flash memory

Energy Efficient Design	• Supports ACPI specification 2.0/1.0
	• Wake-On-Events include:
	  - Wake-On-PS/2 Keyboard/Mouse / Wake-On-USB
	  - Wake-On-LAN and Wake-On-Ring
	  - RTC timer to power-on the system
	• Enhanced Intel® SpeedStep Technology
	• Intel® Rapid Memory power management
	• Dynamic FSB frequency switching
	• AC power failure recovery

Damage Free Intelligence	• Monitors CPU/system temperature and overheat alarm • Monitors CPU(V)/3.3V/5V/12V/VBAT(V)/5VSB(V) voltages and failure alarm • Monitors CPU/system/2nd fan speed and failure alarm • Read back capability that displays temperature, voltage and fan speed • Watchdog timer function
Temperature	• 0°C to 60°C
Humidity	• 10% to 90%
PCB	• 6-layers, microATX form factor • 24.4cm (9.6") x 24.4cm (9.6")

Features

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

DDR2 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 prefetch against DDR which fetches 2 bits per clock cycle.

GRAPHICS The Intel northbridge chip comes integrated with the Intel Graphics Media Accelerator X3100 delivering exceptional 3D graphics performance. It supports analog CRT, LVDS and SDVO interfaces.

DVI DVI (Digital Visual Interface) is a form of video interface technology made to maximize the quality of flat panel LCD monitors and modern video graphics cards. Data is transmitted using the TMDS (Transition Minimized Differential Signaling) protocol, providing a digital signal from the PC's graphics subsystem to the display.

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

SERIAL ATA Serial ATA is a storage interface that is compliant with SATA 1.0a specification. With speed of up to 3Gbps, it improves hard drive performance faster than the standard parallel ATA whose data transfer rate is 100MB/s.

GIGABIT LAN The two Realtek RTL8111C PCI Express Gigabit controllers support up to 1Gbps data transmission.

USB 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 PCI modem card that uses the PCI PME (Power Management Event) signal to remotely wake up the PC.

> Important:
> *The 5V_standby power source of your power supply must support ≥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 5V_standby 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 5V_standby 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 5V_standby power source of your power supply must support ≥1.5A. For 3 or more USB ports, the 5V_standby power source of your power supply must support ≥2A.

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

ACPI STR The system board is designed to meet the ACPI (Advanced Configuration and Power Interface) specification. ACPI has energy saving features that enables PCs to implement Power Management and Plug-and-Play with operating systems that support OS Direct Power Management. 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 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 5V_standby power source of your power supply must support ≥720mA.*

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.

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Chapter 2 - Hardware Installation

System Board Layout
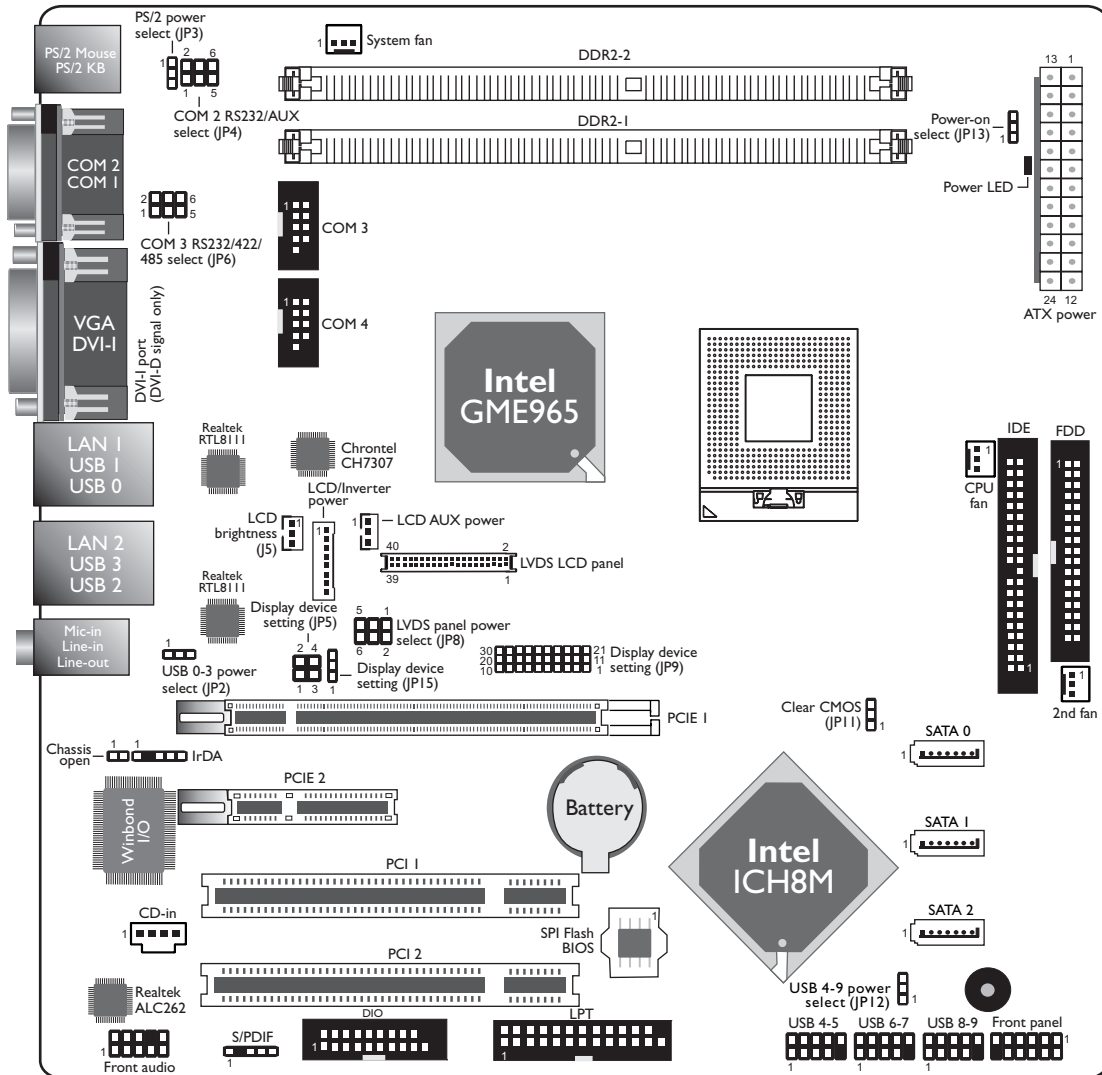
Note:

The DVI-I port supports DVI-D signal only.

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

System Memory

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

DDR2-2
DDR2-1

Power LED
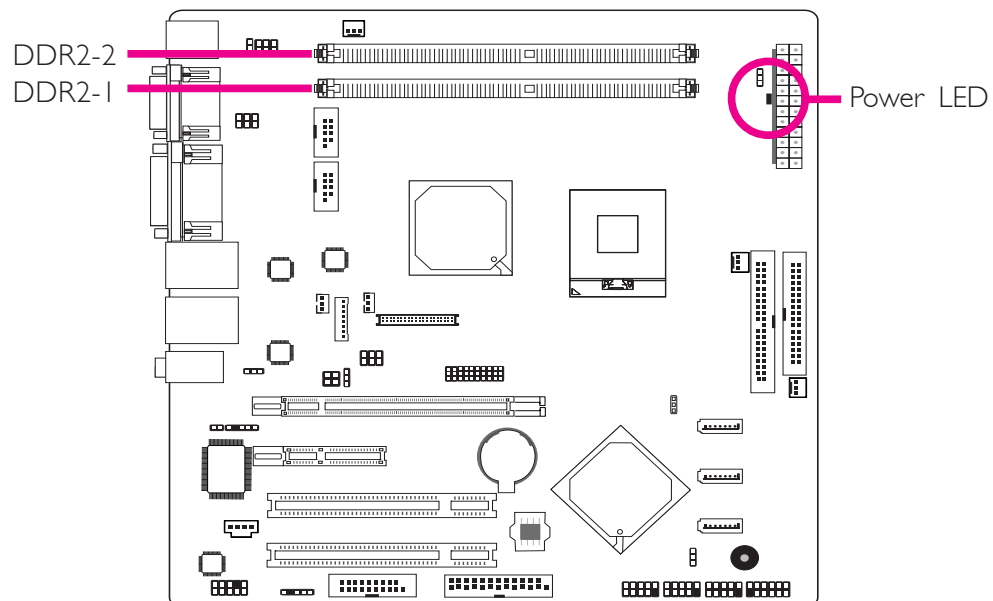
The system board supports two 240-pin DDR2 DIMM sockets.

Installing the DIM Module

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 DDR2 socket on the board.

4. Push the "ejector tabs" which are at the ends of the socket to the side.

Ejector tab — — Ejector tab

DDR2 socket

5. Note how the module is keyed to the socket.

Notch

Key
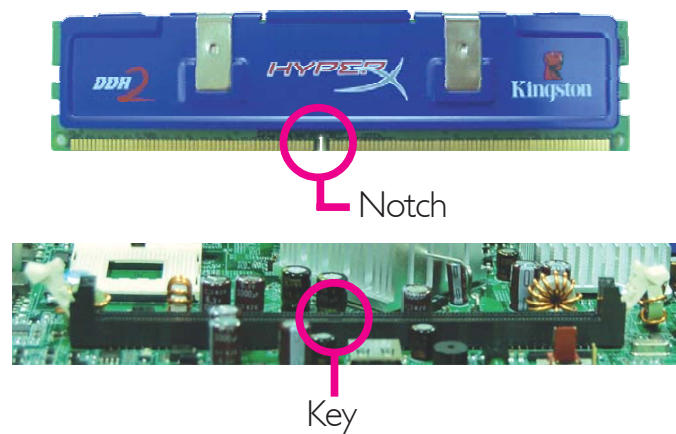
6. Grasping the module by its edges, position the module above the socket with the "notch" in the module aligned with the "key" on the socket. The keying mechanism ensures the module can be plugged into the socket in only one way.
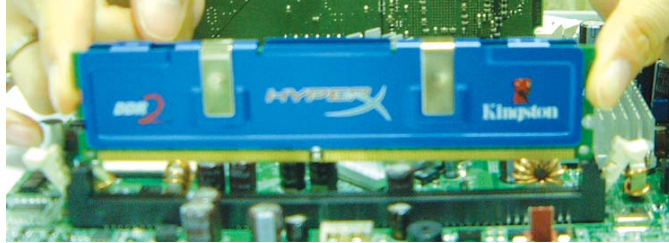
7. Seat the module vertically, pressing it down firmly until it is completely seated in the socket.
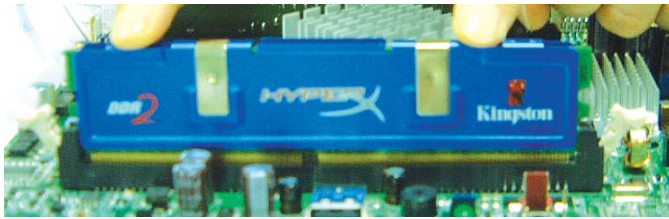
8. The ejector tabs at the ends of the socket will automatically snap into the locked position to hold the module in place.

CPU

Overview

The system board is equipped with a surface mount mPGA478P CPU socket.

> **Note:**
> *The system board used in the following illustrations may not resemble the actual one. These illustrations are for reference only.*

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 mPGA478P socket on the system board.
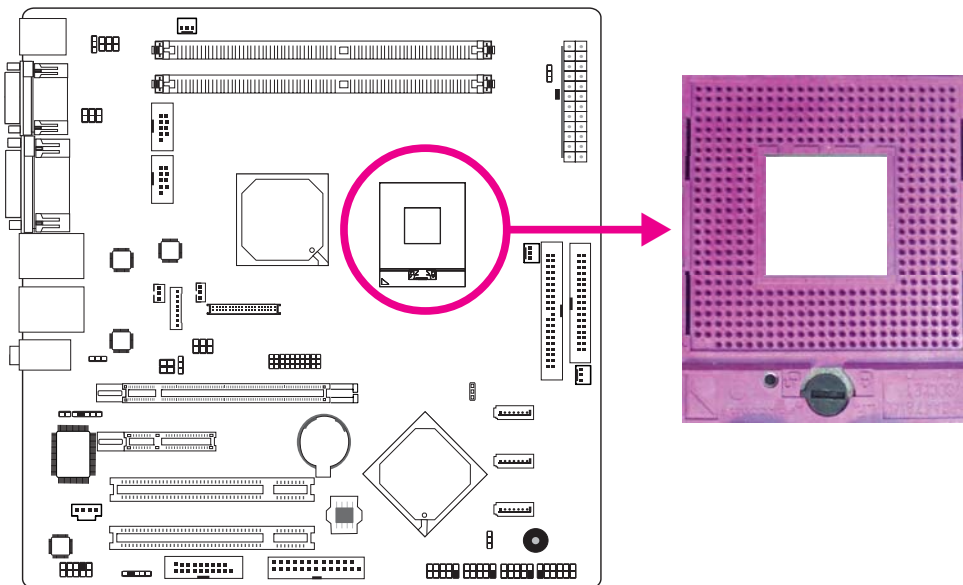
4. Use a screwdriver to turn the screw to its unlock position.

Lock

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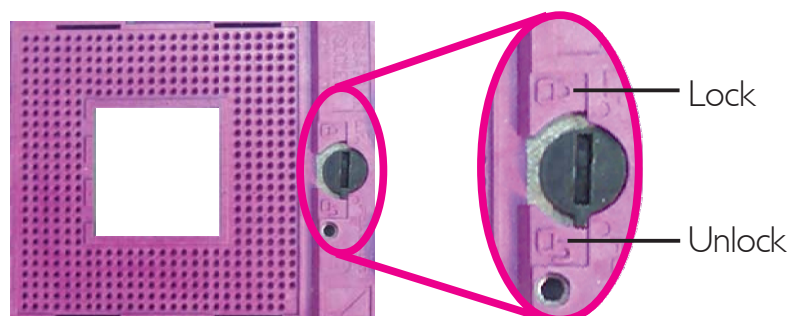
5. Position the CPU above the socket. The gold triangular mark on the CPU must align with pin 1 of the CPU socket.

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

Pin 1 of the socket

Gold triangular mark

6. Insert the CPU into the socket until it is seated in place. The CPU will fit in only one orientation and can easily be inserted without exerting any force. Use a screwdriver to turn the screw to its lock position.

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

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.*
> - *Your 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. On the solder side of the board, match the screw holes of the retention module base to the mounting holes around the CPU socket.
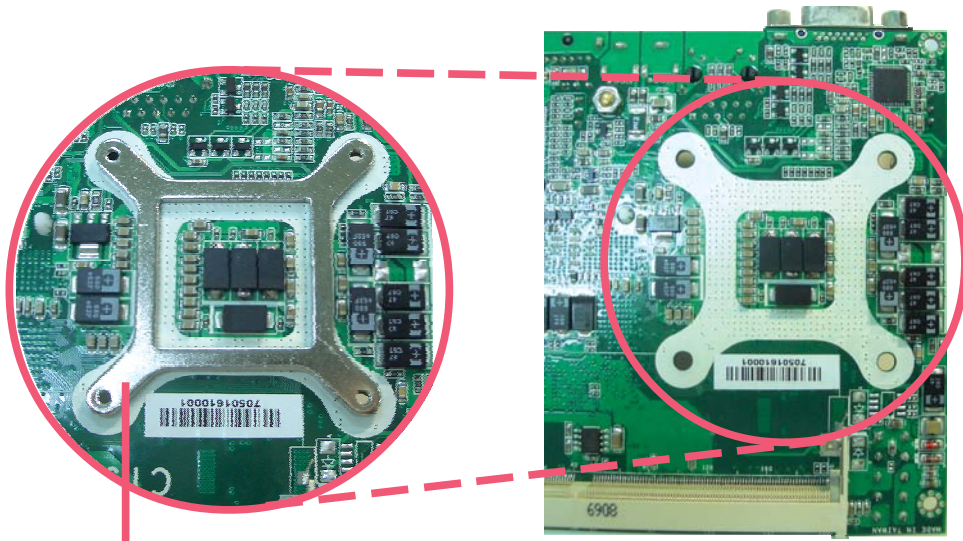
Retention
module base

2. Apply a thin layer of thermal paste on top of the CPU. Do not spread the paste all over the surface. When you later place the heat sink on top, the compound will disperse evenly.

3. While holding the retention module base in position (step 1), place the fan / heat sink assembly on top of the CPU. The 4 screws around the heat sink must match the screw holes of the retention module base. We strongly recommend using this type of fan / heat sink assembly because it provides adequate cooling to the components of the system board.

   Turn each Phillips head screw half way down first to initially stabilize the heat sink onto the board, then finally tighten each screw.

   Important:
   Do not turn the first screw all the way down followed by the next and so on. This is to avoid imbalance which might cause cracks or fractures to the CPU and/or heat sink assembly.

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

CPU fan cable
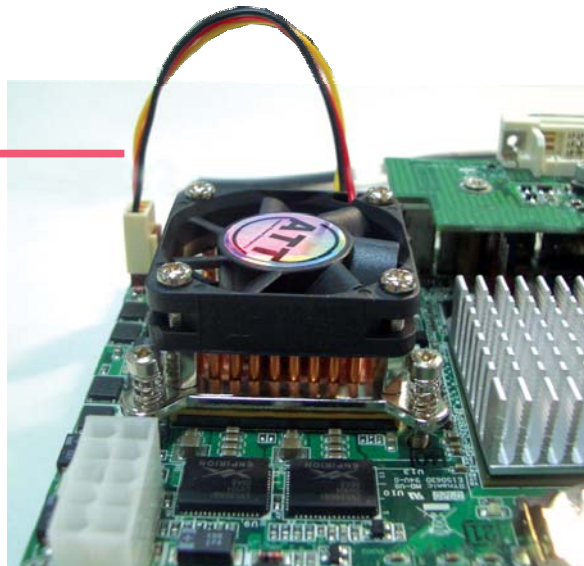
Important:
When you install the CPU fan and heat sink assembly, make sure the assembly is positioned in such a way that the direction of the airflow blows towards the Northbridge. This is to ensure optimum thermal condition and system performance.

Jumper Settings

Clear CMOS Data

3
2
1
1-2 On: Normal
(default)

JP11

3
2
1
2-3 On:
Clear CMOS Data
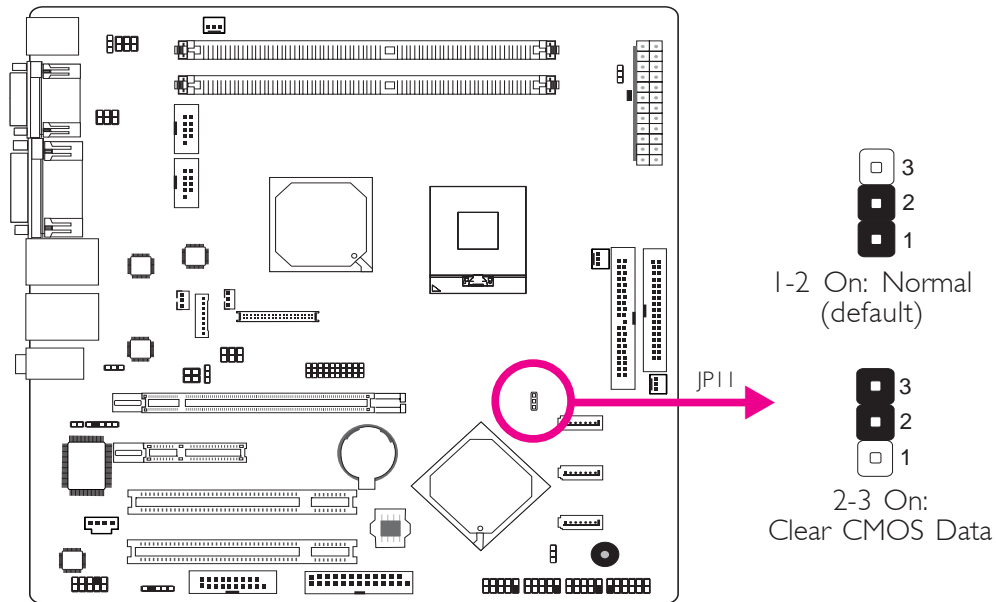
If you encounter the following,

a) CMOS data becomes corrupted.
b) You forgot the supervisor or user password.

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 JP11 pins 2 and 3 to On. Wait for a few seconds and set
    JP11 back to its default setting, pins 1 and 2 On.

3. Now plug the power cord and power-on the system.

PS/2 Power Select

JP3

1-2 On: 5V (default)
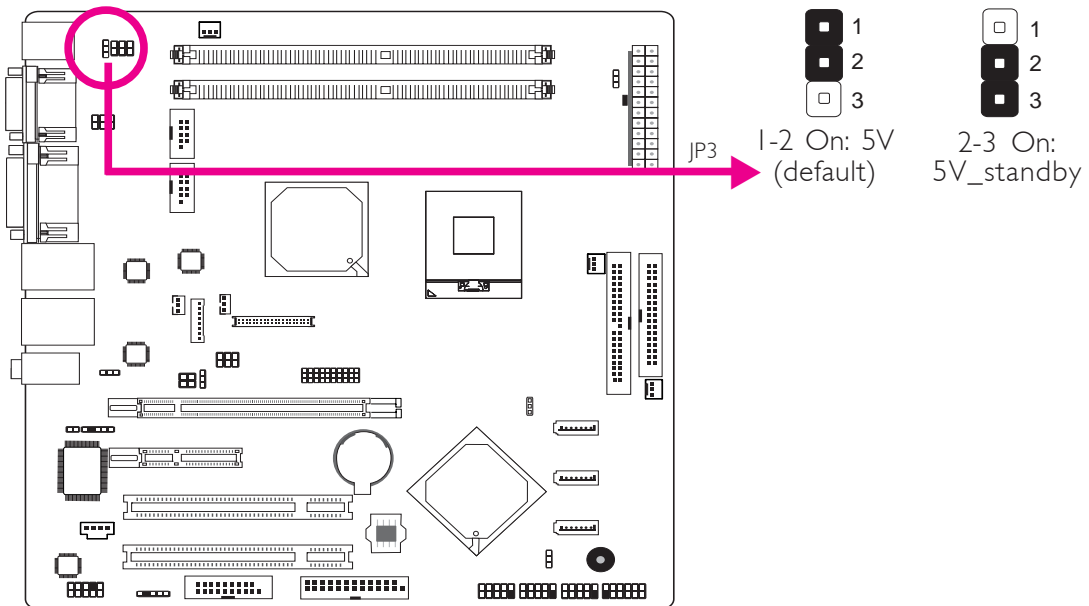
2-3 On: 5V_standby

JP3 is used to select the power of the PS/2 keyboard/mouse port. Selecting 5V_standby 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 Integrated Peripherals submenu ("Super IO Device" section) of the BIOS. Refer to chapter 3 for more information.

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

USB Power Select

USB 0-3 (JP2)

1 2 3
1-2 On: 5V (default)

1 2 3
2-3 On: 5V_standby

USB 4-9 (JP12)

3 2 1
1-2 On: 5V (default)

3 2 1
2-3 On: 5V_standby
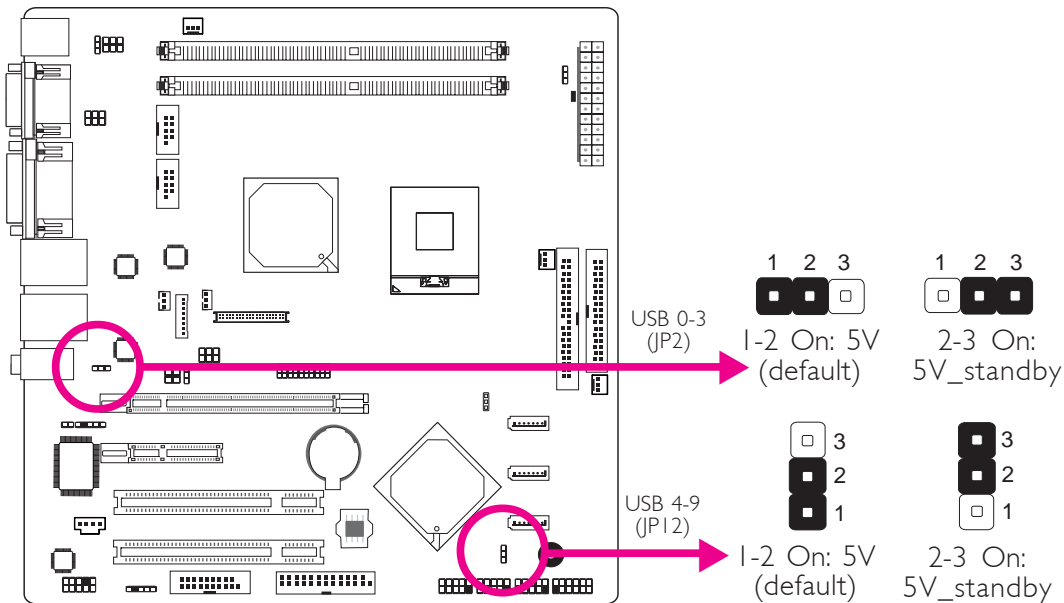
JP2 (for USB 0-3) and JP12 (for USB 4-9) are used to select the power of the USB ports. Selecting 5V_standby will allow you to use a USB device to wake up the system.

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 5V_standby power source of your power supply must support ≥1.5A. For 3 or more USB ports, the 5V_standby power source of your power supply must support ≥2A.*

Onboard DVI-D / PEG x16 Slot Select
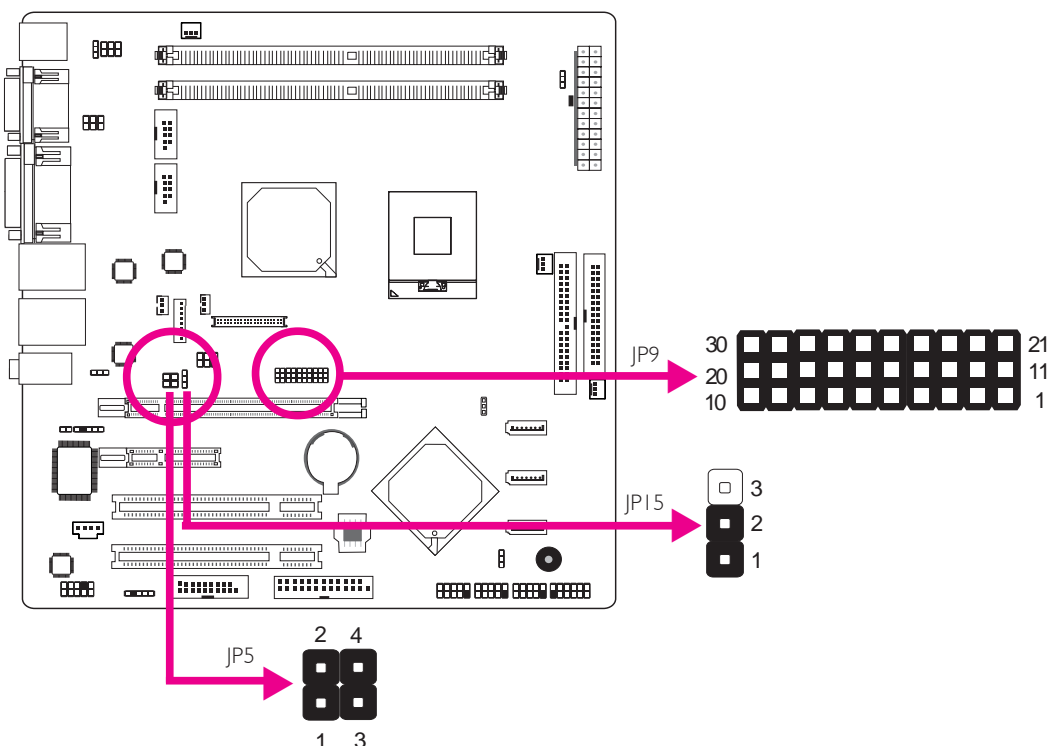
DVI-D / PEG x16 Select	JP5	JP15	JP9
Onboard DVI-D enabled. (default)	1-2, 3-4 On	1-2 On	1/5-11/15 On, 6/10-16/20 On Possible display: CRT / onboard DVD-D / LVDS
PEG x16 slot enabled (PCIE x16/x8/ x4/x1, ADD2 card) (onboard DVI-D will be disabled)	1-2, 3-4 Off	2-3 On	11/15-21/25 On, 16/20-26/30 On Possible display: PEG x16 / SDVO / CRT / LVDS

Possible Display Ports Configurations by Different Devices When PEG x16 Slot is Enabled	
PEG x16	Discrete Graphics
ADD2 card	CRT/ LVDS / SDVO
PCIE CARD x8, x4, x1 (non-graphics card)	CRT / LVDS
PEG x1	CRT / LVDS / Discrete Graphic

1. DVI-D or PEG x16 select only support two display streams in any display port combination: CRT, SDVO, LVDS, DVI-D and Discrete Graphic.

2. DVI-D and LVDS can display at the same time only when under Windows operation system.

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LVDS Panel Power Select

JP8

5 3 1	5 3 1	5 3 1
6 4 2	6 4 2	6 4 2
1-2 On: 12V	3-4 On: 5V	5-6 On: 3.3V (default)
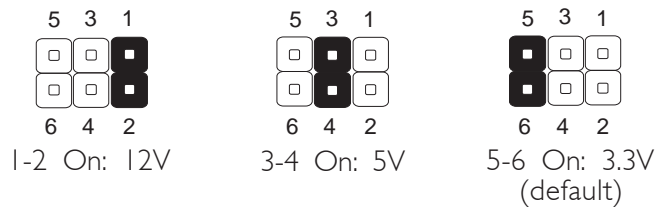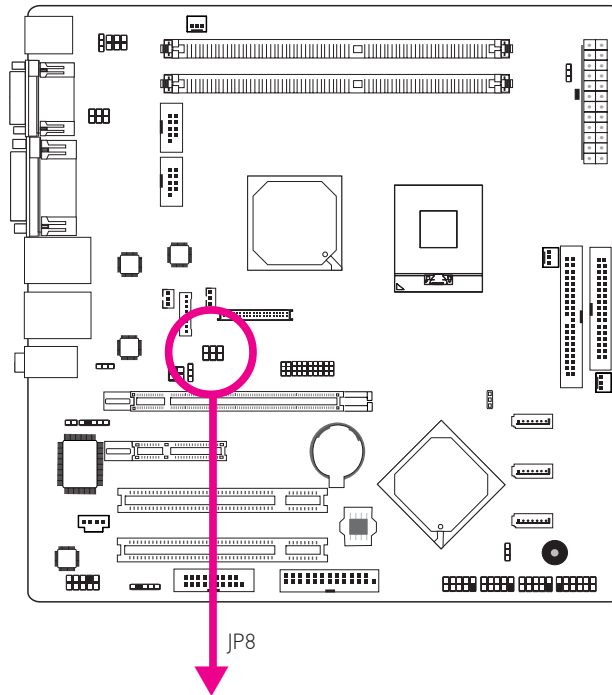
JP8 is used to select the power supplied to the LCD panel.

◇ **Important:**
Before powering-on the system, make sure JP8's setting matches the LCD panel's specification. Selecting the incorrect voltage will seriously damage the LCD panel.

COM 2 RS232/AUX Select

JP4

2 4 6

1 3 5
1-3, 2-4 On:
RS232
(default)

2 4 6

1 3 5
3-5 (5V),
4-6 (12V) On:
Auxiliary power
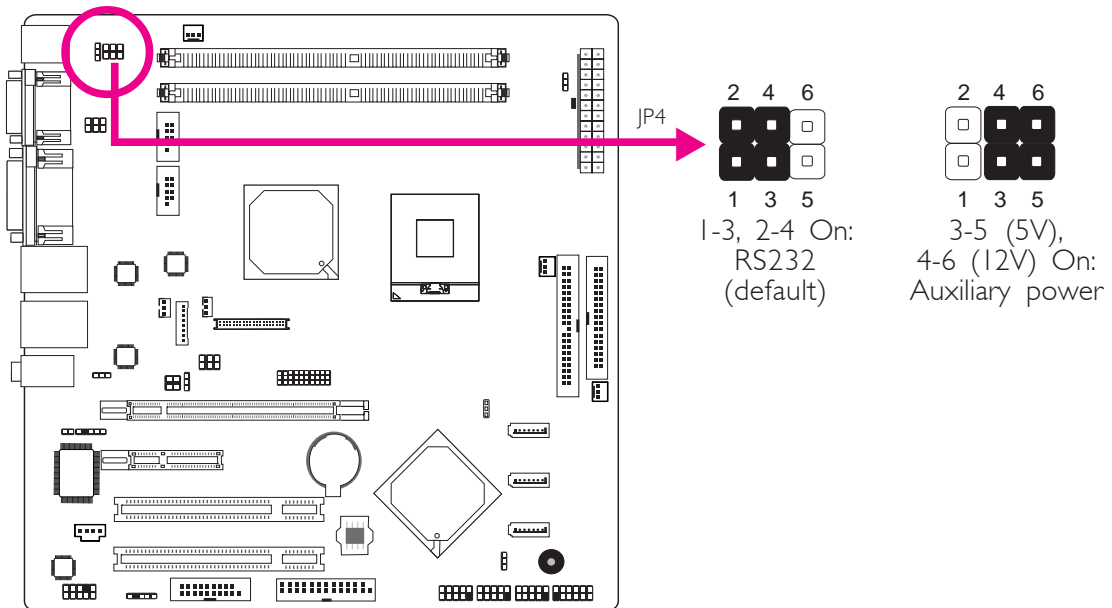
COM 2 is an RS232 port. If the serial device connected to this port requires 5V/12V power from the system board, set JP4 pins 3-5 and 4-6 to On. Otherwise, leave this jumper's setting at 1-3, 2-4 On.

The table below list the pin assignment of JP4.

1	MRIX-	2	MDCDX-
3	X_MRIX-	4	X_MDCDX-
5	+5V	6	+12V

COM 3 RS232/RS422/RS485 Select
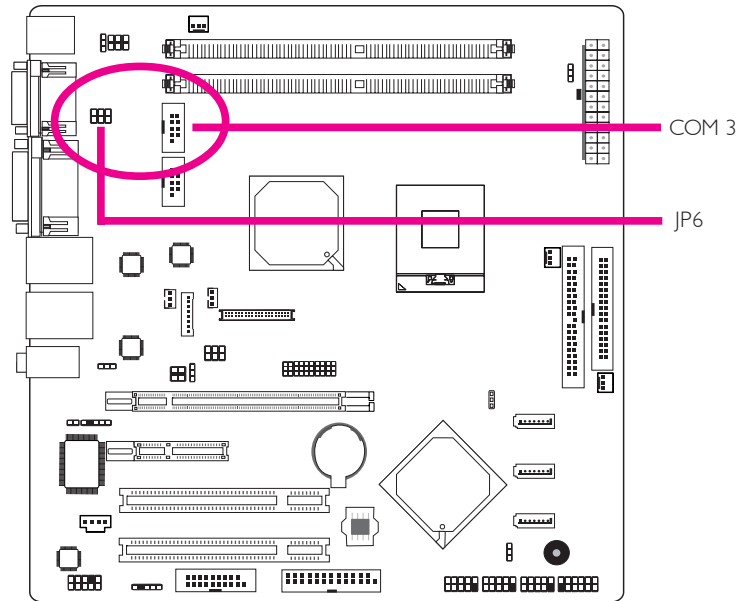
JP6 is used to configure the COM 3 serial port to RS232, RS422 (Half Duplex) or RS485.

The pin function of COM 3 will vary according to JP6's setting.

JP6

1-2 On: RS232 (default)

3-4 On: RS422 Half Duplex

5-6 On: RS485

COM 3

DCD-	RD
TD	DTR-
GND	DSR-
RTS-	CTS-
RI-	

RXD+	RXD-
N. C.	N. C.
N. C.	N. C.
N. C.	N. C.
N. C.	

DATA+	DATA-
N. C.	N. C.
N. C.	N. C.
N. C.	N. C.
N. C.	

Power-on Select

JP13

3
2
1

1-2 On:
Power-on via
power button
(default)

3
2
1

2-3 On:
Power-on via
AC power
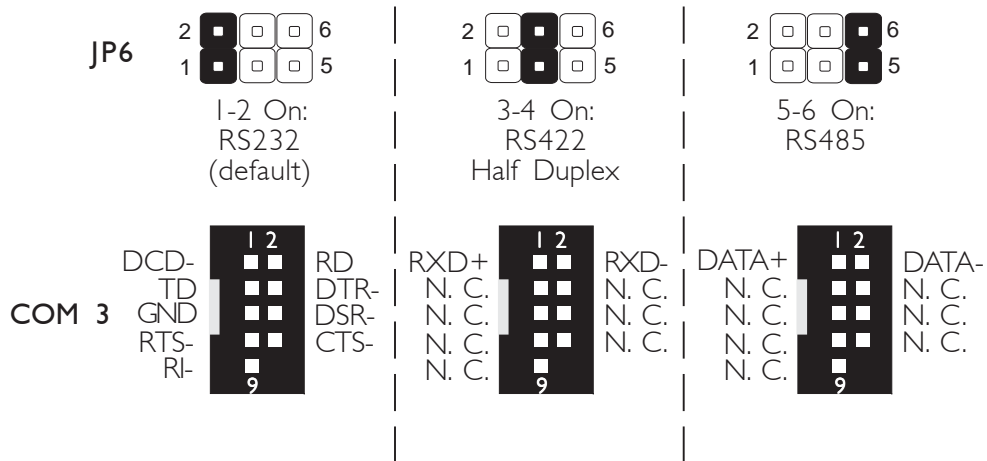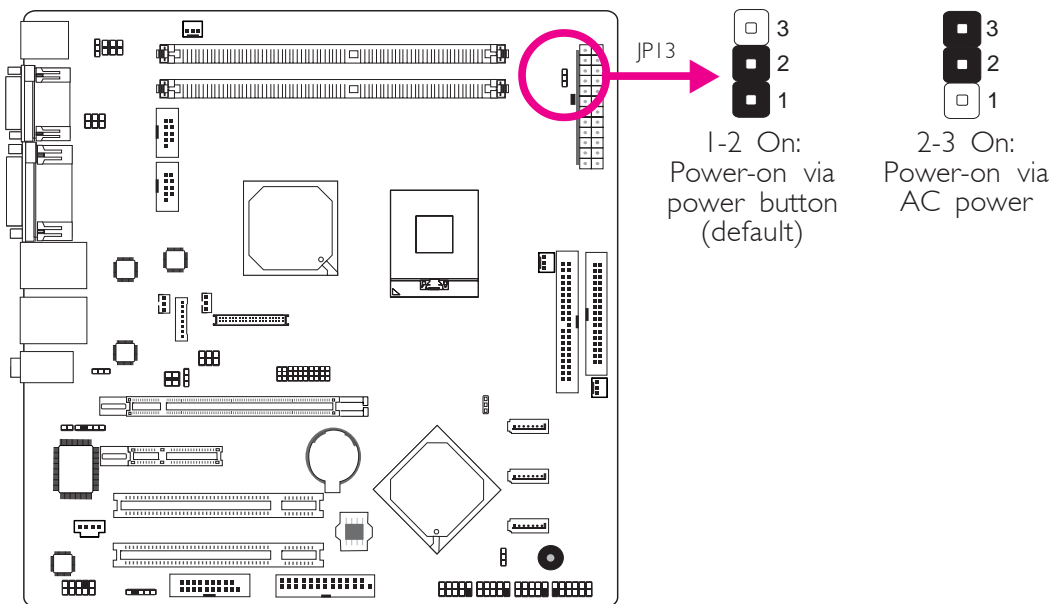
JP13 is used to select the method of powering on the system. If you want the system to power-on whenever AC power comes in, set JP13 pins 2 and 3 to On. If you want to use the power button, set pins 1 and 2 to On.

Note:

In order to ensure that power is resumed after a power failure, JP13 should be set to pins 2-3 and the "PWRON After Pwr-Fail" in CMOS is set to "ON".

Rear Panel I/O Ports

PS/2 Mouse   COM 2   VGA   LAN 1   LAN 2   Mic-in   Line-in   Line-out

PS/2 K/B   COM 1   DVI-I   USB 0-1   USB 2-3
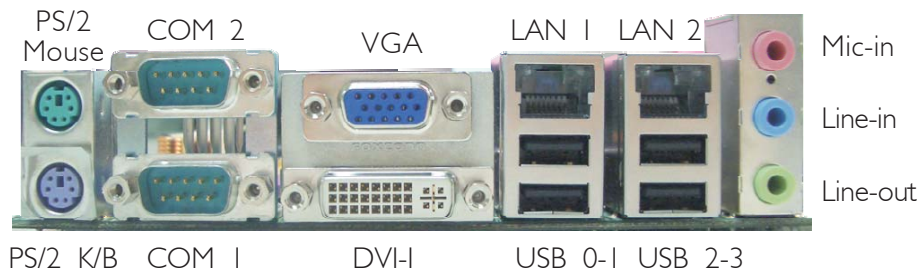
The rear panel I/O ports consist of the following:

- PS/2 mouse port
- PS/2 keyboard port
- 2 COM ports
- VGA port
- DVI-I port (DVI-D signal only)
- 2 LAN ports
- 4 USB ports
- Mic-in jack
- Line-in jack
- Line-out jack

PS/2 Mouse and PS/2 Keyboard Ports

PS/2 Mouse
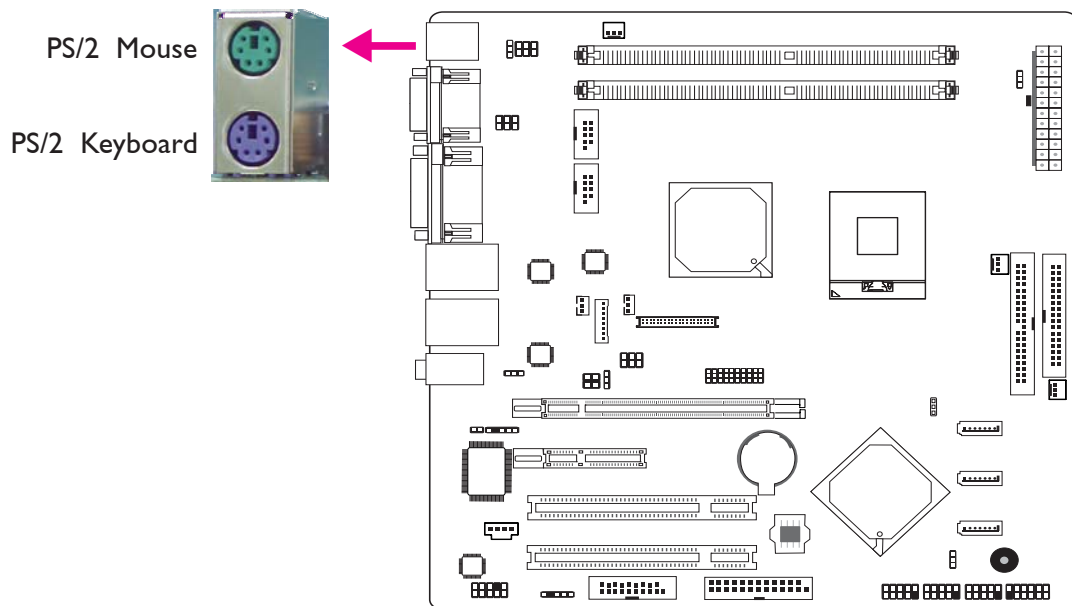
PS/2 Keyboard

These ports are used to connect a PS/2 mouse and a PS/2 keyboard. 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:**
  JP3 must be set to "2-3 On: 5V_standby". Refer to "PS/2 Power Select" in this chapter for more information.

- **BIOS Setting:**

  Configure the PS/2 keyboard/mouse wake up function in the Integrated Peripherals submenu ("Super IO Device" section) of the BIOS. Refer to chapter 3 for more information.

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

2

Serial Ports

COM 2

COM 1

COM 3

COM 4

DCD-
RD
TD
DTR-
GND

1 2 3 4 5

6 7 8 9

DSR-
RTS-
CTS-
RI-

RS232

DCD-	RD
TD	DTR-
GND	DSR-
RTS-	CTS-
RI-	

1 2

9

RS232

RXD+	RXD-
N. C.	N. C.
N. C.	N. C.
N. C.	N. C.
N. C.	

1 2

9

RS422
Half Duplex

DATA+	DATA-
N. C.	N. C.
N. C.	N. C.
N. C.	N. C.
N. C.	

1 2

9

RS485

33
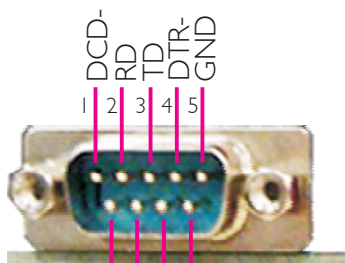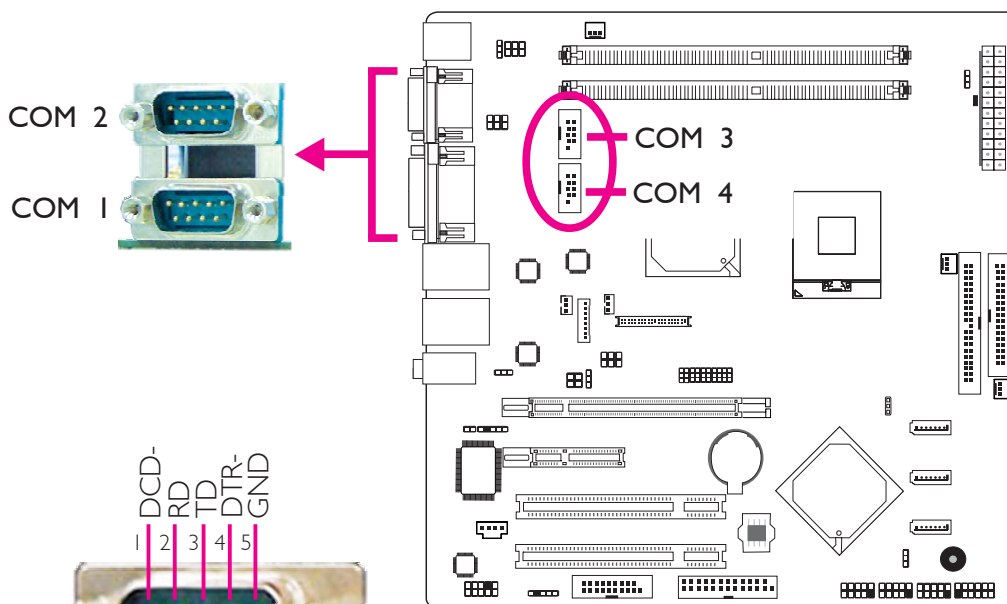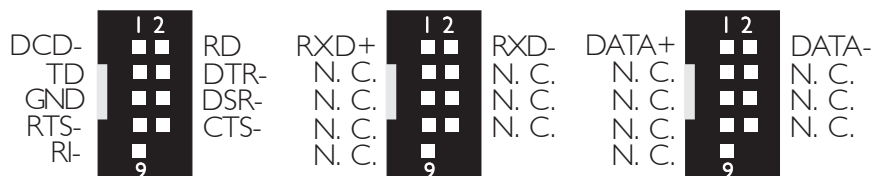
The system board is equipped with 2 onboard serial ports. It is also equipped with two 9-pin connectors for connecting addtional serial ports. The serial ports are asynchronous communication ports with 16C550A-compatible UARTs that can be used with modems, serial printers, remote display terminals, and other serial devices.

To connect COM 3 and COM 4, please refer to the following description. The serial port may be mounted on a card-edge bracket. Install the card-edge bracket to an available slot at the rear of the system chassis then insert the cable connector to the COM port. Make sure the colored stripe on the ribbon cable is aligned with pin 1 of the COM Port.

Jumper Setting

Refer to the "Jumper Settings" section in this chapter for settings relevant to the serial ports.

BIOS Setting

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

VGA Port

VGA
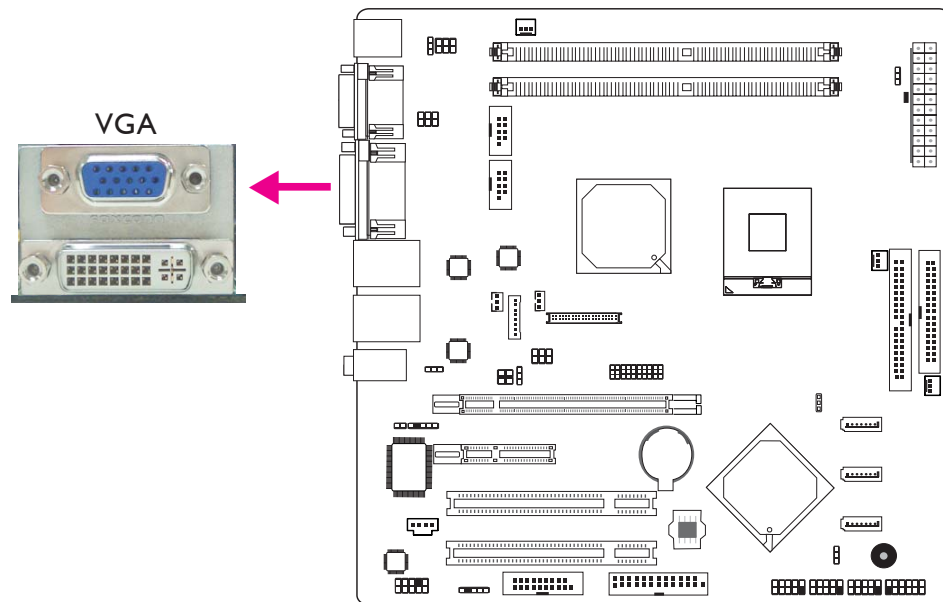
The VGA port is used for connecting a VGA monitor. Connect the monitor's 15-pin D-shell cable connector to the VGA port. After you plug the monitor's cable connector into the VGA port, gently tighten the cable screws to hold the connector in place.

Dual Display

The system board provides total of 3 display interfaces - DVI, VGA and LVDS. The system will display maximum of 2 display devices only. DVI-D and LVDS can display at the same time only when under Windows operation system.

BIOS Setting

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

Driver Installation

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

DVI-I Port
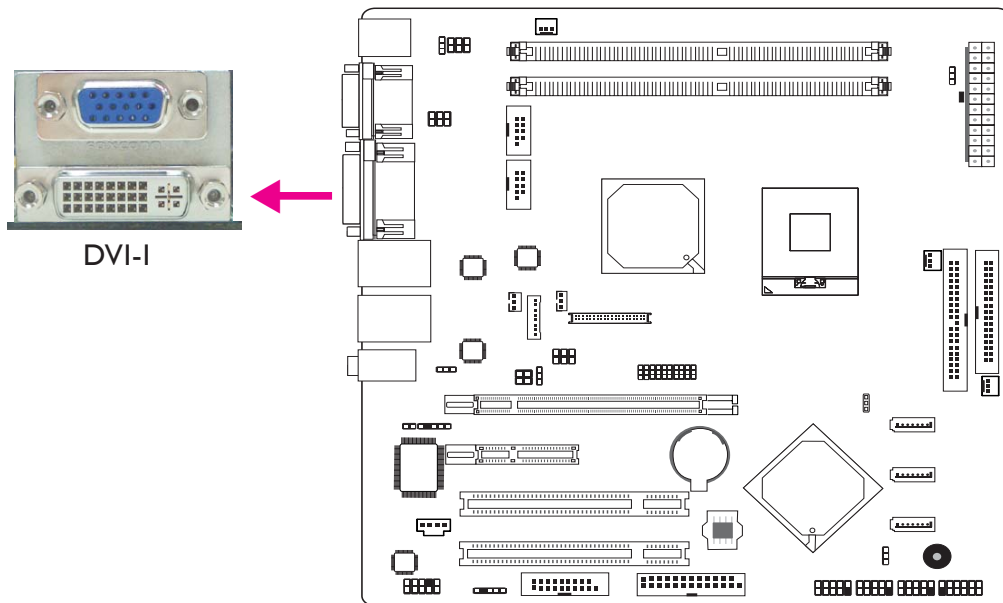
DVI-I

The DVI-I port is used to connect an LCD monitor. This port supports DVI-D signal only.

Connect the display device's cable connector to the DVI port. After you plug the cable connector into the DVI port, gently tighten the cable screws to hold the connector in place.

Dual Display

The system board provides total of 3 display interfaces - DVI, VGA and LVDS. The system will display maximum of 2 display devices only. DVI-D and LVDS can display at the same time only when under Windows operation system.

BIOS Setting

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

RJ45 Fast-Ethernet Port

LAN 1

LAN 2
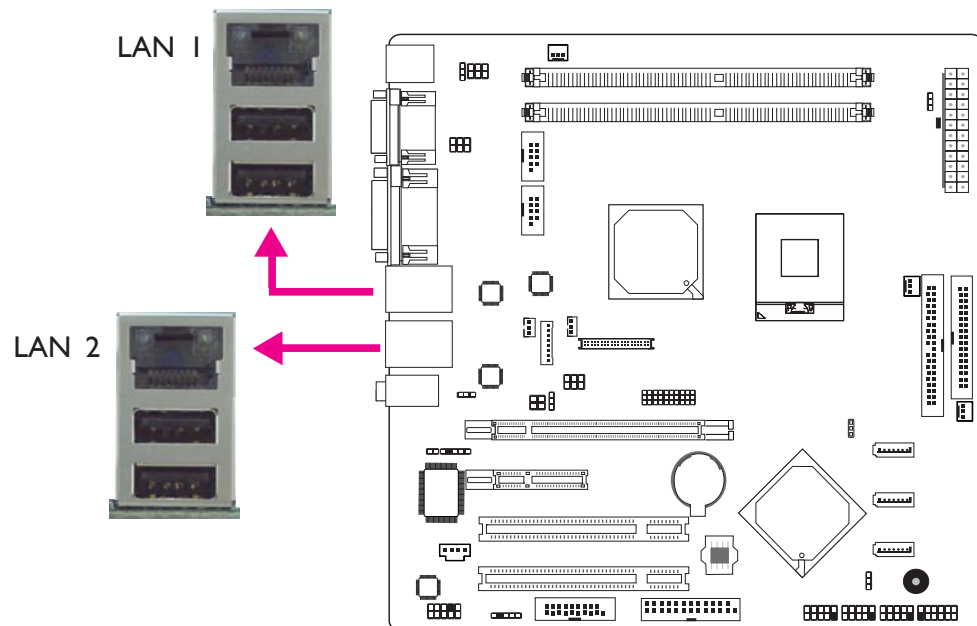
The LAN ports allow the system board to connect to a local area network by means of a network hub.

BIOS Setting

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

Driver Installation

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

Universal Serial Bus Connectors
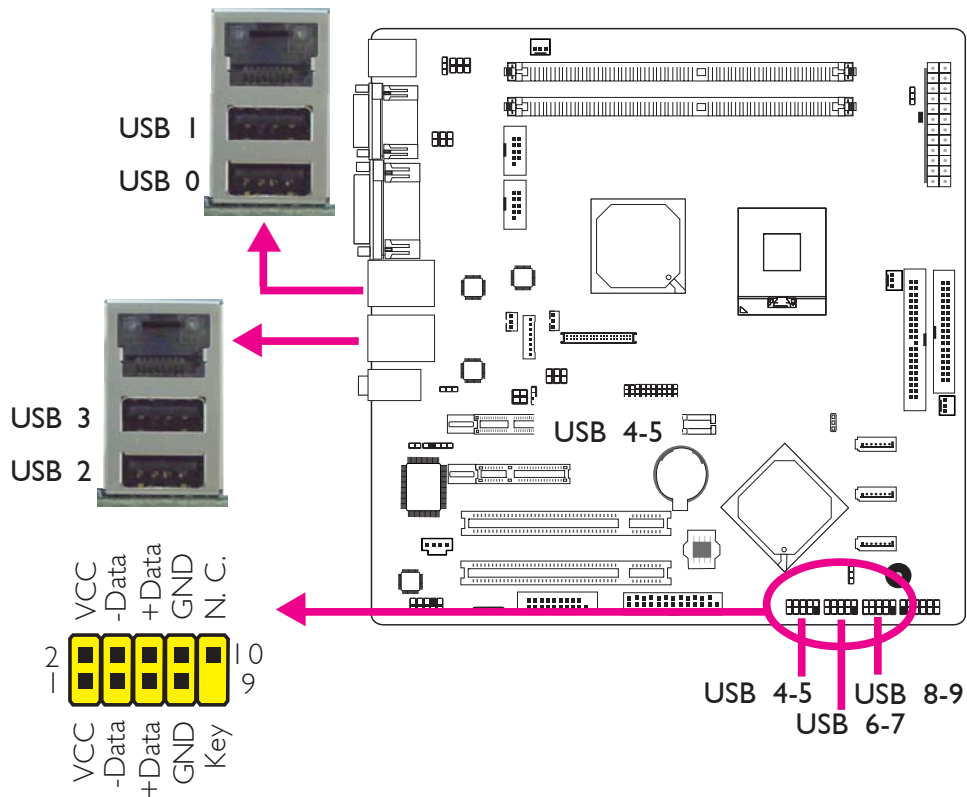
USB allows data exchange between your computer and a wide range of simultaneously accessible external Plug and Play peripherals.

The system board supports 10 USB 2.0/1.1 ports. The USB 4-5, USB 6-7 and USB 8-9 connectors allow you to connect 6 additional USB 2.0/1.1 ports. The additional USB ports may be mounted on a card-edge bracket. Install the card-edge bracket to an available slot at the rear of the system chassis then insert the connector (that is attached to the USB port cables) to the USB connector.

BIOS Setting

Configure the onboard USB in the Integrated Peripherals submenu ("USB Device Setting" 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:**
  JP2 and/or JP12 must be set to "2-3 On: 5V_standby". 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 for more information.

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

Audio

Rear audio

Mic-in

Line-in

Line-out

GND
N. C.
Mic2-JD
Key
Line2-JD

2 ▪▪▪▪▪ 10
1 ▪▪▪▪▪ 9

Mic2-L
Mic2-R
Line2-R
Front_IO_Sense
Line2-L

Front audio
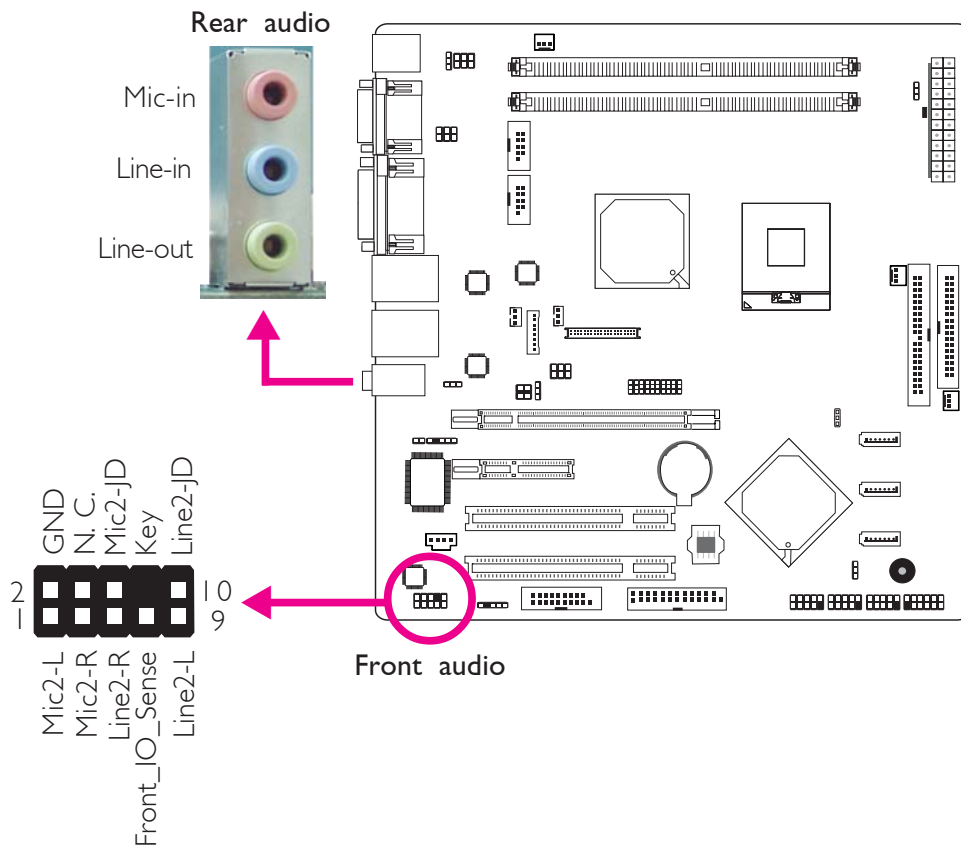
Rear Audio

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

- **Mic-in Jack (Pink)**

  This jack is used to connect an external microphone.

- **Line-in Jack (Light Blue)**

  This jack is used to connect any audio devices such as Hi-fi set, CD player, tape player, AM/FM radio tuner, synthesizer, etc.

- **Line-out Jack (Lime)**

  This jack is used to connect a headphone or external speakers.

Front Audio

The front audio connector allows you to connect to the second line-out and mic-in jacks that are at the front panel of your system.

Driver Installation

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

I/O Connectors

CD-in Internal Audio Connector
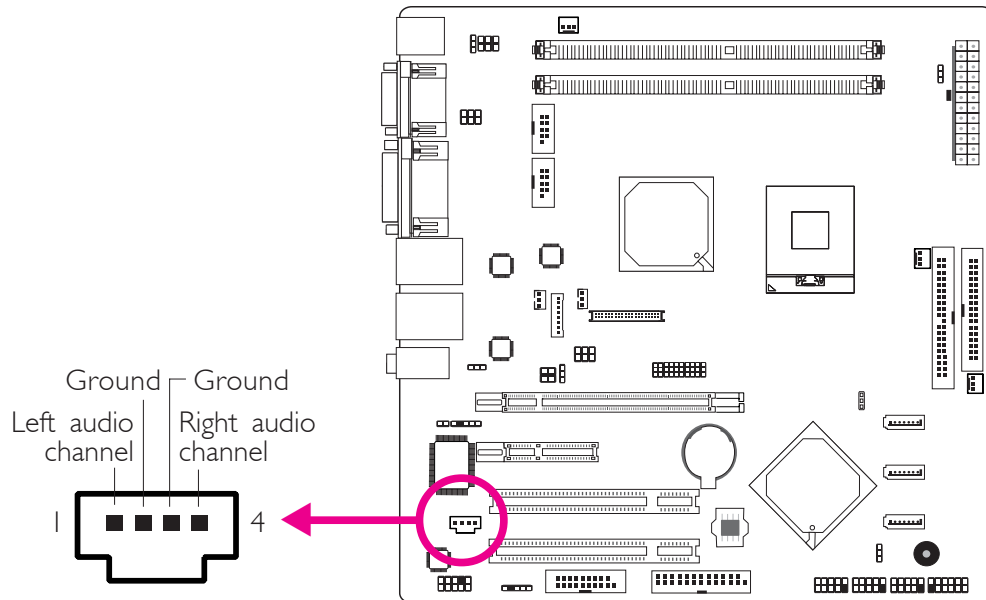
The CD-in connector is used to receive audio from a CD-ROM drive, TV tuner or MPEG card.

S/PDIF Connector

SPDIF out
Key | GND
+5V | | SPDIF in

1 ▭ 5
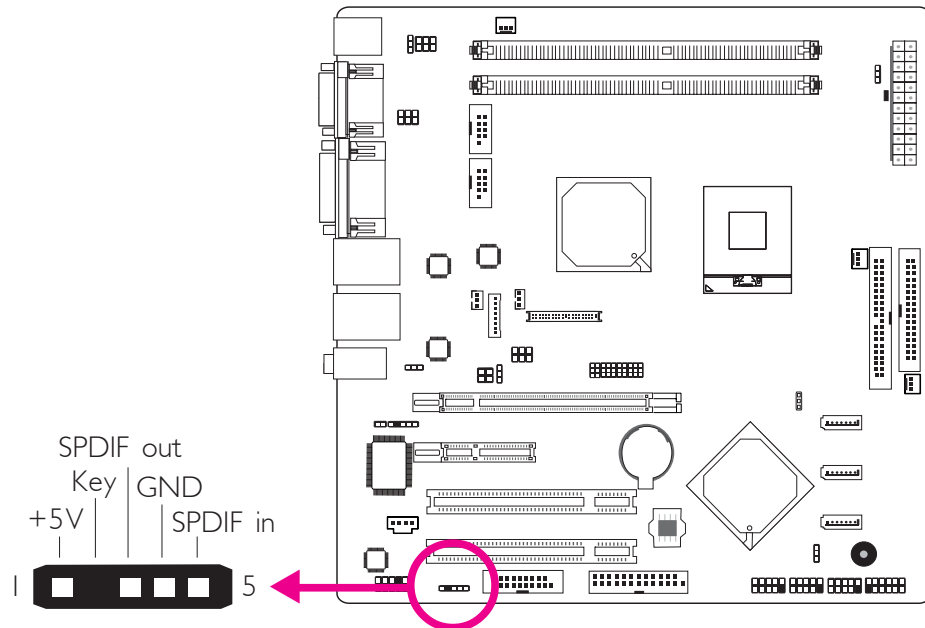
The S/PDIF connector is used to connect an external S/PDIF port. Your S/PDIF port may be mounted on a card-edge bracket. Install the card-edge bracket to an available slot at the rear of the system chassis then connect the audio cable connector to the S/PDIF connector. Make sure pin 1 of the audio cable connector is aligned with pin 1 of the S/PDIF connector.

LVDS LCD Panel Connector
LCD/Inverter Power Connector
LCD AUX Power Connector
LCD Brightness Control (Voltage Level Adjust)

LCD/Inverter
Power

LCD AUX
Power

40   2

39   LVDS LCD Panel

LCD Brightness Control (J5)
1-2 On: Increases the voltage level
2-3 On: Decreases the voltage level
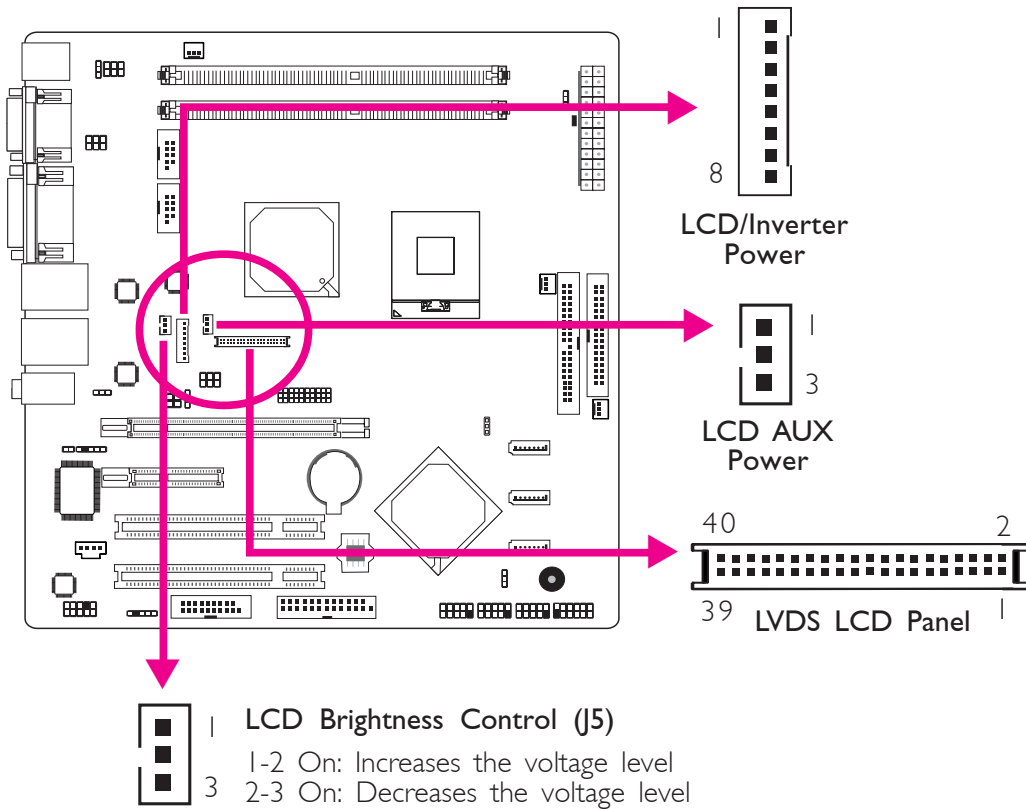
The system board allows you to connect a LCD Display Panel by means of the LVDS LCD panel connector and the LCD/Inverter power connector. These connectors transmit video signals and power from the system board to the LCD Display Panel.

The LCD AUX power connector is used to connect auxiliary power to the LCD panel.

Use J5 to connect to the LCD Brightness Control button of the LCD Display Panel. It is used to adjust the brightness of the LCD Display Panel. Increasing or decreasing the voltage to control the LCD panel's brightness varies among Inverters. You must refer to the Inverter's specification to make the appropriate adjustment to the brightness of the LCD panel.

Jumper Settings

Refer to the "Jumper Settings" section in this chapter for settings relevant to the LCD panel.

BIOS Setting

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

LVDS LCD Panel Connector

Pins	Function	Pins	Function
1	GND	2	GND
3	LVDS_Out3+	4	LVDS_Out7+
5	LVDS_Out3-	6	LVDS_Out7-
7	GND	8	GND
9	LVDS_Out2+	10	LVDS_Out6+
11	LVDS_Out2-	12	LVDS_Out6-
13	GND	14	GND
15	LVDS_Out1+	16	LVDS_Out5+
17	LVDS_Out1-	18	LVDS_Out5-
19	GND	20	GND
21	LVDS_Out0+	22	LVDS_Out4+
23	LVDS_Out0-	24	LVDS_Out4-
25	GND	26	GND
27	LVDS_CLK1+	28	LVDS_CLK2+
29	LVDS_CLK1-	30	LVDS_CLK2-
31	GND	32	GND
33	DDC_CLK	34	N. C.
35	DDC_DATA	36	N. C.
37	PANEL POWER	38	PANEL POWER
39	PANEL POWER	40	PANEL POWER

LCD/Inverter Power Connector

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

LCD AUX Power Connector

Pins	Function
1	Panel Power
2	Ground
3	Panel Power

Digital I/O Connector
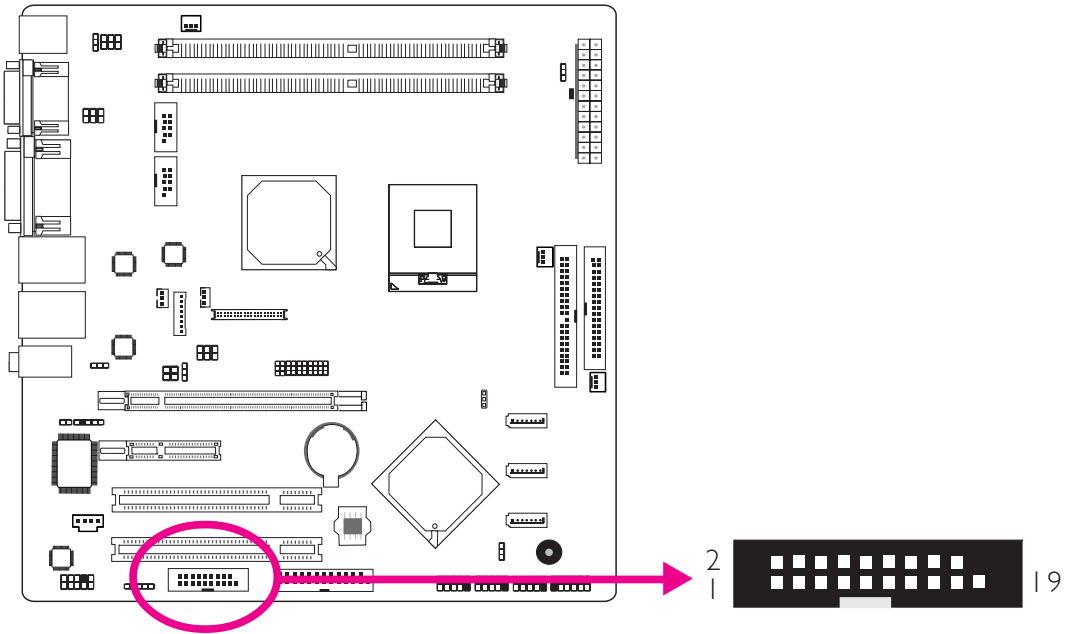
The Digital I/O connector provides powering-on function to an external device that is connected to this connector.

Digital I/O Connector

Pins	Function	Pins	Function
1	GND	2	+12V
3	DIO7	4	+12V
5	DIO6	6	GND
7	DIO5	8	VCC
9	DIO4	10	VCC
11	DIO3	12	GND
13	DIO2	14	V_5P0_STBY
15	DIO1	16	V_5P0_STBY
17	DIO0	18	GND
19	GND		

Serial ATA Connectors
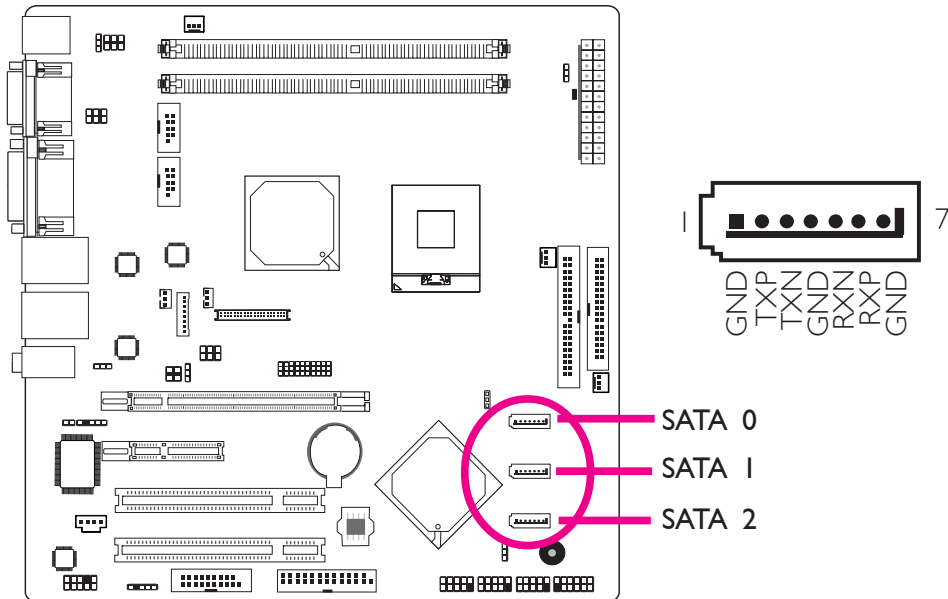
The Serial ATA ports are used to connect Serial ATA devices. Connect one end of the Serial ATA cable to a SATA port and the other end to your Serial ATA device.

BIOS Setting

Configure the Serial ATA drives in the Integrated Peripherals submenu ("OnChip IDE Device" field) of the BIOS. Refer to chapter 3 for more information.

IDE Disk Drive Connectors
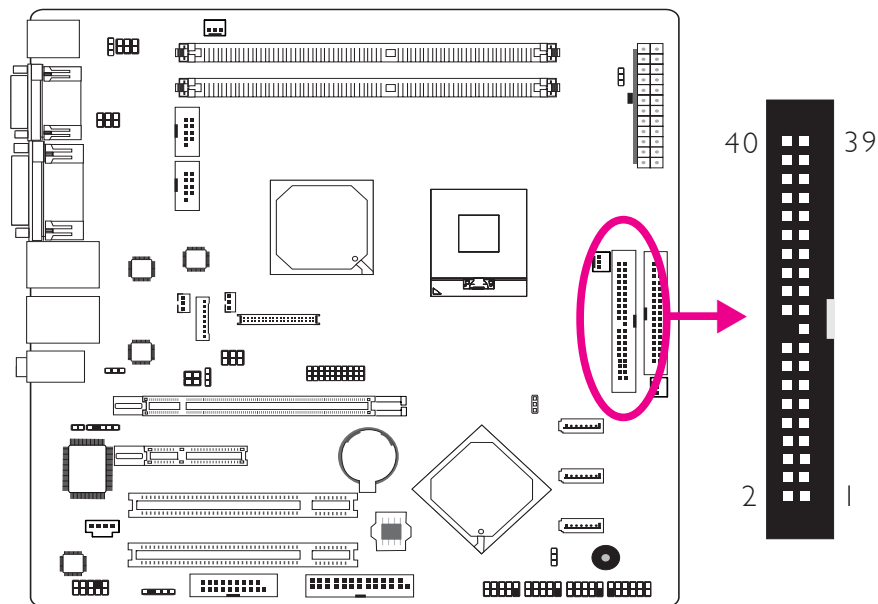
The 40-pin IDE connector is used to connect hard drives. The connector on the IDE cable can be inserted into the connector only if pin 1 of the cable connector is aligned with pin 1 of the IDE connector.

Connecting the IDE Disk Drive Cable

The 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.

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

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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 and 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 Integrated Peripherals submenu ("OnChip IDE Device" field) of the BIOS. Refer to chapter 3 for more information.

Floppy Disk Drive Connector
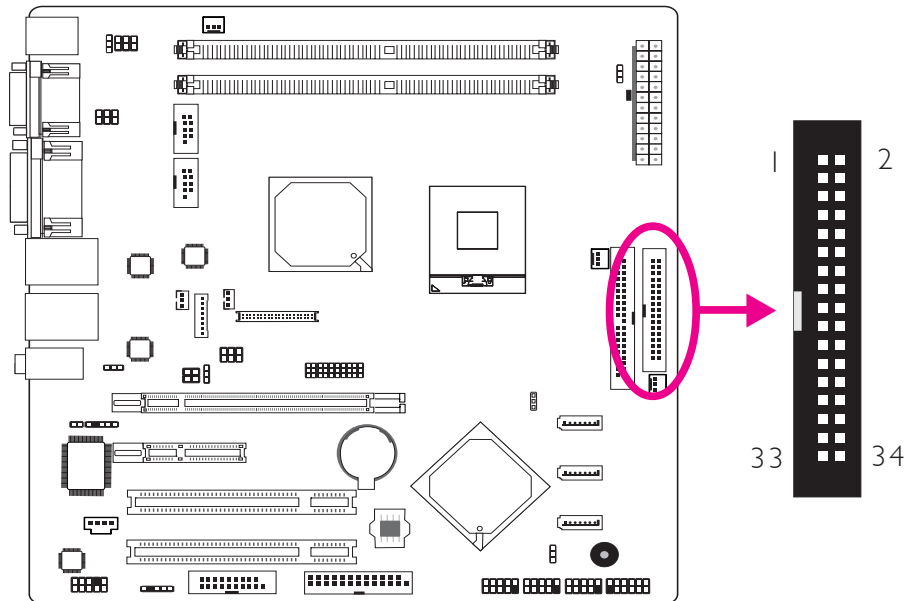
The 34-pin connector is used to connect a standard floppy disk drive. The connector on the floppy cable can be inserted into the floppy connector only if pin 1 of the cable is aligned with pin 1 of the floppy connector.

Connecting the Floppy Disk Drive Cable

Insert one end of the floppy disk drive cable into the floppy connector on the system board and the other end-most connector to the floppy drive. The colored edge of the cable must align with pin 1 of the connector.

BIOS Setting

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

LPT (Parallel) Connector
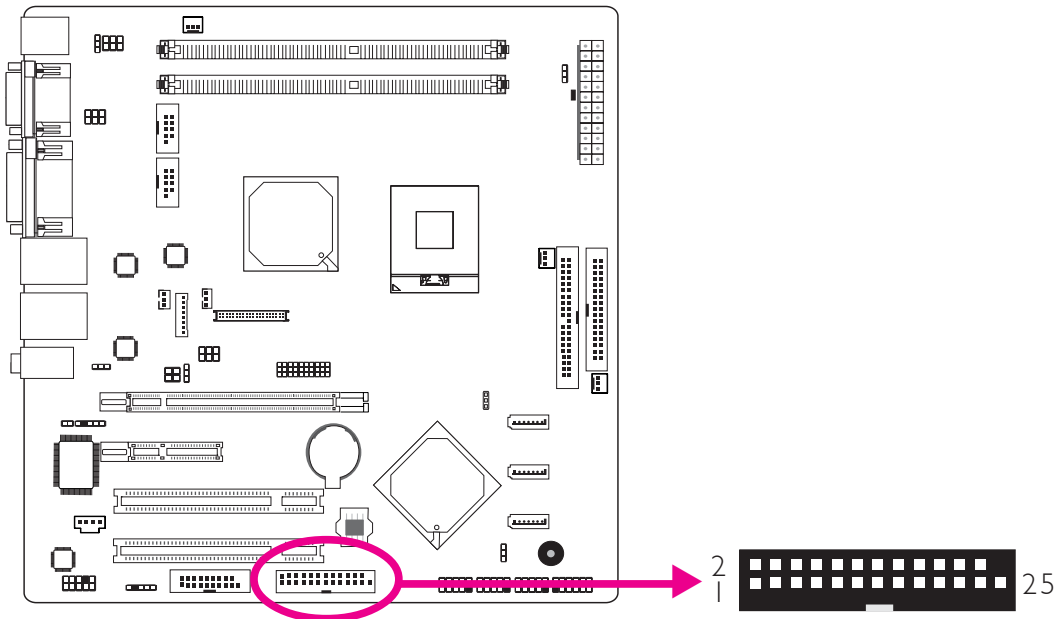
The 25-pin connector is for connecting an external parallel port. The parallel port connects your PC to a parallel printer. It supports SPP, ECP, EPP and ECP+EPP.

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.

Connecting the Parallel Port Cable

Your parallel port may be 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 cable to this connector. Make sure the colored stripe on the ribbon cable is aligned with pin 1 of this connector.

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.

IrDA Connector
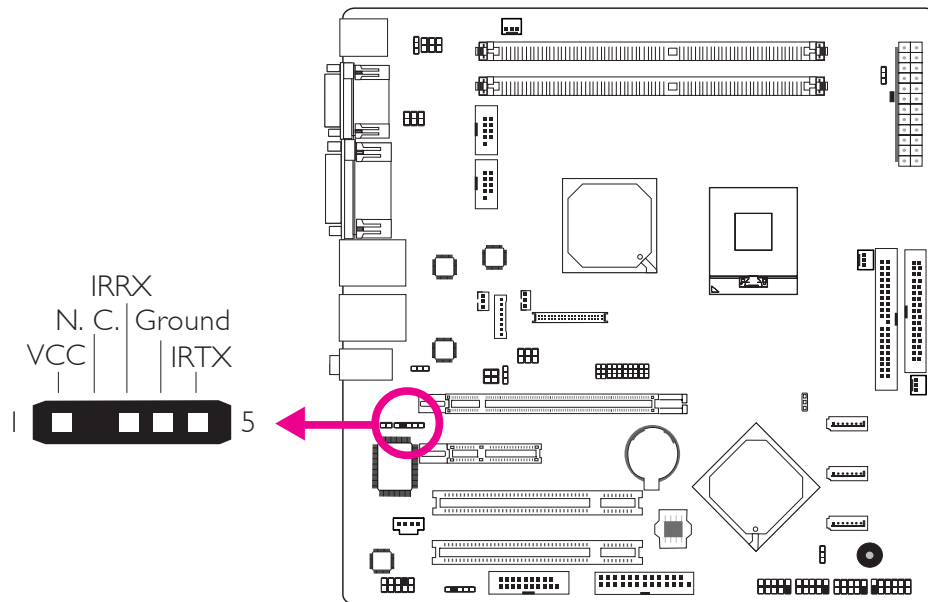
The IrDA connector is for connecting an IrDA module. Connect the cable connector from your IrDA module to this connector.

> **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. Refer to chapter 3 for more information.

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
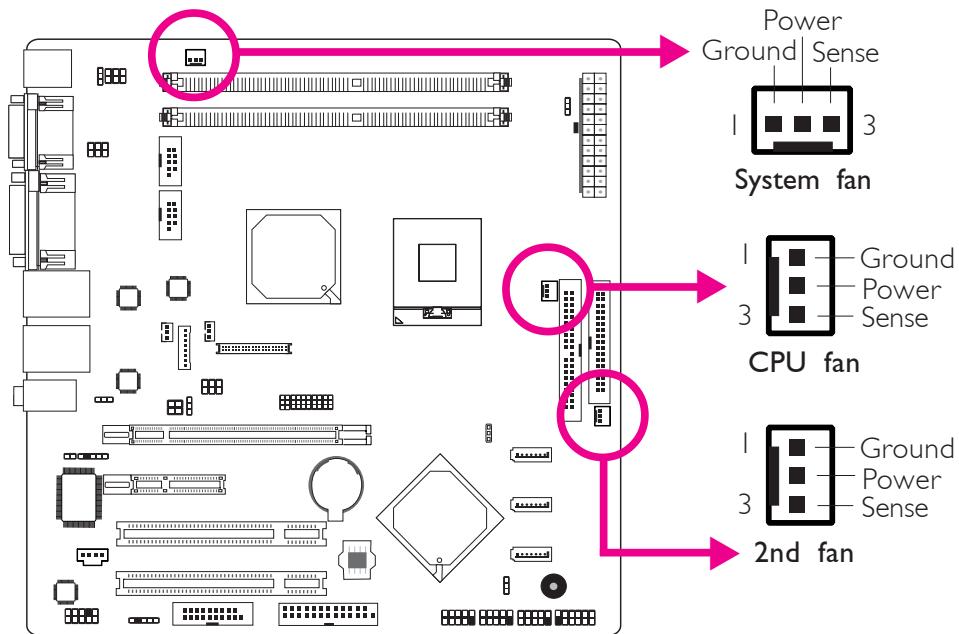
These fan connectors are used to connect cooling fans. Cooling fans will provide adequate airflow throughout the chassis to prevent over-heating the CPU and system board components.

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.

Chassis Open Connector
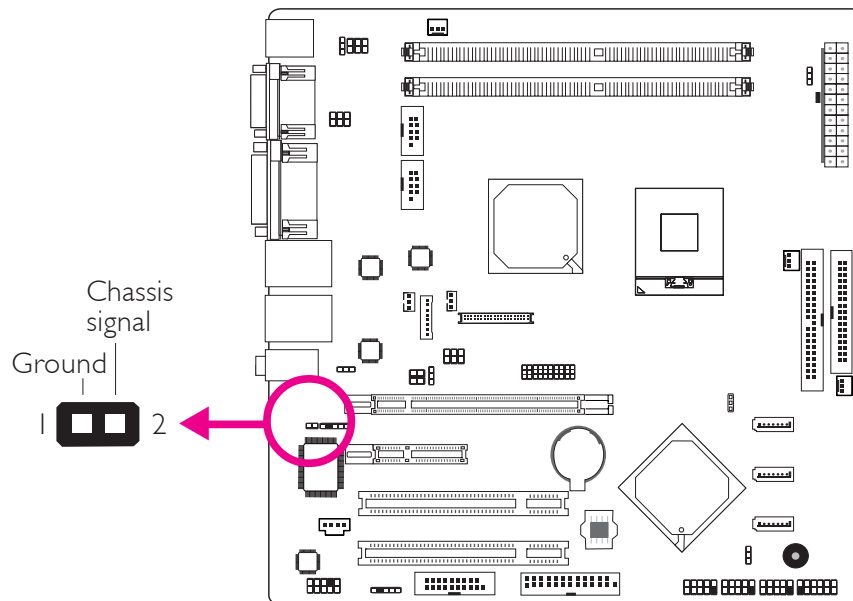
The board supports the chassis intrusion detection function. Connect the chassis intrusion sensor cable from the chassis to this connector. When the system's power is on and a chassis intrusion occurred, an alarm will sound. When the system's power is off and a chassis intrusion occurred, the alarm will sound only when the system restarts.

Hardware Monitor for Windows

Install the "Hardware Monitor for Windows" utility. By default, the chassis intrusion detection function is disabled. When enabled, a warning message will appear when the chassis is open. The utility can also be configured so that a beeping alarm will sound when the chassis is open. Refer to the "Hardware Monitor for Windows" section in chapter 4 for more information.

Power Connector

	13 1	
+3.3VDC	• •	+3.3VDC
-12VDC	• •	+3.3VDC
Ground	• •	Ground
PS_ON#	• •	+5VDC
Ground	• •	Ground
Ground	• •	+5VDC
Ground	• •	Ground
NC	• •	PWR_OK
+5VDC	• •	+5VSB
+5VDC	• •	+12VDC
+5VDC	• •	+12VDC
Ground	• •	+3.3VDC
	24 12	
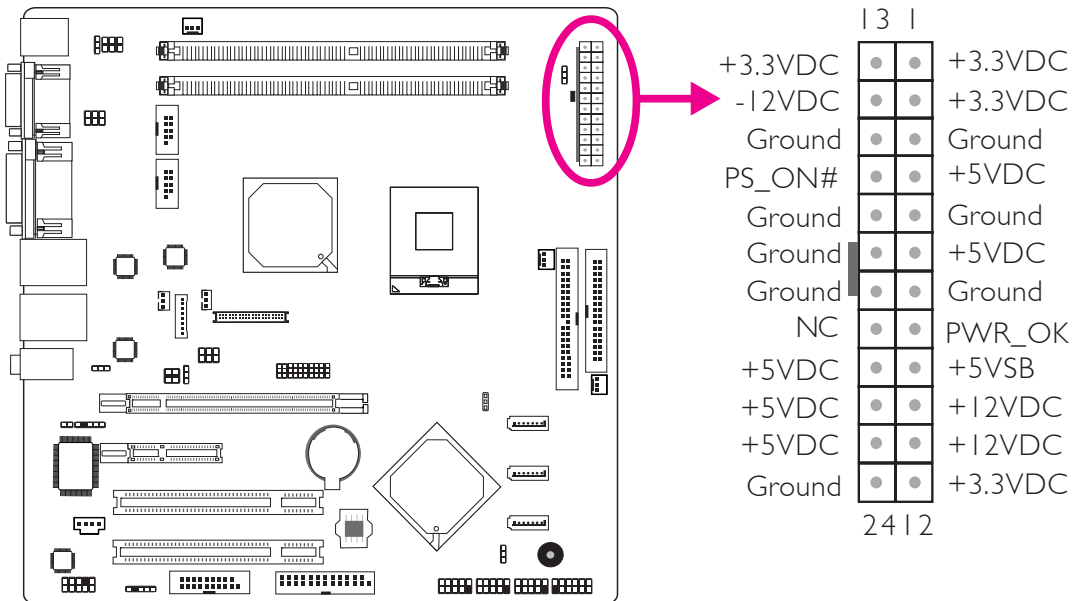
Connect a 24-pin ATX main power connector from the power sup-
ply unit to the ATX power connector. The system board requires a
minimum of 120 Watt power supply to operate. We recommend
that you use a power supply that complies with the ATX12V Power
Supply Design Guide Version 1.1.

> **Important:**
> *The system board consumes a minimal amount of power. Due
> to its low power consumption, you only need a **120W to
> 150W** power supply. Every power supply has its minimum
> load of power. If you use a greater than 150W power supply,
> the power consumed by the system board may not attain its
> minimum load causing instability to the entire system.*

Power LED
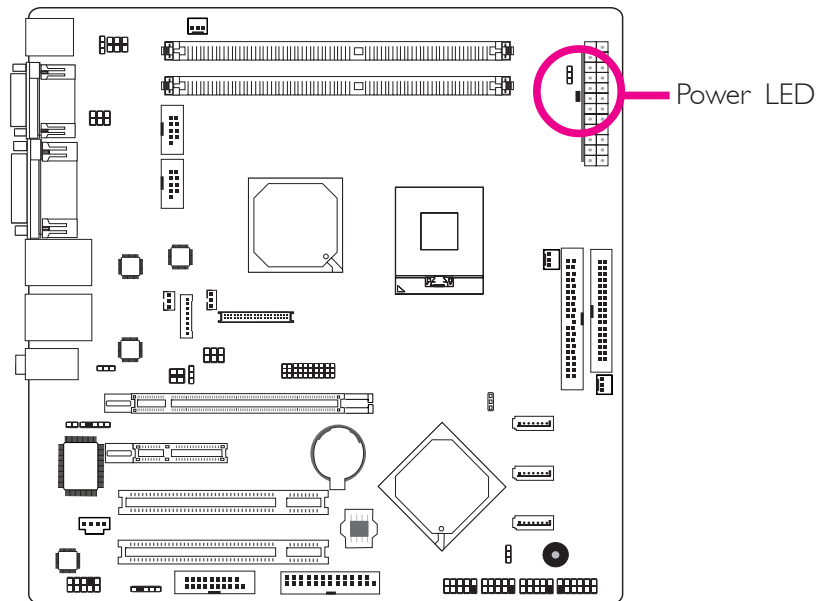
Power LED

When the Power LED lit red, it indicates that there is power on the system board. Power-off the PC then unplug the power cord prior to installing any devices. Failure to do so will cause severe damage to the motherboard and components.

Front Panel Connectors
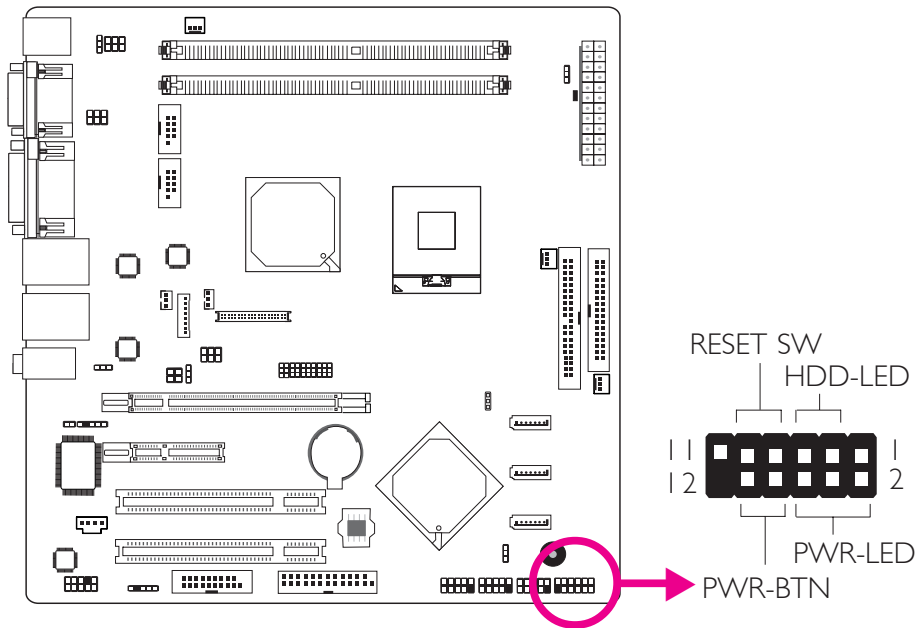
HDD-LED - HDD LED

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

RESET SW - Reset Switch

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

PWR-BTN - Power Switch

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

PWR-LED - Power/Standby LED

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

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

PCI Express Slots

PCI Express x16
PCI Express x4
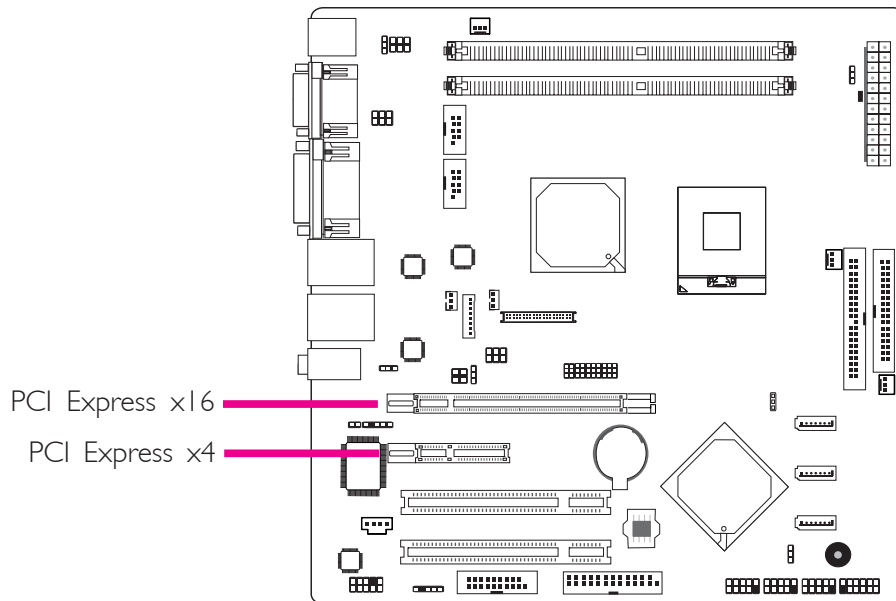
PCI Express x16

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 x4

Install PCI Express cards such as network cards or other cards that comply to the PCI Express specifications into the PCI Express x4 slot.

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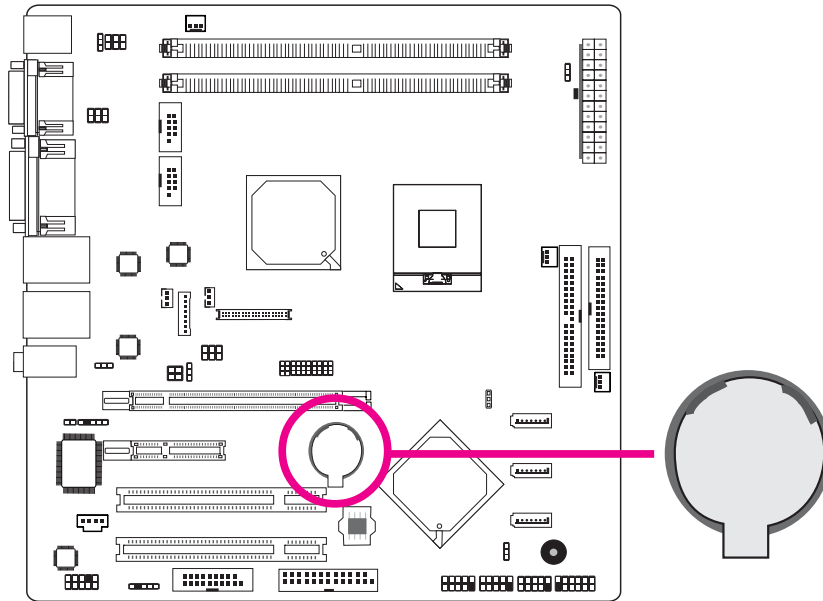
The lithium ion battery powers the real-time clock and CMOS memory. It is an auxiliary source of power when the main power is shut off.

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 local ordinance.

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:

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

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

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

```
                  Phoenix - AwardBIOS CMOS Setup Utility

   ►  Standard CMOS Features          ►  Frequency/Voltage Control
   ►  Advanced BIOS Features              Load Fail-Safe Defaults
   ►  Advanced Chipset Features           Load Optimized Defaults
   ►  Integrated Peripherals              Set Supervisor Password
   ►  Power Management Setup              Set User Password
   ►  PnP/PCI Configurations              Save & Exit Setup
   ►  PC Health Status                    Exit Without Saving

   Esc  :  Quit                      ↑ ↓ → ← : Select Item
   F10  :  Save & Exit Setup

                    Time, Date, Hard Disk Type...
```

Standard CMOS Features

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

```
                    Phoenix - AwardBIOS CMOS Setup Utility
                           Standard CMOS Features

     Date <mm:dd:yy>              Fri, Jun 13 2008          Item  Help
     Time <hh:mm:ss>              9 : 3 : 54
                                                       Menu Level    ▶
  ▶  IDE Channel 0 Master         None
  ▶  IDE Channel 0 Slave          DVDROM GO-D1600B       Change the day, month,
  ▶  IDE Channel 2 Master         ST380817AS             year  and  century
  ▶  IDE Channel 2 Slave          None
  ▶  IDE Channel 3 Master         None

     Drive A                      1.44M, 3.5in.

     Video                        EGA/VGA
     Halt On                      All Errors

     Base Memory                  640K
     Extended Memory              514048K
     Total Memory                 515072K



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

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

Date

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

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 to IDE Channel 3 Master

To configure the IDE drives, move the cursor to a field then press <Enter>. The following screen will appear:
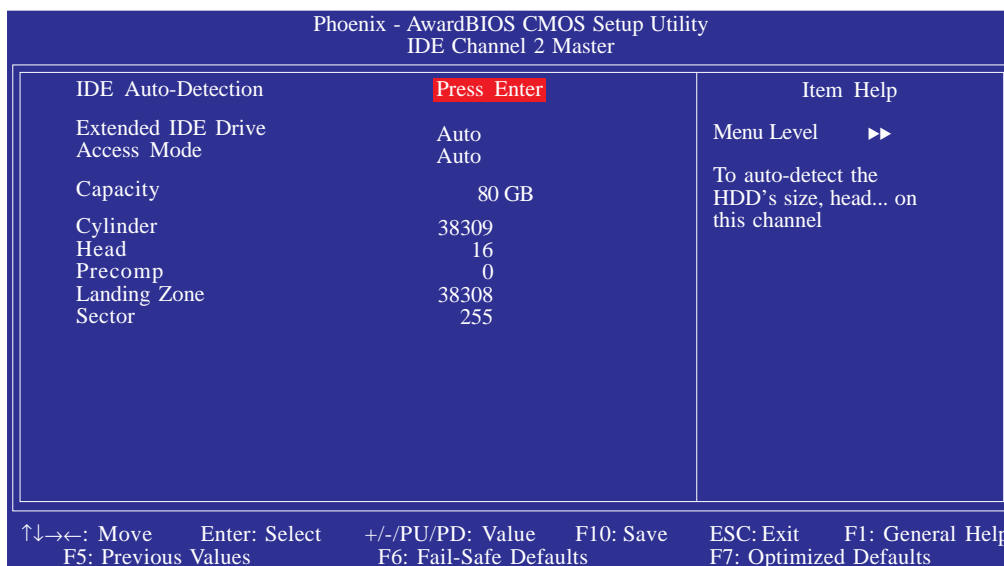
```
                    Phoenix - AwardBIOS CMOS Setup Utility
                            IDE Channel 2 Master

    IDE  Auto-Detection          Press  Enter              Item  Help

    Extended  IDE  Drive         Auto               Menu Level      ▶▶
    Access  Mode                 Auto
                                                    To auto-detect the
    Capacity                       80 GB            HDD's size, head... on
                                                    this channel
    Cylinder                     38309
    Head                            16
    Precomp                          0
    Landing Zone                 38308
    Sector                         255




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

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

IDE Auto-Detection

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

Extended IDE Drive

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

This field identifies the types of floppy disk drives installed.

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

Video

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

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

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

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

Mono   Monochrome adapter. Includes high resolution monochrome adapters.

Halt On

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

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

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

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

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

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

Base Memory

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

Extended Memory

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

Total Memory

Displays the total memory available in the system.

Advanced BIOS Features

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

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

 ▶  CPU Feature                   Press Enter          Item  Help
 ▶  Hard Disk Boot Priority       Press Enter
    Virus Warning                 Disabled         Menu Level    ▶
    Quick Power On Self Test      Enabled
    First Boot Device             CDROM
    Second Boot Device            Hard Disk
    Third Boot Device             Floppy
    Boot Other Device             Enabled
    Swap Floppy Drive             Disabled
    Boot Up Floppy Seek           Disabled
    Boot Up NumlLock Status       On
    Gate A20 Option               Fast
    Security Option               Setup
    APIC Mode                     Enabled
    MPS Version Control For OS     1.4
    Report No FDD For Win 95      No
    Small Logo(EPA) Show          Disabled




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

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

CPU Feature

This field is used to configure the CPU that is installed on the system board. Move the cursor to this field then press <Enter>.
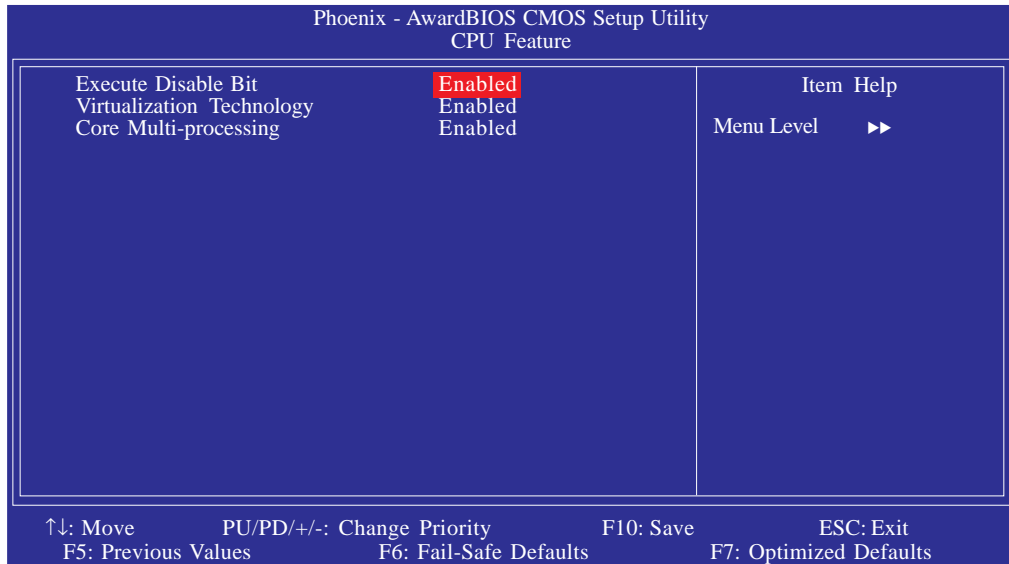
```
                    Phoenix - AwardBIOS CMOS Setup Utility
                                  CPU  Feature

       Execute Disable Bit              Enabled              Item  Help
       Virtualization  Technology       Enabled
       Core Multi-processing            Enabled        Menu Level    ▶▶

   ↑↓: Move          PU/PD/+/-: Change  Priority      F10: Save            ESC: Exit
     F5:  Previous  Values          F6:  Fail-Safe  Defaults      F7:  Optimized  Defaults
```

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

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.
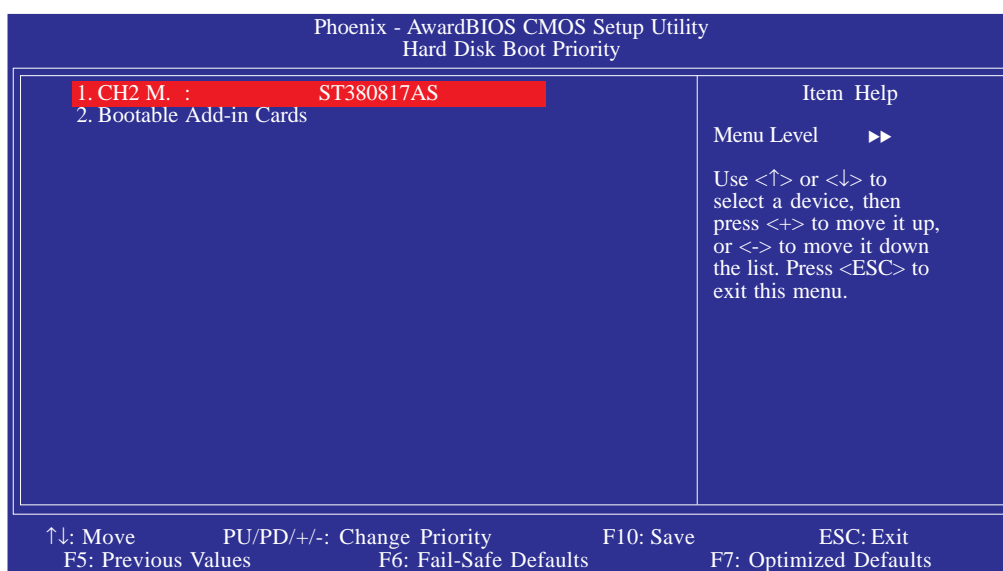
Core Multi-Processing

The options are Enabled and Disabled.

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.

```
                  Phoenix - AwardBIOS CMOS Setup Utility
                          Hard Disk Boot Priority

    1. CH2 M.  :               ST380817AS                 Item  Help
    2. Bootable Add-in Cards
                                                     Menu Level    ▶▶

                                                     Use <↑> or <↓> to
                                                     select a device, then
                                                     press <+> to move it up,
                                                     or <-> to move it down
                                                     the list. Press <ESC> to
                                                     exit this menu.




   ↑↓: Move        PU/PD/+/-: Change  Priority        F10: Save           ESC: Exit
    F5: Previous  Values            F6: Fail-Safe  Defaults      F7: Optimized  Defaults
```

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

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.

Quick Power On Self Test

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

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

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

Swap Floppy Drive

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

Boot Up Floppy Seek

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

Boot Up NumLock Status

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

Gate A20 Option

This 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.

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

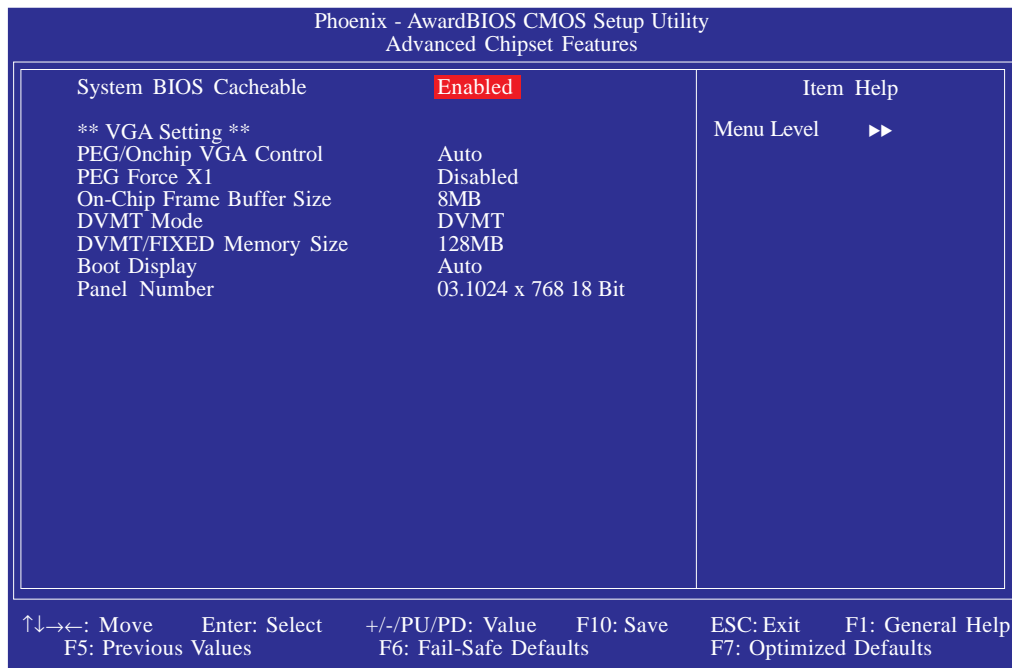This field is used to select the MPS version used by the system.

Report No FDD For WIN 95

The options are Yes and No.

Small Logo(EPA) Show

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

Advanced Chipset Features

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

    System  BIOS  Cacheable          Enabled              Item  Help

    ** VGA Setting **                                 Menu Level   ▶▶
    PEG/Onchip VGA Control           Auto
    PEG Force X1                     Disabled
    On-Chip Frame Buffer Size        8MB
    DVMT Mode                        DVMT
    DVMT/FIXED  Memory  Size         128MB
    Boot Display                     Auto
    Panel  Number                    03.1024 x 768 18 Bit




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

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

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

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.

PEG/OnChip VGA Control

This field is used to select the graphics controller that will serve as the primary boot device. The options are Auto, Onchip VGA and PEG Port.

PEG Force x1

The options are Enabled and Disabled.

On-Chip Frame Buffer Size

This field is used to select the onboard VGA's frame buffer size that is shared from the system memory.

DVMT Mode

The options are Fixed and DVMT.

DVMT/Fixed Memory Size

This field is used to select the graphics memory size used by DVMT/Fixed mode.

Boot Display

This field is used to select the type of display to use when the system boots.

Panel Number

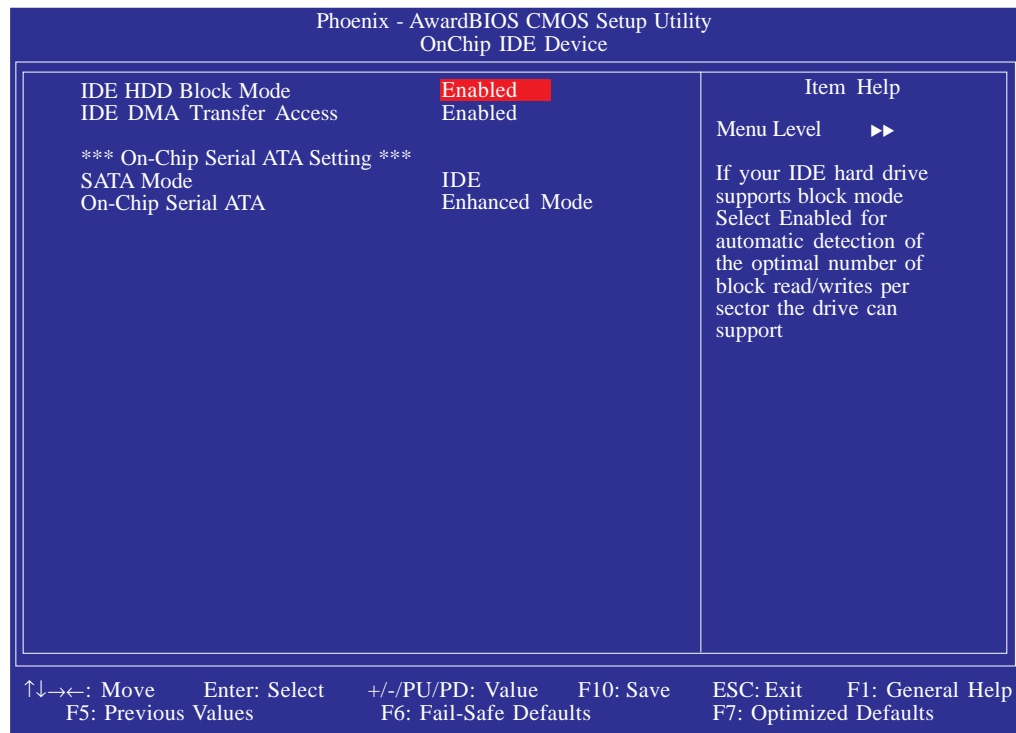This field is used to select the type of panel that you are using.

Integrated Peripherals
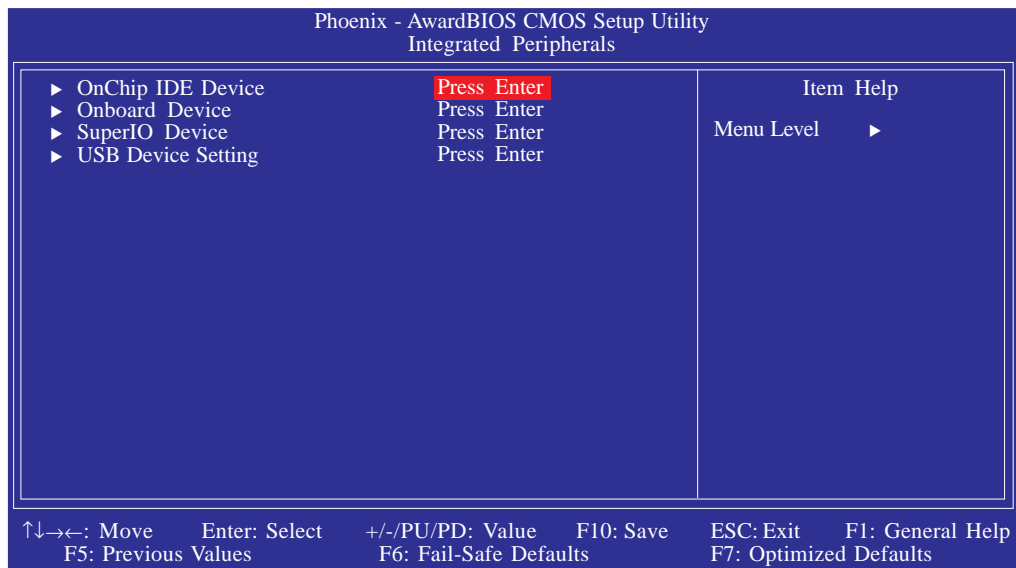
```
                  Phoenix - AwardBIOS CMOS Setup Utility
                           Integrated  Peripherals

   ▶ OnChip IDE Device          Press  Enter        │   Item  Help
   ▶ Onboard  Device            Press  Enter        │
   ▶ SuperIO  Device            Press  Enter        │ Menu Level      ▶
   ▶ USB Device Setting         Press  Enter        │




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

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

OnChip IDE Device

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

```
                  Phoenix - AwardBIOS CMOS Setup Utility
                           OnChip IDE Device

   IDE HDD Block Mode           Enabled           │   Item  Help
   IDE DMA  Transfer  Access    Enabled           │
                                                  │ Menu Level     ▶▶
   *** On-Chip Serial ATA Setting ***             │
   SATA Mode                    IDE               │ If your IDE hard drive
   On-Chip Serial ATA           Enhanced  Mode    │ supports block mode
                                                  │ Select Enabled for
                                                  │ automatic detection of
                                                  │ the optimal number of
                                                  │ block read/writes per
                                                  │ sector the drive can
                                                  │ support




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

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

IDE HDD 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.

SATA Mode

IDE   This option configures the Serial ATA drives in IDE mode.

AHCI   This option allows the Serial ATA devices to use AHCI (Advanced Host Controller Interface).

On-Chip Serial ATA

Disabled   Disables the onboard SATA.

Combined Mode   This option allows you to use both PATA and SATA drives; allowing a maximum of 2 IDE drives in each channel.

Enhanced Mode   This option allows you to use both PATA and SATA drives; allowing a maximum of 5 IDE drives.

SATA Only   SATA is operating in legacy mode.

Onboard Device

Move the cursor to this field and press <Enter>. The following screen will appear.
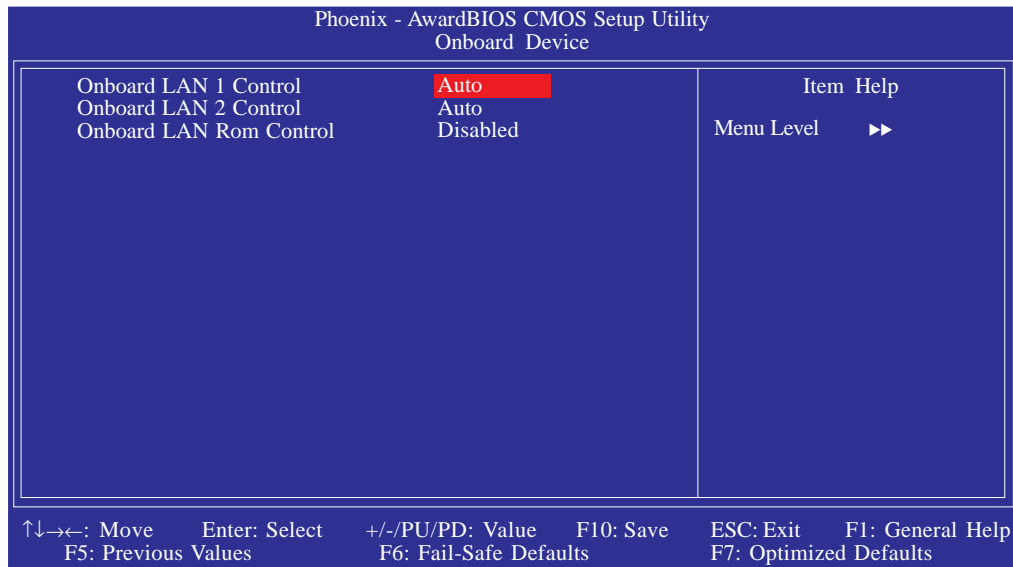
```
              Phoenix - AwardBIOS CMOS Setup Utility
                        Onboard  Device

     Onboard LAN 1 Control          Auto                Item  Help
     Onboard LAN 2 Control          Auto
     Onboard LAN Rom Control        Disabled         Menu Level    ▶▶




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

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

Onboard LAN 1 Control and Onboard LAN 2 Control

These fields are used to enable or disable the onboard LAN chips.

Onboard LAN Rom Control

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

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

Super IO Device

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

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

     Power On Function            BUTTON ONLY       ▲        Item  Help
  x  KB Power ON Password         Enter
  x  Hot Key Power ON             Ctrl-F1                  Menu Level    ▶▶
     Onboard FDC Controller       Enabled
     UART Mode Select             Disabled
  x  RxD, TxD Active              Hi, Lo
  x  IR Transmission Delay        Enabled
  x  UR2 Duplex Mode              Half
  x  Use IR Pins                  IR-Rx2Tx2
     Onboard Parallel Port        378/IRQ7
     Parallel Port Mode           SPP
  x  EPP Mode Select              EPP 1.7
  x  ECP Mode Use DMA             3
     PWRON After PWR-Fail         Off
     Onboard Serial Port 1        3F8
     Serial Port 1 use IRQ        IRQ4
     Onboard Serial Port 2        2F8
     Serial Port 2 use IRQ        IRQ3
     Onboard Serial Port 3        3E8
     Serial Port 3 use IRQ        IRQ10
     Onboard Serial Port 4        2E8
     Serial Port 4 use IRQ        IRQ11             ▼

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

The screen above list all the fields available in the Super IO Device 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.

Power On Function

This field allows you to use the 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 Left   When this option is selected, double-click the left button of the mouse to power-on the system.

Mouse Right When this option is selected, double-click the right button of the mouse to power-on 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 pass-
word. 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 be-
fore 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.

Onboard FDC Controller

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

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 periph-
eral device must be within a 30° angle and within a distance of 1
meter.

RxD, TxD Active

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

IR Transmission Delay

If this field is Enabled, transmission of data will be slower. This is
recommended when you encounter transmission problem with your
device. The options are: Enabled and Disabled.

UR2 Duplex Mode

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

Use IR Pins

The options are IR-Rx2Tx2 and RxD2TxD2.

Onboard Parallel Port

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

Parallel Port Mode

The options are SPP, EPP, ECP, ECP+EPP and Normal. 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.

SPP
Allows normal speed operation but in one direction only.

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

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

EPP Mode Select

This field is used to select the EPP mode.

ECP Mode Use DMA

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

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.

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

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

Disabled　　　　Disables the serial port.

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

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

USB Device Setting

Move the cursor to this field and press <Enter>. The following screen will appear.
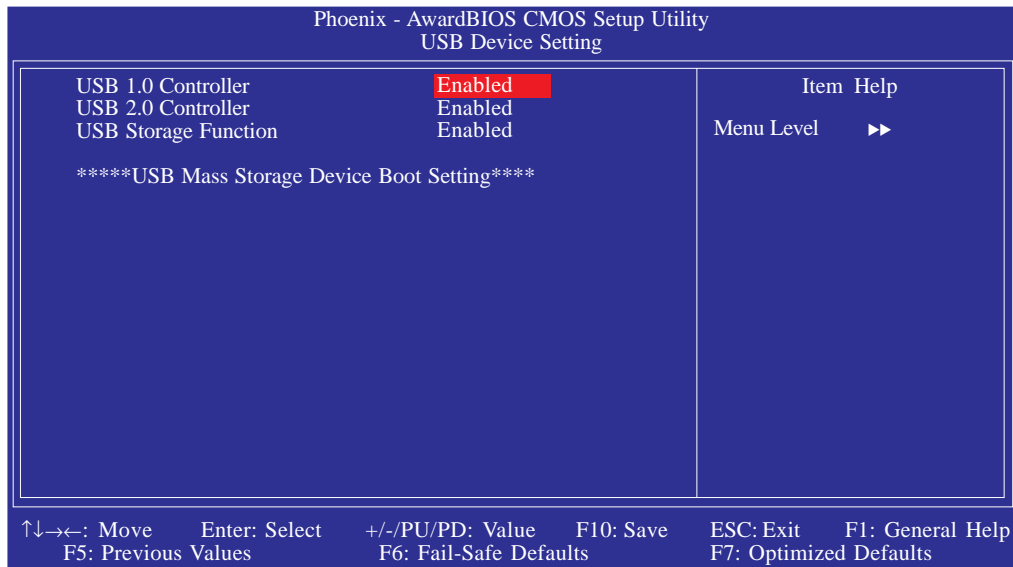
```
                Phoenix - AwardBIOS CMOS Setup Utility
                          USB Device Setting

      USB 1.0 Controller          Enabled                    Item  Help
      USB 2.0 Controller          Enabled
      USB Storage Function        Enabled              Menu Level    ▶▶

      *****USB Mass Storage Device Boot Setting****




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

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

USB 1.0 Controller

This field is used to enable or disable the Universal Host Controller Interface (USB 1.0).

USB 2.0 Controller

This field is used to enable or disable the Enhanced Host Controller Interface (USB 2.0).

USB Storage Function

This field is used to enable or disable the support for legacy USB mass storage.

Power Management Setup

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

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

   PCI Express PME                Disabled            Item  Help
   ACPI Suspend Type              S3(STR)
   Soft-Off by PWR-BTTN           Instant-Off       Menu Level     ▶
   Wake-up By PCI Card            Disabled
   Power On By Ring               Disabled
   USB KB Wake-up From S3         Disabled
   Resume By Alarm                Disabled
 x Date(of Month) Alarm           0
 x Time(hh:mm:ss) Alarm           0 : 0 : 0




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

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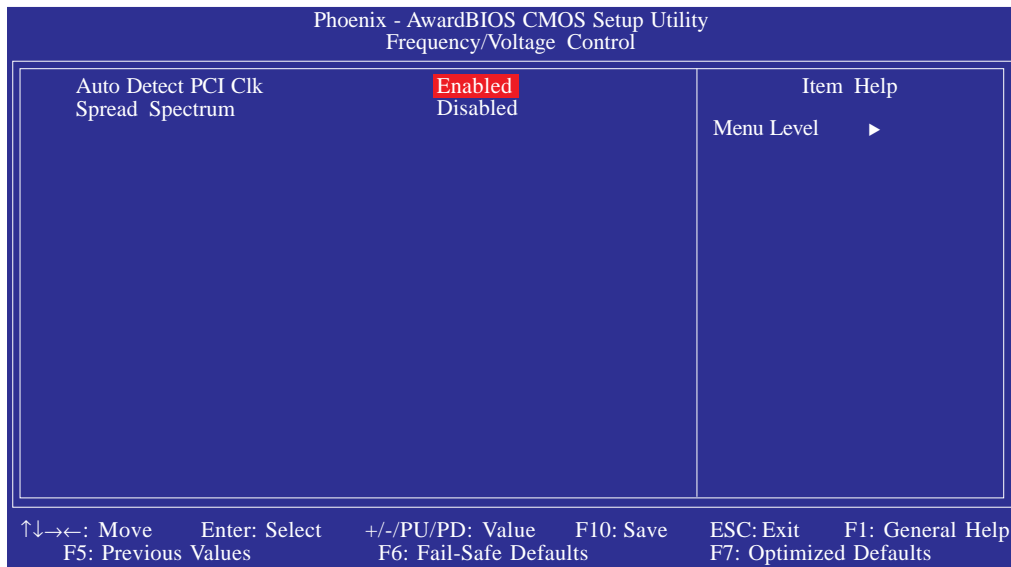
PCI Express PME

This field is used to configure the PCI Express PME..

ACPI Suspend Type

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

S1(POS)   Enables the Power On Suspend function.
S3(STR)   Enables the Suspend to RAM function.

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 but-

ton. 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.

Power On By Ring

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

USB KB Wake-Up From S3

This field, when enabled, allows you to use a USB keyboard or USB mouse to wake up a system that is in the S3 (STR - Suspend To RAM) state. 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 date and time you would like the Soft Power Down (Soft-Off) PC to power-on in the "Date (of Month) Alarm" and "Time (hh:mm:ss) Alarm" fields. However, if the system is being accessed by incoming calls or the network (Resume On Ring/LAN) prior to the date and time set in these fields, the system will give priority to the incoming calls or network.

Disabled   Disables the automatic power-on function. (default)

Date (of Month) 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) Alarm

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

PnP/PCI Configurations

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

```
              Phoenix - AwardBIOS CMOS Setup Utility
                    PnP/PCI Configurations

    Init Display First             PCIEx              Item  Help
    Reset Configuration Data       Disabled
                                              Menu Level      ▶
    Resources Controlled By        Auto(ESCD)
  x IRQ Resources                  Press  Enter     Warning: If use PCI VGA
                                                    "PEG/Onchip VGA Control"
    PCI/VGA Palette Snoop          Disabled         item must be set to PEG
    INT Pin 1 Assignment           Auto             port.
    INT Pin 2 Assignment           Auto
    INT Pin 3 Assignment           Auto
    INT Pin 4 Assignment           Auto
    INT Pin 5 Assignment           Auto
    INT Pin 6 Assignment           Auto
    INT Pin 7 Assignment           Auto
    INT Pin 8 Assignment           Auto



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

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

Init Display First

Onboard When the system boots, it will first initialize the onboard VGA.

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

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

Reset Configuration Data

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

Disabled The BIOS will not reset the configuration data.

Resources Controlled By

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

Auto(ESCD)	The system will automatically detect the settings for you.
Manual	Choose the specific IRQ resources in the "IRQ Resources" field.

IRQ Resources

Move the cursor to this field and press <Enter>. Set each system

```
                Phoenix - AwardBIOS CMOS Setup Utility
                            IRQ  Resources
┌─────────────────────────────────────────────────────┬──────────────────────┐
│   IRQ-3   assigned to         PCI Device              │      Item  Help       │
│   IRQ-4   assigned to         PCI Device              │                      │
│   IRQ-5   assigned to         PCI Device              │  Menu Level   ▶▶      │
│   IRQ-7   assigned to         PCI Device              │                      │
│   IRQ-9   assigned to         PCI Device              │  Legacy ISA for devices│
│   IRQ-10 assigned to          PCI Device              │  compliant with the   │
│   IRQ-11 assigned to          PCI Device              │  original PC AT bus    │
│   IRQ-12 assigned to          PCI Device              │  specification.  PCI/ISA│
│   IRQ-14 assigned to          PCI Device              │  PnP  for  devices    │
│   IRQ-15 assigned to          PCI Device              │  compliant with the Plug│
│                                                       │  and Play  standard    │
│                                                       │  whether designed  for │
│                                                       │  PCI or ISA bus        │
│                                                       │  architecture.         │
├───────────────────────────────────────────────────────────────────────────┤
│ ↑↓→←: Move      Enter: Select    +/-/PU/PD: Value    F10: Save    ESC: Exit    F1: General Help │
│      F5: Previous Values         F6: Fail-Safe Defaults      F7: Optimized Defaults │
└───────────────────────────────────────────────────────────────────────────┘
```

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

PCI/VGA Palette Snoop

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

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

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.

PC Health Status

```
                    Phoenix - AwardBIOS CMOS Setup Utility
                               PC Health Status

    Current  System  Temp        28°C/82°F                Item  Help
    Current  CPU1  Temperature    41°C/105°F
    System  Fan                   0      RPM          Menu Level    ▶
    CPU Fan                       2848  RPM
    2nd Fan                       0      RPM
    Vcore                         1.24V
    +12V                          12.28V
    +5V                           5.34V
    +3.3V                         3.21V
    VBAT (V)                      3.15V
    5VSB (V)                      5.26V




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

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

Current System Temp to 5VSB (V)

These fields will show the temperature, fan speed and output voltage of the monitored devices or components.

Note:

The onboard hardware monitor function is capable of detecting "system health" conditions but if you want a warning message to pop-up or a warning alarm to sound when an abnormal condition occurs, you must install the Hardware Monitor for Windows utility. This utility is included in the CD that came with the system board. Refer to the Hardware Monitor for Windows section in chapter 4 for more information.

Frequency/Voltage Control

```
                    Phoenix - AwardBIOS CMOS Setup Utility
                           Frequency/Voltage  Control

     Auto Detect PCI Clk            Enabled                    Item  Help
     Spread  Spectrum               Disabled
                                                      Menu Level    ▶




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

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

Auto Detect PCI Clk

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

Spread Spectrum

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

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>.

```
                   Phoenix - AwardBIOS CMOS Setup Utility

   ▶  Standard CMOS Features          ▶  Frequency/Voltage  Control
   ▶  Advanced BIOS Features             Load Fail-Safe Defaults
   ▶  Advanced Chipset Features          Load Optimized Defaults
   ▶  Integrated Peripherals            Set Supervisor Password
   ▶  Power Management┌─────────────────────────────word
   ▶  PnP/PCI Configurat│  Load Fail-Safe Defaults (Y/N)?  │etup
   ▶  PC Health Status  └─────────────────────────────aving

   Esc  :  Quit                      ↑ ↓ → ← : Select Item
   F10  :  Save & Exit Setup

                        Load Fail-Safe Defaults
```

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>.

```
                    Phoenix - AwardBIOS CMOS Setup Utility

   ▶ Standard CMOS Features          ▶ Frequency/Voltage  Control
   ▶ Advanced BIOS Features             Load  Fail-Safe Defaults
   ▶ Advanced Chipset Features          Load  Optimized  Defaults
   ▶ Integrated  Peripherals            Set Supervisor Password
   ▶ Power  Management┌──────────────────────────┐word
   ▶ PnP/PCI Configurat│  Load Optimized Defaults (Y/N)?  │etup
   ▶ PC Health Status   └──────────────────────────┘aving

   Esc  :  Quit                    ↑ ↓ → ← : Select Item
   F10  :  Save & Exit Setup

                        Load  Optimized  Defaults
```

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>.
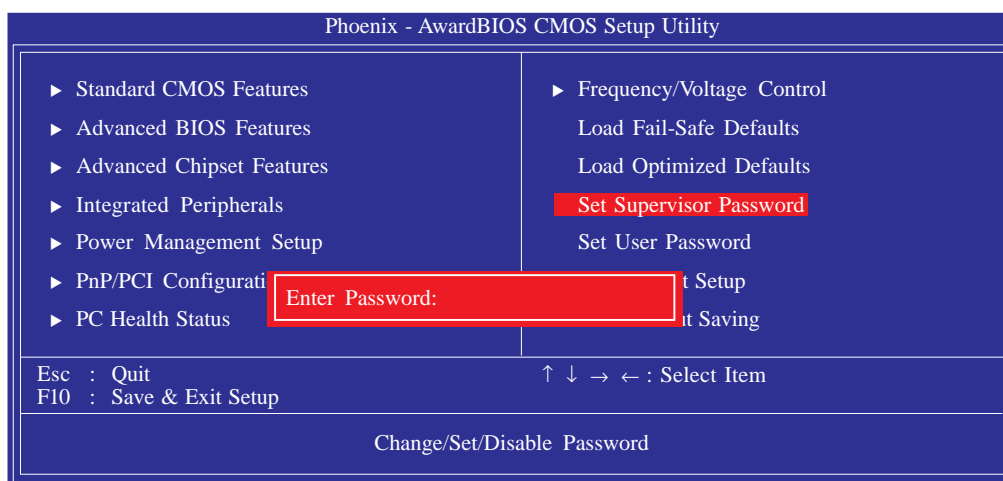
```
                Phoenix - AwardBIOS CMOS Setup Utility

  ▶ Standard CMOS Features            ▶ Frequency/Voltage Control
  ▶ Advanced BIOS Features              Load Fail-Safe Defaults
  ▶ Advanced Chipset Features           Load Optimized Defaults
  ▶ Integrated Peripherals              Set Supervisor Password
  ▶ Power Management Setup              Set User Password
  ▶ PnP/PCI Configurati ┌─────────────────────┐ t Setup
  ▶ PC Health Status    │  Enter  Password:   │ t Saving
                        └─────────────────────┘
  Esc  :  Quit                      ↑ ↓ → ← : Select Item
  F10  :  Save & Exit Setup

                    Change/Set/Disable  Password
```

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

Confirm Password:

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

Set User Password

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

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

Use the arrow keys to highlight "Set User Password" and press <Enter>.
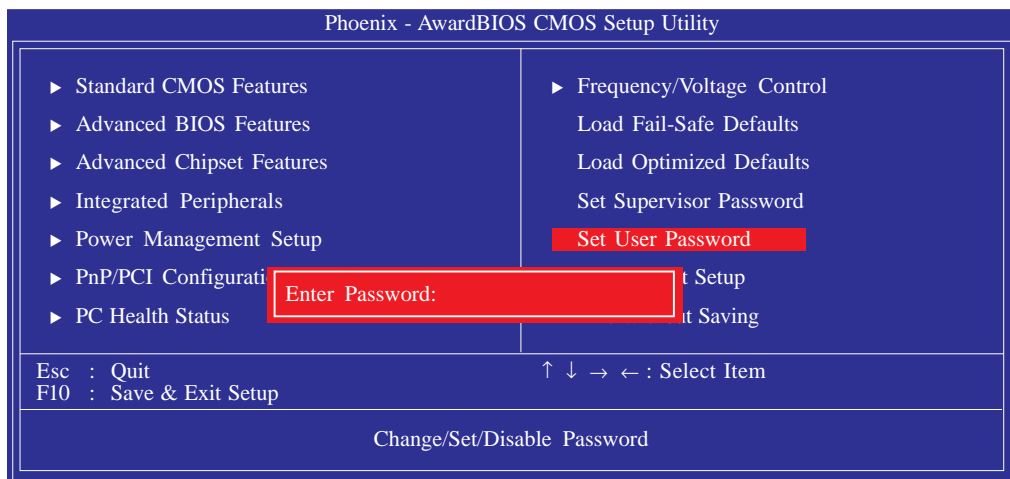
```
              Phoenix - AwardBIOS CMOS Setup Utility

 ▶ Standard CMOS Features          ▶ Frequency/Voltage Control
 ▶ Advanced BIOS Features             Load Fail-Safe Defaults
 ▶ Advanced Chipset Features          Load Optimized Defaults
 ▶ Integrated Peripherals             Set Supervisor Password
 ▶ Power Management Setup             Set User Password
 ▶ PnP/PCI Configurati    Enter Password:              t Setup
 ▶ PC Health Status                                    t Saving

 Esc : Quit                        ↑ ↓ → ← : Select Item
 F10 : Save & Exit Setup

                  Change/Set/Disable Password
```

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

Confirm Password:

You are asked to verify the password. Type in exactly the same password. If you type in a wrong password, you will be prompted to enter the correct password again. To delete or disable the password function, highlight "Set 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>.

```
                  Phoenix - AwardBIOS CMOS Setup Utility

   ▶  Standard CMOS Features          ▶  Frequency/Voltage Control
   ▶  Advanced BIOS Features             Load Fail-Safe Defaults
   ▶  Advanced Chipset Features          Load Optimized Defaults
   ▶  Integrated Peripherals             Set Supervisor Password
   ▶  Power Management                                    sword
   ▶  PnP/PCI Configura    SAVE to CMOS and EXIT (Y/N)?   Setup
   ▶  PC Health Status                                    Saving

   Esc  :  Quit                         ↑ ↓ → ← : Select Item
   F10  :  Save & Exit Setup

                         Save Data to CMOS
```

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, high-light "Exit Without Saving" and press <Enter>.

```
                  Phoenix - AwardBIOS CMOS Setup Utility

 ▶  Standard CMOS Features              ▶  Frequency/Voltage  Control
 ▶  Advanced  BIOS  Features               Load Fail-Safe Defaults
 ▶  Advanced Chipset Features              Load Optimized Defaults
 ▶  Integrated  Peripherals                Set Supervisor Password
 ▶  Power  Management                      ssword
 ▶  PnP/PCI Configurat     Quit Without Saving (Y/N)? N     Setup
 ▶  PC Health Status                       t Saving

  Esc  :  Quit                       ↑ ↓ → ← : Select Item
  F10  :  Save & Exit Setup

                       Abandon  All  Data
```

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> simulta-neously or <Del> after memory testing is done.

Updating the BIOS

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

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

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

3. Save the setting and reboot the system.

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

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

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

   File Name to Program : [                        ]




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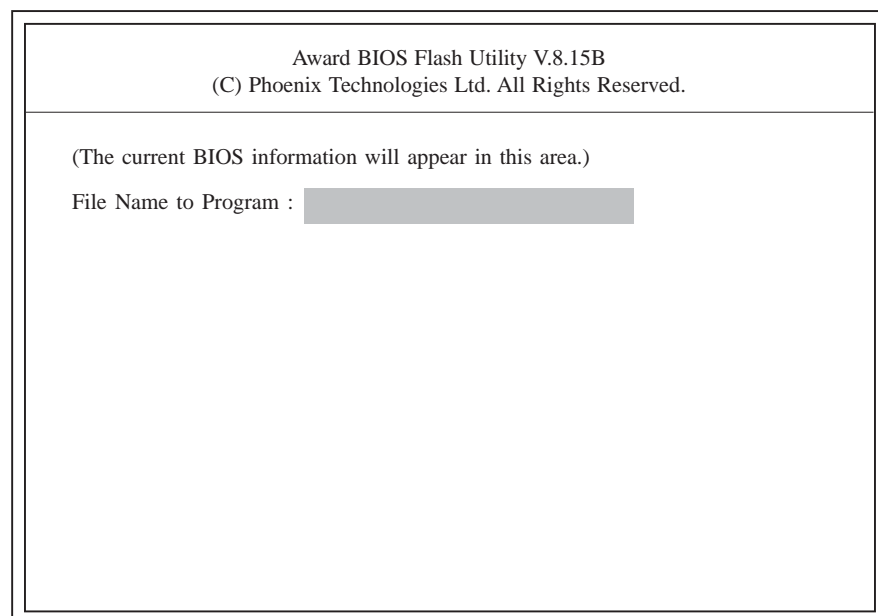
5. Type the new BIOS file name onto the gray area that is next to "File Name to Program" then press <Enter>.

6. The following will appear.

    Do You Want to Save BIOS (Y/N)

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

7. The following will then appear.

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

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

Chapter 4 - Supported Software

Drivers for Windows 7 / Windows Vista System

The CD that came with the 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, please go directly to the root directory of the CD and double-click "Setup".

Supported Software ∙∙∙∙∙∙∙∙∙∙∙∙∙∙∙∙∙∙∙∙∙∙∙∙∙∙∙∙∙∙∙∙∙∙∙∙∙∙

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.

To install the utility, click "Intel Chipset Software Installation Utility" on the main menu.

1. Setup is now ready to in-
   stall the utility. Click Next.

2. Read the license agreement
   then click Yes.

3. Go through the readme document for system requirements and installation tips then click Next.

5. After completing installation, click Finish to exit setup.

Supported Software ·································

Intel Graphics Drivers

To install the driver, click "Intel Graphics Drivers" on the main menu.

1. Setup is now ready to in-
   stall the graphics driver.
   Click Next.
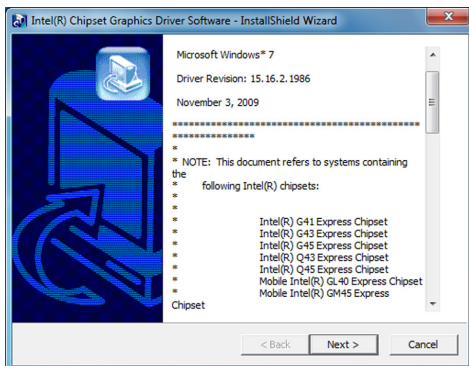
By default, the "Automatically run WinSAT and enable the Windows Aero desktop theme" is enabled. With this enabled, after installing the graphics driver and the system rebooted, the screen will turn blank for 1 to 2 minutes (while WinSAT is running) before the Windows 7 / Windows Vista desktop appears. The "blank screen" period is the time Windows is testing the graphics performance.

We recommend that you skip this process by dis-abling this function then click Next.
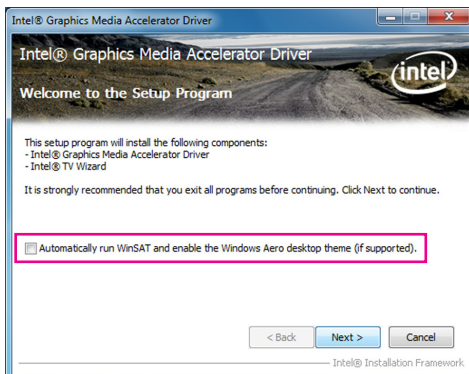
2. Read the license agreement then click Yes.

3. Go through the readme document for system requirements and installation tips then click Next.
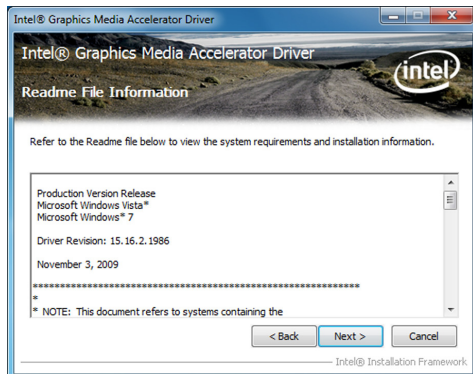
4. Setup is now installing the driver. Click Next to continue.
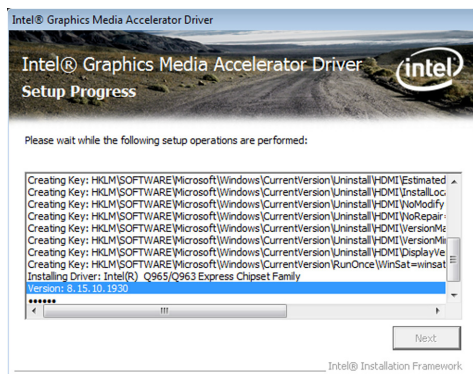
5. Click "Yes, I want to restart this computer now" then click Finish.

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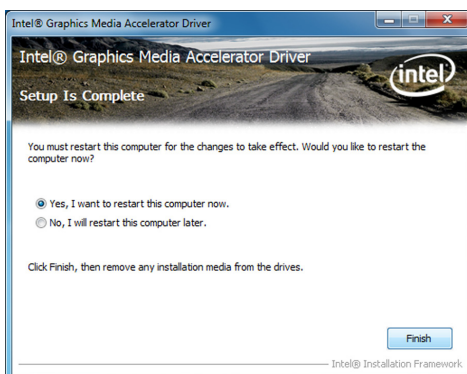
Audio Drivers

To install the driver, click "Audio Drivers" on the main menu.

1. Setup is now ready to in-
   stall the driver. Click Next.

2. Follow the remainder of the
   steps on the screen; click-
   ing "Next" each time you
   finish a step.

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

   Restarting the system will
   allow the new software in-
   stallation to take effect.

Supported Software ································

LAN Drivers

To install the driver, click "LAN Drivers" on the main menu.

1. Setup is ready to install the driver. Click Next.
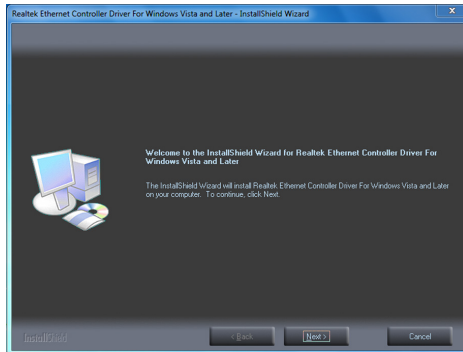
2. Click Install to begin the installation.
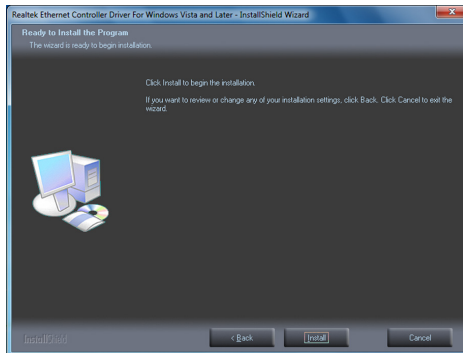
3. After completing installation, click Finish.

Hardware Monitor for Windows

The Hardware Monitor for Windows 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.

To install the utility, click "Hardware Monitor for Windows" on the main menu.

1. Setup is now ready to install the utility. Click Next.
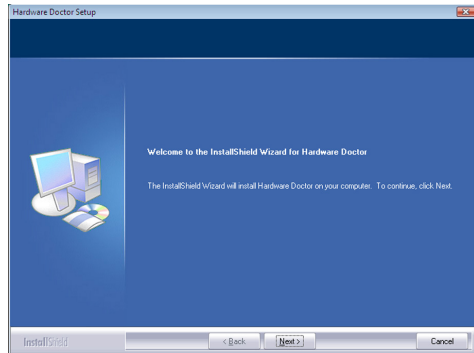
2. Click Next to install or click Browse to select another folder.
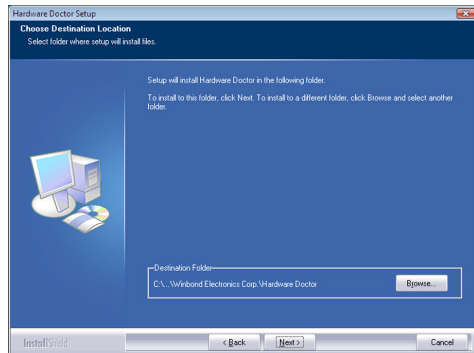
3. Click Next to add the pro-
   gram icon to the Program
   Folder.
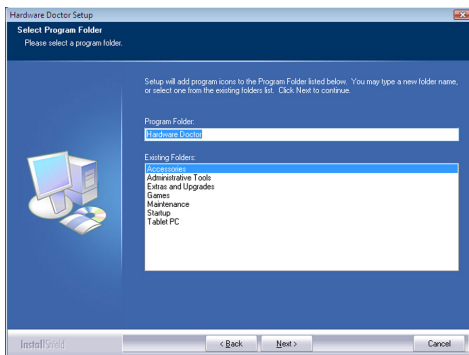
4. After completing instal-
   lation, click Finish to exit
   setup.
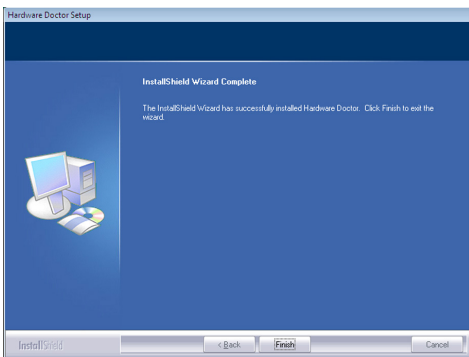
5. Click Yes if you want to
   create a Hardware Doctor
   shortcut at your desktop.
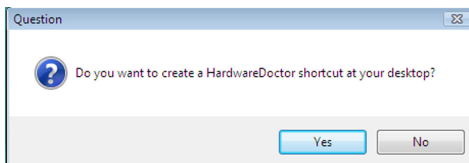
6. Click "Yes, I want to restart
    my computer now" then
    click Finish.

    Restarting the system will
    allow the utility to take ef-
    fect.

Supported Software ································

Using the Hardware Monitor for Windows Utility

1. On your desktop, right-click the Hardware Doctor icon and then select Properties.
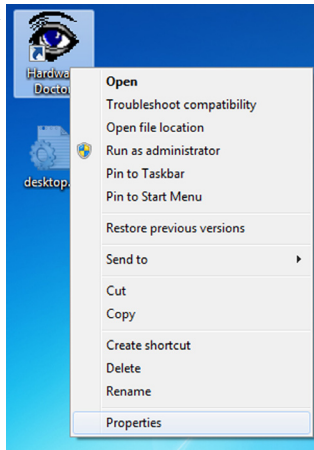
2. Select the Compatibility tab, click "Run this program as an administrator" then click OK.
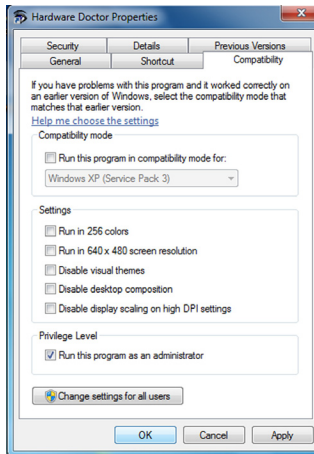
4. You can now access the utility.
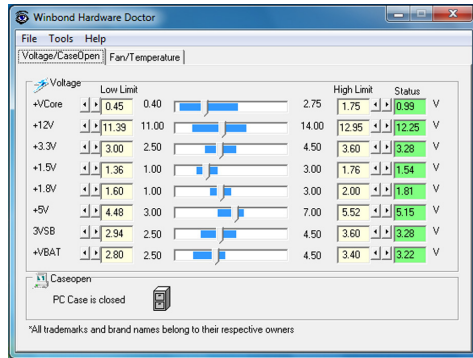
4

Supported Software ································

Intel Matrix Storage Manager Utility

Intel Matrix Storage Manager is a utility that allows you to monitor the current status of the SATA drives. It enables enhanced performance and power management for the storage subsystem.

To install the utility, click "Intel Matrix Storage Manager Utility" on the main menu.
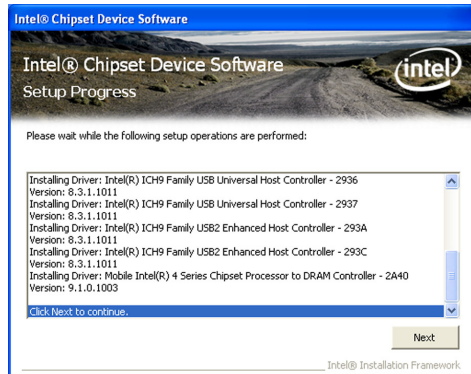
1. Setup is now ready to install the utility. Click Next.
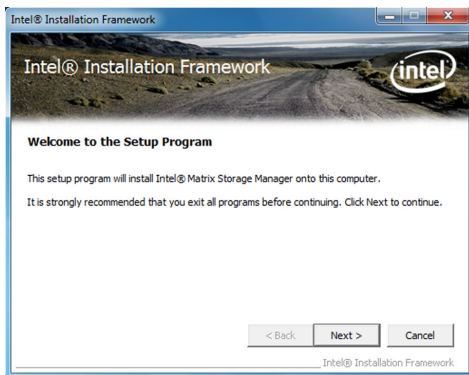
2. Read the license agreement then click Yes.

3. Go through the readme document for system requirements and installation tips then click Next.
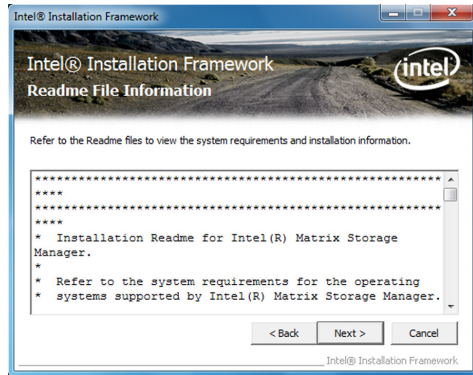
4. Setup is now installing the utility. Click Next to continue.
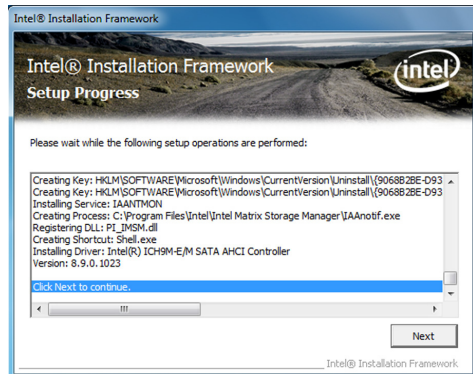
5. Click "Yes, I want to restart my computer now" then click Finish.

   Restarting the system will allow the new software installation to take effect.
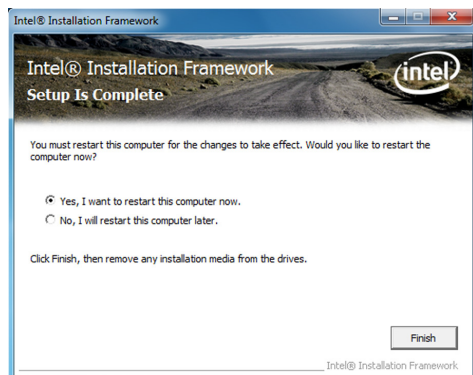
6. Run the Intel Matrix Storage Console utility to view the hard drives' configuration.
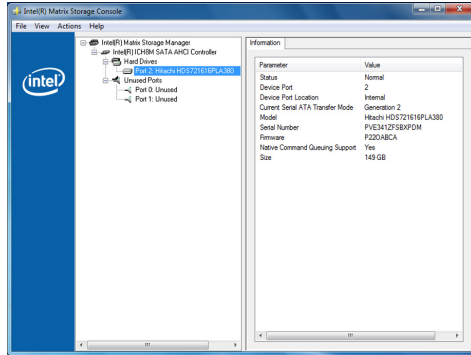
AHCI For F6 During Windows Setup Floppy Driver

You need to prepare an AHCI driver floppy diskette that you will need when you install the AHCI driver during Windows 7 / Windows Vista installation. You may also choose to copy the installation files to a USB flash drive.

1. Click "AHCI For F6 Dur-
   ing Windows Setup Floppy
   Driver" on the main menu.

   Windows Explorer will ap-
   pear showing the locations
   of the installation files.
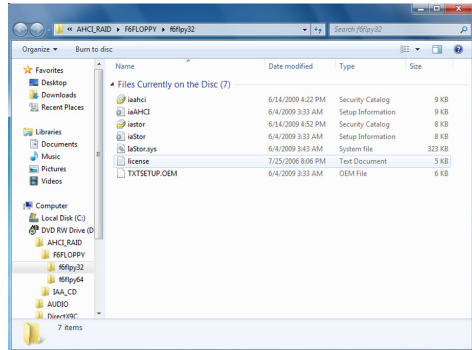
2. Click the Organize menu
   then click "Select All".

3. Insert a blank formatted
   floppy diskette into a floppy
   disk drive or plug a USB
   flash drive.
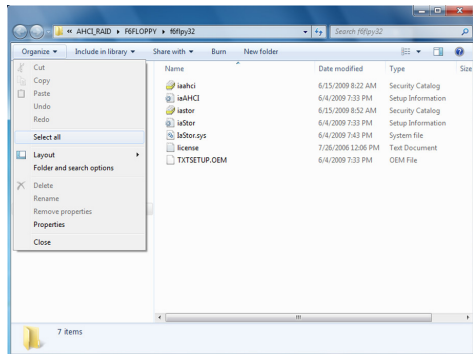
4. Right click on the files, select "Send To" and then select the floppy drive or USB flash drive.

The system will copy the selected files to the designated drive.
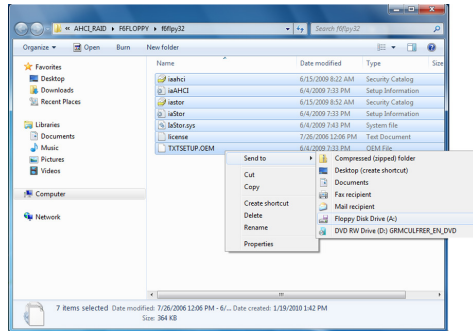
Installing the AHCI Driver During Windows 7 / Windows Vista Installation

The AHCI driver must be installed during Windows 7 / Windows Vista installation. This is required in order to be able to install the operating system onto a hard drive that is configured in AHCI mode.

Note:
The illustrations below were captured from the Windows 7 operating system. Except for slight differences in their screen appearance, the installation procedure is also the same for Windows Vista.

When you insert the operating system's installation disc into an optical drive, the message **Press any key to boot from CD or DVD** will appear. Press Enter.

1. Enter the preferred language and other preferences then click Next.

2. Click Install Now.

3. Click "I accept the license terms" then click Next.
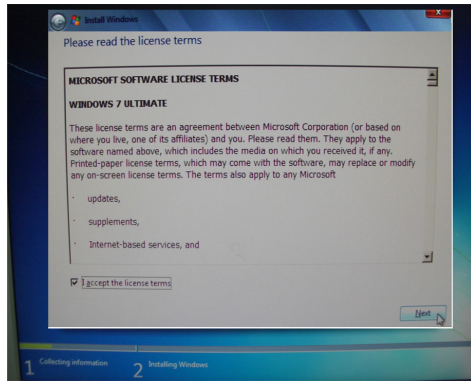
4. Click Custom (advanced) to install a new copy of Windows.
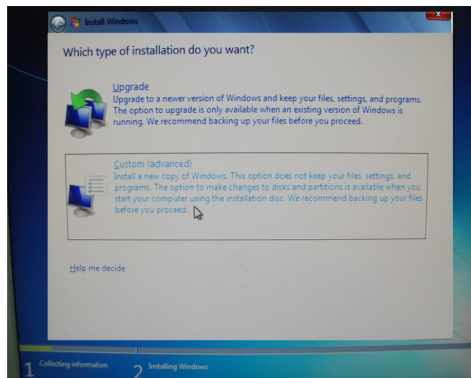
5. Select Load Driver then click Next.

4
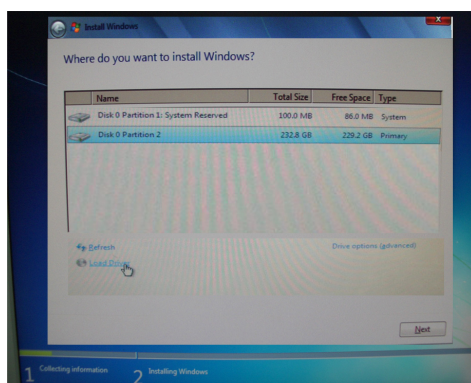
6. If you are using one opti-
cal drive only, take out the
Window's installation disc
and then insert the CD that
came with the motherboard
package.

   If you have another optical
drive, you can choose to
insert the provided CD to
that drive or plug the USB
flash drive that contains the
AHCI driver.

   Click Browse.
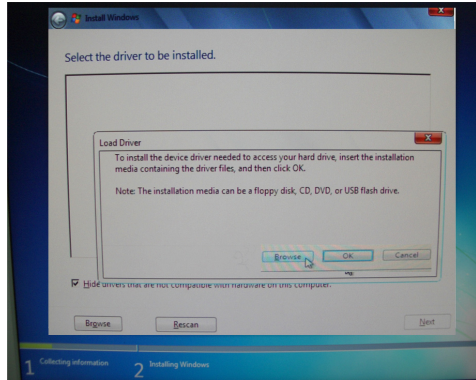
7. Locate for the optical drive
where you inserted the
CD. The AHCI driver is in
the \AHCI_RAID\F6FLOPPY\
F6FLPY32 of the CD.

   Or locate for the USB flash
drive that contains the
AHCI driver.

   After you have selected the
driver, click OK.
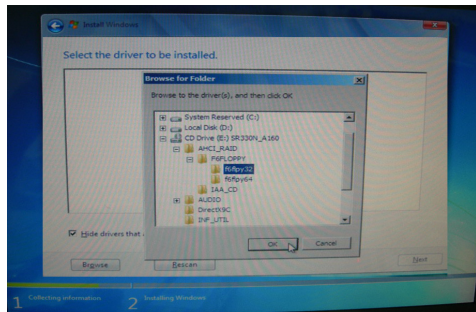
8. Select the driver then click
Next.
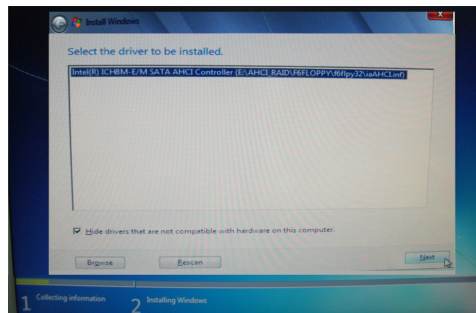
9. If you are using one opti-
    cal drive only, the warning
    message "Windows cannot
    be installed to this disk"
    will appear. Remove the
    AHCI driver CD and insert
    the Windows installation
    disc back in. You will not be
    able to proceed yet because
    the Next button is still gray.
    You must first click Refresh.

    Skip this step if the CD is
    in another optical drive or
    if you are using a USB flash
    drive.
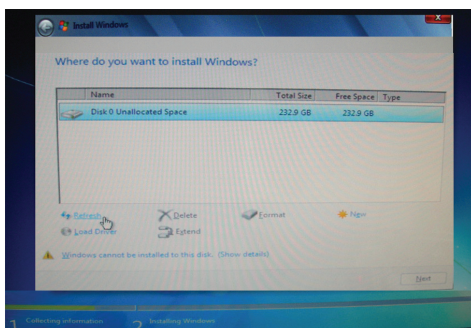
10. The Next button that was
    initially gray will turn
    black. Click Next to pro-
    ceed.
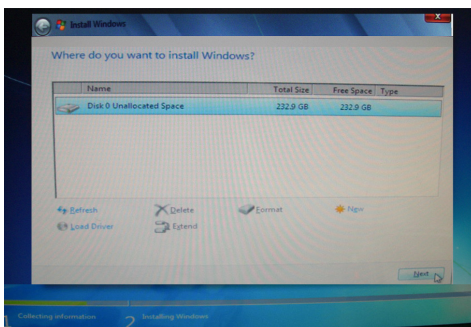
11. The system is currently
    installing Windows. Your
    computer will restart sev-
    eral times during the in-
    stallation.
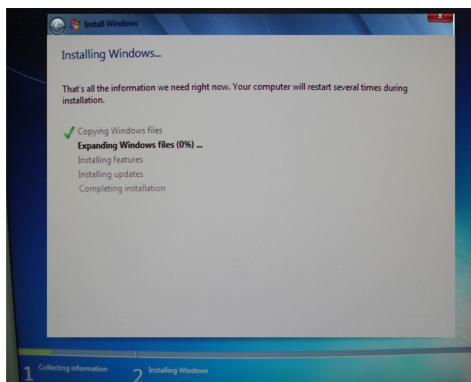
Adobe Acrobat Reader 9.3

To install, click "Adobe Acrobat Reader 9.3" on the main menu.

1. Click Next to install to the destination folder or click Change Destination folder to select another folder.
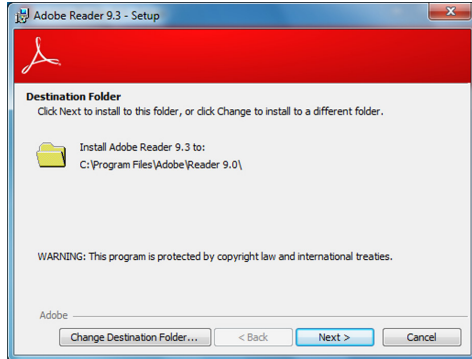
2. Click Install to begin installation.
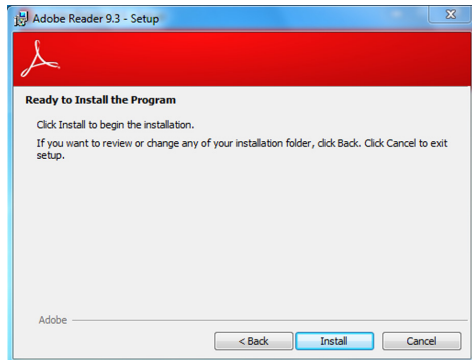
3. Click Finish to exit installation.
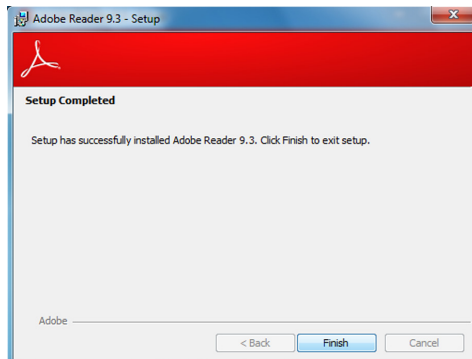
Drivers for Windows XP System

The CD that came with the system board contains drivers, utilities and software applications required to enhance the performance of the system board. Insert the CD into a CD-ROM drive. The autorun screen (Main Board Utility CD) will appear. If after inserting the CD, "Autorun" did not automatically start, please go directly to the root directory of the CD and double-click "Setup".

Microsoft DirectX 9.0C Driver

To install, click "Microsoft DirectX 9.0C Driver" on the main menu.

1. Click "I accept the agree-ment" then click Next.
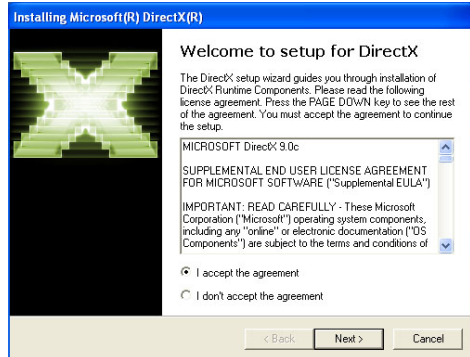
2. You are now ready to install DirectX. Click Next.
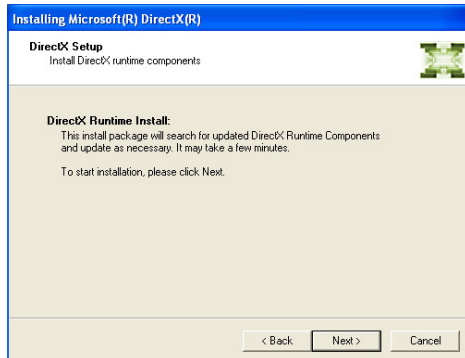
3. Click Finish. Reboot the system for DirectX to take effect.
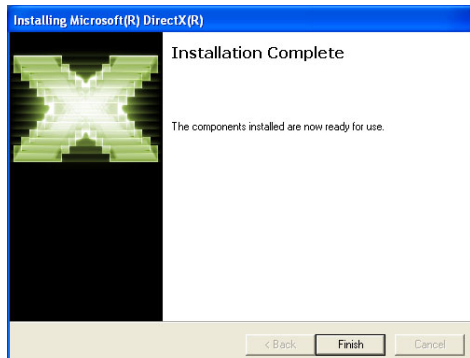
Supported Software ································

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.

To install the utility, click "Intel Chipset Software Installation Utility" on the main menu.

1. Setup is ready to install the utility. Click Next.

2. Read the license agreement then click Yes.

3. Go through the readme document for more installation tips then click Next.
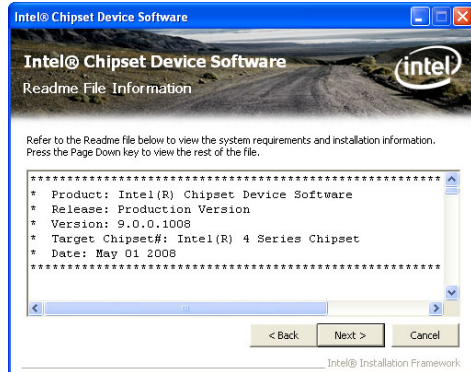
4. After all setup operations are done, click Next.

5. Click Finish to exit setup.

Supported Software ······································

Intel Graphics Drivers

To install the driver, click "Intel Graphics Drivers" on the main menu.

1. Setup is now ready to in-
    stall the graphics driver.
    Click Next.

2. Read the license agreement
    then click Yes.
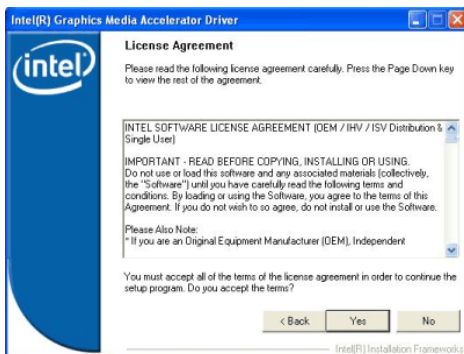
3. Go through the readme
    document for more installa-
    tion tips then click Next.
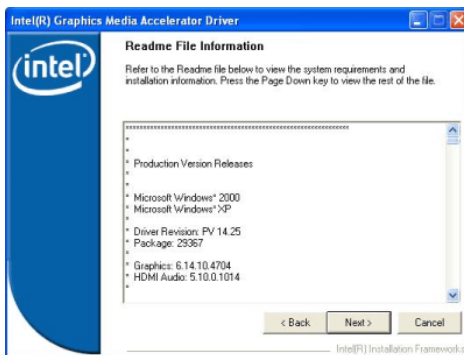
4. Setup is currently installing the driver. After installation has completed, click Next.
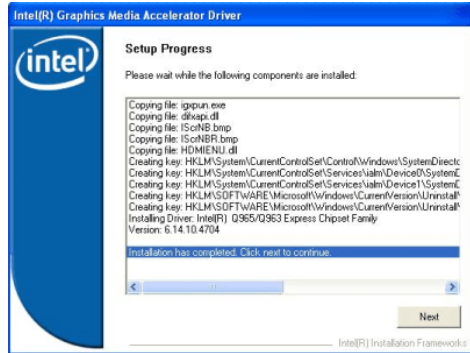
5. Click "Yes, I want to restart this computer now." then click Finish.

Restarting the system will allow the new software in-stalllation to take effect.

Supported Software ····································
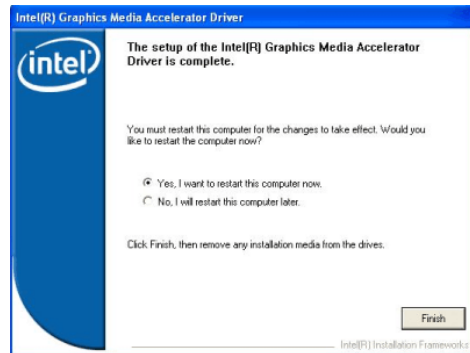
Audio Drivers

To install the driver, click "Audio Drivers" on the main menu.

1. Setup is ready to install the driver. Click Next.
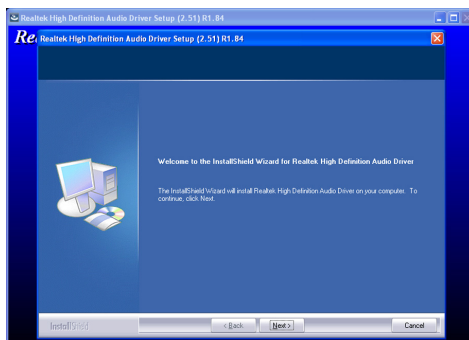
2. Click "Yes, I want to restart my computer now" then click Finish.

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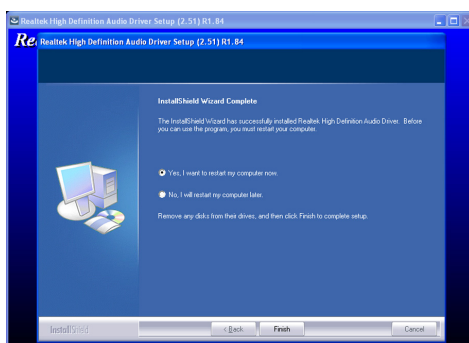
LAN Drivers

To install the driver, click "Realtek LAN Drivers" on the main menu.

1. Setup is ready to install the driver. Click Next.

2. Click Install to begin the installation.

3. After completing installa-tion, click Finish.

Supported Software ■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■■

Hardware Monitor for Windows

The Hardware Monitor for Windows 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.

To install, click "Hardware Monitor for Windows" on the main menu.

1. Setup is now ready to install the utility. Click Next.
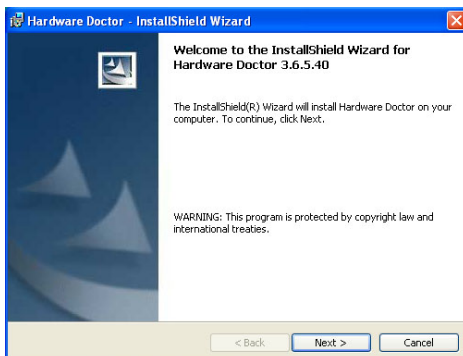
2. Click Next to install or click Change to select another folder.

3. Click Install to begin the installation.
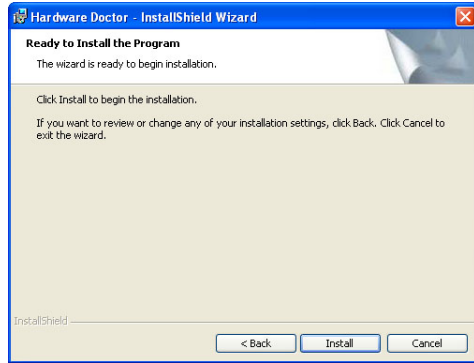
4. After completing installation, click Finish.
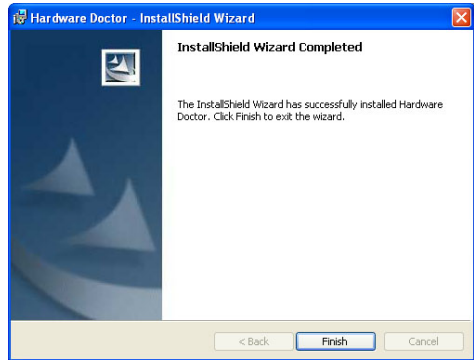
Supported Software ████████████████████████████████

Intel Matrix Storage Manager Utility

Intel Matrix Storage Manager is a utility that allows you to monitor the current status of the SATA drives. It enables enhanced performance and power management for the storage subsystem.

Note:
This utility is supported only when the SATA Mode field is set to AHCI. (The SATA Mode field is in the OnChip IDE Device section, Integrated Peripherals submenu of the BIOS utility.)

To install the utility, click "Intel Matrix Storage Manager Utility" on the main menu.

1. Setup is now ready to install the utility. Click Next.
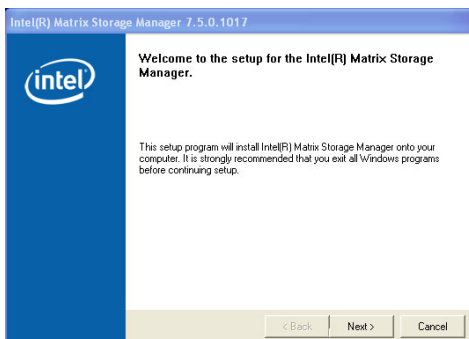
2. Read the Warning information carefully then click Next.

3. Read the license agreement then click Yes.

4. Go through the readme document for system requirements and installation tips then click Next.

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.

Supported Software ████████████████████████████████
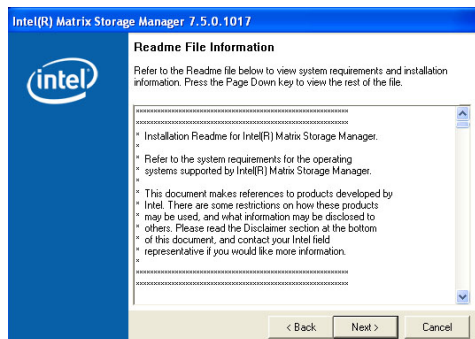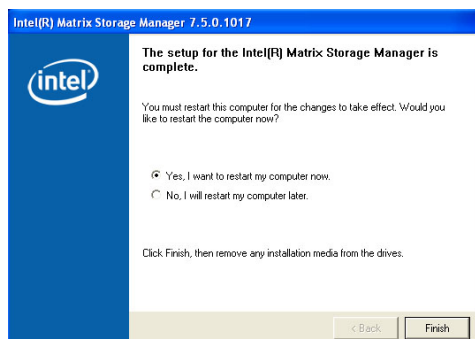
AHCI For F6 During Windows Setup Floppy Driver

You need to prepare an AHCI driver floppy diskette that you will need when you install the AHCI driver during Windows XP installation.

1. Click "AHCI For F6 During Windows Setup Floppy Driver" on the main menu.

   Windows Explorer will appear showing the locations of the installation files.
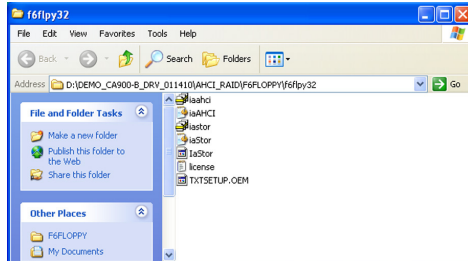
2. Click the Edit menu then click "Select All".

3. Insert a blank formatted floppy diskette into a floppy disk drive.
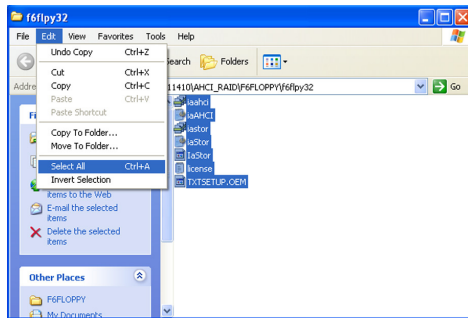
4. Right click on the files, select "Send To" and then select "3½ Floppy (A:)".

   The system will copy the selected files into the diskette.
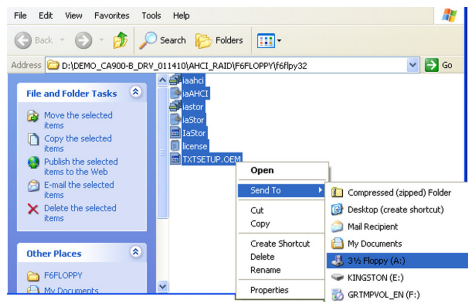
Installing the AHCI Driver During Windows XP Installation

The AHCI driver must be installed during Windows XP installation. This is required in order to be able to install the operating system onto a hard drive that is configured in AHCI mode.

1. When you insert the operating system's installation disc into an optical drive, the message **Press any key to boot from CD** will appear. Press Enter.

2. The message **Setup is inspecting your computer's hardware configuration** will appear.

3. Press **F6** when prompted in the status line with the "Press F6 if you need to install a third party SCSI or RAID driver" message.

4. Press **S** to "Specify Additional Device".

4. Insert the floppy disk, containing the AHCI driver, into a floppy drive.

5. Select **Intel(R) ICH8M-E/M SATA AHCI Controller** then press Enter.

You have successfully installed the driver. However you must continue installing the OS. Leave the floppy disk in the floppy drive until the system reboots itself because Windows setup will need to copy the files again from the floppy disk to the Windows installation folders. After Windows setup has copied these files again, remove the floppy diskette so that Windows setup can reboot as needed.

Supported Software ·································

Adobe Acrobat Reader 9.3

To install the reader, click "Adobe Acrobat Reader 9.3" on the main menu.

1. Click Next to install to the destination folder or click Change Destination folder to select another folder.
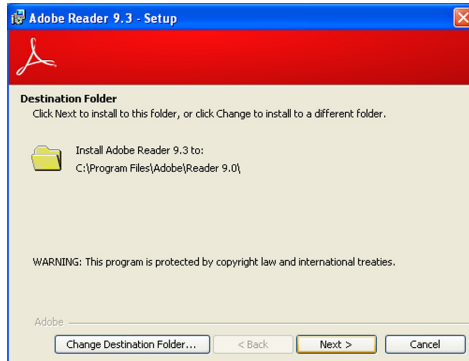
2. Click Install to begin installation.
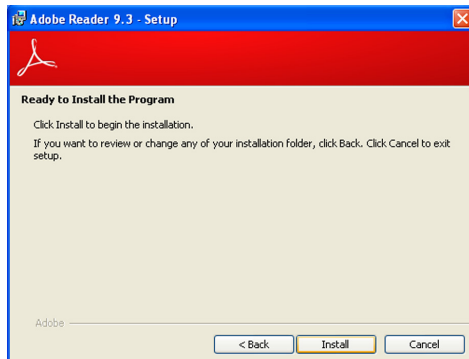
3. Click Finish to exit instalaion.
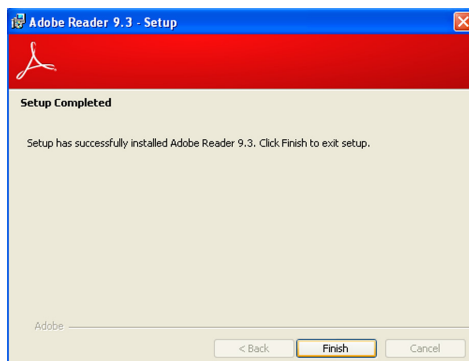
Appendix A - NLITE and AHCI Installation Guide

nLite

nLite is an application program that allows you to customize your XP installation disc by integrating the RAID/AHCI drivers into the disc. By using nLite, the F6 function key usually required during installation is no longer needed.

Note:
The installation steps below are based on nLite version 1.4.9. Installation procedures may slightly vary if you're using another version of the program.

1. Download the program from nLite's offical website.

   http://www.nliteos.com/download.html

2. Install nLite.

   Important:
   Due to it's coding with Visual.Net, you may need to first install .NET Framework prior to installing nLite.

3. Download relevant RAID/AHCI driver files from Intel's website. The drivers you choose will depend on the operating system and chipset used by your computer.

   The downloaded driver files should include iaahci.cat, iaAHCI.inf, iastor.cat, iaStor.inf, IaStor.sys, license.txt and TXTSETUP.OEM.
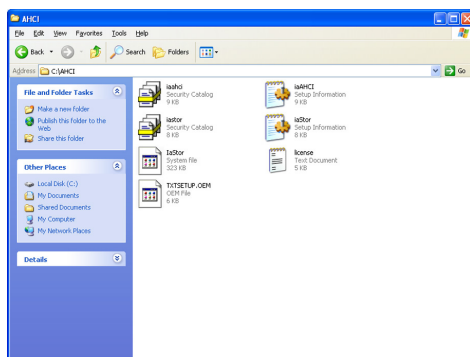
4. Insert the XP installation disc into an optical drive.

5. Launch nLite. The Welcome screen will appear. Click **Next**.
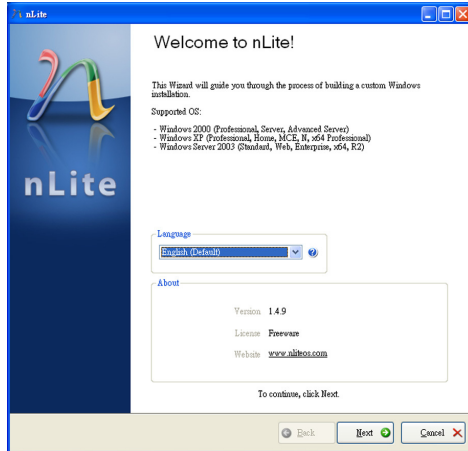
6. Click **Next** to temporarily save the Windows installation files to the designated default folder.

   If you want to save them in another folder, click **Browse**, select the folder and then click **Next**.
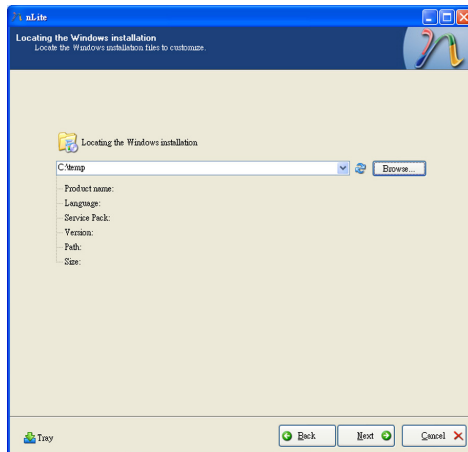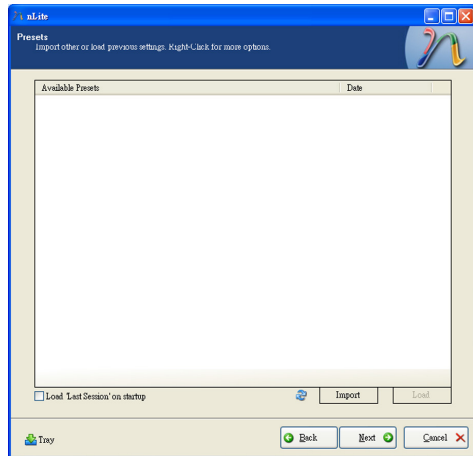
7. Click **Next**.

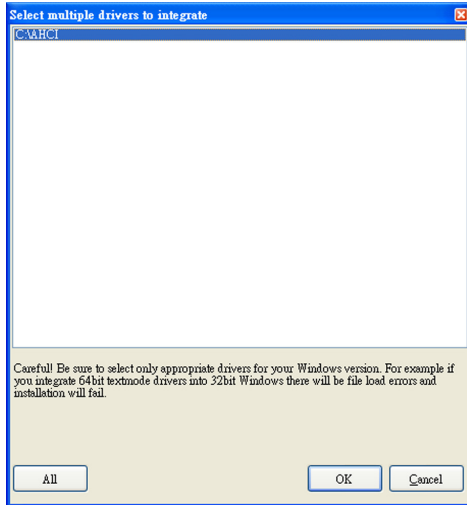8. In the Task Selection dialog box, click **Drivers** and **Bootable ISO**. Click **Next**.

A
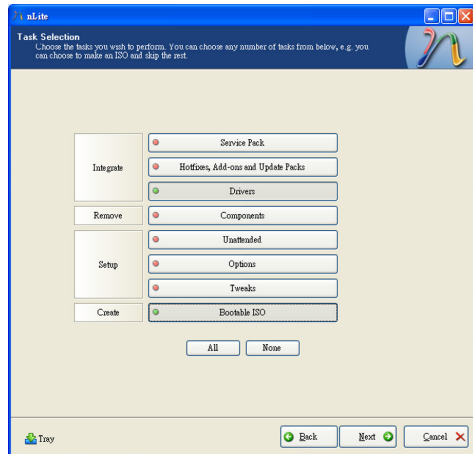
9. Click **Insert** and then se-
    lect **Multiple driver folder**
    to select the drivers you
    will integrate. Click **Next**.
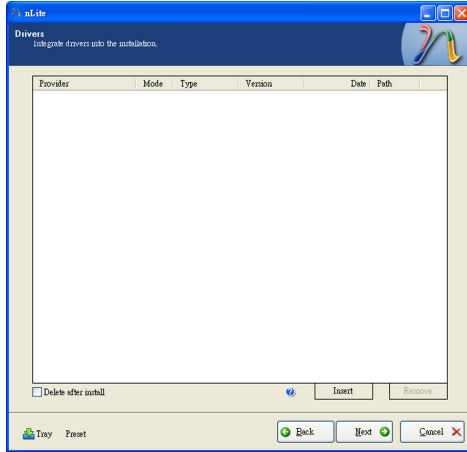
10. Select only the drivers
    appropriate for the Win-
    dows version that you are
    using and then click **OK**.

    Integrating 64-bit driv-
    ers into 32-bit Windows
   or vice versa will cause
    file load errors and failed
    installation.

11. If you are uncertain of the southbridge chip used on your motherboard, select all RAID/AHCI controllers and then click **OK**.

12. Click **Next**.

13. The program is currently integrating the drivers and applying changes to the installation.
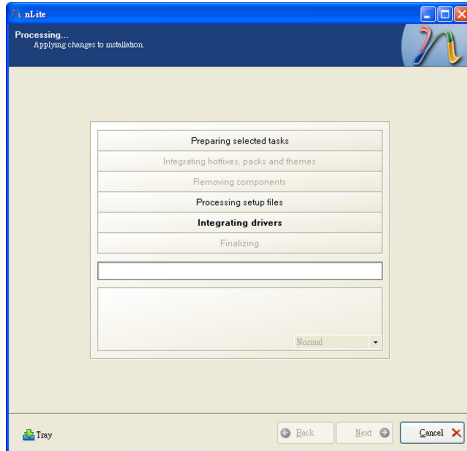
14. When the program is finished applying the changes, click **Next**.
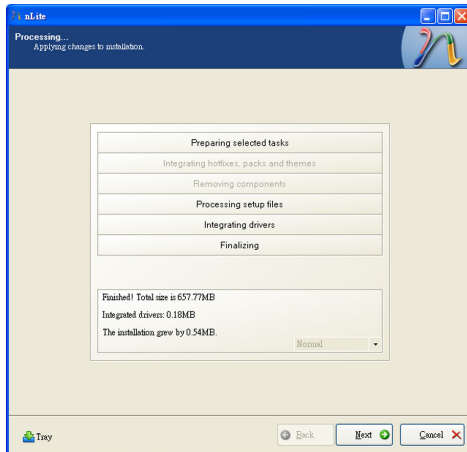
15. To create an image, se-
lect the **Create Image**
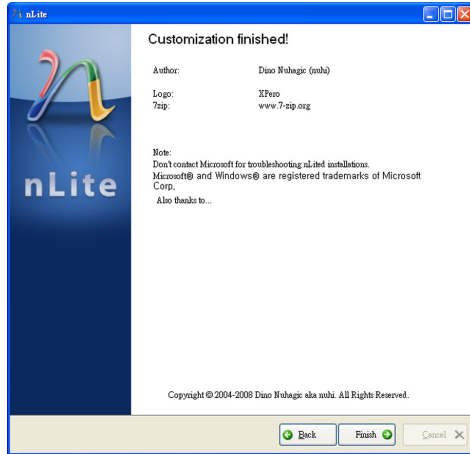mode under the General
section and then click
Next.
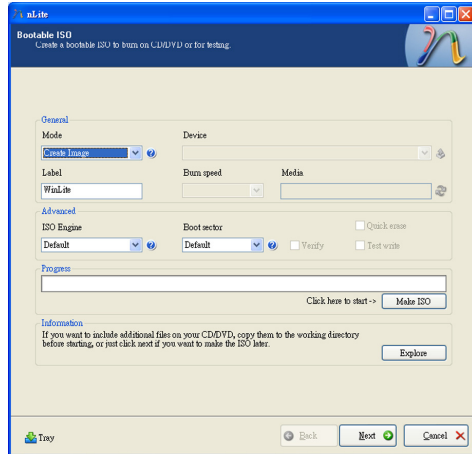
16. Or you can choose to
burn it directly to a disc
by selecting the **Direct
Burn** mode under the
General section.

Select the optical device
and all other necessary
settings and then click
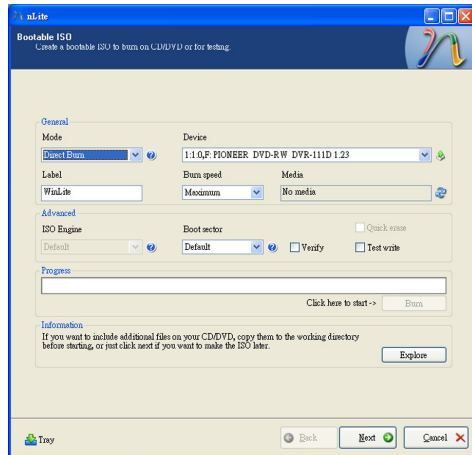
17. You have finished cus-
    tomizing the Windows
   XP installation disc. Click
    Finish.

    Enter the BIOS utility to
    configure the SATA con-
   troller to RAID/AHCI. You
    can now install Windows
    XP.

AHCI

The installation steps below will guide you in configuring your SATA drive to AHCI mode.

1. Enter the BIOS utility and configure the SATA controller to IDE mode.

2. Install Windows XP but do not press F6.

3. Download relevant RAID/AHCI driver files supported by the motherboard chipset from Intel's website.

    Transfer the downloaded driver files to C:\AHCI.

4. Open Device Manager and right click on one of the Intel Serial ATA Storage Controllers, then select **Update Driver**.

    If the controller you se-lected did not work, try selecting another one.

5. In the Hardware Update Wizard dialog box, select **"No, not this time"** then click **Next**.

6. Select **"Install from a list or specific location (Advanced)"** and then click **Next**.
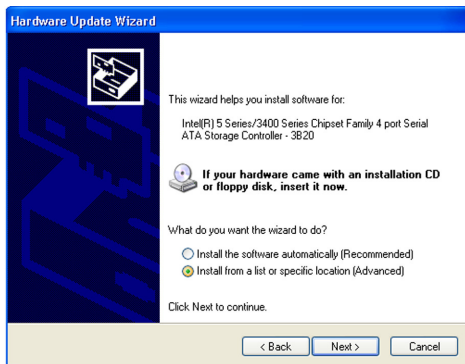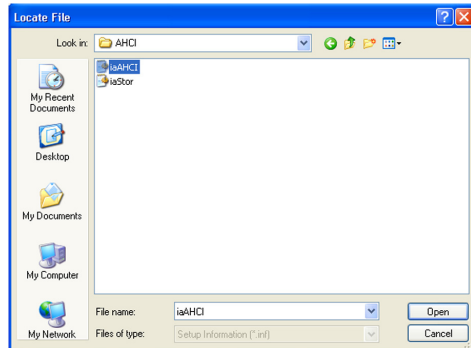

7. Select **"Don't search. I will choose the driver to install"** and then click **Next**.
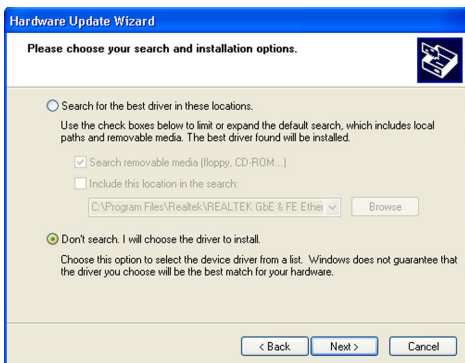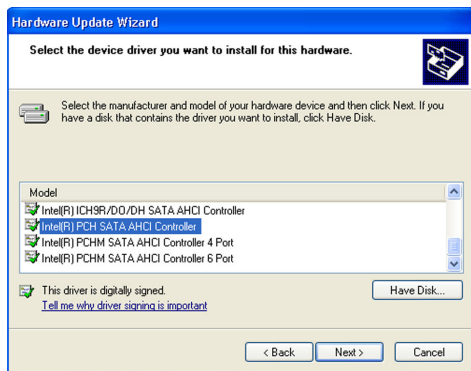
8. Click **"Have Disk"**.
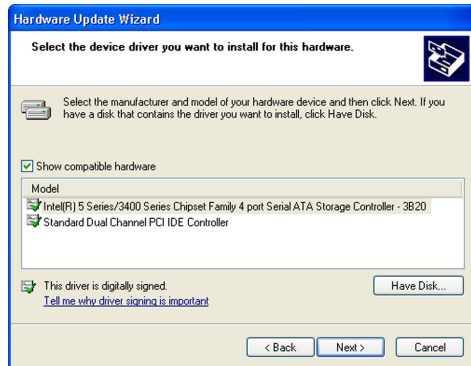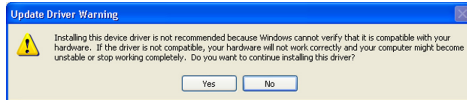
9. Select C:\AHCI\iaAHCI.inf and then click **Open**.

10. Select the appropriate AHCI Controller of your hardware device and then click **Next**.
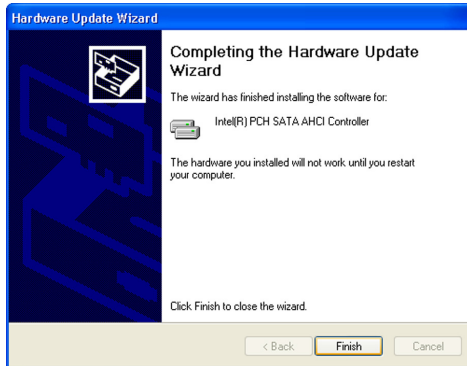
11. A warning message appeared because the selected SATA controller did not match your hardware device.

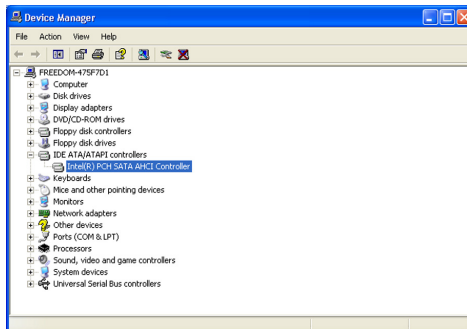   Ignore the warning and click **Yes** to proceed.

12. Click **Finish**.

13. The system's settings have been changed. Windows XP requires that you restart the computer. Click **Yes**.

14. Enter the BIOS utility and modify the SATA controller from IDE to AHCI. By doing so, Windows will work normally with the SATA controller that is in AHCI mode.

Appendix B - Watchdog Timer

Watchdog Timer

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

```
;=============== PROGRAM START ================
SIO_CON_PORT      EQU      2EH
SIO_DATA          EQU      2FH


begin:
MOV    DX,SIO_CON_PORT      ;SUPERIO ENTER CONFIG
MOV    AL,87H
OUT    DX,AL
OUT    DX,AL


MOV    DX,SIO_CON_PORT
MOV    AL,2DH               ;GPIO5 AND POWER CONTROL SIGNALS
                            MULTI-FUNCTION PIN SELECTION
OUT    DX,AL                ;BIT 0 PIN77 SELECT (0= WDTO#, 1=
                            GPIO50)


MOV    DX,SIO_DATA
IN     AL,DX
AND    AL,0FEH              ;SELECT PIN TO WATCH DOG
OUT    DX,AL


MOV    DX,SIO_CON_PORT
MOV    AL,07H               ;LOGIC DEVICE SLELCT
OUT    DX,AL


MOV    DX,SIO_DATA
MOV    AL,08H               ;SELECT DEVICE 8 (WATCH DOG)
OUT    DX,AL


MOV    DX,SIO_CON_PORT
MOV    AL,030H              ;ACTIVATE REGISTER
OUT    DX,AL


MOV    DX,SIO_DATA
OR     AL,01H               ;0= INACTIVATE, 1=ACTIVATE
OUT    DX,AL
```

```
MOV    DX,SIO_CON_PORT
MOV    AL,0F5H                    ;WATCH DOG CONTROL REGISTER
OUT    DX,AL

MOV    DX,SIO_DATA                ;BIT1 DIS/EN WDTO# OUTPUT LOW PULSE
                                  TO KBRST#PIN(0=DIS, 1=ENABLE)
IN     AL,DX                      ;BIT3 COUNTER MODE SLEECT (0=SECOND
                                  MODE, 1=MINUTE MODE)
OR     AL,02H
OUT    DX,AL

MOV    DX,SIO_CON_PORT
MOV    AL,0F6H                    ;WATCH DOG COUNTER
OUT    DX,AL

MOV    DX,SIO_DATA
MOV    AL,0AH                     ;SET COUNTER (EX 10 SEC)
OUT    DX,AL

MOV    DX,SIO_CON_PORT
MOV    AL,0F7H                    ;WATCH DOG COUNTER
OUT    DX,AL

MOV    DX,SIO_DATA
MOV    AL,00H                     ;Clear WDTO
OUT    DX,AL

mov    DX,SIO_CON_PORT    ;SUPERIO EXIT CONFIG
mov    al, 0AAh
out    dx, al

;=============== RETURN DOS ===================
mov    ah,4ch                     ;return dos
int    21h

   end begin
```

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.

Hard Drive

Hard disk failure.

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

Excessively long formatting period.

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

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.

C

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.

Appendix D- Frequently Asked Questions

Q1: Black screen appeared when uninstalling the Windows Vista graphics driver.

A1: Before uninstalling the graphics driver, please perform the following steps. Click the graphics icon in the notification area of the taskbar then select Graphics Properties.

Click this link first before selecting Graphic Properties
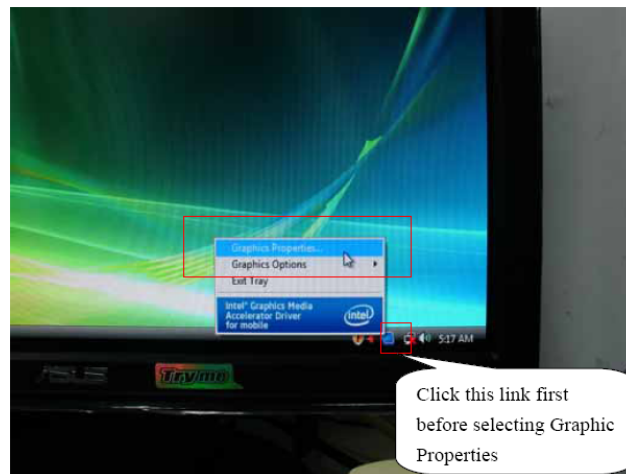
In the Single Display section, select Monitor.
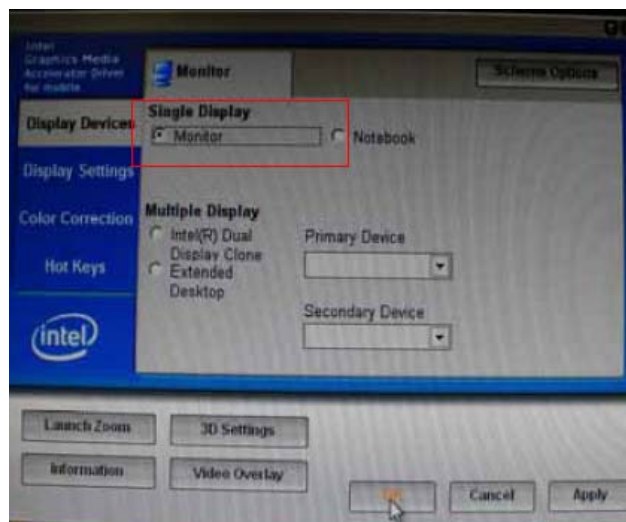
Frequently Asked Questions ▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪▪
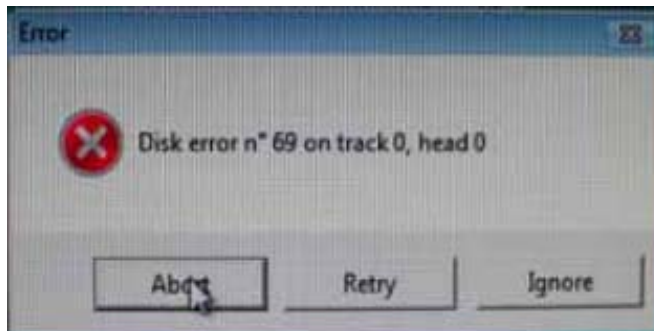
Q2: When executing F6FLPY.EXE in Windows Vista and the following error messages appear, please perform step A2.

Click OK.

Click Abort.

A2: Disconnect the USB floppy drive for 15 seconds then reconnect it to the motherboard. Execute F6FLPY.EXE again.

Disconnect for 15 seconds

Reconnect

Appendix E - Hot Keys for Graphics Display

The integrated graphics driver provides hot keys that allows ease in adjusting the graphics display screen.

Action	Hot Keys
Enable Monitor	<Ctrl><Alt><F1>
Enable Notebook	<Ctrl><Alt><F3>
Enable Digital Display	<Ctrl><Alt><F4>
Open Graphics Property Application	<Ctrl><Alt><F12>
Rotate to Normal	<Ctrl><Alt><Up>
Rotate 90 degrees	<Ctrl><Alt><Left>
Rotate 180 degrees	<Ctrl><Alt><Down>
Rotate 270 degrees	<Ctrl><Alt><Right>