

# GA-M57SLI-S4

AMD Athlon™ 64 FX / Athlon™ 64 X2 Dual-Core /  
AMD Athlon™ 64 / Sempron™ AM2 Processor Motherboard

## User's Manual

Rev. 2002

12ME-M57SLI4R-2002R



\* The WEEE marking on the product indicates this product must not be disposed of with user's other household waste and must be handed over to a designated collection point for the recycling of waste electrical and electronic equipment!!

\* The WEEE marking applies only in European Union's member states.

## Declaration of Conformity

We, Manufacturer/Importer  
**O.B.T. Technology Trading GmbH**  
Bilkenhoppel 16, 22347 Hamburg, Germany  
declare that the product  
**0101510ARD**  
**GA-M57SL-S4**  
(description of the apparatus, system, installation to which it refers)  
is  
**0101510ARD**  
**GA-M57SL-S4**  
(reference to the specification under which conformity is declared)  
in accordance with 89/339 EEC/EMC Directive

<input type="checkbox"/> EN 55011	Limits and methods of measurement of radio disturbance characteristics of household electrical appliances (SAB) high frequency equipment	<input type="checkbox"/> EN 51000-3-2	Disturbances in supply systems caused by household appliances and similar electrical equipment "Voltage fluctuations"
<input type="checkbox"/> EN 55013	Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment	<input type="checkbox"/> EN 51000-3-3	Disturbances in supply systems caused by household appliances and similar electrical equipment "Voltage fluctuations"
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<input type="checkbox"/> EN 55015	Limits and methods of measurement of radio disturbance characteristics of household electrical appliances (SAB) fluorescent lamps and luminaires	<input type="checkbox"/> EN 55028-1	Generic immunity standard Part 1: Residential, commercial and light industry
<input type="checkbox"/> EN 55020	Immunity from radio interference of broadcast receivers and associated equipment	<input type="checkbox"/> EN 55028-2	Generic immunity standard Part 2: Industrial environment
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(EC conformity marking)

**The manufacturer also declares the conformity of above mentioned product with the actual required safety standards in accordance with US 200958562**

<input type="checkbox"/> EN 60005	Safety requirements for mains operated household and similar general use electrical appliances	<input type="checkbox"/> EN 60950	Safety for information technology equipment including electrical business equipment
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### Manufacturer/Importer

Signature: Timmy Huang

(Stamp)

Date: Apr. 11, 2007

Name: Timmy Huang

## DECLARATION OF CONFORMITY

Per FCC Part 2, Section 2.1077(a)



Responsible Party Name: **G.B.T. INC. (U.S.A.)**

Address: **17358 Railroad Street**

City of Industry, **CA 91748**

Phone/Fax No: **(818) 854-9338/ (818) 854-9339**

hereby declares that the product

**Product Name: Motherboard**

**Model Number: GA-M57SL-S4**

Conforms to the following specifications:

FCC Part 15, Subpart B, Section 15.107(a) and Section 15.109

(a), Class B Digital Device

### Supplementary Information:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful and (2) this device must accept any interference received, including that may cause undesired operation.

Representative Person's Name: ERIC LIU

Signature: Eric Liu

Date: Apr. 11, 2007

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## Product Manual Classification

In order to assist in the use of this product, Gigabyte has categorized the user manual in the following:

- For quick installation, please refer to the "Hardware Installation Guide" included with the product.
- For detailed product information and specifications, please carefully read the "Product User Manual".
- For detailed information related to Gigabyte's unique features, please go to "Technology Guide" section on Gigabyte's website to read or download the information you need.

For more product details, please click onto Gigabyte's website at [www.gigabyte.com.tw](http://www.gigabyte.com.tw)

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## Item Checklist

- IDE Cable x 1, FDD Cable x 1
- SATA 3Gb/s Cable x 4
- I/O Shield
- SLI Bridge (GC-DGBR2-RH) x 1
- Retention Bracket x 1

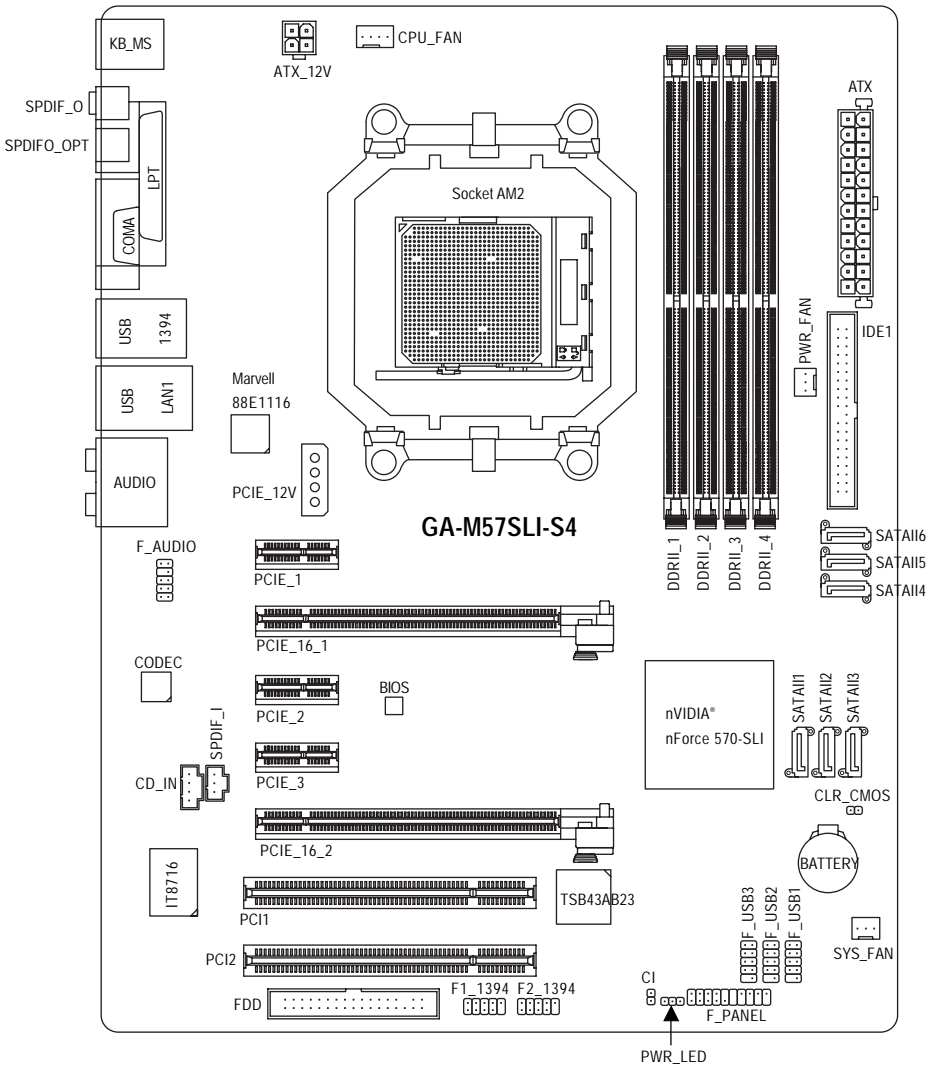
\* The items listed above are for reference only, and are subject to change without notice.

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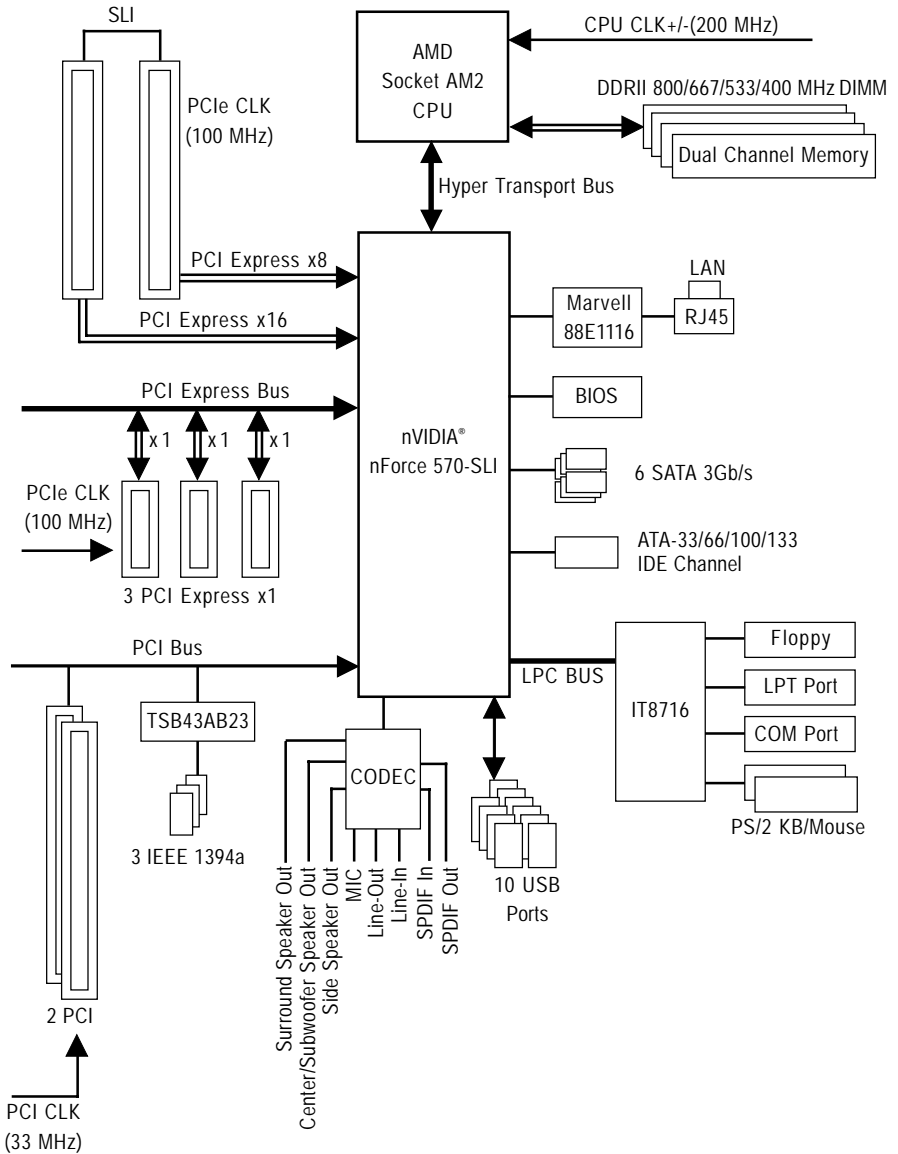
## Optional Accessories

- ◆ 2 Ports USB 2.0 Cable (Part Number: 12CR1-1UB030-51/R)
- ◆ 4 Ports USB 2.0 Cable (Part Number: 12CR1-1UB030-21/R)
- ◆ 2 Ports IEEE 1394a Cable (Part Number: 12CF1-1IE008-01R)
- ◆ SATA bracket (Part No. 12CF1-3SATPW-01R/11R)
- ◆ S/PDIF-IN Cable (Part Number: 12CR1-1SPDIN-01R)

# GA-M57SLI-S4 Motherboard Layout



# Block Diagram





# Chapter 1 Hardware Installation

## 1-1 Considerations Prior to Installation

### Preparing Your Computer

The motherboard contains numerous delicate electronic circuits and components which can become damaged as a result of electrostatic discharge (ESD). Thus, prior to installation, please follow the instructions below:

1. Please turn off the computer and unplug its power cord.
2. When handling the motherboard, avoid touching any metal leads or connectors.
3. It is best to wear an electrostatic discharge (ESD) cuff when handling electronic components (CPU, RAM).
4. Prior to installing the electronic components, please have these items on top of an antistatic pad or within a electrostatic shielding container.
5. Please verify that the power supply is switched off before unplugging the power supply connector from the motherboard.

### Installation Notices

1. Prior to installation, please do not remove the stickers on the motherboard. These stickers are required for warranty validation.
2. Prior to the installation of the motherboard or any hardware, please first carefully read the information in the provided manual.
3. Before using the product, please verify that all cables and power connectors are connected.
4. To prevent damage to the motherboard, please do not allow screws to come in contact with the motherboard circuit or its components.
5. Please make sure there are no leftover screws or metal components placed on the motherboard or within the computer casing.
6. Please do not place the computer system on an uneven surface.
7. Turning on the computer power during the installation process can lead to damage to system components as well as physical harm to the user.
8. If you are uncertain about any installation steps or have a problem related to the use of the product, please consult a certified computer technician.

### Instances of Non-Warranty

1. Damage due to natural disaster, accident or human cause.
2. Damage as a result of violating the conditions recommended in the user manual.
3. Damage due to improper installation.
4. Damage due to use of uncertified components.
5. Damage due to use exceeding the permitted parameters.
6. Product determined to be an unofficial Gigabyte product.

## 1-2 Feature Summary

CPU	<ul style="list-style-type: none"> <li>◆ Socket AM2 for AMD Athlon™ 64 FX / Athlon™ 64 X2 Dual-Core / Athlon™ 64 / Sempron™ processor</li> </ul>
Front Side Bus	<ul style="list-style-type: none"> <li>◆ 2000 MHz</li> </ul>
Chipset	<ul style="list-style-type: none"> <li>◆ nVIDIA® nForce 570-SLI</li> </ul>
LAN	<ul style="list-style-type: none"> <li>◆ Marvell 88E1116 phy (10/100/1000 Mbit)</li> </ul>
Audio	<ul style="list-style-type: none"> <li>◆ Onboard Realtek ALC888 CODEC chip</li> <li>◆ Supports High Definition Audio</li> <li>◆ Supports 2 / 4 / 6 / 8 channel audio</li> <li>◆ Supports S/PDIF In/Out connection</li> <li>◆ Supports CD In connection</li> </ul>
IEEE 1394	<ul style="list-style-type: none"> <li>◆ Onboard T.I. TSB43AB23 chip</li> <li>◆ 3 IEEE 1394a ports</li> </ul>
Storage	<ul style="list-style-type: none"> <li>◆ nVIDIA® nForce 570-SLI               <ul style="list-style-type: none"> <li>- 1 FDD connector, allowing connection of 2 FDD devices</li> <li>- 1 IDE connector with ATA-33/66/100/133 support, allowing connection of 2 IDE devices</li> <li>- 6 SATA 3Gb/s connectors, allowing connection of 6 SATA 3Gb/s devices</li> <li>- Supports RAID 0, RAID 1, RAID 0+1, and RAID 5 for Serial ATA</li> </ul> </li> </ul>
O.S Support	<ul style="list-style-type: none"> <li>◆ Microsoft Windows Vista/2000/XP</li> </ul>
Memory	<ul style="list-style-type: none"> <li>◆ 4 DDRII DIMM memory slots (supports up to 16 GB memory)<sup>(Note 1)</sup></li> <li>◆ Supports dual channel DDRII 800/667/533/400 DIMMs</li> <li>◆ Supports 1.8V DDRII DIMMs</li> <li>◆ Supports ECC memory</li> </ul>
Expansion Slots	<ul style="list-style-type: none"> <li>◆ 2 PCI Express x16 slots</li> <li>◆ 3 PCI Express x1 slots</li> <li>◆ 2 PCI slots</li> </ul>
Internal Connectors	<ul style="list-style-type: none"> <li>◆ 1 24-pin ATX power connector</li> <li>◆ 1 4-pin ATX 12V power connector</li> <li>◆ 1 floppy connector</li> <li>◆ 1 IDE connector</li> <li>◆ 6 SATA 3Gb/s connectors</li> <li>◆ 1 CPU fan connector</li> <li>◆ 1 system fan connector</li> <li>◆ 1 power fan connector</li> <li>◆ 1 front panel connector</li> <li>◆ 1 front audio connector</li> <li>◆ 1 CD In connector</li> <li>◆ 1 S/PDIF In connector</li> <li>◆ 3 USB 2.0/1.1 connectors for additional 6 USB 2.0/1.1 ports by cables</li> <li>◆ 2 IEEE 1394a connectors for additional 2 ports by cables</li> <li>◆ 1 chassis intrusion connector</li> <li>◆ 1 power LED connector</li> </ul>

Rear Panel I/O	<ul style="list-style-type: none"> <li>◆ 1 PS/2 keyboard port</li> <li>◆ 1 PS/2 mouse port</li> <li>◆ 1 parallel port</li> <li>◆ 1 S/PDIF out port (coaxial)</li> <li>◆ 1 S/PDIF out port (optical)</li> <li>◆ 1 serial port</li> <li>◆ 4 USB 2.0/1.1 ports</li> <li>◆ 1 IEEE 1394a port</li> <li>◆ 1 RJ-45 port</li> <li>◆ 6 audio jacks (Line In / Line Out / MIC In / Surround Speaker Out (Rear Speaker Out) / Center/Subwoofer Speaker Out / Side Speaker Out)</li> </ul>
I/O Control	<ul style="list-style-type: none"> <li>◆ IT8716 chip</li> </ul>
Hardware Monitor	<ul style="list-style-type: none"> <li>◆ System voltage detection</li> <li>◆ CPU temperature detection</li> <li>◆ CPU / Power / System fan speed detection</li> <li>◆ CPU warning temperature</li> <li>◆ CPU / Power / System fan failure warning</li> <li>◆ Supports CPU Smart Fan function <sup>(Note 2)</sup></li> </ul>
BIOS	<ul style="list-style-type: none"> <li>◆ 1 4 Mbit flash ROM</li> <li>◆ Use of licensed AWARD BIOS</li> <li>◆ PnP 1.0a, DMI 2.0, SM BIOS 2.3, ACPI 1.0b</li> </ul>
Additional Features	<ul style="list-style-type: none"> <li>◆ Supports @BIOS</li> <li>◆ Supports Download Center</li> <li>◆ Supports Q-Flash</li> <li>◆ Supports EasyTune <sup>(Note 3)</sup></li> <li>◆ Supports Xpress Install</li> <li>◆ Supports Xpress Recovery2</li> <li>◆ Supports Xpress BIOS Rescue</li> </ul>
Bundle Software	<ul style="list-style-type: none"> <li>◆ Norton Internet Security (OEM version)</li> </ul>
Form Factor	<ul style="list-style-type: none"> <li>◆ ATX form factor; 30.5cm x 23.4cm</li> </ul>

(Note 1) Due to the limitation of Windows 32-bit operating system, when more than 4 GB of physical memory is installed, the actual memory available for the operating system will be less than 4 GB; Windows 64-bit operating system doesn't have such limitation.

(Note 2) Whether the CPU Smart FAN Control function is supported will depend on the CPU you install.

(Note 3) EasyTune functions may vary depending on different motherboards.

## 1-3 Installation of the CPU and CPU Cooler



Before installing the CPU, please comply with the following conditions:

1. Please make sure that the motherboard supports the CPU.
2. Please take note of the pin 1 marking (the small triangle) on the CPU. If you install the CPU in the wrong direction, the CPU will not insert properly. If this occurs, please change the insert direction of the CPU.
3. Please add an even layer of heat paste between the CPU and CPU cooler.
4. Please make sure the CPU cooler is installed on the CPU prior to system use, otherwise overheating and permanent damage of the CPU may occur.
5. Please set the CPU host frequency in accordance with the processor specifications. It is not recommended that the system bus frequency be set beyond hardware specifications since it does not meet the required standards for the peripherals. If you wish to set the frequency beyond the proper specifications, please do so according to your hardware specifications including the CPU, graphics card, memory, hard drive, etc.

### 1-3-1 Installation of the CPU

Check the CPU pins to see that none are bent. Move the socket lever to the unlocked position as shown in Fig. 1 (90° to the plane of the motherboard) prior to inserting the CPU. The pin 1 location is designated on the CPU by a small triangle that corresponds to a triangle marking on the socket as shown in Fig. 2. Align the CPU to the socket and gently lower it into place. Do not force the CPU into the socket.



Fig.1  
Position lever at a 90 degree angle.



Pin One

Fig.2  
Pin 1 location on the socket and processor.  
Gently place the CPU into position making sure that the CPU pins fit perfectly into their holes. Once the CPU is positioned into its socket, place one finger down on the middle of the CPU and gently press the metal lever back into its original position.



Please use extra care when installing the CPU. The CPU will not fit if positioned incorrectly. Rather than applying force, please change the positioning of the CPU.

### 1-3-2 Installation of the CPU Cooler

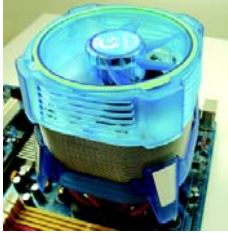


Fig.1

Before installing the CPU cooler, please first add an even layer of heat paste on the surface of the CPU. Install all the CPU cooler components (Please refer to the cooler manual for detailed installation instructions).

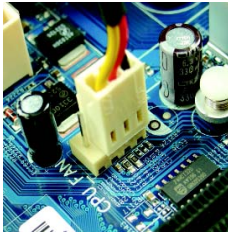


Fig.2

Please connect the CPU cooler power connector to the CPU\_FAN connector located on the motherboard so that the CPU cooler can properly function to prevent CPU overheating.



Use extreme care when removing the CPU cooler because the thermal grease/tape between the CPU cooler and CPU may adhere to the CPU. Inadequately removing the CPU cooler may damage the CPU.

## 1-4 Installation of Memory



Before installing the memory modules, please comply with the following conditions:

1. Please make sure that the memory used is supported by the motherboard. It is recommended that memory of similar capacity, specifications and brand be used.
2. Before installing or removing memory modules, please make sure that the computer power is switched off to prevent hardware damage.
3. Memory modules have a foolproof insertion design. A memory module can be installed in only one direction. If you are unable to insert the module, please switch the direction.

The motherboard supports DDRII memory modules, whereby BIOS will automatically detect memory capacity and specifications. Memory modules are designed so that they can be inserted only in one direction. The memory capacity used can differ with each slot.

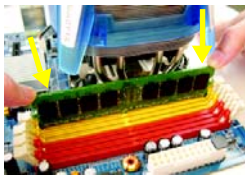
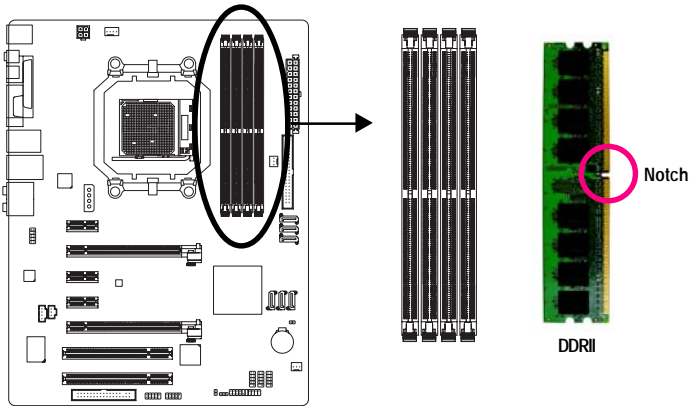


Fig.1

The DIMM socket has a notch, so the DIMM memory module can only fit in one direction. Insert the DIMM memory module vertically into the DIMM socket. Then push it down.

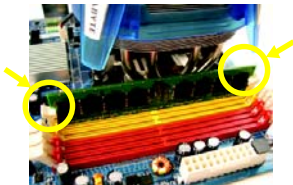


Fig.2

Close the plastic clip at both edges of the DIMM sockets to lock the DIMM module.

Reverse the installation steps when you wish to remove the DIMM module.



## Dual Channel Memory Configuration

The GA-M57SLI-S4 supports the Dual Channel Technology. After operating the Dual Channel Technology, the bandwidth of Memory Bus will double.

Due to CPU limitation, if you wish to operate the Dual Channel Technology, follow the guidelines below:

1. Dual Channel mode will not be enabled if only one memory module is installed.
2. To enable Dual Channel mode with two memory modules (it is recommended to use memory modules of identical brand, size, chips, and speed), you must install them into DIMM sockets of the same color.
3. To enable Dual Channel mode with four memory modules, it is recommended to use memory modules of identical brand, size, chips, and speed.

The following is a Dual Channel Memory configuration table:

(DS: Double Side, SS: Single Side, "--": Empty)

DIMM Socket	DDRII_1	DDRII_2	DDRII_3	DDRII_4
2 memory modules	DS/SS	DS/SS	--	--
	--	--	DS/SS	DS/SS
4 memory modules	DS/SS	DS/SS	DS/SS	DS/SS



If two memory modules are to be used to achieve Dual Channel mode, we recommend installing them in DDRII\_1 and DDRII\_2 DIMM sockets.

## 1-5 Installation of Expansion Cards

To install your expansion card, follow the steps below.

1. Disconnect your system from its power source and read the expansion card's installation manual before installing the expansion card in the computer.
2. Remove your computer's chassis cover, screws and slot bracket from the computer. Ground yourself to prevent damage to your computer resulting from Electrostatic discharge (ESD).
3. Press the expansion card firmly into the expansion slot in the motherboard.
4. Make sure the metal contacts on the card are fully seated in the slot.
5. Replace the screw to secure the slot bracket of the expansion card.
6. Replace your computer's chassis cover.
7. Power on the computer, if necessary, configure required settings for the expansion card in system BIOS Setup.
8. Install related driver in the operating system.

For example: Installing a PCI Express x16 VGA card:



To install the VGA card:

Please align the VGA card with the PCI Express x16 slot and press down on the card. Make sure the VGA card is locked by the small white drawable bar.

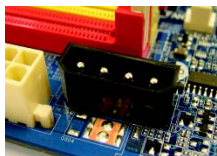


To remove the VGA card :

Please carefully pull out the small white-drawable bar at the end of the PCI Express x16 slot when you try to uninstall the VGA card.



Or you can also press the latch on the opposite side of the drawable bar as the picture to the left shows.



The motherboard includes a PCIE\_12V power connector, which provides extra power to the onboard PCI Express x16 slot. When installing two graphics cards, please connect the power cable from the power supply to this connector.



## 1-6 Setup of an SLI (Scalable Link Interface) Configuration

The NVIDIA nForce 570-SLI chipset offers blistering graphics performance with the ability to bridge two NVIDIA SLI-ready PCI Express™ graphics cards! The SLI design takes advantage of the increased bandwidth of the PCI Express™ bus architecture, features hardware and software innovations within NVIDIA GPU (graphics processing unit) and the NVIDIA nForce 570-SLI chipset. Together, the NVIDIA SLI technologies work seamlessly to allow two graphics cards to operate in parallel and share the work and deliver heart-pounding PC performance. This section provides instructions on configuring an SLI system.

### Before you begin--



The exact power requirements will depend on your overall system configurations. You need a power supply that can provide sufficient and stable power to your system and the two SLI graphics cards. Please refer to the table below to see recommended power for different systems.

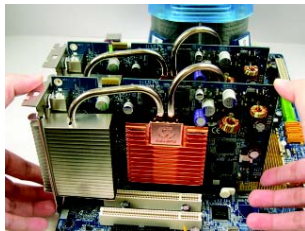
System configurations	System A	System B
Processors	AMD Athlon 64 FX-53	AMD Athlon 64 4000+
PCIe x 16 video cards	2 NVIDIA 6800 Ultra cards	2 NVIDIA 6800 GT cards
DDR memory modules	4 DIMMs	2 DIMMs
Hard drives/Optical drives	4 hard drives + 2 optical drives	1 hard drives + 1 optical drives
Expansion cards	1 PCIe x1 card + 2 PCI cards	0
USB devices	10	4
IEEE1394 devices	1	0
<b>Required +12V current</b>	<b>25A or above</b>	<b>20A or above</b>
<b>Power supply requirement</b>	<b>500W or above</b>	<b>350W or above</b>

To enable the SLI function, install two SLI-ready graphics cards into the PCIe\_16\_1 and PCIe\_16\_2 slots. (It is recommended to use graphics cards of identical brand and chips. For example: GIGABYTE GV-NX76T256D-RH.)

To set up a single graphics card system, we recommend installing the graphics card on the PCIe\_16\_1 slot to ensure better display performance.

## Connecting Two Graphics Cards:

Step 1: Observe the steps in "1-5 Installing an Expansion Card" and install two SLI-ready graphics cards of the same model on the PCIE\_16\_1 and PCIE\_16\_2 slots.

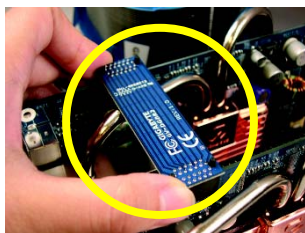


Step 2: Insert the SLI bridge (the GC-DGBR2-RH) in the SLI gold edge connectors on top of both cards. Make sure the two mini female slots on the bridge connector securely fit onto the SLI gold edge connectors of both cards.

Female slots on the bridge connector



Gold edge connector on the top of graphics card



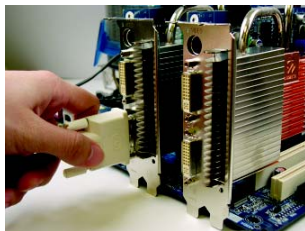
Step 3: In order to securely fix the bridge connector between the two cards, you must install the retention bracket included with the motherboard and secure the retention bracket to the chassis back panel with a screw.



place this part on the top of the bridge connector.



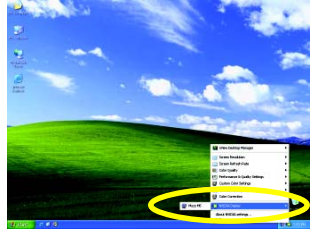
Step 4: Plug the display cable into the graphics card on the PCIE\_16\_1 slot<sup>(Note)</sup>.



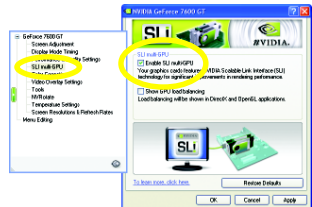
(Note) To enable the SLI function, you must plug the display cable into the graphics card on the PCIE\_16\_1 slot.

## Configuring the Graphics Card Driver:

Step 1: After installing graphics card driver in operating system, right-click the NVIDIA icon in your system tray and then select **NVIDIA Display**. The NVIDIA control panel will appear.

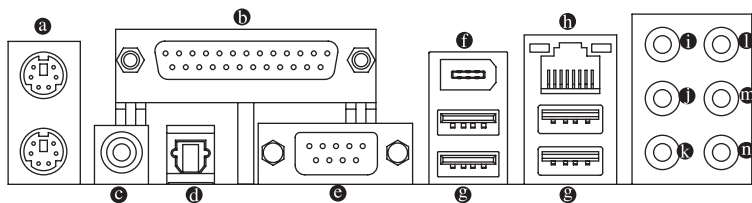


Step 2: Select **SLI multi-GPU** in the side menu and then select the **Enable SLI multi-GPU** checkbox in the **SLI multi-GPU** dialog box. System will restart after you click **Apply**. Then the SLI configuration is completed.



Note: The SLI configuration screen may differ by driver version. Refer to the user's manual that came with your graphics card for more information about enabling SLI mode.

## 1-7 I/O Back Panel Introduction



### a PS/2 Keyboard and PS/2 Mouse Port

Use the upper port (green) to connect a PS/2 mouse and the lower port (purple) to connect a PS/2 keyboard.

### b Parallel Port

Use the parallel port to connect devices such as a printer, scanner and etc. The parallel port is also called a printer port.

### c Coaxial S/PDIF Out Connector

This connector provides digital audio out to an external audio system that supports digital coaxial audio. Before using this feature, ensure that your audio system provides a coaxial digital audio in connector.

### d Optical S/PDIF Out Connector

This connector provides digital audio out to an external audio system that supports digital optical audio. Before using this feature, ensure that your audio system provides an optical digital audio in connector.

### e Serial Port

Use the serial port to connect devices such as a mouse, modem or other peripherals.

### f IEEE 1394a Port

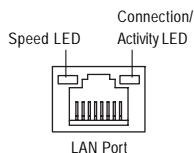
The IEEE 1394 port supports the IEEE 1394a specification, featuring high speed, high bandwidth and hotplug capabilities. Use this port for an IEEE 1394a device.

### g USB port

The USB port supports the USB 2.0/1.1 specification. Use this port for USB devices such as an USB keyboard/mouse, USB printer, USB flash drive and etc.

### h RJ-45 LAN Port

The Gigabit Ethernet LAN port provides Internet connection at up to 1 Gbps data rate. The following describes the states of the LAN port LEDs.



Speed LED:

State	Description
Orange	1 Gbps data rate
Green	100 Mbps data rate
Off	10 Mbps data rate

Connection/Activity LED:

State	Description
Blinking	Data transmission or receiving is occurring
On	No data transmission or receiving is occurring
Off	LAN link is not established

① **Center/Subwoofer Speaker Out Jack (Orange)**

Use this audio jack to connect center/subwoofer speakers in a 6/8-channel audio configuration.

② **Rear Speaker Out Jack (Black)**

Use this audio jack to connect rear speakers in a 4/6/8-channel audio configuration.

③ **Side Speaker Out Jack (Gray)**

Use this audio jack to connect side speakers in a 8-channel audio configuration.

④ **Line In Jack (Blue)**

The default line in jack. Use this audio jack for line in devices such as an optical drive, walkman, etc.

⑤ **Line Out Jack (Green)**

The default line out jack. Use this audio jack for a headphone or 2-channel speaker. This jack can be used to connect front speakers in a 4/6/8-channel audio configuration.

⑥ **Mic In Jack (Pink)**

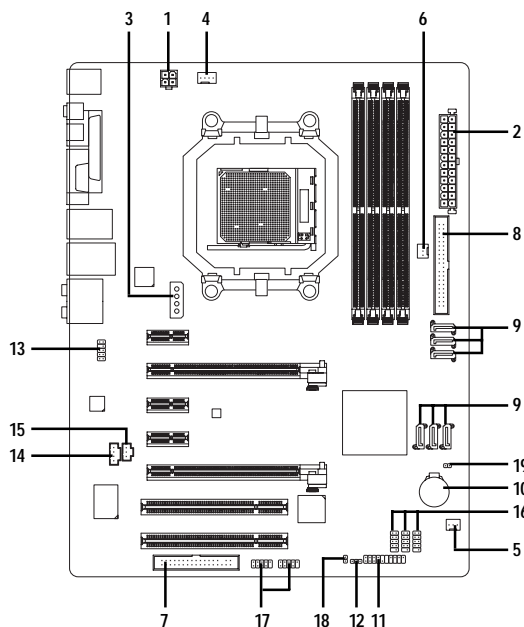
The default Mic in jack. Microphones must be connected to this jack.



NOTE

In addition to the default speakers settings, the ① ~ ⑥ audio jacks can be reconfigured to perform different functions via the audio software. Only microphones still **MUST** be connected to the default Mic In jack (⑥). Please refer to the 2-/4-/6-/8- channel audio setup steps for detailed software configuration information.

## 1-8 Connectors Introduction



1)	ATX_12V	11)	F_PANEL
2)	ATX (Power Connector)	12)	PWR_LED
3)	PCI_E_12V	13)	F_AUDIO
4)	CPU_FAN	14)	CD_IN
5)	SYS_FAN	15)	SPDIF_I
6)	PWR_FAN	16)	F_USB1 / F_USB2 / F_USB3
7)	FDD	17)	F1_1394 / F2_1394
8)	IDE1	18)	CI
9)	SATA0 / 1 / 2 / 3 / 4 / 5 / 6	19)	CLR_CMOS
10)	BATTERY		

## 1/2) ATX\_12V / ATX (Power Connector)

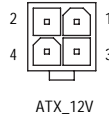
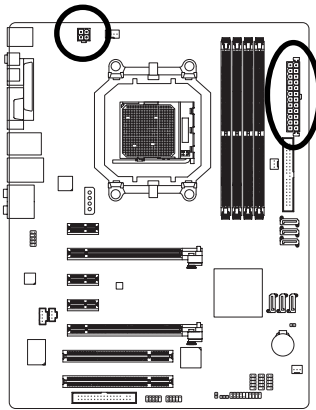
With the use of the power connector, the power supply can supply enough stable power to all the components on the motherboard. Before connecting the power connector, please make sure that all components and devices are properly installed. Align the power connector with its proper location on the motherboard and connect tightly.

The ATX\_12V power connector mainly supplies power to the CPU. If the ATX\_12V power connector is not connected, the system will not start.

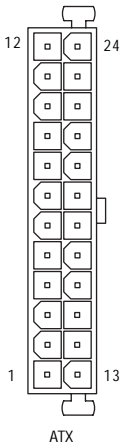
### Caution!

Please use a power supply that is able to handle the system voltage requirements. It is recommended that a power supply that can withstand high power consumption be used (400W or greater). If a power supply is used that does not provide the required power, the result can lead to an unstable system or a system that is unable to start.

If you use a 24-pin ATX power supply, please remove the small cover on the power connector on the motherboard before plugging in the power cord; otherwise, please do not remove it.



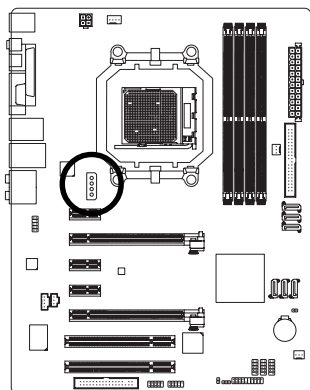
Pin No.	Definition
1	GND
2	GND
3	+12V
4	+12V



Pin No.	Definition	Pin No.	Definition
1	3.3V	13	3.3V
2	3.3V	14	-12V
3	GND	15	GND
4	+5V	16	PS_ON(soft On/Off)
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	Power Good	20	-5V
9	5V SB(stand by +5V)	21	+5V
10	+12V	22	+5V
11	+12V(Only for 24-pin ATX)	23	+5V (Only for 24-pin ATX)
12	3.3V(Only for 24-pin ATX)	24	GND(Only for 24-pin ATX)

### 3) PCIE\_12V (Power Connector)

This power connector provides extra power to the onboard PCI Express x16 slot. When installing two graphics cards, please connect the power cable from the power supply to this connector, or system instability may occur.



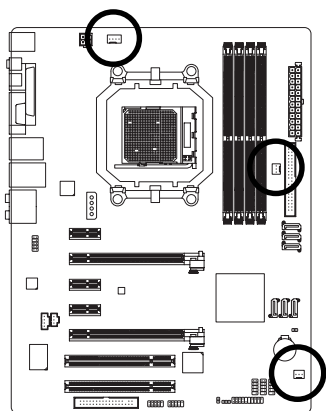
Pin No.	Definition
1	NC
2	GND
3	GND
4	+12V

### 4/5/6) CPU\_FAN / SYS\_FAN / PWR\_FAN (Cooler Fan Power Connector)

The cooler fan power connector supplies a +12V power voltage via a 3-pin/4-pin (only for CPU\_FAN) power connector and possesses a foolproof connection design.

Most coolers are designed with color-coded power connector wires. A red power connector wire indicates a positive connection and requires a +12V power voltage. The black connector wire is the ground wire (GND).

Remember to connect the CPU/system/power fan cable to the CPU\_FAN/SYS\_FAN/PWR\_FAN connector to prevent CPU damage or system hanging caused by overheating.



CPU\_FAN

CPU\_FAN :

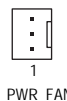
Pin No.	Definition
1	GND
2	+12V / Speed Control
3	Sense
4	Speed Control



SYS\_FAN

SYS\_FAN / PWR\_FAN :

Pin No.	Definition
1	GND
2	+12V
3	Sense

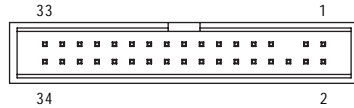
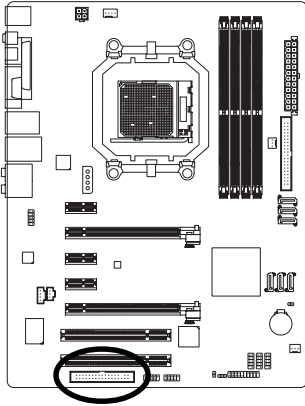


PWR\_FAN



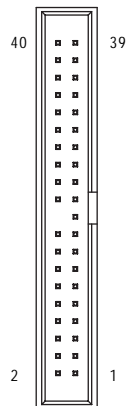
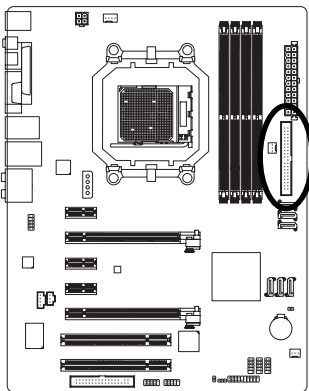
## 7) FDD (FDD Connector)

The FDD connector is used to connect the FDD cable while the other end of the cable connects to the FDD drive. The types of FDD drives supported are: 360 KB, 720 KB, 1.2 MB, 1.44 MB and 2.88 MB. Before attaching the FDD cable, please take note of the foolproof groove in the FDD connector.



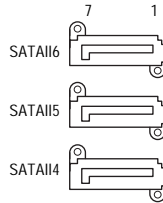
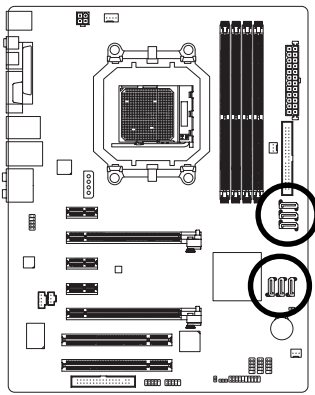
## 8) IDE1 (IDE Connector)

An IDE device connects to the computer via an IDE connector. One IDE connector can connect to one IDE cable, and the single IDE cable can then connect to two IDE devices (hard drive or optical drive). If you wish to connect two IDE devices, please set the jumper on one IDE device as Master and the other as Slave (for information on settings, please refer to the instructions located on the IDE device). Before attaching the IDE cable, please take note of the foolproof groove in the IDE connector.

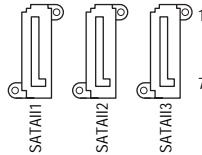


## 9) SATAII1 / 2 / 3 / 4 / 5 / 6 (SATA 3Gb/s Connectors, Controlled by nForce 570-SLI)

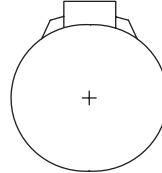
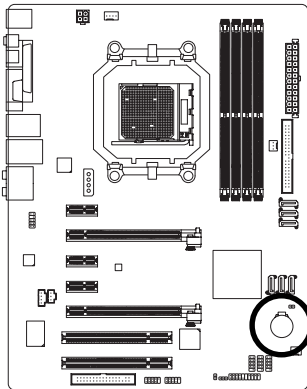
SATA 3Gb/s can provide up to 300 MB/s transfer rate. Please refer to the BIOS setting for the SATA 3Gb/s and install the proper driver in order to work properly.



Pin No.	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND



## 10) BATTERY



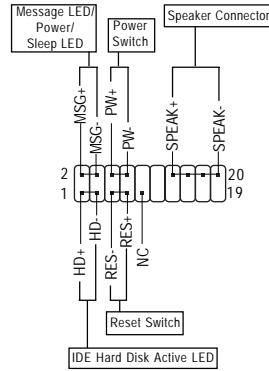
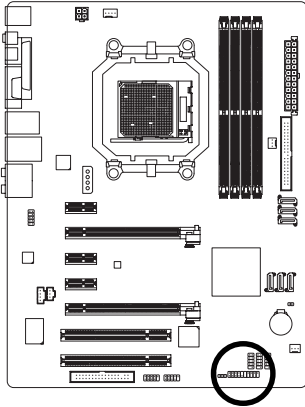
- ❖ Danger of explosion if battery is incorrectly replaced.
- ❖ Replace only with the same or equivalent type recommended by the manufacturer.
- ❖ Dispose of used batteries according to the manufacturer's instructions.

If you want to erase CMOS...

1. Turn off the computer and unplug the power cord.
2. Gently take out the battery and put it aside for about one minute.  
(Or you can use a metal object to connect the positive and negative pins in the battery holder to make them short for five seconds.)
3. Re-install the battery.
4. Plug the power cord in and turn on the computer.

### 11) F\_PANEL (Front Panel Jumper)

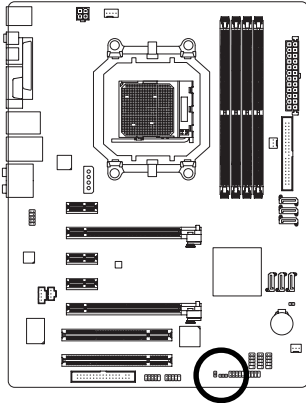
Please connect the power LED, PC speaker, reset switch and power switch etc. of your chassis front panel to the F\_PANEL connector according to the pin assignment below.



MSG (Message LED/Power/Sleep LED) (Yellow)	Pin 1: LED anode(+) Pin 2: LED cathode(-)
PW (Power Switch) (Red)	Open: Normal Close: Power On/Off
SPEAK (Speaker Connector) (Amber)	Pin 1: Power Pin 2- Pin 3: NC Pin 4: Data(-)
HD (IDE Hard Disk Active LED) (Blue)	Pin 1: LED anode(+) Pin 2: LED cathode(-)
RES (Reset Switch) (Green)	Open: Normal Close: Reset Hardware System
NC (Purple)	NC

## 12) PWR\_LED

The PWR\_LED connector is connected with the system power indicator to indicate whether the system is on/off. It will blink when the system enters suspend mode(S1).

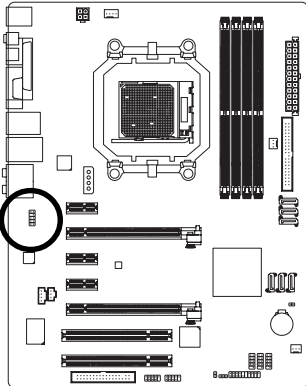


1 

Pin No.	Definition
1	MPD+
2	MPD-
3	MPD-

## 13) F\_AUDIO (Front Audio Connector)

This connector supports either HD (High Definition) or AC'97 front panel audio module. If you wish to use the front audio function, connect the front panel audio module to this connector. Check the pin assignments carefully while you connect the front panel audio module. Incorrect connection between the module and connector will make the audio device unable to work or even damage it. For optional front panel audio module, please contact your chassis manufacturer.



10  9  
2  1

HD Audio:

Pin No.	Definition
1	MIC2_L
2	GND
3	MIC2_R
4	-ACZ_DET
5	LINE2_R
6	FSENSE1
7	FAUDIO_JD
8	No Pin
9	LINE2_L
10	FSENSE2

AC'97 Audio:

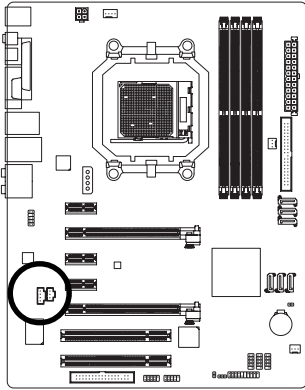
Pin No.	Definition
1	MIC
2	GND
3	MIC Power
4	NC
5	Line Out (R)
6	NC
7	NC
8	No Pin
9	Line Out (L)
10	NC



By default, the audio driver is configured to support HD Audio. To connect an AC'97 front panel audio module to this connector, please refer to the instructions on page 80 about the software settings.

#### 14) CD\_IN (CD In Connector, black)

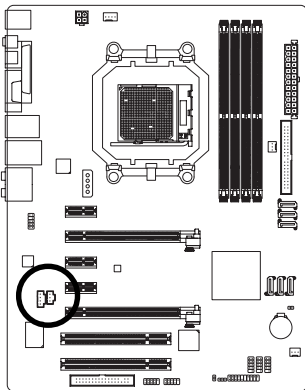
Connect CD-ROM or DVD-ROM audio out to the connector.



Pin No.	Definition
1	CD-L
2	GND
3	GND
4	CD-R

#### 15) SPDIF\_I (S/PDIF In Connector, red)

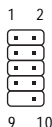
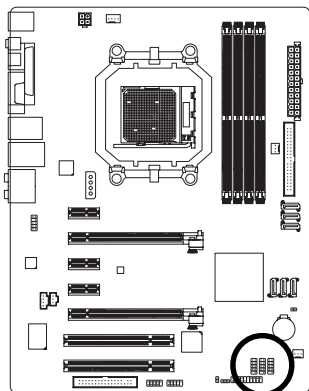
Use S/PDIF In feature only when your device has digital output function. Be careful with the polarity of the SPDIF\_I connector. Check the pin assignment carefully while you connect the S/PDIF cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional S/PDIF cable, please contact your local dealer.



Pin No.	Definition
1	Power
2	SPDIFI
3	GND

## 16) F\_USB1 / F\_USB2 / F\_USB3 (Front USB Connector)

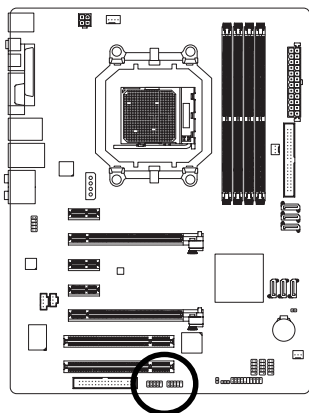
Be careful with the polarity of the front USB connector. Check the pin assignment carefully while you connect the front USB cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional front USB cable, please contact your local dealer.



Pin No.	Definition
1	Power (5V)
2	Power (5V)
3	USB DX-
4	USB Dy-
5	USB DX+
6	USB Dy+
7	GND
8	GND
9	No Pin
10	NC

## 17) F1\_1394 / F2\_1394 (Front IEEE 1394a Connector)

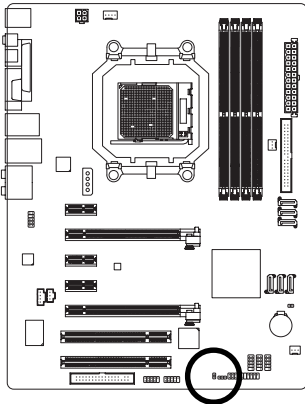
Serial interface standard set by Institute of Electrical and Electronics Engineers, which has features like high speed, high bandwidth and hot plug. Be careful with the polarity of the IEEE 1394 connector. Check the pin assignment carefully while you connect the IEEE 1394 cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional IEEE 1394 cable, please contact your local dealer.



Pin No.	Definition
1	TPA+
2	TPA-
3	GND
4	GND
5	TPB+
6	TPB-
7	Power (12V)
8	Power (12V)
9	No Pin
10	GND

### 18) CI (Chassis Intrusion, Case Open)

This 2-pin connector allows your system to detect if the chassis cover is removed. You can check the "Case Opened" status in BIOS Setup.

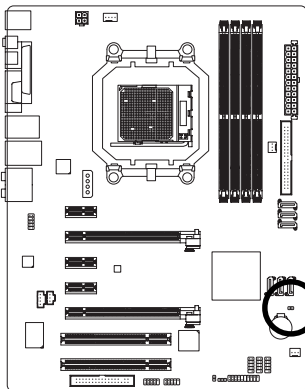


1

Pin No.	Definition
1	Signal
2	GND

### 19) CLR\_CMOS (Clear CMOS)

You may clear the CMOS data to its default values by this header. To clear CMOS, temporarily short the two pins. Default doesn't include the jumper to avoid improper use of this header.



 Open: Normal

 Short: Clear CMOS





## Chapter 2 BIOS Setup

BIOS (Basic Input and Output System) includes a CMOS SETUP utility which allows user to configure required settings or to activate certain system features.

The CMOS SETUP saves the configuration in the CMOS SRAM of the motherboard.

When the power is turned off, the battery on the motherboard supplies the necessary power to the CMOS SRAM.

When the power is turned on, pressing the <Del> button during the BIOS POST (Power-On Self Test) will take you to the CMOS SETUP screen. You can enter the BIOS setup screen by pressing "Ctrl + F1".

If you wish to upgrade to a new BIOS, either Gigabyte's Q-Flash or @BIOS utility can be used.

Q-Flash allows the user to quickly and easily update or backup BIOS without entering the operating system.

@BIOS is a Windows-based utility that does not require users to boot to DOS before upgrading BIOS but directly download and update BIOS from the Internet.

### CONTROL KEYS

<↑><↓><←><→>	Move to select item
<Enter>	Select Item
<Esc>	Main Menu - Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu - Exit current page and return to Main Menu
<Page Up>	Increase the numeric value or make changes
<Page Down>	Decrease the numeric value or make changes
<F1>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<F2>	Item Help
<F5>	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
<F6>	Load the fail-safe default CMOS value from BIOS default table
<F7>	Load the Optimized Defaults
<F8>	Q-Flash utility
<F9>	System Information
<F10>	Save all the CMOS changes, only for Main Menu
<F11>	Save CMOS to BIOS - CMOS Profiles
<F12>	Load CMOS from BIOS - CMOS Profiles

### Main Menu

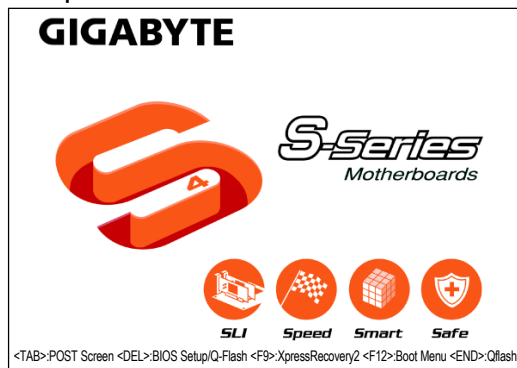
The on-line description of the highlighted setup function is displayed at the bottom of the screen.

### Status Page Setup Menu / Option Page Setup Menu

Press <F1> to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc>.



Because BIOS flashing is potentially risky, please do it with caution and avoid inadequate operation that may result in system malfunction.

**Startup Screen:****<TAB> : POST Screen**

Press the **TAB** key to show the BIOS POST screen.

(To show the BIOS POST screen at system startup, refer to the instructions on the Full Screen LOGO Show item on page 39.)

**<DEL> : BIOS Setup/Q-Flash**

Press the **Delete** key to enter BIOS Setup or to access the Q-Flash utility in BIOS Setup.

**<F9> : Xpress Recovery2**

Press the **F9** key to enter the Xpress Recovery2 screen.

**<F12> : Boot Menu**

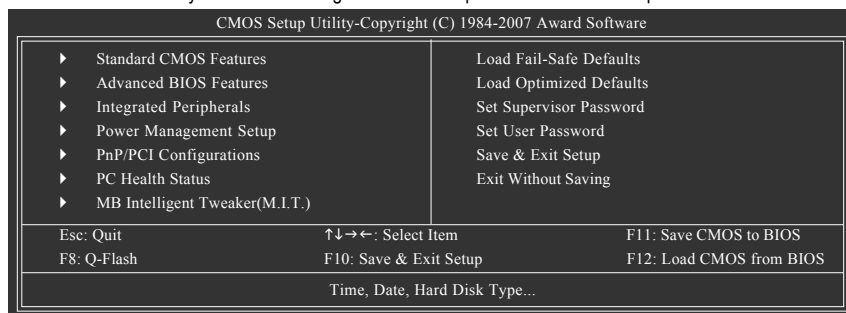
Press the **F12** key to enter Boot Menu to select the first boot device.

**<END> : Qflash**

Press the **End** key to access the Q-Flash utility directly without having to enter BIOS Setup first.

**The Main Menu (For example: BIOS Ver. : FAa)**

Once you enter Award BIOS CMOS Setup Utility, the Main Menu (as figure below) will appear on the screen. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.



NOTE

1. If you don't find the settings you want, press "Ctrl+F1" to access advanced options.
2. Select the **Load Optimized Defaults** item in the BIOS Setup when somehow the system is not stable as usual. This action makes the system reset to the default settings for stability.
3. The BIOS Setup menus described in this chapter are for reference only and may differ from the exact settings for your motherboard.

## BIOS Setting Recovery

### ▶ F11 : Save CMOS to BIOS

This function allows you to make a record of the current CMOS settings as a profile. You can create up to 8 profiles (Profile 1-8) and give each of them a name.

### ▶ F12 : Load CMOS from BIOS

If your system becomes unstable and you load the default BIOS settings, you can use this function to reload the CMOS settings with a CMOS settings profile created before, without the hassles of resetting the CMOS configurations.

## ■ Standard CMOS Features

This setup page includes all the items in standard compatible BIOS.

## ■ Advanced BIOS Features

This setup page includes all the items of Award special enhanced features.

## ■ Integrated Peripherals

This setup page includes all onboard peripherals.

## ■ Power Management Setup

This setup page includes all the items of Green function features.

## ■ PnP/PCI Configuration

This setup page includes all the configurations of PCI & PnP ISA resources.

## ■ PC Health Status

This setup page is about system autodetect temperature, voltage, fan speed, etc.

## ■ MB Intelligent Tweaker(M.I.T.)

This setup page is to control CPU clock and frequency ratio.

## ■ Load Fail-Safe Defaults

Fail-Safe Defaults indicates the value of the system parameters which the system would be in safe configuration.

## ■ Load Optimized Defaults

Optimized Defaults indicates the value of the system parameters which the system would be in best performance configuration.

## ■ Set Supervisor Password

Change, set, or disable password. It allows you to limit access to the system and Setup, or just to Setup.

## ■ Set User Password

Change, set, or disable password. It allows you to limit access to the system.

## ■ Save & Exit Setup

Save CMOS value settings to CMOS and exit setup.

## ■ Exit Without Saving

Abandon all CMOS value changes and exit setup.

## 2-1 Standard CMOS Features

CMOS Setup Utility-Copyright (C) 1984-2007 Award Software Standard CMOS Features		
Date (mm:dd:yy)	Thu, Mar 29 2007	Item Help
Time (hh:mm:ss)	22:31:24	Menu Level▶
▶ IDE Channel 0 Master	[None]	
▶ IDE Channel 0 Slave	[None]	
▶ IDE Channel 2 Master	[None]	
▶ IDE Channel 3 Master	[None]	
▶ IDE Channel 4 Master	[None]	
▶ IDE Channel 5 Master	[None]	
▶ IDE Channel 6 Master	[None]	
▶ IDE Channel 7 Master	[None]	
Drive A	[1.44M, 3.5"]	
Drive B	[None]	
Floppy 3 Mode Support	[Disabled]	
Halt On	[All, But Keyboard]	
Base Memory	640K	
Extended Memory	51M	
↑↓→←: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    ESC: Exit    F1: General Help F5: Previous Values    F6: Fail-Safe Defaults    F7: Optimized Defaults		

### ☞ Date

The date format is <week>, <month>, <day>, <year>.

- ▶▶ Week                    The week, from Sun to Sat, determined by the BIOS and is display-only
- ▶▶ Month                   The month, Jan. Through Dec.
- ▶▶ Day                     The day, from 1 to 31 (or the maximum allowed in the month)
- ▶▶ Year                     The year, from 2000 through 2099

### ☞ Time

The times format in <hour> <minute> <second>. The time is calculated based on the 24-hour military-time clock. For example, 1 p.m. is 13:0:0.

### ☞ IDE Channel 0 Master/Slave

- ▶▶ IDE HDD Auto-Detection Press "Enter" to select this option for automatic device detection.
- ▶▶ IDE Channel 0 Master/Slave                    devices setup. You can use one of the three methods:
  - Auto                    Allows BIOS to automatically detect SATA/IDE devices during POST(default)
  - None                    Select this if no SATA/IDE devices are used and the system will skip the automatic detection step and allow for faster system start up.
  - Manual                 User can manually input the correct settings.
- ▶▶ Access Mode            Use this to set the access mode for the hard drive. The four options are: CHS/LBA/Large/Auto(default:Auto)

### ☞ IDE Channel 2/3/4/5/6/7 Master

- ▶▶ IDE HDD Auto-Detection Press "Enter" to select this option for automatic device detection.
- ▶▶ Extended IDE Drive You can use one of the two methods:
  - Auto                    Allows BIOS to automatically detect SATA/IDE devices during POST(default)
  - None                    Select this if no SATA/IDE devices are used and the system will skip the automatic detection step and allow for faster system start up.
- ▶▶ Access Mode            Use this to set the access mode for the hard drive. The two options are: Large/Auto(default:Auto)

‣ Capacity Capacity of currently installed hard drive.

Hard drive information should be labeled on the outside drive casing. Enter the appropriate option based on this information.

- Cylinder Number of cylinders
- Head Number of heads
- Precomp Write precomp
- Landing Zone Landing zone
- Sector Number of sectors

### ☞ Drive A / Drive B

The category identifies the types of floppy disk drive A or drive B that has been installed in the computer.

- None No floppy drive installed.
- 360K, 5.25" 5.25 inch PC-type standard drive; 360 KB capacity.
- 1.2M, 5.25" 5.25 inch AT-type high-density drive; 1.2 MB capacity (3.5 inch when 3 Mode is Enabled).
- 720K, 3.5" 3.5 inch double-sided drive; 720 KB capacity
- 1.44M, 3.5" 3.5 inch double-sided drive; 1.44 MB capacity. (Default value)
- 2.88M, 3.5" 3.5 inch double-sided drive; 2.88 MB capacity.

### ☞ Floppy 3 Mode Support (for Japan Area)

- Disabled Normal Floppy Drive. (Default value)
- Drive A Drive A is 3 mode Floppy Drive.
- Drive B Drive B is 3 mode Floppy Drive.
- Both Drive A & B are 3 mode Floppy Drives.

### ☞ Halt on

The category determines whether the computer will stop if an error is detected during power up.

- No Errors The system boot will not stop for any error that may be detected and you will be prompted.
- All Errors Whenever the BIOS detects a non-fatal error the system will be stopped.
- All, But Keyboard The system boot will not stop for a keyboard error; it will stop for all other errors. (Default value)
- 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 keyboard or disk error; it will stop for all other errors.

### ☞ Memory

The category is display-only which is determined by POST (Power On Self Test) of the BIOS.

#### ‣ Base Memory

The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system.

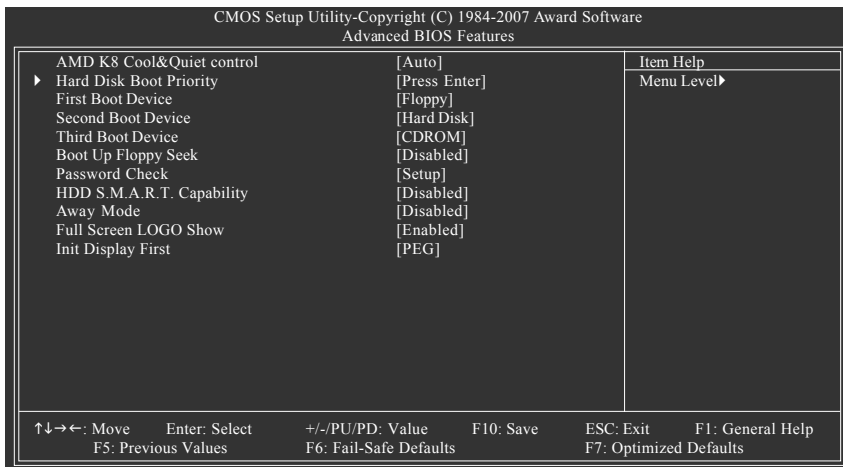
The value of the base memory is typically 512 KB for systems with 512 KB memory installed on the motherboard, or 640 KB for systems with 640 KB or more memory installed on the motherboard.

#### ‣ Extended Memory

The BIOS determines how much extended memory is present during the POST.

This is the amount of memory located above 1 MB in the CPU's memory address map.

## 2-2 Advanced BIOS Features



### ☞ AMD K8 Cool&Quiet control

- ▶▶ Auto      AMD Cool'n'Quiet driver manages clock and VID to best serve the thermal, performance and power requirements. (Default value)
- ▶▶ Disabled    Disable this function.

### ☞ Hard Disk Boot Priority

Select boot sequence for onboard(or add-on cards) SCSI, RAID, etc.

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.

### ☞ First / Second / Third Boot Device

- ▶▶ Floppy      Select your boot device priority by Floppy.
- ▶▶ LS120      Select your boot device priority by LS120.
- ▶▶ Hard Disk    Select your boot device priority by Hard Disk.
- ▶▶ CDROM      Select your boot device priority by CDROM.
- ▶▶ ZIP          Select your boot device priority by ZIP.
- ▶▶ USB-FDD     Select your boot device priority by USB-FDD.
- ▶▶ USB-ZIP     Select your boot device priority by USB-ZIP.
- ▶▶ USB-CDROM    Select your boot device priority by USB-CDROM.
- ▶▶ USB-HDD     Select your boot device priority by USB-HDD.
- ▶▶ Legacy LAN    Select your boot device priority by LAN.
- ▶▶ Disabled     Disable this function.

### ☞ **Boot Up Floppy Seek**

During POST, BIOS will determine the floppy disk drive installed is 40 or 80 tracks. 360 KB type is 40 tracks, 720 KB, 1.2 MB and 1.44 MB are all 80 tracks.

- ▶▶ Enabled      BIOS searches for floppy disk drive to determine it is 40 or 80 tracks. Note that BIOS can not tell from 720 KB, 1.2 MB or 1.44 MB drive type as they are all 80 tracks.
- ▶▶ Disabled      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 360 KB.  
(Default value)

### ☞ **Password Check**

- ▶▶ System      The system can not boot and can not access to Setup page will be denied if the correct password is not entered at the prompt.
- ▶▶ Setup      The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt. (Default value)

### ☞ **HDD S.M.A.R.T. Capability**

This feature allows your hard disk to report read/write errors and to issue warnings when third-party hardware monitor utility is installed.

- ▶▶ Enabled      Enable HDD S.M.A.R.T. capability.
- ▶▶ Disabled      Disable HDD S.M.A.R.T. capability. (Default value)

### ☞ **Away Mode**

- ▶▶ Disabled      Disable this function. (Default value)
- ▶▶ Enabled      Enable Away Mode in Windows XP Media Center operating system.  
(Away Mode: Enables the system to silently perform unattended tasks while in a low-power mode that appears off.)

### ☞ **Full Screen LOGO Show**

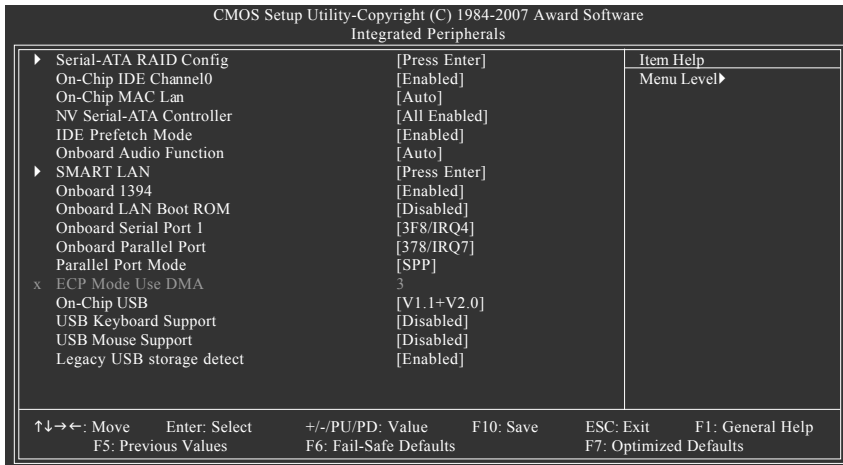
- ▶▶ Enabled      Show full screen logo at system startup. (Default value)
- ▶▶ Disabled      Disable this function. If you wish to see BIOS POST screen, set this item to "Disabled".

### ☞ **Init Display First**

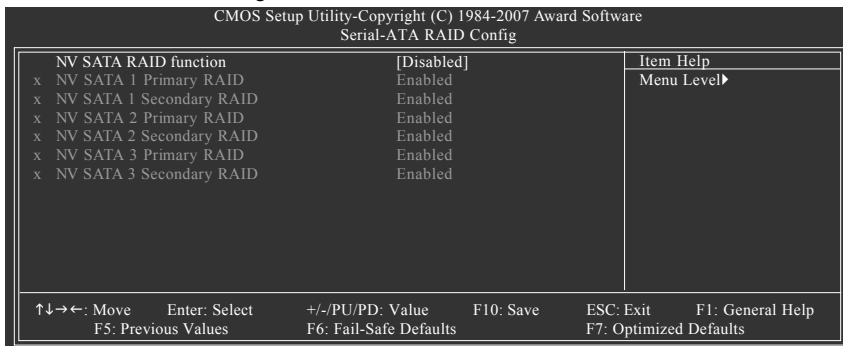
This feature allows you to select the first initiation of the monitor display from which card when you install a PCI VGA card and a PCI Express VGA card on the motherboard.

- ▶▶ PCI Slot      Set Init Display First to PCI VGA card.
- ▶▶ PEG      Set Init Display First to PCI Express VGA card (the PCIE\_16\_1 slot). (Default value)
- ▶▶ PEG (Slot2)    Set Init Display First to PCI Express VGA card (the PCIE\_16\_2 slot).

## 2-3 Integrated Peripherals



### Serial-ATA RAID Config



### NV SATA RAID function

- ▶ Enabled      Allows users to configure individual SATA channels as RAID or ATA mode.
- ▶ Disabled     Disable the RAID function for all of the onboard SATA channels. (Default value)

### NV SATA 1 Primary RAID

- ▶ Enabled      Enable RAID function for the first channel of the first SATA controller. (Default value)
- ▶ Disabled     Disable the RAID function of this channel. It will operate in ATA mode.

### NV SATA 1 Secondary RAID

- ▶ Enabled      Enable RAID function for the second channel of the first SATA controller. (Default value)
- ▶ Disabled     Disable the RAID function of this channel. It will operate in ATA mode.

### NV SATA 2 Primary RAID

- ▶ Enabled      Enable RAID function for the first channel of the second SATA controller. (Default value)
- ▶ Disabled     Disable the RAID function of this channel. It will operate in ATA mode.



### ☞ NV SATA 2 Secondary RAID

- ▶▶ Enabled Enable RAID function for the second channel of the second SATA controller. (Default value)
- ▶▶ Disabled Disable the RAID function of this channel. It will operate in ATA mode.

### ☞ NV SATA 3 Primary RAID

- ▶▶ Enabled Enable RAID function for the first channel of the third SATA controller. (Default value)
- ▶▶ Disabled Disable the RAID function of this channel. It will operate in ATA mode.

### ☞ NV SATA 3 Secondary RAID

- ▶▶ Enabled Enable RAID function for the second channel of the third SATA controller. (Default value)
- ▶▶ Disabled Disable the RAID function of this channel. It will operate in ATA mode.

### ☞ On-Chip IDE Channel0

- ▶▶ Enabled Enable onboard first channel IDE port. (Default value)
- ▶▶ Disabled Disable onboard first channel IDE port.

### ☞ On-Chip MAC LAN

- ▶▶ Disabled Disable the LAN controller built-in core chipset.
- ▶▶ Auto Enable the LAN controller built-in core chipset. (Default value)

### ☞ NV Serial-ATA Controller

- ▶▶ Disabled Disable all the 3 SATA controllers.
- ▶▶ SATA-1 Enable the first SATA controller only.
- ▶▶ SATA-1+2 Enable the first and the second SATA controller.
- ▶▶ All Enabled Enable all the 3 SATA controllers. (Default value)

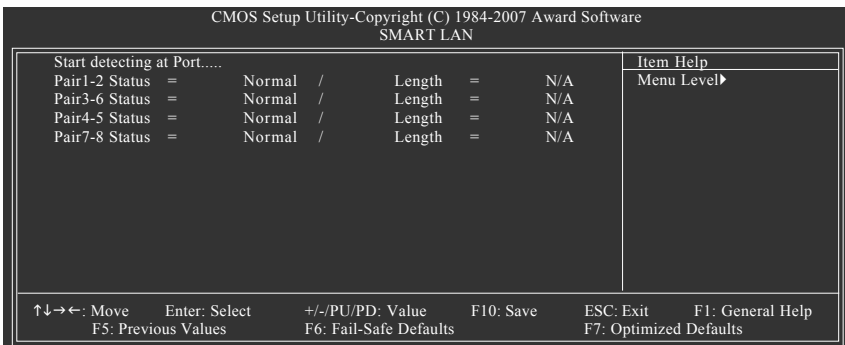
### ☞ IDE Prefetch Mode

- ▶▶ Enabled Enable IDE data buffer to enhance HDD transfer speed. (Default value)
- ▶▶ Disabled Disable IDE data buffer for the system stability.

### ☞ Onboard Audio Function

- ▶▶ Auto Auto-detect onboard audio function. (Default value)
- ▶▶ Disabled Disable this function.

### ☞ SMART LAN



This motherboard incorporates cable diagnostic feature designed to detect the status of the attached LAN cable. This feature will detect cabling issue and report the approximate distance to the fault or short. Refer to the following information for diagnosing your LAN cable:

▶▶ **When LAN Cable Is Functioning Normally...**

1. If no cable problem is detected on the LAN cable connected to a Gigabit hub, the **Status** fields of Pair 1-2, Pair 3-6, Pair 4-5, and Pair 7-8 will show **Normal** and the **Length** fields will show **N/A**, as shown in the figure above.
2. If no cable problem is detected on the LAN cable connected to a 10/100 Mbps hub, the **Status** fields of Pair 1-2 and Pair 3-6 will show **Normal** and the **Length** fields will show **N/A**. However, because Pair 4-5 and Pair 7-8 are not used in a 10/100 Mbps environment, their **Status** fields will show **Short** or **Open**, and the length shown is the approximate length of the attached LAN cable.

▶▶ **When a Cable Problem Occurs...**

If a cable problem occurs on a specified pair of wires, the **Status** field will show **Short** or **Open** and the length shown will be the approximate distance to the fault or short.

For example, if it shows `Pair1-2 Status = Short / Length = 1.6m`, it means that a fault or short might occur at about 1.6m on Pair 1-2.

▶▶ **When No LAN Cable Is Attached...**

If no LAN cable is attached to the motherboard, the **Status** fields of all four pairs of wires will show **Open** and the **Length** fields show **0.0m**.

☞ **Onboard 1394**

- ▶▶ Enabled Enable onboard IEEE 1394 function. (Default value)
- ▶▶ Disabled Disable onboard IEEE 1394 function.

☞ **Onboard LAN Boot ROM**

This function decide whether to invoke the boot ROM of the onboard LAN chip.

- ▶▶ Enabled Enable this function.
- ▶▶ Disabled Disable this function. (Default value)

☞ **Onboard Serial Port 1**

- ▶▶ Auto BIOS will automatically setup the port 1 address.
- ▶▶ 3F8/IRQ4 Enable onboard Serial port 1 and address is 3F8/IRQ4. (Default value)
- ▶▶ 2F8/IRQ3 Enable onboard Serial port 1 and address is 2F8/IRQ3.
- ▶▶ 3E8/IRQ4 Enable onboard Serial port 1 and address is 3E8/IRQ4.
- ▶▶ 2E8/IRQ3 Enable onboard Serial port 1 and address is 2E8/IRQ3.
- ▶▶ Disabled Disable onboard Serial port 1.

☞ **Onboard Parallel Port**

- ▶▶ Disabled Disable onboard LPT port.
- ▶▶ 378/IRQ7 Enable onboard LPT port and address is 378/IRQ7. (Default value)
- ▶▶ 278/IRQ5 Enable onboard LPT port and address is 278/IRQ5.
- ▶▶ 3BC/IRQ7 Enable onboard LPT port and address is 3BC/IRQ7.

☞ **Parallel Port Mode**

- ▶▶ SPP Using Parallel port as Standard Parallel Port. (Default value)
- ▶▶ EPP Using Parallel port as Enhanced Parallel Port.
- ▶▶ ECP Using Parallel port as Extended Capabilities Port.
- ▶▶ ECP+EPP Using Parallel port as ECP and EPP mode.

### ☞ **ECP Mode Use DMA**

This item will become available when **Parallel Port Mode** set to **ECP** or **ECP+EPP**.

- ▶▶ 3                   Set ECP Mode Use DMA to 3. (Default value)
- ▶▶ 1                   Set ECP Mode Use DMA to 1.

### ☞ **On-Chip USB**

- ▶▶ V1.1+V2.0       Enable USB 1.1 and USB 2.0 controllers. (Default value)
- ▶▶ V1.1             Enable only USB 1.1 controller
- ▶▶ Disabled        Disable onchip USB support.

### ☞ **USB Keyboard Support**

- ▶▶ Enabled         Enable USB keyboard support.
- ▶▶ Disabled       Disable USB keyboard support. (Default value)

### ☞ **USB Mouse Support**

- ▶▶ Enabled         Enable USB mouse support.
- ▶▶ Disabled       Disable USB mouse support. (Default value)

### ☞ **Legacy USB storage detect**

This option allows users to decide whether to detect USB storage devices, including USB flash drives and USB hard drives during POST.

- ▶▶ Enabled         BIOS will scan all USB storage devices. (Default value)
- ▶▶ Disabled       Disable this function.

## 2-4 Power Management Setup

CMOS Setup Utility-Copyright (C) 1984-2007 Award Software Power Management Setup		
ACPI Suspend Type	[S1(POS)]	Item Help
Soft-Off by Power button	[Instant-Off]	Menu Level▶
PME Event Wake Up	[Enabled]	
Modem Ring On	[Enabled]	
USB Resume from Suspend	[Disabled]	
Power-On by Alarm	[Disabled]	
x Day of Month Alarm	Everyday	
x Time (hh:mm:ss) Alarm	0 : 0 : 0	
x HPET Support <sup>(Note)</sup>	[Enabled]	
Power On By Mouse	[Disabled]	
Power On By Keyboard	[Disabled]	
x KB Power ON Password	Enter	
AC BACK Function	[Soft-Off]	

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

### ☞ ACPI Suspend Type

- ▶▶ S1(POS)    Set ACPI suspend type to S1/POS(Power On Suspend). (Default value)
- ▶▶ S3(STR)    Set ACPI suspend type to S3/STR(Suspend To RAM).

### ☞ Soft-Off by Power button

- ▶▶ Instant-Off    Press power button then Power off instantly. (Default value)
- ▶▶ Delay 4 Sec.    Press power button 4 sec. to Power off. Enter suspend if button is pressed less than 4 sec.

### ☞ PME Event Wake Up

This feature requires an ATX power supply that provides at least 1A on the 5VSB lead.

- ▶▶ Disabled    Disable this function.
- ▶▶ Enabled    Enable PME as wake up event. (Default value)

### ☞ Modem Ring On

An incoming call via modem can awake the system from any suspend state.

- ▶▶ Disabled    Disable this function.
- ▶▶ Enabled    Enable Modem Ring On function. (Default value)

### ☞ USB Resume from Suspend

- ▶▶ Disabled    Disable this function. (Default value)
- ▶▶ Enabled    Enable USB device wake up system from suspend mode.

(Note) Supported on Windows® Vista® operating system only.

### ☞ **Power-On by Alarm**

You can set "Power-On by Alarm" item to Enabled and key in Date/Time to power on system.

- ▶▶ Disabled      Disable this function. (Default value)
- ▶▶ Enabled        Enable alarm function to POWER ON system.

If Power-On by Alarm is Enabled.

- ▶▶ Day of Month Alarm :      Everyday, 1~31
- ▶▶ Time (hh: mm: ss) Alarm : (0~23) : (0~59) : (0~59)

### ☞ **HPET Support** <sup>(Note)</sup>

- ▶▶ Enabled        Enable support for High Precision Event Timer (HPET) function. (Default value)
- ▶▶ Disabled        Disable this function.

### ☞ **Power On By Mouse**

- ▶▶ Disabled        Disable this function. (Default value)
- ▶▶ Double-Click    Double click on PS/2 mouse left button to power on the system.

### ☞ **Power On By Keyboard**

- ▶▶ Disabled        Disable this function. (Default value)
- ▶▶ Password        Enter from 1 to 5 characters to set the Keyboard Power On Password.
- ▶▶ Any KEY        Press any key to power on the system.
- ▶▶ Keyboard 98    If your keyboard have "POWER Key" button, you can press the key to power on the system.

### ☞ **KB Power ON Password**

When "Power On by Keyboard" is set to Password, you can set the password here.

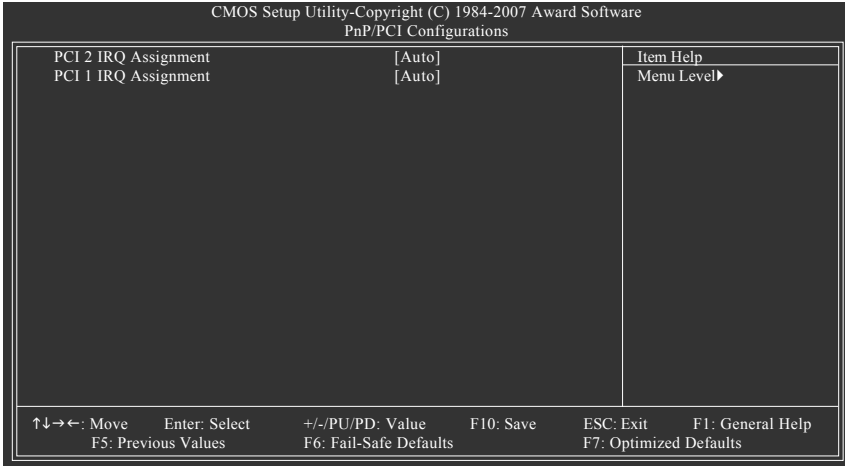
- ▶▶ Enter            Input password (from 1 to 5 characters) and press Enter to set the Keyboard Power On password.

### ☞ **AC BACK Function**

- ▶▶ Soft-Off        When AC-power back to the system, the system will be in "Off" state. (Default value)
- ▶▶ Full-On         When AC-power back to the system, the system always in "On" state.

(Note) Supported on Windows® Vista® operating system only.

## 2-5 PnP/PCI Configurations



### ☞ PCI 2 IRQ Assignment

- ▶▶ Auto                      Auto assign IRQ to PCI 2. (Default value)
- ▶▶ 3,4,5,7,9,10,11,12,14,15    Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI 2.

### ☞ PCI 1 IRQ Assignment

- ▶▶ Auto                      Auto assign IRQ to PCI 1. (Default value)
- ▶▶ 3,4,5,7,9,10,11,12,14,15    Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI 1.

## 2-6 PC Health Status

CMOS Setup Utility-Copyright (C) 1984-2007 Award Software		Item Help
PC Health Status		Menu Level▶
Reset Case Open Status	[Disabled]	
Case Opened	Yes	
Vcore	OK	
DDR2 1.8V	OK	
+3.3V	OK	
+12V	OK	
Current CPU Temperature	45°C	
Current CPU FAN Speed	3245 RPM	
Current POWER FAN Speed	0 RPM	
Current SYSTEM FAN Speed	0 RPM	
CPU Warning Temperature	[Disabled]	
CPU FAN Fail Warning	[Disabled]	
POWER FAN Fail Warning	[Disabled]	
SYSTEM FAN Fail Warning	[Disabled]	
CPU Smart FAN Control <sup>(Note)</sup>	[Enabled]	
CPU Smart FAN Mode	[Auto]	

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

### Reset Case Open Status

- ▶ Disabled Don't reset case open status. (Default value)
- ▶ Enabled Clear case open status at next boot.

### Case Opened

If the case is closed, **Case Opened** will show "No."

If the case is opened, **Case Opened** will show "Yes."

If you want to reset **Case Opened** value, enable **Reset Case Open Status** and save the change to CMOS, and then your computer will restart.

### Current Voltage(V) Vcore / DDR2 1.8V / +3.3V / +12V

- ▶ Detect system's voltage status automatically.

### Current CPU Temperature

- ▶ Detect CPU temperature automatically.

### Current CPU/POWER/SYSTEM FAN Speed (RPM)

- ▶ Detect CPU/power/system fan speed status automatically.

### CPU Warning Temperature

- ▶ 60°C / 140°F Monitor CPU temperature at 60°C / 140°F.
- ▶ 70°C / 158°F Monitor CPU temperature at 70°C / 158°F.
- ▶ 80°C / 176°F Monitor CPU temperature at 80°C / 176°F.
- ▶ 90°C / 194°F Monitor CPU temperature at 90°C / 194°F.
- ▶ Disabled Disable this function. (Default value)

### CPU/POWER/SYSTEM FAN Fail Warning

- ▶ Disabled Disable CPU/power/system fan fail warning function. (Default value)
- ▶ Enabled Enable CPU/power/system fan fail warning function.

(Note) Whether the CPU Smart FAN Control function is supported will depend on the CPU you install.

 **CPU Smart FAN Control** (Note)

- ▶▶ Disabled      Disable this function.
- ▶▶ Enabled        When this function is enabled, CPU fan will run at different speed depending on CPU temperature. Users can adjust the fan speed with Easy Tune based on their requirements. (Default value)

 **CPU Smart FAN Mode**

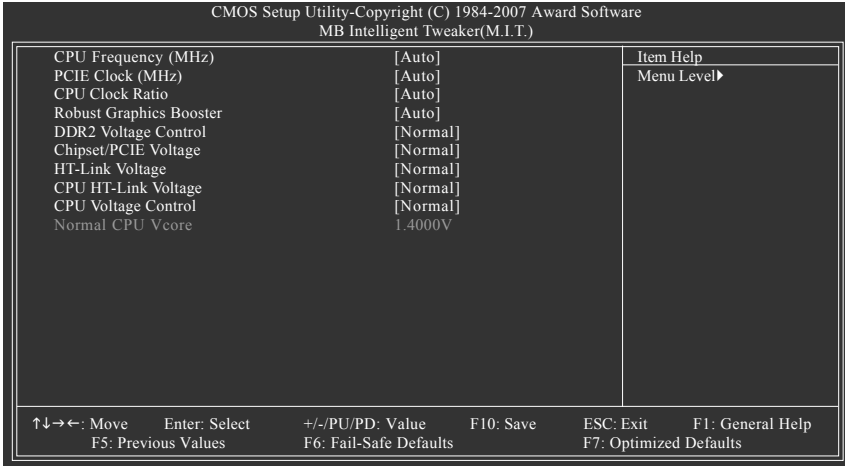
This option is available only when CPU Smart FAN Control is enabled.

- ▶▶ Auto            BIOS autodetects the type of CPU fan you installed and sets the optimal CPU Smart FAN control mode for it. (Default Value)
- ▶▶ Voltage        Set to Voltage when you use a CPU fan with a 3-pin fan power cable.
- ▶▶ PWM            Set to PWM when you use a CPU fan with a 4-pin fan power cable.

(Note) Whether the CPU Smart FAN Control function is supported will depend on the CPU you install.



## 2-7 MB Intelligent Tweaker(M.I.T.)



CAUTION

Incorrectly doing overclock/overvoltage may result in damage to CPU, chipset, or memory and reduce the useful life of these components. This page is for advanced users only and we recommend you not to alter the default settings to prevent system instability or other unexpected results. (Inadequately altering the settings may result in system's failure to boot. If this occurs, clear the CMOS values and reset the board to default values.)

### ☞ CPU Frequency (MHz)

Allows you to manually set the CPU host frequency. **Auto** (default) allows BIOS to automatically adjust the CPU host frequency.

**Important** It is highly recommended that the CPU frequency be set in accordance with the CPU specifications.

### ☞ PCIe Clock (MHz)

Allows you to manually set the PCIe clock frequency. The adjustable range is from 100 MHz to 200 MHz. **Auto** sets the PCIe clock frequency to standard 100 MHz. (Default: Auto)

### ☞ CPU Clock Ratio

Allows you to alter the clock ratio for the installed CPU. The adjustable range is dependent on the CPU being used.

### ☞ Robust Graphics Booster

Select the options can enhance the VGA graphics card bandwidth to get higher performance.

- ▶▶ Auto            Set Robust Graphics Booster to Auto. (Default value)
- ▶▶ Fast            Set Robust Graphics Booster to Fast.
- ▶▶ Turbo          Set Robust Graphics Booster to Turbo.

### ☞ **DDR2 Voltage Control**

Sets the voltage settings for the memory.

- ▶▶ Normal                      Supply DDR2 voltage as DDR2 required. (Default value)
- ▶▶ +0.025V ~ +0.700V        Increase DDR2 voltage by 0.025V to 0.700V.

### ☞ **Chipset/PCIE Voltage**

Sets the voltage settings for chipset and PCI Express bus.

- ▶▶ Normal                      Supply chipset and PCIe voltage as chipset and PCIe required. (Default value)
- ▶▶ +0.025V ~ +0.375V        Increase PCIe voltage by 0.025V to 0.375V.

### ☞ **HT-Link Voltage**

Sets the voltage settings for HT-Link.

- ▶▶ Normal                      Supply HT-Link voltage as HT-Link required. (Default value)
- ▶▶ +0.025V ~ +0.375V        Increase HT-Link voltage by 0.025V to 0.375V.

### ☞ **CPU HT-Link Voltage**

Sets the voltage settings for the HT-Link between CPU and chipset.

- ▶▶ Normal                      Supply CPU HT-Link voltage as CPU HT-Link required. (Default value)
- ▶▶ +0.025V ~ +0.375V        Increase CPU HT-Link voltage by 0.025V to 0.375V.

### ☞ **CPU Voltage Control**

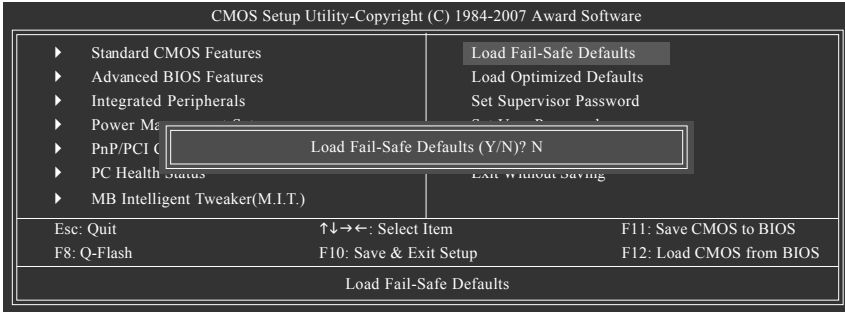
Allows you to set the CPU voltage. **Normal** sets the CPU voltage as required. The adjustable range is dependent on the CPU being installed. (Default: Normal)

Note: Increasing CPU voltage may result in damage to your CPU or reduce the useful life of the CPU.

### ☞ **Normal CPU Vcore**

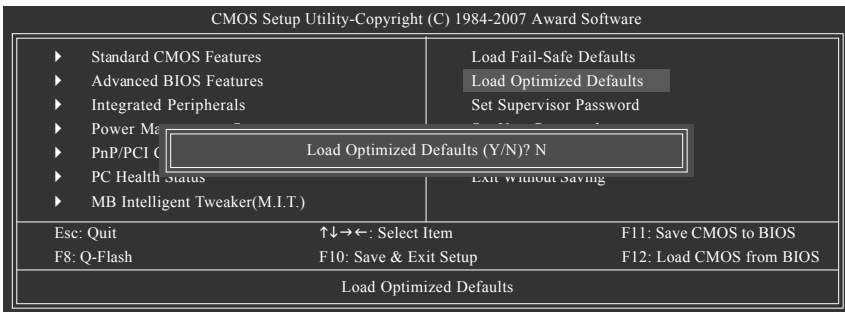
Displays the normal operating voltage of your CPU.

## 2-8 Load Fail-Safe Defaults



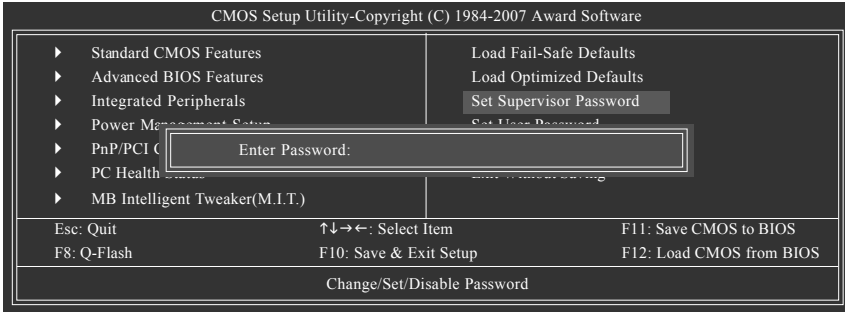
Fail-Safe defaults contain the most appropriate values of the system parameters that allow minimum system performance.

## 2-9 Load Optimized Defaults



Selecting this field loads the factory defaults for BIOS and Chipset Features which the system automatically detects.

## 2-10 Set Supervisor/User Password



When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

Type the password, up to eight characters, and press <Enter>. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

To disable password, just press <Enter> when you are prompted to enter password. A message "PASSWORD DISABLED" will appear to confirm the password being disabled. Once the password is disabled, the system will boot and you can enter Setup freely.

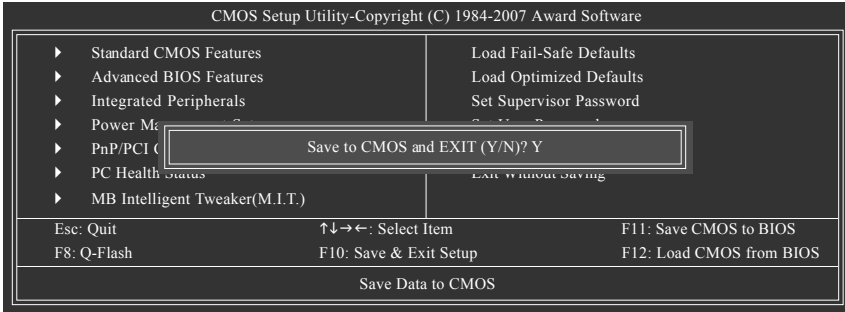
The BIOS Setup program allows you to specify two separate passwords:

SUPERVISOR PASSWORD and a USER PASSWORD. When disabled, anyone may access all BIOS Setup program function. When enabled, the Supervisor password is required for entering the BIOS Setup program and having full configuration fields, the User password is required to access only basic items.

If you select "System" at "Password Check" in Advance BIOS Features Menu, you will be prompted for the password every time the system is rebooted or any time you try to enter Setup Menu.

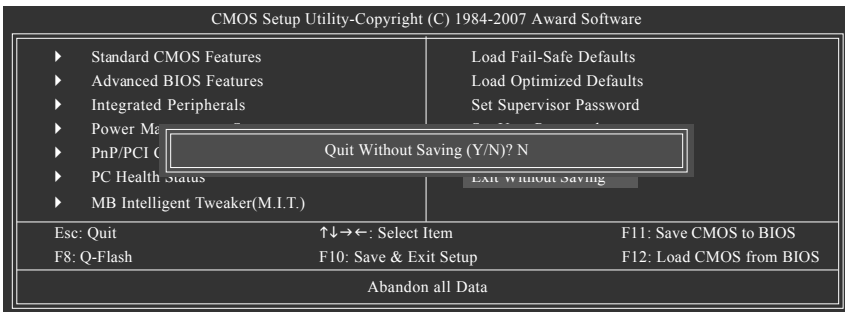
If you select "Setup" at "Password Check" in Advance BIOS Features Menu, you will be prompted only when you try to enter Setup.

## 2-11 Save & Exit Setup



Type "Y" will quit the Setup Utility and save the user setup value to RTC CMOS.  
Type "N" will return to Setup Utility.

## 2-12 Exit Without Saving



Type "Y" will quit the Setup Utility without saving to RTC CMOS.  
Type "N" will return to Setup Utility.



## Chapter 3 Drivers Installation

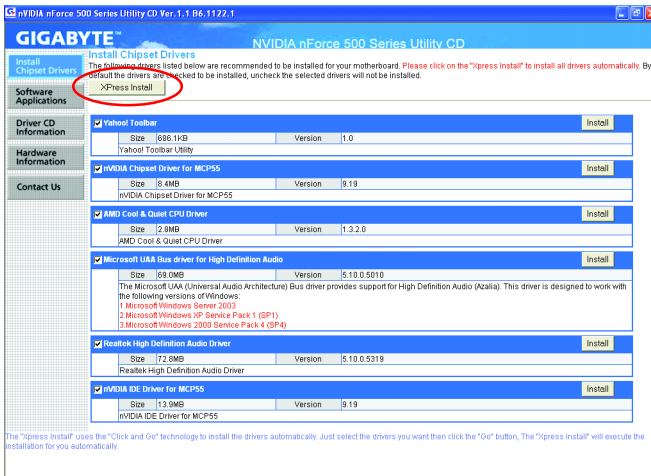


- Before installing the drivers, first install the operating system. (The following instructions use Windows XP as the example operating system.)
- After installing the operating system, insert the driver disk into your optional drive. The CD Autorun screen is automatically displayed which looks like that shown in the screen shot below. (If the CD Autorun screen does not appear automatically, go to My Computer, double-click the optical drive and execute the Run.exe program.)

### 3-1 Install Chipset Drivers

"Xpress Install " is now analyzing your computer...99%

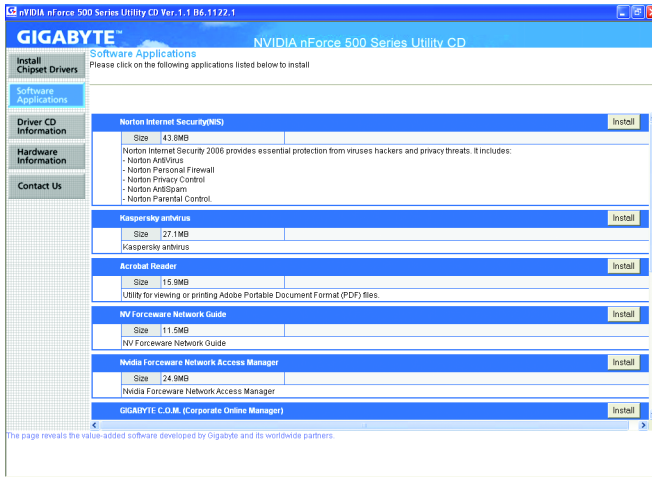
After inserting the driver disk, "Xpress Install" will automatically scan the system and then list all the drivers that are recommended to install. Please select the item that you wish to install and press the **Install** button following the item. Or you can press **Xpress Install** to install all the driver items.



- Some device drivers will restart your system automatically during the driver installation. After the system restart, **Xpress Install** will continue to install other drivers.
- After the drivers are installed, follow the onscreen instructions to restart your system. You can install other applications included in the CD-ROM.
- For USB 2.0 driver support under the Windows XP operating system, please install the Windows XP Service Pack 1 or later. After installing the SP1 (or later), if a question mark still exists in **Universal Serial Bus Controller** in **Device Manager**, please remove the question mark (by right-clicking your mouse and select **Uninstall**) and restart the system. (The system will then autodetect and install the USB 2.0 driver.)

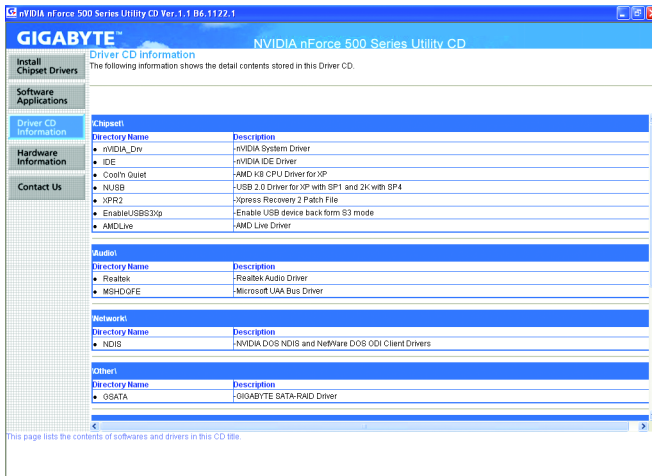
## 3-2 Software Applications

This page displays all the tools that Gigabyte developed and some free software, you can choose anyone you want and press "install" to install them.



## 3-3 Driver CD Information

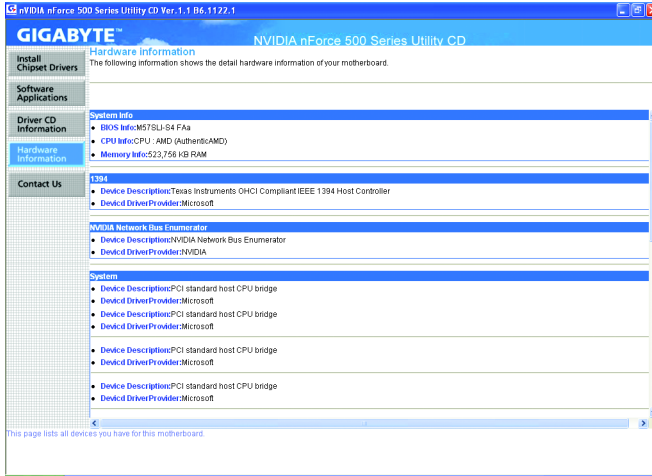
This page lists the contents of software and drivers in this CD-title.





## 3-4 Hardware Information

This page lists all device you have for this motherboard.



## 3-5 Contact Us

Please see the last page for details.





## Chapter 4 Appendix

### 4-1 Unique Software Utilities

(Not all model support these Unique Software Utilities, please check your MB features.)

#### 4-1-1 EasyTune 5 Introduction

EasyTune 5 presents the most convenient Windows based system performance enhancement and manageability utility. Featuring several powerful yet easy to use tools such as 1) Overclocking for enhancing system performance, 2) C.I.A. and M.I.B. for special enhancement for CPU and Memory, 3) Smart-Fan control for managing fan speed control of both CPU cooling fan and North-Bridge Chipset cooling fan, 4) PC health for monitoring system status. <sup>(Note)</sup>

#### User Interface Overview



	Button/Display	Description
1.	OVERCLOCKING	Enters the Overclocking setting page
2.	C.I.A./M.I.B.	Enters the C.I.A. and M.I.B. setting page
3.	SMART FAN	Enters the Smart-Fan setting page
4.	PC HEALTH	Enters the PC Health setting page
5.	GO	Confirmation and Execution button
6.	EASY MODE/ADVANCED MODE	Toggles between Easy and Advance Mode
7.	Display Field	Displays panel of CPU frequency
8.	Function LEDs	Shows the information of the current function
9.	GIGABYTE Logo	Visits GIGABYTE website
10.	Help	Displays EasyTune™ 5 help screen
11.	Exit or Minimize	Quits or minimizes EasyTune™ 5

(Note) EasyTune 5 functions may vary depending on different motherboards.

## 4-1-2 Xpress Recovery2 Introduction



Xpress Recovery2 is designed to provide quick backup and restoration of hard disk data. Supporting Microsoft operating systems including Windows XP/2000/NT/98/Me and DOS, and file systems including FAT16, FAT32, and NTFS, Xpress Recovery2 is able to back up data on hard disks on PATA and SATA IDE controllers. After Xpress Recovery2 is executed from CD-ROM for the first time, it will stay permanent in your hard disk. If you wish to run Xpress Recovery2 later, you can simply press F9 during system bootup to enter Xpress Recovery2 without the CD-ROM.

### System requirements:

1. Intel x86 platforms
2. At least 64M bytes of system memory
3. VESA-supported VGA cards

### How to use the Xpress Recovery2

Initial access by booting from CD-ROM and subsequent access by pressing the F9 key:

Steps: After entering BIOS Setup, go to **Advanced BIOS Feature** and set to boot from CD-ROM. Save the settings and exit the BIOS Setup. Insert the provided driver CD into your CD-ROM drive. Upon system restart, the message which says "Boot from CD/DVD:" will appear in the bottom left corner of the screen. Press any key to enter Xpress Recovery2.

After the steps above are completed, subsequent access to Xpress Recovery2 can be made by simply pressing the <F9> key during system power-on.



1. If you have already entered Xpress Recovery2 by booting from the CD-ROM, you can enter Xpress Recovery2 by pressing the <F9> key in the future.
2. System storage capacity and the reading/writing speed of the hard disk will affect the data backup speed.
3. It is recommended that Xpress Recovery2 be immediately installed once you complete installations of OS and all required drivers as well as software.

## The Main Screen of Xpress Recovery2



### 1. RESTORE:

Restore the backed-up data to your hard disk. (This button will not appear if there is no backup file.)

### 2. BACKUP:

Back up data from hard disk.

### 3. REMOVE:

Remove previously-created backup files to release disk space.

(This button will not appear if there is no backup file.)

### 4. REBOOT:

Exit the main screen and restart the system.

### Limitations:

1. Not compatible to Xpress Recovery.
2. For the use of Xpress Recovery2, a primary partition must be reserved.
3. Xpress Recovery2 will store the backup file at the end of the hard disk, so free space available on the hard disk for the backup file must be allocated in advance. (A minimum 4GB is recommended but the actual space is dependent on the size of the data to be backed up)
4. Capable of backing up hard disks installed with Windows operating systems including DOS and Windows XP/2000/NT/9x/Me.
5. USB hard disks are currently not supported.
6. Does not support RAID/AHCI (class code 0104/0106) hard disks.
7. Capable of backing up and restoring only the first physical hard disk.

Hard disks detection sequence is as follows:

- a. PATA IDE primary channel
- b. PATA IDE secondary channel
- c. SATA IDE channel 1
- d. SATA IDE channel 2
- e. SATA IDE channel 3
- f. SATA IDE channel 4

### Precautions:

1. When using hard disks with more than 128 G under Windows 2000, be sure to execute the EnableBigLba.exe program from the driver CD before data backup.
2. It is normal that data backup takes longer time than data restoration.
3. Xpress Recovery2 is compliant with the GPL regulations.
4. On a few motherboards based on Nvidia chipsets, BIOS update is required for Xpress Recovery2 to correctly identify RAID and SATA IDE mode. Please contact your motherboard manufacturer.

## 4-1-3 Flash BIOS Method Introduction

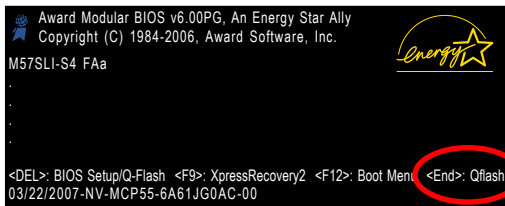


### Method 1 : Q-Flash™

Q-Flash™ is a BIOS update tool that allows the user to update BIOS without entering operating systems like MS-DOS or Windows. Embedded in the BIOS, the Q-Flash™ tool frees you from the hassles of going through complicated BIOS flashing process.

#### Before Use:

1. From GIGABYTE's website, download the latest compressed BIOS update file that matches your motherboard model.
2. Extract the file and save the new BIOS file (e.g. M57SLS42.FA) to your floppy disk, USB flash drive, or hard drive. Note: The USB flash drive or hard drive must use FAT32/16/12 file system.
3. Restart the system. During the POST, press the <End> key to enter Q-Flash. Note: You can access Q-Flash by either pressing the <End> key during the POST or pressing the <F8> key in BIOS Setup. However, if the BIOS update file is saved to a hard drive in RAID/AHCI mode or a hard drive attached to an independent IDE/SATA controller, use the <End> key during the POST to access Q-Flash.



<End> : Qflash



Because BIOS flashing is potentially risky, please do it with caution and avoid inadequate operation that may result in system malfunction.

### Updating the BIOS

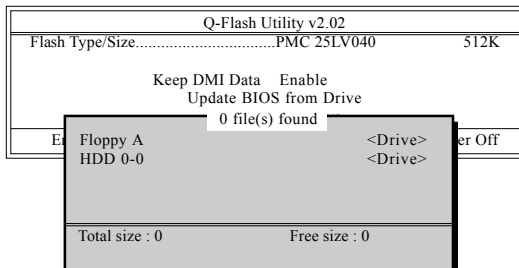
#### Step 1:

- a. In the Q-Flash menu, use the UP or DOWN ARROW key to select **Update BIOS from Drive** and press ENTER.



If you wish to back up the current BIOS file, use the **Save BIOS to Drive** function.

- b. Select the floppy drive or hard drive where the BIOS file is saved, such as "Floppy A" and press ENTER.



c. Select the BIOS file and press ENTER.



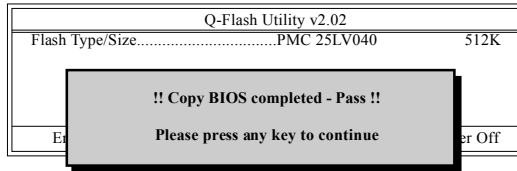
Make sure again the BIOS file matches your motherboard model.

Step 2: The process of system reading the BIOS file from the floppy disk is displayed on the screen. When the message "Are you sure to update BIOS?" appears, press ENTER. The BIOS update will begin and the current process will be displayed.



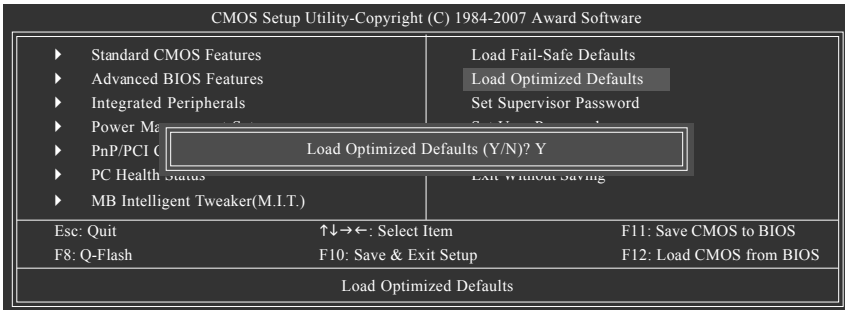
1. Do not turn off or restart the system when the system is reading/updating the BIOS.
2. Do not remove the floppy disk or hard drive/USB drive when the system is updating the BIOS.

Step 3: When the update process is complete, press any key to return to the Q-Flash main menu.



Step 4: Press ESC and then ENTER to exit Q-Flash and the system will restart. As the system reboots, you will see the new BIOS version during POST.

Step 5: As the system reboots, press DELETE to enter BIOS Setup. Select **Load Optimized Defaults** and press ENTER to load BIOS defaults. System will re-detect all peripherals devices after BIOS update, so we recommend that you reload BIOS defaults.



Press Y to load BIOS defaults

Step 6: Select **Save & Exit Setup** and then press **Y** to save settings to CMOS and exit BIOS Setup. When the system restarts, the whole update process is complete.



## Method 2 : @BIOS™ Utility

If you do not have a DOS startup disk, we recommend that you use the new @BIOS utility. @BIOS allows users to update their BIOS under Windows. Just select the desired @BIOS server to download the latest version of BIOS.

Fig 1. Installing the @BIOS utility

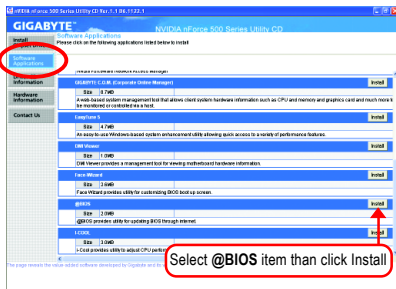


Fig 2. Installation Complete and Run @BIOS

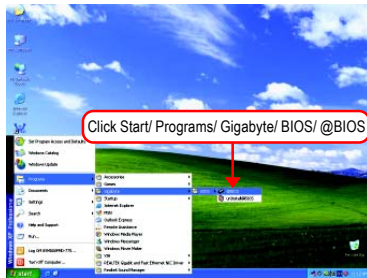


Fig 3. The @BIOS Utility

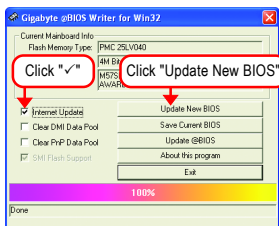
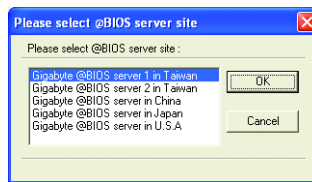


Fig 4. Select the desired @BIOS server



## 1. Methods and steps:

### I. Update BIOS through Internet

- Click "Internet Update" icon
- Click "Update New BIOS" icon
- Select @BIOS™ sever
- Select the exact model name on your motherboard
- System will automatically download and update the BIOS.

### II. Update BIOS NOT through Internet:

- Do not click "Internet Update" icon
- Click "Update New BIOS"
- Please select "All Files" in dialog box while opening the old file.
- Please search for BIOS unzip file, downloading from internet or any other methods (such as: M57SLS42.FA).
- Complete update process following the instruction.



### III. Save BIOS

In the very beginning, there is "Save Current BIOS" icon shown in dialog box. It means to save the current BIOS version.

### IV. Check out supported motherboard and Flash ROM:

In the very beginning, there is "About this program" icon shown in dialog box. It can help you check out which kind of motherboard and which brand of Flash ROM are supported.

## 2. Note:

- I. In method I, if it shows two or more motherboard's model names to be selected, please make sure your motherboard's model name again. Selecting wrong model name will cause the system unbooted.
- II. In method II, be sure that motherboard's model name in BIOS unzip file are the same as your motherboard's. Otherwise, your system won't boot.
- III. In method I, if the BIOS file you need cannot be found in @BIOS™ server, please go onto Gigabyte's web site for downloading and updating it according to method II.
- IV. Please note that any interruption during updating will cause system unbooted.
- V. Do not use @BIOS and C.O.M. (Corporate Online Management) at the same time.

## 4-1-4 Configuring SATA Hard Drive(s)

**To configure SATA hard drive(s), follow the steps below:**

- (1) Install SATA hard drive(s) in your system.
- (2) Configure SATA controller mode and boot sequence in BIOS Setup.
- (3) Configure RAID set in RAID BIOS. <sup>(Note)</sup>
- (4) Make a floppy disk containing the SATA controller driver. <sup>(Note)</sup>
- (5) Install the SATA controller driver during OS installation. <sup>(Note)</sup>

### **Before you begin**

Please prepare:

- (a) SATA hard drive(s). To ensure optimal performance, it is recommended that you use two hard drives with identical model and capacity for RAID array. If you do not want to create RAID, you may prepare only one hard drive.
- (b) An empty formatted floppy disk. <sup>(Note)</sup>
- (c) Windows XP/2000 setup disk.
- (d) Driver CD for your motherboard. <sup>(Note)</sup>

### **(1) Installing SATA hard drive(s) in your computer**

Attach one end of the SATA signal cable to the rear of the SATA hard drive and the other end to available SATA port(s) on the motherboard. Then connect the power connector from your power supply to the hard drive.

(Note) Required for setting up RAID array.

## (2) Configuring SATA controller mode and boot sequence in BIOS Setup

You have to make sure whether the SATA controller is configured correctly in system BIOS Setup and set BIOS boot sequence for the SATA hard drive(s)/RAID array.

Step 1:

Turn on your computer and press Del to enter BIOS Setup during POST (Power-On Self Test). In BIOS Setup, go to **Integrated Peripherals --> Serial-ATA RAID Config** (Figure 1).

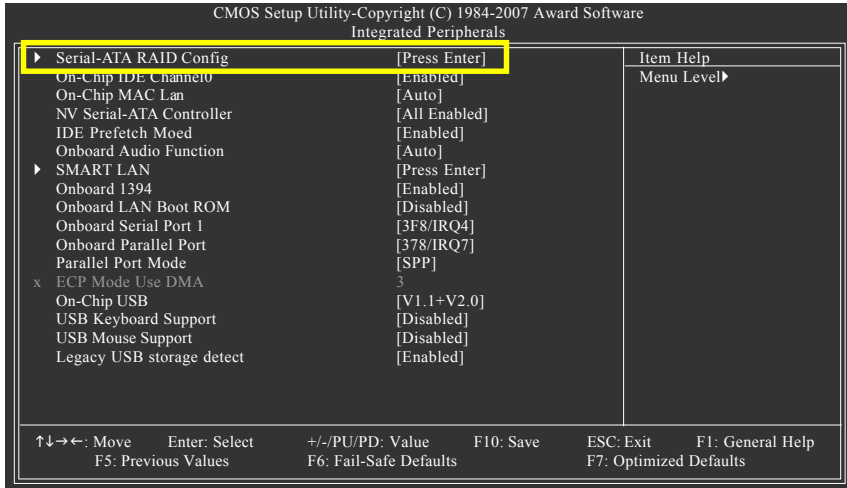


Figure 1

Ensure that **NV SATA RAID function** is enabled (Figure 2). Then enable the SATA controller/channel with hard disks that you want to use for RAID (**NV SATA 1** controls the SATAII1 and SATAII2 connectors; **NV SATA 2** controls the SATAII3 and SATAII4 connectors; **NV SATA 3** controls the SATAII5 and SATAII6 connectors). For example, if you wish to create RAID with hard disks on the SATAII1 and SATAII2 connectors, ensure that **NV SATA 1 Primary RAID** and **NV SATA 1 Secondary RAID** are enabled (Figure 2).

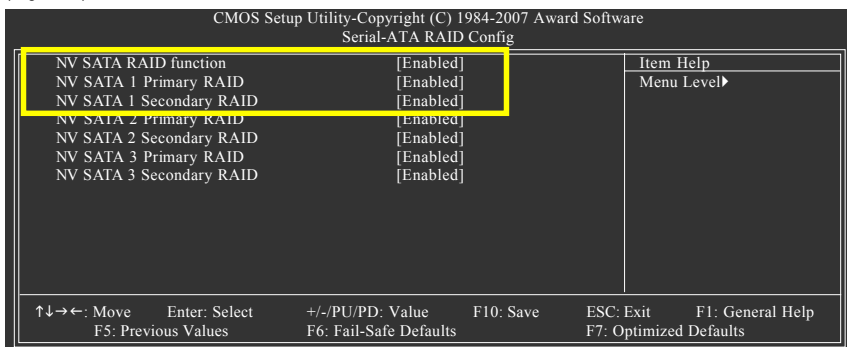


Figure 2



The BIOS Setup menus described in this section may not show the exact settings for your motherboard. The actual BIOS Setup menu options you will see shall depend on the motherboard you have and the BIOS version.

## Step 2:

To boot from Windows installation CD-ROM, set **First Boot Device** under the **Advanced BIOS Features** menu to **CDROM** (Figure 3).

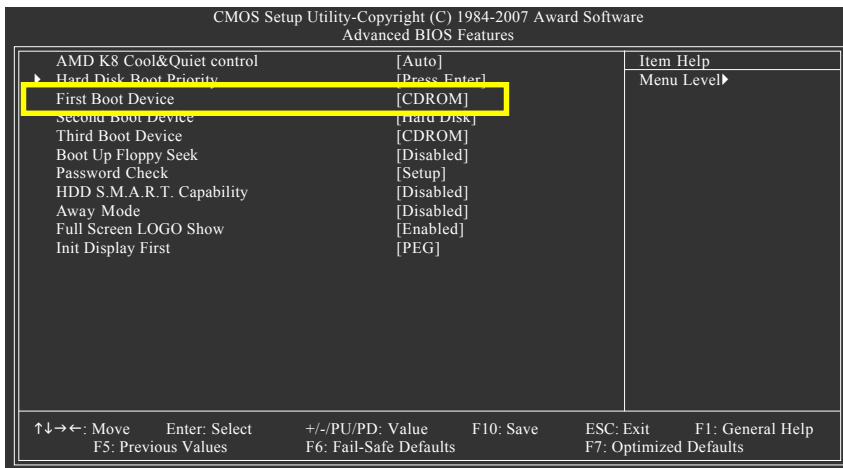


Figure 3

## Step 3:

Save and exit BIOS Setup.

### (3) Configuring RAID set in RAID BIOS

Enter the RAID BIOS setup utility to configure a RAID array. Skip this step and proceed to Section 4 if you do not want to create RAID.

#### Step 1:

After the POST memory test begins and before the operating system boot begins, look for a message which says "Press F10 to enter RAID setup utility" (Figure 4). Hit the **F10** key to enter the RAID BIOS setup utility.

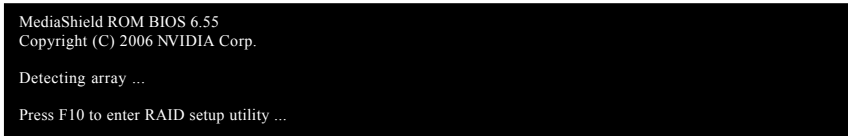


Figure 4

#### Step 2:

The Define a New Array screen is the first option screen when you enter the NVIDIA RAID setup utility. (Figure 5). You can press the TAB key to highlight through options.

#### Step 3:

In the RAID Mode field, use the UP or DOWN ARROW key to select a RAID mode. The supported RAID modes include Mirroring, Striping, Stripe Mirroring, Spanning and RAID 5. The following is an example of RAID 0 array creation.

#### Step 4:

If RAID 0 (Striping) is selected, you can manually set the striping block size. In the Striping Block field, use the UP or DOWN ARROW key to set the Striping Block size. The KB is the standard unit of Striping Block size. We recommend you leaving it to the default setting--Optimal (64 K). The size range is from 4 K to 128 K.

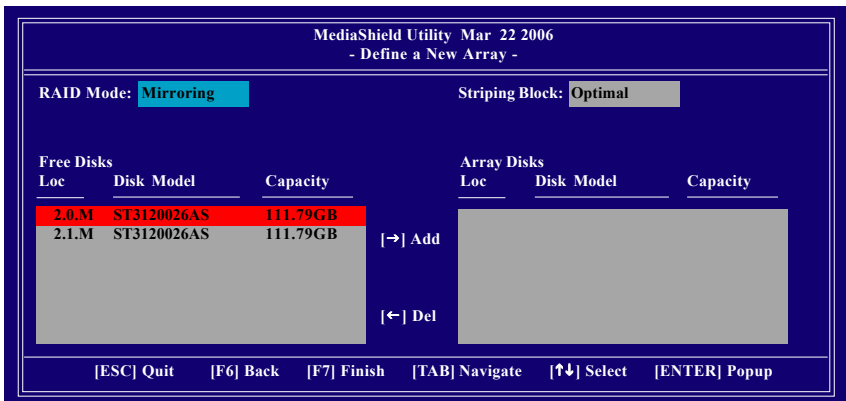


Figure 5

## Step 5:

Next, select the hard drives which you wish to be included in the disk array. The Free Disks section displays the information about the currently installed SATA hard drives. Press the TAB key to move to the Free Disks section. Select the target hard drives using the UP or DOWN ARROW key and use the RIGHT ARROW key to add the hard drives to the Array Disks section (Figure 6).

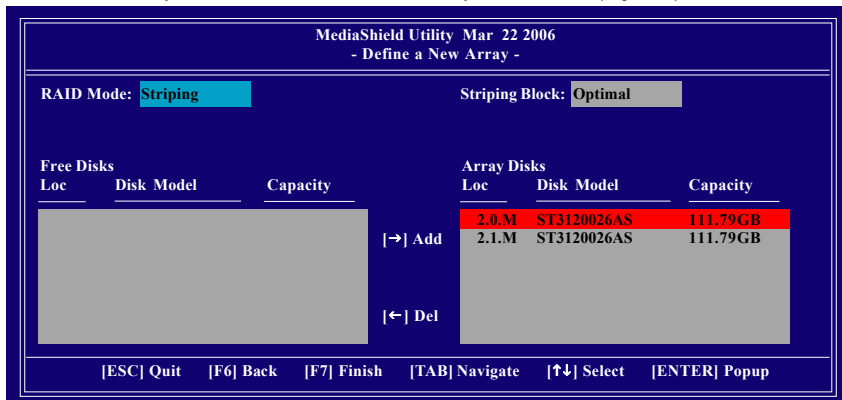


Figure 6

## Step 6:

Press F7 after selecting the target hard disks. A message which says "Clear disk data?" will appear (Figure 7). If you are sure to clear the data in the selected hard drives, press Y. (If the hard drives contain previously created RAID array, you need to press Y to clear the data from the hard drives.)

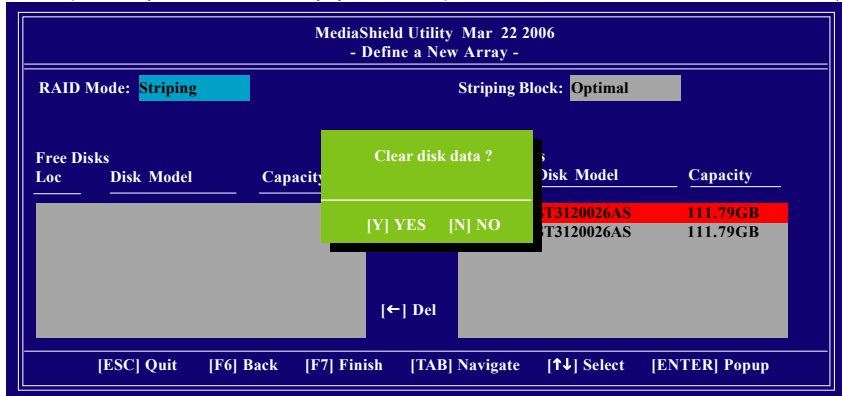


Figure 7







## (5) Installing SATA controller driver during OS installation

Now that you have prepared the SATA driver disk and configured BIOS settings, you are ready to install Windows 2000/XP onto your SATA hard drive with the SATA driver. The following is an example of Windows XP installation.

Step 1: Restart your system to boot from the Windows 2000/XP Setup disk and press F6 as soon as you see the "Press F6 if you need to install a 3rd party SCSI or RAID driver" message (Figure 13). After pressing F6, there will be a few moments of some files being loaded before you see the next screen.

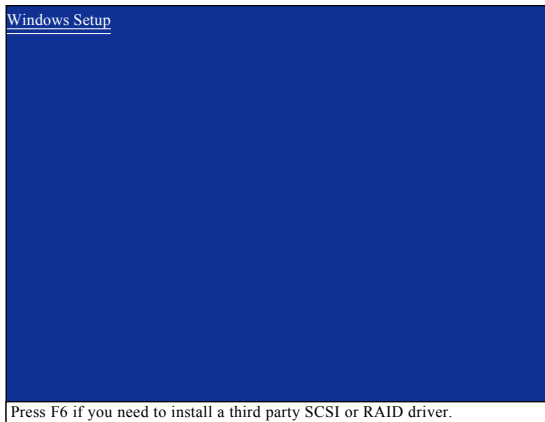


Figure 13

Step 2:

When a screen similar to that below appears, insert the floppy disk containing the SATA driver and press S (Figure 14).

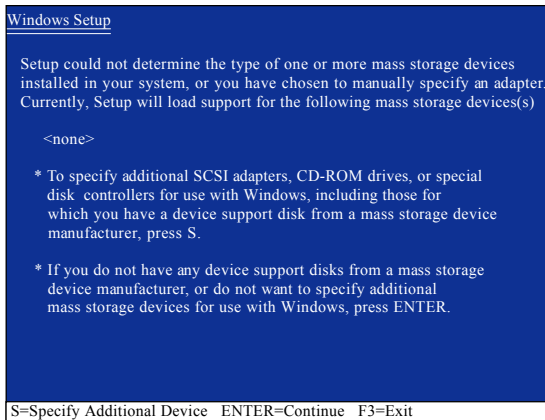


Figure 14

## Step 3:

If Setup correctly recognizes the driver in the floppy disk, a controller menu similar to Figure 15 below will appear. Use the ARROW keys to select **NVIDIA RAID CLASS DRIVER** (Figure 15) and press ENTER. Later, when a screen similar to Figure 16 appears, you must press S to select additional driver. The screen will return to previous screen as shown in Figure 15. Select **NVIDIA nForce Storage Controller** and press ENTER.

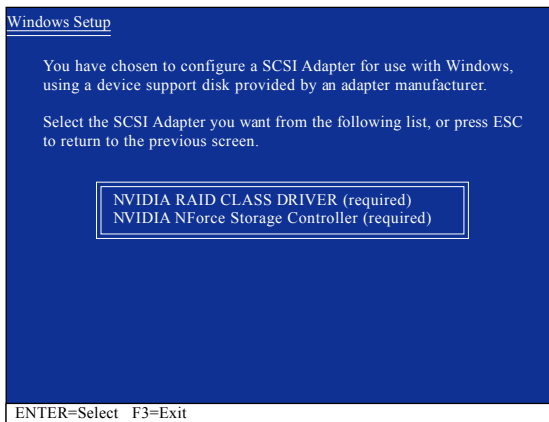


Figure 15

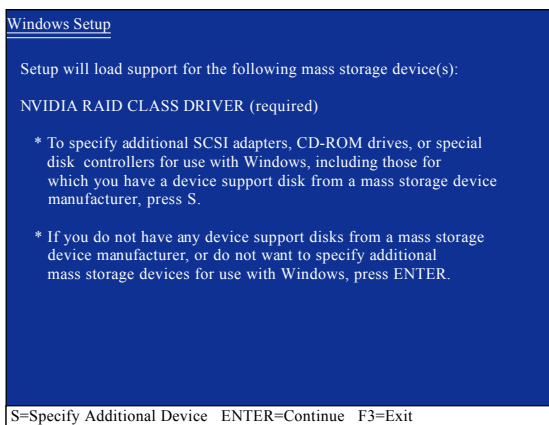


Figure 16



If a message appears saying one or some file(s) cannot be found, please check the floppy disk or copy the correct SATA driver again from the motherboard driver CD.

**Step 4:**

When the next screen (Figure 17) appears, press ENTER to continue the SATA driver installation from the floppy disk.

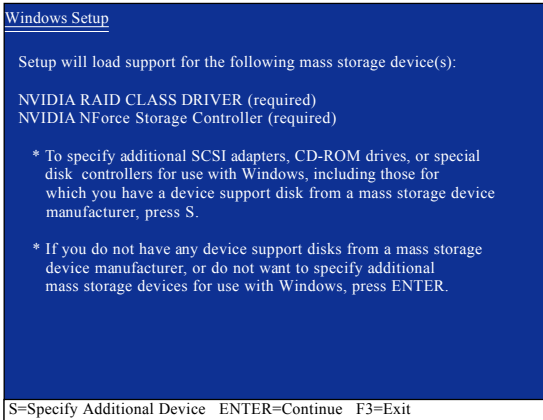


Figure 17

After the SATA controller driver installation is completed, you can proceed with the Windows 2000/XP installation.

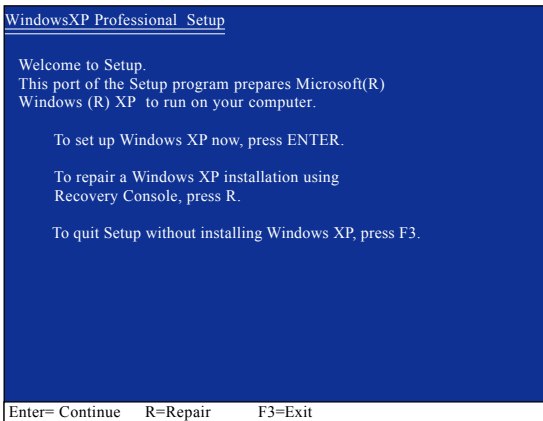


Figure 18

(Note: Each time you add a new hard drive to a RAID array, the RAID driver will have to be installed under Windows once for that hard drive. After that, the driver will not have to be installed.)



## 4-1-5 2- / 4- / 6- / 8- Channel Audio Function Introduction

The default speaker settings for the 6 audio jacks are as shown in the picture to the right. The jack retasking capability supported by HD Audio allows users to change the function for each audio jack by the audio software provided. For example, if a rear speaker is plugged into the center/subwoofer speaker out jack, you can change the center/subwoofer speaker out jack to function as a rear speaker out jack via the audio software. Please follow the steps to install the function. (Following pictures are in Windows XP)



Note that if you wish to connect a microphone, you MUST connect it to the default Mic In jack for the microphone to work correctly.

### HD Audio

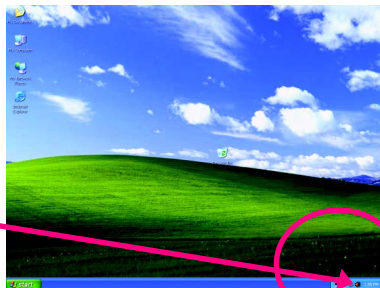
With multiple built-in high quality digital-to-analog converters (DACs) that support audio output at up to 192 kHz/24-bit quality and multi-streaming applications, HD Audio is able to handle multiple audio streams (in and out) simultaneously. Multi-channel audio experiences have become a reality so you can, for instance, listen to MP3 music, have an Internet chat, make a telephone call over the Internet, and etc. all at the same time.

### Stereo Speakers Connection and Settings:

We recommend that you use the speaker with amplifier to acquire the best sound effect if the stereo output is applied.

#### STEP 1 :

After installation of the audio driver, you should find an Audio Manager icon in your system tray (you can also find the icon in Control Panel). Double-click the icon to open the Audio Control Panel.

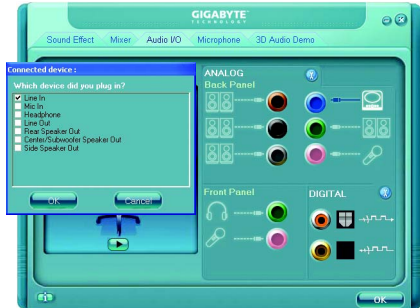


**STEP 2:**

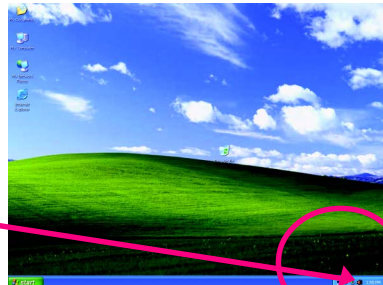
In the Audio Control Panel, click the **Audio I/O** tab.  
In the upper left list, click **2CH Speaker**.

**STEP 3:**

After a speaker or headphone is plugged into the rear Line Out jack, a small window will pop up and ask you what type of equipment is connected. Choose **Headphone** or **Line Out** depending on the device connected and click **OK**. The 2-channel audio setup is completed.

**4 Channel Audio Setup****STEP 1 :**

After installation of the audio driver, you should find an Audio Manager icon in your system tray (you can also find the icon in Control Panel). Double-click the icon to open the Audio Control Panel.

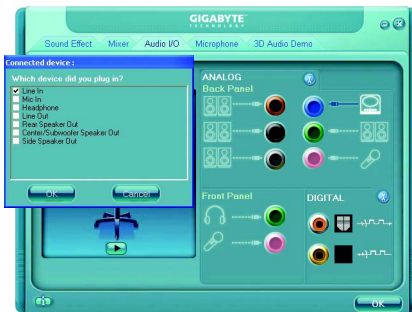
**STEP 2:**

In the Audio Control Panel, click the **Audio I/O** tab.  
In the upper left list, click **4CH Speaker**.

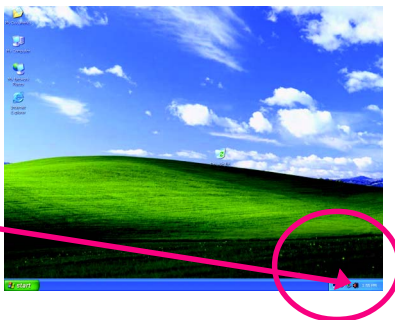


**STEP 3:**

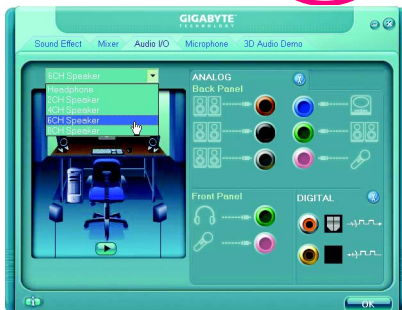
After plugging in 4-channel speakers to the rear speaker jacks, a small window will pop up and ask you what type of equipment is connected. Choose a device depending on the type of speaker connected (4-channel audio consists of Front Speaker Out (Line Out) and Rear Speaker Out) and then click **OK**. The 4-channel audio setup is completed.

**6 Channel Audio Setup****STEP 1 :**

After installation of the audio driver, you should find an Audio Manager icon in your system tray (you can also find the icon in Control Panel). Double-click the icon to open the Audio Control Panel.

**STEP 2:**

In the Audio Control Panel, click the **Audio I/O** tab. In the upper left list, click **6CH Speaker**.


**STEP 3:**

After plugging in 6-channel speakers to the rear speaker jacks, a small window will pop up and ask you what type of equipment is connected. Choose a device depending on the type of speaker connected (6-channel audio consists of Front Speaker Out (Line Out), Rear Speaker Out, and Center/Subwoofer Speaker Out) then click **OK**. The 6-channel audio setup is completed.



## 8 Channel Audio Setup

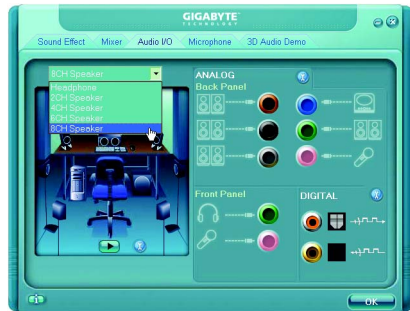
### STEP 1 :

After installation of the audio driver, you should find an Audio Manager  icon in your system tray (you can also find the icon in Control Panel). Double-click the icon to open the Audio Control Panel.



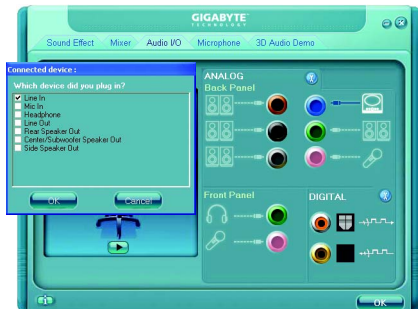
### STEP 2:

In the Audio Control Panel, click the **Audio I/O** tab. In the upper left list, click **8CH Speaker**.



### STEP 3:

After plugging in 8-channel speakers to the rear speaker jacks, a small window will pop up and ask you what type of equipment is connected. Choose a device depending on the type of speaker connected (8-channel audio consists of Front Speaker Out (Line Out), Rear Speaker Out, Center/Subwoofer Speaker Out, and Side Speaker Out) then click **OK**. The 8-channel audio setup is completed.



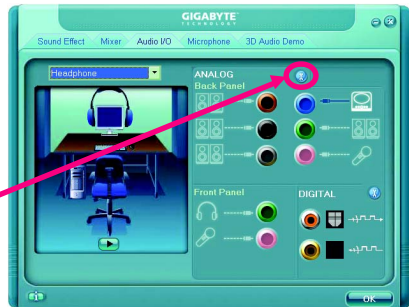
### Sound Effect Configuration:

At the **Sound Effect** menu, users can adjust sound option settings as desired.



### AC'97 Audio Configuration:

To enable the front panel audio connector to support AC'97 Audio mode, go to the Audio Control Panel and click the **Audio I/O** tab. In the **ANALOG** area, click the **Tool** icon and then select the **Disable front panel jack detection** check box. This action completes the AC'97 Audio configuration.





## 4-2 Troubleshooting

Below is a collection of general asked questions. To check general asked questions based on a specific motherboard model, please log on to GIGABYTE's website.

Question 1: I cannot see some options that were included in previous BIOS after updating BIOS. Why?

Answer: Some advanced options are hidden in new BIOS version. Please press Ctrl and F1 keys after entering BIOS menu and you will be able to see these options.

Questions 2: Why is the light of my keyboard/optical mouse still on after computer shuts down?

Answer: In some boards, a small amount of electricity is kept on standby after computer shuts down and that's why the light is still on.

Question 3: How do I clear CMOS?

Answer: If your board has a Clear CMOS jumper, please refer to the Clear CMOS steps in the manual. If your board doesn't have such jumper, you can take off the on-board battery to leak voltage to clear CMOS. Please refer to the steps below:

Steps:

1. Turn off power.
2. Disconnect the power cord from MB.
3. Take out the battery gently and put it aside for about 1 minute (Or you can use a metal object to connect the positive and negative pins in the battery holder to makethem short for 5 seconds).
4. Re-insert the battery to the battery holder.
5. Connect power cord to MB again and turn on power.
6. Press Del to enter BIOS and load Fail-Safe Defaults(or load Optimized Defaults).
7. Save changes and reboot the system.

Question 4: Why do I still get a weak sound after turning up the speaker to the maximum volume?

Answer: Please make sure the speaker you are using is equipped with an internal amplifier. If not, please change another speaker with power/amplifier and try again later.

Question 5: Sometimes I hear different continuous beeps from computer after system boots up. What do these beeps usually stand for?

Answer: The beep codes below may help you identify the possible computer problems. However, they are only for reference purposes. The situations might differ from case to case.

→ AWARD BIOS Beep Codes

- 1 short: System boots successfully
- 2 short: CMOS setting error
- 1 long 1 short: DRAM or M/B error
- 1 long 2 short: Monitor or display card error
- 1 long 3 short: Keyboard error
- 1 long 9 short: BIOS ROM error
- Continuous long beeps: DRAM error
- Continuous short beeps: Power error











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You may go to the GIGABYTE website, select your language  
in the language list on the top right corner of the website.

- **GIGABYTE Global Service System**



To submit a technical or non-technical (Sales/Marketing) question, please link to :

<http://gts.gigabyte.com.tw>

Then select your language to enter the system.



关于符合中国《电子信息产品污染控制管理办法》的声明  
 Management Methods on Control of Pollution from Electronic Information Products  
 (China RoHS Declaration)

产品中有毒有害物质或元素的名称及含量  
 Hazardous Substances Table

部件名称 (Parts)	有毒有害物质或元素 (Hazardous Substances)					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
PCB板 PCB	○	○	○	○	○	○
结构件及风扇 Mechanical parts and Fan	×	○	○	○	○	○
芯片及其他主动零件 Chip and other Active components	×	○	○	○	○	○
连接器 Connectors	×	○	○	○	○	○
被动电子元件 Passive Components	×	○	○	○	○	○
线材 Cables	○	○	○	○	○	○
焊接金属 Soldering metal	○	○	○	○	○	○
助焊剂, 散热膏, 标签及其他耗材 Flux, Solder Paste, Label and other Consumable Materials	○	○	○	○	○	○
○:表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006标准规定的限量要求以下。 Indicates that this hazardous substance contained in all homogenous materials of this part is below the limit requirement SJ/T 11363-2006						
×:表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006标准规定的限量要求。 Indicates that this hazardous substance contained in at least one of the homogenous materials of this part is above the limit requirement in SJ/T 11363-2006						
对销售之日的所发售产品, 本表显示我公司供应链的电子信息产品可能包含这些物质。注意: 在所售产品中可能会也可能不会含有所有列出的部件。 This table shows where these substances may be found in the supply chain of our electronic information products, as of the date of the sale of the enclosed products. Note that some of the component types listed above may or may not be a part of the enclosed product.						