GA-M61PME-S2P

AM2+/AM2 socket motherboard for
AMD Phenom™ FX processor/AMD Phenom™ X4 processor/
AMD Phenom™ X3 processor/AMD Athlon™ X2 processor/
AMD Athlon™ processor/AMD Sempron™ X2 processor/
AMD Sempron™ processor

User’s Manual
Rev. 1002
12ME-M61PMEP2-1002R
DECLARATION OF CONFORMITY

Responsible Party Name: EETI, INC (USA)

Address: 1738 Ridgway Street
City of Industry, CA 91748

Phone/Fax No. (818) 844-9388/818-844-9399

Model Number: GA-M61PME-S2P

Product Name: Motherboard

I hereby declare that the above named equipment, when operating in its normal and customary manner, is in conformity with Part 15 of the FCC Rules. Compliance with the FCC regulations does not guarantee that interference will not occur in all installations. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient the receiving antenna.
2. Relocate the equipment with respect to the receiver.
3. Move the equipment away from the receiver.
4. Plug the equipment into a different outlet so that the equipment and the receiver are on different branch circuits.

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

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

The user can find more information in the FCC OET Bulletin 65, "How to Identify and Resolve Radio TV Interference Problems."
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Documentation Classifications
In order to assist in the use of this product, GIGABYTE provides the following types of documentations:

- For detailed product information, carefully read the User's Manual.
- For instructions on how to use GIGABYTE's unique features, read or download the information on/from the Support\Motherboard\Technology Guide page on our website.

For product-related information, check on our website at:
http://www.gigabyte.com.tw

Identifying Your Motherboard Revision
The revision number on your motherboard looks like this: "REV: X.X." For example, "REV: 1.0" means the revision of the motherboard is 1.0. Check your motherboard revision before updating motherboard BIOS, drivers, or when looking for technical information.
Example:
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Box Contents

- GA-M61PME-S2P motherboard
- Motherboard driver disk
- User’s Manual
- One IDE cable
- One SATA 3Gb/s cables
- I/O Shield

- The box contents above are for reference only and the actual items shall depend on product package you obtain.
- The box contents are subject to change without notice.
- The motherboard image is for reference only.

Optional Items

- Floppy disk drive cable (Part No. 12CF1-1FD001-7*R)
- 2-port USB 2.0 bracket (Part No. 12CR1-1UB030-5*R)
- 2-port SATA power cable (Part No. 12CF1-2SERPW-0*R)
- S/PDIF in and out cable (Part No. 12CR1-1SPINO-1*R)
GA-M61PME-S2P Motherboard Layout
Chapter 1  Hardware Installation

1-1  Installation Precautions

The motherboard contains numerous delicate electronic circuits and components which can become damaged as a result of electrostatic discharge (ESD). Prior to installation, carefully read the user's manual and follow these procedures:

• Prior to installation, do not remove or break motherboard S/N (Serial Number) sticker or warranty sticker provided by your dealer. These stickers are required for warranty validation.
• Always remove the AC power by unplugging the power cord from the power outlet before installing or removing the motherboard or other hardware components.
• When connecting hardware components to the internal connectors on the motherboard, make sure they are connected tightly and securely.
• When handling the motherboard, avoid touching any metal leads or connectors.
• It is best to wear an electrostatic discharge (ESD) wrist strap when handling electronic components such as a motherboard, CPU or memory. If you do not have an ESD wrist strap, keep your hands dry and first touch a metal object to eliminate static electricity.
• Prior to installing the motherboard, please have it on top of an antistatic pad or within an electrostatic shielding container.
• Before unplugging the power supply cable from the motherboard, make sure the power supply has been turned off.
• Before turning on the power, make sure the power supply voltage has been set according to the local voltage standard.
• Before using the product, please verify that all cables and power connectors of your hardware components are connected.
• To prevent damage to the motherboard, do not allow screws to come in contact with the motherboard circuit or its components.
• Make sure there are no leftover screws or metal components placed on the motherboard or within the computer casing.
• Do not place the computer system on an uneven surface.
• Do not place the computer system in a high-temperature environment.
• Turning on the computer power during the installation process can lead to damage to system components as well as physical harm to the user.
• 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.
1-2 Product Specifications

CPU
- Support for Socket AM2+/AM2 processors:
  AMD Phenom™ FX processor/AMD Phenom™ X4 processor/
  AMD Phenom™ X3 processor/AMD Athlon™ X2 processor/
  AMD Athlon™ processor/AMD Sempron™ X2 processor/
  AMD Sempron™ processor
  (Go to GIGABYTE’s website for the latest CPU support list.)

Hyper Transport Bus
- 2000 MT/s

Chipset
- NVIDIA® GeForce 6100/nForce 430 chipset

Memory
- 2 x 1.8V DDR2 DIMM sockets supporting up to 8 GB of system memory (Note 1)
- Dual channel memory architecture
- Support for DDR2 1066/800/667 MHz memory modules
  (Go to GIGABYTE’s website for the latest memory support list.)

Audio
- Realtek ALC883 codec
- High Definition Audio
- 2/4/5.1/7.1-channel (Note 2)
- Support for S/PDIF In/Out
- Support for CD In

LAN
- RTL 8201CL chip (10/100 Mbit)

Expansion Slots
- 1 x PCI Express x16 slot, running at x16
- 1 x PCI Express x1 slot
- 2 x PCI slots

Storage Interface
- NVIDIA® GeForce 6100/nForce 430 chipset:
  - 1 x IDE connector supporting ATA-133/100/66/33 and up to 2 IDE devices
  - 2 x SATA 3Gb/s connectors supporting up to 2 SATA 3Gb/s devices
  - Support for SATA RAID 0 and RAID 1
- iTE IT8718 chip:
  - 1 x floppy disk drive connector supporting up to 1 floppy disk drive

USB
- Integrated in the South Bridge
- Up to 8 USB 2.0/1.1 ports (4 on the back panel, 4 via the USB brackets connected to the internal USB headers)

Internal Connectors
- 1 x 24-pin ATX main power connector
- 1 x 4-pin ATX 12V power connector
- 1 x floppy disk drive connector
- 1 x IDE connector
- 2 x SATA 3Gb/s connectors
- 1 x CPU fan header
- 1 x system fan header
- 1 x front panel header
- 1 x front panel audio header
- 1 x surround/center audio header
| Internal Connectors       | • 1 x CD In connector                   |
|                         | • 1 x S/PDIF In/Out header             |
|                         | • 2 x USB 2.0/1.1 headers              |
|                         | • 1 x chassis intrusion header         |
|                         | • 1 x power LED header                 |
| Back Panel Connectors   | • 1 x PS/2 keyboard port               |
|                         | • 1 x PS/2 mouse port                  |
|                         | • 1 x parallel port                    |
|                         | • 1 x serial port                      |
|                         | • 1 x D-Sub port                       |
|                         | • 4 x USB 2.0/1.1 ports                |
|                         | • 1 x RJ-45 port                       |
|                         | • 3 x audio jacks (Line In/Line Out/Microphone) |
| I/O Controller          | • iTE IT8718 chip                      |
| Hardware Monitor        | • System voltage detection             |
|                         | • CPU/System temperature detection     |
|                         | • CPU/System fan speed detection       |
|                         | • CPU/System overheating warning       |
|                         | • CPU/System fan fail warning          |
|                         | • CPU fan speed control (Note 3)       |
| BIOS                    | • 2 x 8 Mbit flash                     |
|                         | • Use of licensed AWARD BIOS           |
|                         | • Support for DualBIOS™                |
|                         | • PnP 1.0a, DMI 2.0, SM BIOS 2.4, ACPI 1.0b |
| Unique Features         | • Support for @BIOS                    |
|                         | • Support for Q-Flash                   |
|                         | • Support for Virtual Dual BIOS        |
|                         | • Support for Download Center          |
|                         | • Support for Xpress Install           |
|                         | • Support for Xpress Recovery2         |
|                         | • Support for EasyTune (Note 4)        |
| Bundled Software        | • Norton Internet Security (OEM version) |
| Operating System        | • Support for Microsoft® Windows® Vista/XP |
| Form Factor             | • Micro ATX Form Factor; 24.4cm x 22.5cm |

(Note 1) Due to Windows Vista/XP 32-bit operating system limitation, when more than 4 GB of physical memory is installed, the actual memory size displayed will be less than 4 GB.

(Note 2) A 5.1/7.1 surround cable (optional) needs to be installed if you wish to enable 7.1-channel audio output.

(Note 3) Whether the CPU fan speed control function is supported will depend on the CPU cooler you install.

(Note 4) Available functions in EasyTune may differ by motherboard model.
1-3 Installing the CPU and CPU Cooler

Read the following guidelines before you begin to install the CPU:

- Make sure that the motherboard supports the CPU.
  (Go to GIGABYTE’s website for the latest CPU support list.)
- Always turn off the computer and unplug the power cord from the power outlet before installing the CPU to prevent hardware damage.
- Locate the pin one of the CPU. The CPU cannot be inserted if oriented incorrectly.
- Apply an even and thin layer of thermal grease on the surface of the CPU.
- Do not turn on the computer if the CPU cooler is not installed, otherwise overheating and damage of the CPU may occur.
- Set the CPU host frequency in accordance with the CPU specifications. It is not recommended that the system bus frequency be set beyond hardware specifications since it does not meet the standard requirements for the peripherals. If you wish to set the frequency beyond the standard specifications, please do so according to your hardware specifications including the CPU, graphics card, memory, hard drive, etc.

1-3-1 Installing the CPU

A. Locate the pin one (denoted by a small triangle) of the CPU socket and the CPU.
B. Follow the steps below to correctly install the CPU into the motherboard CPU socket.

Before installing the CPU, make sure to turn off the computer and unplug the power cord from the power outlet to prevent damage to the CPU.

Step 1: Completely lift up the CPU socket locking lever.

Step 2: Align the CPU pin one (small triangle marking) with the triangle mark on the CPU socket and gently insert the CPU into the socket. Make 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, lowering the locking lever and latching it into the fully locked position.

Do not force the CPU into the CPU socket. The CPU cannot fit in if oriented incorrectly. Adjust the CPU orientation if this occurs.
1-3-2 Installing the CPU Cooler
Follow the steps below to correctly install the CPU cooler on the CPU. (The following procedure uses the GIGABYTE cooler as the example.)

Step 1:
Apply an even and thin layer of thermal grease on the surface of the installed CPU.

Step 2:
Place the CPU cooler on the CPU.

Step 3:
Hook the CPU cooler clip to the mounting lug on one side of the retention frame. On the other side, push straight down on the CPU cooler clip to hook it to the mounting lug on the retention frame.

Step 4:
Turn the cam handle from the left side to the right side (as the picture above shows) to lock into place. (Refer to your CPU cooler installation manual for instructions on installing the cooler.)

Step 5:
Finally, attach the power connector of the CPU cooler to the CPU fan header (CPU_FAN) on the motherboard.

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 Installing the Memory

Read the following guidelines before you begin to install the memory:

- Make sure that the motherboard supports the memory. It is recommended that memory of the same capacity, brand, speed, and chips be used.
  (Go to GIGABYTE’s website for the latest memory support list.)
- Always turn off the computer and unplug the power cord from the power outlet before installing the memory to prevent hardware damage.
- Memory modules have a foolproof design. A memory module can be installed in only one direction. If you are unable to insert the memory, switch the direction.

1-4-1 Dual Channel Memory Configuration

This motherboard provides two DDR2 memory sockets and supports Dual Channel Technology. After the memory is installed, the BIOS will automatically detect the specifications and capacity of the memory. Enabling Dual Channel memory mode will double the original memory bandwidth.

The two DDR2 memory sockets are divided into two channels as following:

- Channel 0: DDR2_1
- Channel 1: DDR2_2

Due to CPU limitation, read the following guidelines before installing the memory in Dual Channel mode.

1. Dual Channel mode cannot be enabled if only one DDR2 memory module is installed.
2. When enabling Dual Channel mode with two memory modules, it is recommended that memory of the same capacity, brand, speed, and chips be used.
1-4-2 Installing a Memory

Before installing a memory module, make sure to turn off the computer and unplug the power cord from the power outlet to prevent damage to the memory module. DDR2 DIMMs are not compatible to DDR DIMMs. Be sure to install DDR2 DIMMs on this motherboard.

A DDR2 memory module has a notch, so it can only fit in one direction. Follow the steps below to correctly install your memory modules in the memory sockets.

**Step 1:**
Note the orientation of the memory module. Spread the retaining clips at both ends of the memory socket. Place the memory module on the socket. As indicated in the picture on the left, place your fingers on the top edge of the memory, push down on the memory and insert it vertically into the memory socket.

**Step 2:**
The clips at both ends of the socket will snap into place when the memory module is securely inserted.
1-5 Installing an Expansion Card

Read the following guidelines before you begin to install an expansion card:
- Make sure the motherboard supports the expansion card. Carefully read the manual that came with your expansion card.
- Always turn off the computer and unplug the power cord from the power outlet before installing an expansion card to prevent hardware damage.

Follow the steps below to correctly install your expansion card in the expansion slot.
1. Locate an expansion slot that supports your card. Remove the metal slot cover from the chassis back panel.
2. Align the card with the slot, and press down on the card until it is fully seated in the slot.
3. Make sure the metal contacts on the card are completely inserted into the slot.
4. Secure the card’s metal bracket to the chassis back panel with a screw.
5. After installing all expansion cards, replace the chassis cover(s).
6. Turn on your computer. If necessary, go to BIOS Setup to make any required BIOS changes for your expansion card(s).
7. Install the driver provided with the expansion card in your operating system.

Example: Installing and Removing a PCI Express x16 Graphics Card:
- Installing a Graphics Card:
  Gently push down on the top edge of the card until it is fully inserted into the PCI Express x16 slot. Make sure the card is securely seated in the slot and does not rock.
- Removing the Card:
  Gently push back on the lever on the slot and then lift the card straight out from the slot.
1-6 Back Panel Connectors

- **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.

- **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.

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

- **D-Sub Port**
  The D-Sub port supports a 15-pin D-Sub connector. Connect a monitor that supports D-Sub connection to this port.

- **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.

- **RJ-45 LAN Port**
  The Fast Ethernet LAN port provides Internet connection at up to 100 Mbps data rate. The following describes the states of the LAN port LEDs.

<table>
<thead>
<tr>
<th>State</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>100 Mbps data rate</td>
</tr>
<tr>
<td>Off</td>
<td>10 Mbps data rate</td>
</tr>
</tbody>
</table>

- **Activity LED:**
  - Blinking: Data transmission or receiving is occurring
  - Off: No data transmission or receiving is occurring

- **Connection/Speed LED:**
  - Green: 100 Mbps data rate
  - Off: 10 Mbps data rate

- **CAUTION**
  - When removing the cable connected to a back panel connector, first remove the cable from your device and then remove it from the motherboard.
  - When removing the cable, pull it straight out from the connector. Do not rock it side to side to prevent an electrical short inside the cable connector.
- Line In Jack (Blue)
  The default line in jack. Use this audio jack for line in devices such as an optical drive, walkman, etc.

- 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 4/5.1/7.1-channel audio configuration.

- Mic In Jack (Pink)
  The default Mic in jack. Microphones must be connected to this jack.

To configure 7.1-channel audio, you need to install a 5.1/7.1 surround cable (optional) and enable the multi-channel audio feature through the audio driver. Refer to the instructions on setting up a 2/4/5.1/7.1-channel audio configuration in Chapter 5, "Configuring 2/4/5.1/7.1-Channel Audio."
1-7 Internal Connectors

Read the following guidelines before connecting external devices:

- First make sure your devices are compliant with the connectors you wish to connect.
- Before installing the devices, be sure to turn off the devices and your computer. Unplug the power cord from the power outlet to prevent damage to the devices.
- After installing the device and before turning on the computer, make sure the device cable has been securely attached to the connector on the motherboard.
1/2) ATX_12V/ATX (2x2 12V Power Connector and 2x12 Main 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, first make sure the power supply is turned off and all devices are properly installed. The power connector possesses a foolproof design. Connect the power supply cable to the power connector in the correct orientation. The 12V power connector mainly supplies power to the CPU. If the 12V power connector is not connected, the computer will not start.

- To meet expansion requirements, it is recommended that a power supply that can withstand high power consumption be used (500W or greater). If a power supply is used that does not provide the required power, the result can lead to an unstable or unbootable system.
- The main power connector is compatible with power supplies with 2x10 power connectors. When using a 2x12 power supply, remove the protective cover from the main power connector on the motherboard. Do not insert the power supply cable into pins under the protective cover when using a 2x10 power supply.

<table>
<thead>
<tr>
<th>PIN</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GND</td>
</tr>
<tr>
<td>2</td>
<td>GND</td>
</tr>
<tr>
<td>3</td>
<td>+12V</td>
</tr>
<tr>
<td>4</td>
<td>+12V</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PIN</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.3V</td>
</tr>
<tr>
<td>2</td>
<td>3.3V</td>
</tr>
<tr>
<td>3</td>
<td>GND</td>
</tr>
<tr>
<td>4</td>
<td>+5V</td>
</tr>
<tr>
<td>5</td>
<td>GND</td>
</tr>
<tr>
<td>6</td>
<td>+5V</td>
</tr>
<tr>
<td>7</td>
<td>GND</td>
</tr>
<tr>
<td>8</td>
<td>Power Good</td>
</tr>
<tr>
<td>9</td>
<td>5V SB (stand by +5V)</td>
</tr>
<tr>
<td>10</td>
<td>+12V</td>
</tr>
<tr>
<td>11</td>
<td>+12V (Only for 2x12-pin ATX)</td>
</tr>
<tr>
<td>12</td>
<td>3.3V (Only for 2x12-pin ATX)</td>
</tr>
</tbody>
</table>

**NOTE:**

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, first make sure the power supply is turned off and all devices are properly installed. The power connector possesses a foolproof design. Connect the power supply cable to the power connector in the correct orientation. The 12V power connector mainly supplies power to the CPU. If the 12V power connector is not connected, the computer will not start.

- To meet expansion requirements, it is recommended that a power supply that can withstand high power consumption be used (500W or greater). If a power supply is used that does not provide the required power, the result can lead to an unstable or unbootable system.
- The main power connector is compatible with power supplies with 2x10 power connectors. When using a 2x12 power supply, remove the protective cover from the main power connector on the motherboard. Do not insert the power supply cable into pins under the protective cover when using a 2x10 power supply.
3/4) CPU_FAN/SYS_FAN (Fan Headers)

The motherboard has a 4-pin CPU fan header (CPU_FAN) and a 3-pin system fan header (SYS_FAN). Most fan headers possess a foolproof insertion design. When connecting a fan cable, be sure to connect it in the correct orientation (the black connector wire is the ground wire). The motherboard supports CPU fan speed control, which requires the use of a CPU fan with fan speed control design. For optimum heat dissipation, it is recommended that a system fan be installed inside the chassis.

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GND</td>
</tr>
<tr>
<td>2</td>
<td>+12V / Speed Control</td>
</tr>
<tr>
<td>3</td>
<td>Sense</td>
</tr>
<tr>
<td>4</td>
<td>Speed Control</td>
</tr>
</tbody>
</table>

**CAUTION**

- Be sure to connect fan cables to the fan headers to prevent your CPU and system from overheating. Overheating may result in damage to the CPU or the system may hang.
- These fan headers are not configuration jumper blocks. Do not place a jumper cap on the headers.

5) FDD (Floppy Disk Drive Connector)

This connector is used to connect a floppy disk drive. The types of floppy disk drives supported are: 360 KB, 720 KB, 1.2 MB, 1.44 MB, and 2.88 MB. Before connecting a floppy disk drive, be sure to locate pin 1 of the connector and the floppy disk drive cable. The pin 1 of the cable is typically designated by a stripe of different color.

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GND</td>
</tr>
<tr>
<td>2</td>
<td>+12V</td>
</tr>
<tr>
<td>3</td>
<td>Sense</td>
</tr>
</tbody>
</table>
6) IDE (IDE Connector)
The IDE connector supports up to two IDE devices such as hard drives and optical drives. Before attaching the IDE cable, locate the foolproof groove on the connector. If you wish to connect two IDE devices, remember to set the jumpers and the cabling according to the role of the IDE devices (for example, master or slave). (For information about configuring master/slave settings for the IDE devices, read the instructions from the device manufacturers.)

7) SATA2_0/SATA2_1 (SATA 3Gb/s Connectors)
The SATA connectors conform to SATA 3Gb/s standard and are compatible with SATA 1.5Gb/s standard. Each SATA connector supports a single SATA device. The NVIDIA® GeForce 6100/nForce 430 chipset controller supports RAID 0 and RAID 1. Refer to Chapter 5, "Configuring SATA Hard Drive(s)," for instructions on configuring a RAID array.

A RAID 0 or RAID 1 configuration requires two hard drives.
8) PWR_LED (System Power LED Header)
This header can be used to connect a system power LED on the chassis to indicate system power status. The LED is on when the system is operating. The LED keeps blinking when the system is in S1 sleep state. The LED is off when the system is in S3/S4 sleep state or powered off (S5).

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MPD+</td>
</tr>
<tr>
<td>2</td>
<td>MPD-</td>
</tr>
<tr>
<td>3</td>
<td>MPD-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>System Status</th>
<th>LED</th>
</tr>
</thead>
<tbody>
<tr>
<td>S0</td>
<td>On</td>
</tr>
<tr>
<td>S1</td>
<td>Blinking</td>
</tr>
<tr>
<td>S3/S4/S5</td>
<td>Off</td>
</tr>
</tbody>
</table>

9) BAT (BATTERY)
The battery provides power to keep the values (such as BIOS configurations, date, and time information) in the CMOS when the computer is turned off. Replace the battery when the battery voltage drops to a low level, or the CMOS values may not be accurate or may be lost.

You may clear the CMOS values by removing the battery:
1. Turn off your computer and unplug the power cord.
2. Gently remove the battery from the battery holder and wait for one minute.
   (Or use a metal object like a screwdriver to touch the positive and negative terminals of the battery holder, making them short for 5 seconds.)
3. Replace the battery.
4. Plug in the power cord and restart your computer.

- Always turn off your computer and unplug the power cord before replacing the battery.
- Replace the battery with an equivalent one. Danger of explosion if the battery is replaced with an incorrect model.
- Contact the place of purchase or local dealer if you are not able to replace the battery by yourself or uncertain about the battery model.
- When installing the battery, note the orientation of the positive side (+) and the negative side (-) of the battery (the positive side should face up).
- Used batteries must be handled in accordance with local environmental regulations.
10) F_PANEL (Front Panel Header)

Connect the power switch, reset switch, speaker and system status indicator on the chassis front panel to this header according to the pin assignments below. Note the positive and negative pins before connecting the cables.

![F_PANEL Diagram]

- **MSG (Message/Power/Sleep LED, Yellow):**
  Connects to the power status indicator on the chassis front panel. The LED is on when the system is operating. The LED keeps blinking when the system is in S1 sleep state. The LED is off when the system is in S3/S4 sleep state or powered off (S5).

- **PW (Power Switch, Red):**
  Connects to the power switch on the chassis front panel. You may configure the way to turn off your system using the power switch (refer to Chapter 2, "BIOS Setup," "Power Management Setup," for more information).

- **SPEAK (Speaker, Orange):**
  Connects to the speaker on the chassis front panel. The system reports system startup status by issuing a beep code. One single short beep will be heard if no problem is detected at system startup. If a problem is detected, the BIOS may issue beeps in different patterns to indicate the problem. Refer to Chapter 5, "Troubleshooting," for information about beep codes.

- **HD (Hard Drive Activity LED, Blue):**
  Connects to the hard drive activity LED on the chassis front panel. The LED is on when the hard drive is reading or writing data.

- **RES (Reset Switch, Green):**
  Connects to the reset switch on the chassis front panel. Press the reset switch to restart the computer if the computer freezes and fails to perform a normal restart.

- **NC (Purple):**
  No connection

<table>
<thead>
<tr>
<th>System Status</th>
<th>LED</th>
</tr>
</thead>
<tbody>
<tr>
<td>S0</td>
<td>On</td>
</tr>
<tr>
<td>S1</td>
<td>Blinking</td>
</tr>
<tr>
<td>S3/S4/S5</td>
<td>Off</td>
</tr>
</tbody>
</table>

The front panel design may differ by chassis. A front panel module mainly consists of power switch, reset switch, power LED, hard drive activity LED, speaker and etc. When connecting your chassis front panel module to this header, make sure the wire assignments and the pin assignments are matched correctly.
11) F_AUDIO (Front Panel Audio Header)

The front panel audio header supports Intel High Definition audio (HD) and AC’97 audio. You may connect your chassis front panel audio module to this header. Make sure the wire assignments of the module connector match the pin assignments of the motherboard header. Incorrect connection between the module connector and the motherboard header will make the device unable to work or even damage it.

- For AC’97 Front Panel Audio:
  • The front panel audio header supports HD audio by default. If your chassis provides an AC’97 front panel audio module, refer to the instructions on how to activate AC’97 functionality via the audio software in Chapter 5, “Configuring 2/4/5.1-Channel Audio.”
  • Audio signals will be present on both of the front and back panel audio connections simultaneously. If you want to mute the back panel audio (only supported when using an HD front panel audio module), refer to Chapter 5, “Configuring 2/4/5.1-Channel Audio.”
  • Some chassis provide a front panel audio module that has separated connectors on each wire instead of a single plug. For information about connecting the front panel audio module that has different wire assignments, please contact the chassis manufacturer.

12) HDA_SUR (Surround/Center Audio Header)

To enable 7.1-channel audio, connect a 5.1/7.1 surround cable to this header and configure audio output mode via the audio software. For purchasing the optional 5.1/7.1 surround cable, please contact the local dealer.
13) CD_IN (CD In Connector)

You may connect the audio cable that came with your optical drive to the header.

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CD-L</td>
</tr>
<tr>
<td>2</td>
<td>GND</td>
</tr>
<tr>
<td>3</td>
<td>GND</td>
</tr>
<tr>
<td>4</td>
<td>CD-R</td>
</tr>
</tbody>
</table>

14) SPDIF_IO (S/PDIF Out Header)

This header supports digital S/PDIF out. Via an optional S/PDIF out cable, this header can connect to an audio device that supports digital audio in. For purchasing the optional S/PDIF out cable, please contact the local dealer.

Pin 1 (the red wire) of the S/PDIF out cable must align with pin 1 of the SPDIF_IO header. Incorrect connection may render the device unusable or even result in damage to the device.
15) **F_USB1/F_USB2 (USB Headers)**

The headers conform to USB 2.0/1.1 specification. Each USB header can provide two USB ports via an optional USB bracket. For purchasing the optional USB bracket, please contact the local dealer.

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Power (5V)</td>
</tr>
<tr>
<td>2</td>
<td>Power (5V)</td>
</tr>
<tr>
<td>3</td>
<td>USB DX-</td>
</tr>
<tr>
<td>4</td>
<td>USB DY-</td>
</tr>
<tr>
<td>5</td>
<td>USB DX+</td>
</tr>
<tr>
<td>6</td>
<td>USB DY+</td>
</tr>
<tr>
<td>7</td>
<td>GND</td>
</tr>
<tr>
<td>8</td>
<td>GND</td>
</tr>
<tr>
<td>9</td>
<td>No Pin</td>
</tr>
<tr>
<td>10</td>
<td>NC</td>
</tr>
</tbody>
</table>

- Do not plug the IEEE 1394 bracket (2x5-pin) cable into the USB header.
- Prior to installing the USB bracket, be sure to turn off your computer and unplug the power cord from the power outlet to prevent damage to the USB bracket.

16) **CI (Chassis Intrusion Header)**

This motherboard provides a chassis detection feature that detects if the chassis cover has been removed. This function requires a chassis with chassis intrusion detection design.

<table>
<thead>
<tr>
<th>Pin No.</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Signal</td>
</tr>
<tr>
<td>2</td>
<td>GND</td>
</tr>
</tbody>
</table>
17) CLR_CMOS (Clearing CMOS Jumper)

Use this jumper to clear the CMOS values (e.g. date information and BIOS configurations) and reset the CMOS values to factory defaults. To clear the CMOS values, place a jumper cap on the two pins to temporarily short the two pins or use a metal object like a screwdriver to touch the two pins for a few seconds.

- Always turn off your computer and unplug the power cord from the power outlet before clearing the CMOS values.
- After clearing the CMOS values and before turning on your computer, be sure to remove the jumper cap from the jumper. Failure to do so may cause damage to the motherboard.
- After system restart, go to BIOS Setup to load factory defaults (select **Load Optimized Defaults**) or manually configure the BIOS settings (refer to Chapter 2, "BIOS Setup," for BIOS configurations).
Chapter 2  BIOS Setup

BIOS (Basic Input and Output System) records hardware parameters of the system in the CMOS on the motherboard. Its major functions include conducting the Power-On Self-Test (POST) during system startup, saving system parameters and loading operating system, etc. BIOS includes a BIOS Setup program that allows the user to modify basic system configuration settings or to activate certain system features. When the power is turned off, the battery on the motherboard supplies the necessary power to the CMOS to keep the configuration values in the CMOS.

To access the BIOS Setup program, press the <Delete> key during the POST when the power is turned on. To see more advanced BIOS Setup menu options, you can press <Ctrl> + <F1> in the main menu of the BIOS Setup program.

To upgrade the BIOS, use either the GIGABYTE Q-Flash or @BIOS utility.

- Q-Flash allows the user to quickly and easily upgrade or back up BIOS without entering the operating system.
- @BIOS is a Windows-based utility that searches and downloads the latest version of BIOS from the Internet and updates the BIOS.

For instructions on using the Q-Flash and @BIOS utilities, refer to Chapter 4, "BIOS Update Utilities."

- Because BIOS flashing is potentially risky, if you do not encounter problems using the current version of BIOS, it is recommended that you not flash the BIOS. To flash the BIOS, do it with caution. Inadequate BIOS flashing may result in system malfunction.
- BIOS will emit a beep code during the POST. Refer to Chapter 5, "Troubleshooting," for the beep codes description.
- It is recommended that you not alter the default settings (unless you need to) to prevent system instability or other unexpected results. Inadequately altering the settings may result in system's failure to boot. If this occurs, try to clear the CMOS values and reset the board to default values. (Refer to the "Load Optimized Defaults" section in this chapter or introductions of the battery/clearing CMOS jumper in Chapter 1 for how to clear the CMOS values.)
2-1  Startup Screen

The following screen may appear when the computer boots.

Function Keys:

<DEL>: BIOS Setup
Press the <Delete> key to enter BIOS Setup or to access the Q-Flash utility in BIOS Setup.

<F9>: Xpress Recovery2
If you have ever entered Xpress Recovery2 to back up hard drive data using the motherboard driver disk, the <F9> key can be used for subsequent access to XpressRecovery2 during the POST. For more information, refer to Chapter 4, "Xpress Recovery2."

<F12>: Boot Menu
Boot Menu allows you to set the first boot device without entering BIOS Setup. In Boot Menu, use the up arrow key <↑> or the down arrow key <↓> to select the first boot device, then press <Enter> to accept. To exit Boot Menu, press <Esc>. The system will directly boot from the device configured in Boot Menu.
Note: The setting in Boot Menu is effective for one time only. After system restart, the device boot order will still be based on BIOS Setup settings. You can access Boot Menu again to change the first boot device setting as needed.

<End>: Q-Flash
Press the <End> key to access the Q-Flash utility directly without having to enter BIOS Setup first.
2-2 The Main Menu

Once you enter the BIOS Setup program, the Main Menu (as shown below) appears on the screen. Use arrow keys to move among the items and press <Enter> to accept or enter a sub-menu.

(Sample BIOS Version: E8)

<table>
<thead>
<tr>
<th>CMOS Setup Utility-Copyright (C) 1984-2008 Award Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Standard CMOS Features</td>
</tr>
<tr>
<td>- Advanced BIOS Features</td>
</tr>
<tr>
<td>- Integrated Peripherals</td>
</tr>
<tr>
<td>- Power Management Setup</td>
</tr>
<tr>
<td>- PnP/PCI Configurations</td>
</tr>
<tr>
<td>- PC Health Status</td>
</tr>
<tr>
<td>Load Fail-Safe Defaults</td>
</tr>
<tr>
<td>Load Optimized Defaults</td>
</tr>
<tr>
<td>Set Supervisor Password</td>
</tr>
<tr>
<td>Set User Password</td>
</tr>
<tr>
<td>Save &amp; Exit Setup</td>
</tr>
<tr>
<td>Exit Without Saving</td>
</tr>
</tbody>
</table>

ESC: Quit
F8: Q-Flash
F10: Save & Exit Setup

Time, Date, Hard Disk Type...

BIOS Setup Program Function Keys

- **<↑><↓><←><→>**: Move the selection bar to select an item
- **<Enter>**: Execute command or enter the submenu
- **<Esc>**: Main Menu: Exit the BIOS Setup program
- **Submenus**: Exit current submenu
- **<Page Up>**: Increase the numeric value or make changes
- **<Page Down>**: Decrease the numeric value or make changes
- **<F1>**: Show descriptions of the function keys
- **<F2>**: Move cursor to the Item Help block on the right (submenus only)
- **<F5>**: Restore the previous BIOS settings for the current submenus
- **<F6>**: Load the Fail-Safe BIOS default settings for the current submenus
- **<F7>**: Load the Optimized BIOS default settings for the current submenus
- **<F8>**: Access the Q-Flash utility
- **<F9>**: Display system information
- **<F10>**: Save all the changes and exit the BIOS Setup program

Main Menu Help
The onscreen description of a highlighted setup option is displayed on the bottom line of the Main Menu.

Submenu Help
While in a submenu, press <F1> to display a help screen (General Help) of function keys available for the menu. Press <Esc> to exit the help screen. Help for each item is in the Item Help block on the right side of the submenu.

- If you do not find the settings you want in the Main Menu or a submenu, press <Ctrl>+<F1> to access more advanced options.
- When the system is not stable as usual, select the **Load Optimized Defaults** item to set your system to its defaults.
- The BIOS Setup menus described in this chapter are for reference only and may differ by BIOS version.
- Standard CMOS Features
  Use this menu to configure the system time and date, hard drive types, floppy disk drive types, and the type of errors that stop the system boot, etc.

- Advanced BIOS Features
  Use this menu to configure the device boot order, advanced features available on the CPU, and the primary display adapter.

- Integrated Peripherals
  Use this menu to configure all peripheral devices, such as IDE, SATA, USB, integrated audio, and integrated LAN, etc.

- Power Management Setup
  Use this menu to configure all the power-saving functions.

- PnP/PCI Configurations
  Use this menu to configure the system's PCI & PnP resources.

- PC Health Status
  Use this menu to see information about autodetected system/CPU temperature, system voltage and fan speed, etc.

- Load Fail-Safe Defaults
  Fail-Safe defaults are factory settings for the most stable, minimal-performance system operations.

- Load Optimized Defaults
  Optimized defaults are factory settings for optimal-performance system operations.

- Set Supervisor Password
  Change, set, or disable password. It allows you to restrict access to the system and BIOS Setup. A supervisor password allows you to make changes in BIOS Setup.

- Set User Password
  Change, set, or disable password. It allows you to restrict access to the system and BIOS Setup. An user password only allows you to view the BIOS settings but not to make changes.

- Save & Exit Setup
  Save all the changes made in the BIOS Setup program to the CMOS and exit BIOS Setup. (Pressing <F10> can also carry out this task.)

- Exit Without Saving
  Abandon all changes and the previous settings remain in effect. Pressing <Y> to the confirmation message will exit BIOS Setup. (Pressing <Esc> can also carry out this task.)
2-3  **Standard CMOS Features**

<table>
<thead>
<tr>
<th>Standard CMOS Features</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Date</strong> (mm:dd:yy)</td>
</tr>
<tr>
<td><strong>Time</strong> (hh:mm:ss)</td>
</tr>
<tr>
<td>IDE Channel 0 Master</td>
</tr>
<tr>
<td>IDE Channel 0 Slave</td>
</tr>
<tr>
<td>IDE Channel 2 Master</td>
</tr>
<tr>
<td>IDE Channel 3 Master</td>
</tr>
<tr>
<td>Drive A</td>
</tr>
<tr>
<td>Floppy 3 Mode Support</td>
</tr>
<tr>
<td>Halt On</td>
</tr>
<tr>
<td>Base Memory</td>
</tr>
<tr>
<td>Extended Memory</td>
</tr>
</tbody>
</table>

**Menu Level**

- **F1**: General Help
- **F2**: Move Enter: Select
- **F3**: PU/PD: Value
- **F4**: ESC: Exit
- **F5**: Previous Values
- **F6**: Fail-Safe Default
- **F7**: Optimized Defaults

**Date**

Sets the system date. The date format is week (read-only), month, date and year. Select the desired field and use the up arrow or down arrow key to set the date.

**Time**

Sets the system time. For example, 1 p.m. is 13:0:0. Select the desired field and use the up arrow or down arrow key to set the time.

**IDE Channel 0 Master/Slave**

- **IDE HDD Auto-Detection**
  - Press <Enter> to autodetect the parameters of the IDE/SATA device on this channel.

**IDE Channel 0 Master/Slave**

Configure your IDE/SATA devices by using one of the three methods below:

- **Auto**
  - Lets BIOS automatically detect IDE/SATA devices during the POST. (Default)
- **None**
  - If no IDE/SATA devices are used, set this item to None so the system will skip the detection of the device during the POST for faster system startup.
- **Manual**
  - Allows you to manually enter the specifications of the hard drive when the hard drive access mode is set to CHS.

- **Access Mode**
  - Sets the hard drive access mode. Options are: Auto (default), CHS, LBA, Large.

**IDE Channel 2/3 Master**

- **IDE Auto-Detection**
  - Press <Enter> to autodetect the parameters of the IDE/SATA device on this channel.

- **Extended IDE Drive**
  - Configure your IDE/SATA devices by using one of the two methods below:
    - **Auto**
      - Lets BIOS automatically detect IDE/SATA devices during the POST. (Default)
    - **None**
      - If no IDE/SATA devices are used, set this item to None so the system will skip the detection of the device during the POST for faster system startup.

- **Access Mode**
  - Sets the hard drive access mode. Options are: Auto (default), Large.
The following fields display your hard drive specifications. If you wish to enter the parameters manually, refer to the information on the hard drive.

- **Capacity**      Approximate capacity of the currently installed hard drive.
- **Cylinder**     Number of cylinders.
- **Head**         Number of heads.
- **Precomp**      Write precompensation cylinder.
- **Landing Zone** Landing zone.
- **Sector**       Number of sectors.

**Drive A**

Allows you to select the type of floppy disk drive installed in your system. If you do not install a floppy disk drive, set this item to **None**. Options are: None, 360K/5.25", 1.2M/5.25", 720K/3.5", 1.44M/3.5", 2.88M/3.5".

**Floppy 3 Mode Support**

Allows you to specify whether the installed floppy disk drive is 3-mode floppy disk drive, a Japanese standard floppy disk drive. Options are: Disabled (default), Drive A.

**Halt On**

Allows you to determine whether the system will stop for an error during the POST.

- **No Errors**   The system boot will not stop for any error.
- **All Errors**  Whenever the BIOS detects a non-fatal error the system boot will stop.
- **All, But Keyboard** The system boot will not stop for a keyboard error but stop for all other errors. (Default)
- **All, But Diskette** The system boot will not stop for a floppy disk drive error but stop for all other errors.
- **All, But Disk/Key** The system boot will not stop for a keyboard or a floppy disk drive error but it will stop for all other errors.

**Memory**

These fields are read-only and are determined by the BIOS POST.

- **Base Memory**  Also called conventional memory. Typically, 640 KB will be reserved for the MS-DOS operating system.
- **Extended Memory** The amount of extended memory.
### 2-4 Advanced BIOS Features

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
<th>Item Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtualization</td>
<td>[Disabled]</td>
<td></td>
</tr>
<tr>
<td>Patch AMD TLB Erratum (Note)</td>
<td>[Enabled]</td>
<td></td>
</tr>
<tr>
<td>AMD K8 Cool&amp;Quiet control</td>
<td>[Auto]</td>
<td></td>
</tr>
<tr>
<td>Hard Disk Boot Priority</td>
<td>[Press Enter]</td>
<td></td>
</tr>
<tr>
<td>First Boot Device</td>
<td>[Floppy]</td>
<td></td>
</tr>
<tr>
<td>Second Boot Device</td>
<td>[Hard Disk]</td>
<td></td>
</tr>
<tr>
<td>Third Boot Device</td>
<td>[CDROM]</td>
<td></td>
</tr>
<tr>
<td>Password Check</td>
<td>[Setup]</td>
<td></td>
</tr>
<tr>
<td>HDD S.M.A.R.T. Capability</td>
<td>[Disabled]</td>
<td></td>
</tr>
<tr>
<td>Away Mode</td>
<td>[Disabled]</td>
<td></td>
</tr>
<tr>
<td>Init Display First</td>
<td>[PEG]</td>
<td></td>
</tr>
<tr>
<td>Frame Buffer Size</td>
<td>[64M]</td>
<td></td>
</tr>
<tr>
<td>Onboard GPU</td>
<td>[Enable If No Ext PEG]</td>
<td></td>
</tr>
</tbody>
</table>

- **Virtualization**
  Virtualization allows a platform to run multiple operating systems and applications in independent partitions. With virtualization, one computer system can function as multiple virtual systems. (Default: Disabled)

- **Patch AMD TLB Erratum (Note)**
  Enables or disables the Patch AMD TLB Erratum function. (Default: Enabled)

- **AMD K8 Cool&Quiet control**
  - **Auto**
    Lets the AMD Cool'n'Quiet driver dynamically adjust the CPU clock and VIA to reduce heat output from your computer and its power consumption. (Default)
  - **Disabled**
    Disable this function.

- **Hard Disk Boot Priority**
  Specifies the sequence of loading the operating system from the installed hard drives. Use the up or down arrow key to select a hard drive, then press the plus key (or <PageUp>) or the minus key (or <PageDown>) to move it up or down on the list. Press <Esc> to exit this menu when finished.

- **First/Second/Third Boot Device**
  Specifies the boot order from the available devices. Use the up or down arrow key to select a device and press <Enter> to accept. Options are: Floppy, LS120, Hard Disk, CDROM, ZIP, USB-FDD, USB-ZIP, USB-CDROM, USB-HDD, Legacy LAN, Disabled.

(Note) This item is present only if you install a CPU that supports this feature.
Password Check
Specifies whether a password is required every time the system boots, or only when you enter BIOS Setup. After configuring this item, set the password(s) under the Set Supervisor/User Password item in the BIOS Main Menu.

- Setup: A password is only required for entering the BIOS Setup program. (Default)
- System: A password is required for booting the system and for entering the BIOS Setup program.

HDD S.M.A.R.T. Capability
Enables or disables the S.M.A.R.T. (Self Monitoring and Reporting Technology) capability of your hard drive. This feature allows your system to report read/write errors of the hard drive and to issue warnings when a third party hardware monitor utility is installed. (Default: Disabled)

Away Mode
Enables or disables Away Mode in Windows XP Media Center operating system. Away Mode allows the system to silently perform unattended tasks while in a low-power mode that appears off. (Default: Disabled)

Init Display First
Specifies the first initiation of the monitor display from the installed PCI graphics card, PCI Express graphics card, or the onboard VGA.

- PCI Slot: Sets the PCI graphics card as the first display.
- Onboard VGA: Sets the onboard VGA as the first display.
- PEG: Sets PCI Express graphics card as the first display. (Default)

Frame Buffer Size
Frame buffer size is the total amount of system memory allocated solely for the onboard graphics controller. MS-DOS, for example, will use only this memory for display. Options are: 32M, 64M (default), 128M, 256M, Disabled.

Onboard GPU
Enables or disables the onboard VGA function.

- Enable If No Ext PEG: Activates the onboard VGA only if no PCI Express VGA card is installed. (Default)
- Always Enable: Always activates the onboard VGA, whether or not a PCI Express card is installed. If you wish to set up a dual view configuration, set this item to Always Enable.
2-5 Integrated Peripherals

CMOS Setup Utility - Copyright (C) 1984-2008 Award Software
Integrated Peripherals

- On-Chip IDE Channel
  Enables or disables the integrated IDE controller. (Default: Enabled)

- NV SATA Controller
  Enables or disables the integrated SATA 3Gb/s controller. (Default: Enabled)

- IDE Prefetch Mode
  Enables or disables prefetch mode for the integrated IDE controller. Enabled activates the IDE prefetch buffer to enhance hard drive performance. (Default: Enabled)

- USB Memory Type
  Specifies the type of memory allocated for USB devices. Options are: SHADOW (default), Base Memory (640K).

- Serial-ATA RAID Config

CMOS Setup Utility - Copyright (C) 1984-2008 Award Software
Serial-ATA RAID Config

- NV SATA RAID function
  [Disabled]

- NV SATA 1 Primary RAID
  Enabled

- NV SATA 1 Secondary RAID
  Enabled

Item Help
Menu Level

F5: Previous Values
F6: Fail-Safe Defaults
F7: Optimized Defaults

F1: General Help
ESC: Exit
F: +/ PU/PD: Value
F10: Save
Move Enter: Select
+//-PU/PD: Value
F5: Previous Values
F6: Fail-Safe Defaults
F7: Optimized Defaults
NV SATA RAID function
Enables or disables RAID for the integrated SATA 3Gb/s controller. Enabled allows you to configure RAID for individual SATA channel. (Default: Disabled)

NV SATA 1 Primary RAID
Enables or disables RAID for the first channel of the integrated SATA 3Gb/s controller. This item is configurable only if the NV SATA RAID function item is set to Enabled.
(Default: Enabled)

NV SATA 1 Secondary RAID
Enables or disables RAID for the second channel of the integrated SATA 3Gb/s controller. This item is configurable only if the NV SATA RAID function item is set to Enabled.

Onboard Audio Function
Enables or disables the onboard audio function. (Default: Auto)
If you wish to install a 3rd party add-in audio card instead of using the onboard audio, set this item to Disabled.

On-Chip MAC Lan
Enables or disables the onboard LAN function. (Default: Auto)
If you wish to install a 3rd party add-in network card instead of using the onboard LAN, set this item to Disabled.

Onboard LAN Boot ROM
Allows you to decide whether to activate the boot ROM integrated with the onboard LAN chip. (Default: Disabled)

Onboard Serial Port 1
Enables or disables the first serial port and specifies its base I/O address and corresponding interrupt. Options are: Auto, 3F8/IRQ4 (default), 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, Disabled.

Onboard Parallel Port
Enables or disables the onboard parallel port (LPT) and specifies its base I/O address and corresponding interrupt. Options are: 378/IRQ7 (default), 278/IRQ5, 3BC/IRQ7, Disabled.

Parallel Port Mode
Selects an operating mode for the onboard parallel (LPT) port. Options are: SPP (Standard Parallel Port)(default), EPP (Enhanced Parallel Port), ECP (Extended Capabilities Port), ECP+EPP.

ECP Mode Use DMA
Selects DMA channel for the LPT port in ECP mode. This item is configurable only if Parallel Port Mode is set to ECP or ECP+EPP mode. Options are: 3 (default), 1.

On-Chip USB
Configures the integrated USB controller.
- V1.1+V2.0 Enables the integrated USB 1.1 and USB 2.0 controllers. (Default)
- V1.1 Enables only the integrated USB 1.1 controller.
- Disabled Disables the integrated USB 1.1 and USB 2.0 controllers. Disabled will turn off all of the USB functionalities below.
USB Keyboard Support
Allows USB keyboard to be used in MS-DOS. (Default: Disabled)

USB Mouse Support
Allows USB mouse to be used in MS-DOS. (Default: Disabled)

Legacy USB storage detect
Determines whether to detect USB storage devices, including USB flash drives and USB hard drives during the POST. (Default: Enabled)
2-6  Power Management Setup

CMOS Setup Utility-Copyright (C) 1984-2008 Award Software
Power Management Setup

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
<th>Item Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACPI Suspend Type</td>
<td>S3(STR)</td>
<td></td>
</tr>
<tr>
<td>Soft-Off by Power button</td>
<td>Instant-Off</td>
<td></td>
</tr>
<tr>
<td>PME Event Wake Up</td>
<td>Enabled</td>
<td></td>
</tr>
<tr>
<td>Modem Ring On</td>
<td>Enabled</td>
<td></td>
</tr>
<tr>
<td>USB Resume from Suspend</td>
<td>Enabled</td>
<td></td>
</tr>
<tr>
<td>Power-On by Alarm</td>
<td>Disabled</td>
<td></td>
</tr>
<tr>
<td>x Day of Month Alarm</td>
<td>Everyday</td>
<td></td>
</tr>
<tr>
<td>x Time (hh:mm:ss) Alarm</td>
<td>0:0:0</td>
<td></td>
</tr>
<tr>
<td>HPET Support</td>
<td>Enabled</td>
<td></td>
</tr>
<tr>
<td>HPET Mode</td>
<td>32-bit mode</td>
<td></td>
</tr>
<tr>
<td>Power On By Mouse</td>
<td>Disabled</td>
<td></td>
</tr>
<tr>
<td>Power On By Keyboard</td>
<td>Disabled</td>
<td></td>
</tr>
<tr>
<td>x KB Power ON Password</td>
<td>Enter</td>
<td></td>
</tr>
<tr>
<td>AC Back Function</td>
<td>Soft-Off</td>
<td></td>
</tr>
</tbody>
</table>

††† 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
- Specifies the ACPI sleep state when the system enters suspend.
  - S1(POS) Enables the system to enter the ACPI S1 (Power on Suspend) sleep state. In S1 sleep state, the system appears suspended and stays in a low power mode. The system can be resumed at any time.
  - S3(STR) Enables the system to enter the ACPI S3 (Suspend to RAM) sleep state. In S3 sleep state, the system appears to be off and consumes less power than in the S1 state. When signaled by a wake-up device or event, the system resumes to its working state exactly where it was left off. (default)

Soft-Off by Power button
- Configures the way to turn off the computer in MS-DOS mode using the power button.
  - Instant-Off Press the power button and then the system will be turned off instantly. (Default)
  - Delay 4 Sec. Press and hold the power button for 4 seconds to turn off the system. If the power button is pressed for less than 4 seconds, the system will enter suspend mode.

PME Event Wake Up
- Allows the system to be awakened from an ACPI sleep state by a wake-up signal from a PCI or PCIe device. Note: To use this function, you need an ATX power supply providing at least 1A on the 5VSB lead. (Default: Enabled)

Modem Ring On
- Allows the system to be awakened from an ACPI sleep state by a wake-up signal from a modem that supports wake-up function. (Default: Enabled)

(Note) Supported on Windows® Vista® operating system only.
USB Resume from Suspend
Allows the system to be awakened from ACPI S3 sleep state by a wake-up signal from the installed USB device. (Default: Enabled)

Power-On by Alarm
Determines whether to power on the system at a desired time. (Default: Disabled)
If enabled, set the date and time as following:
- Day of Month Alarm: Turn on the system at a specific time on each day or on a specific day in a month.
- Time (hh: mm: ss) Alarm: Set the time at which the system will be powered on automatically.
Note: When using this function, avoid inadequate shutdown from the operating system or removal of the AC power, or the settings may not be effective.

HPET Support (Note)
Enables or disables High Precision Event Timer (HPET) for Windows® Vista® operating system. (Default: Enabled)

HPET Mode (Note)
Allows you to select the HPET mode for your Windows® Vista® operating system. Select 32-bit mode when you install 32-bit Windows® Vista®; select 64-bit mode when you install 64-bit Windows® Vista®. (Default: 32-bit mode)

Power On By Mouse
Allows the system to be turned on by a PS/2 mouse wake-up event.
Note: To use this function, you need an ATX power supply providing at least 1A on the 5VSB lead.
- Disabled: Disables this function. (Default)
- Double Click: Double click on left button on the PS/2 mouse to turn on the system.

Power On By Keyboard
Allows the system to be turned on by a PS/2 keyboard wake-up event.
Note: you need an ATX power supply providing at least 1A on the 5VSB lead.
- Disabled: Disables this function. (Default)
- Password: Set a password with 1~5 characters to turn on the system.
- Any KEY: Press any key on the keyboard to turn on the system.
- Keyboard 98: Press POWER button on the Windows 98 keyboard to turn on the system.

KB Power ON Password
Set the password when Power On by Keyboard is set to Password. Press <Enter> on this item and set a password with up to 5 characters and then press <Enter> to accept. To turn on the system, enter the password and press <Enter>.
Note: To cancel the password, press <Enter> on this item. When prompted for the password, press <Enter> again without entering the password to clear the password settings.

AC Back Function
Determines the state of the system after the return of power from an AC power loss.
- Soft-Off: The system stays off upon the return of the AC power. (Default)
- Full-On: The system is turned on upon the return of the AC power.

(Note) Supported on Windows® Vista® operating system only.
### 2-7 PnP/PCI Configurations

#### CMOS Setup Utility

<table>
<thead>
<tr>
<th>Item Help</th>
<th>Menu Level#</th>
</tr>
</thead>
</table>

| PCI 1 IRQ Assignment | [Auto] |
| PCI 2 IRQ Assignment | [Auto] |

- **PCI 1 IRQ Assignment**
  - **Auto**: BIOS auto-assigns IRQ to the first PCI slot. (Default)
  - **3,4,5,7,9,10,11,12,14,15**: Assigns IRQ 3,4,5,7,9,10,11,12,14,15 to the first PCI slot.

- **PCI 2 IRQ Assignment**
  - **Auto**: BIOS auto-assigns IRQ to the second PCI slot. (Default)
  - **3,4,5,7,9,10,11,12,14,15**: Assigns IRQ 3,4,5,7,9,10,11,12,14,15 to the second PCI slot.
2-8  PC Health Status

<table>
<thead>
<tr>
<th>Item Help</th>
<th>Menu Level#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reset Case Open Status</td>
<td>[Disabled]</td>
</tr>
<tr>
<td>Case Opened</td>
<td>Yes</td>
</tr>
<tr>
<td>Vcore</td>
<td>OK</td>
</tr>
<tr>
<td>DDR2 1.8V</td>
<td>OK</td>
</tr>
<tr>
<td>+3.3V</td>
<td>OK</td>
</tr>
<tr>
<td>+12V</td>
<td>OK</td>
</tr>
<tr>
<td>Current System Temperature</td>
<td>32°C</td>
</tr>
<tr>
<td>Current CPU Temperature</td>
<td>45°C</td>
</tr>
<tr>
<td>Current CPU FAN Speed</td>
<td>3245 RPM</td>
</tr>
<tr>
<td>Current SYSTEM FAN Speed</td>
<td>0 RPM</td>
</tr>
<tr>
<td>System Warning Temperature</td>
<td>[Disabled]</td>
</tr>
<tr>
<td>CPU Warning Temperature</td>
<td>[Disabled]</td>
</tr>
<tr>
<td>CPU FAN Fail Warning</td>
<td>[Disabled]</td>
</tr>
<tr>
<td>SYSTEM FAN Fail Warning</td>
<td>[Disabled]</td>
</tr>
<tr>
<td>CPU Smart FAN Control</td>
<td>[Enabled]</td>
</tr>
<tr>
<td>CPU Smart FAN Mode</td>
<td>[Auto]</td>
</tr>
</tbody>
</table>

- **Reset Case Open Status**
  Keeps or clears the record of previous chassis intrusion status. **Enabled** clears the record of previous chassis intrusion status and the **Case Opened** field will show "No" at next boot. (Default: Disabled)

- **Case Opened**
  Displays the detection status of the chassis intrusion detection device attached to the motherboard CI header. If the system chassis cover is removed, this field will show "Yes", otherwise it will show "No". To clear the chassis intrusion status record, set **Reset Case Open Status** to **Enabled**, save the settings to CMOS, and then restart your system.

- **Current Voltage(V) Vcore/DDR2 1.8V/+3.3V/+12V**
  Displays the current system voltages.

- **Current System/CPU Temperature**
  Displays current system/CPU temperature.

- **Current CPU/SYSTEM FAN Speed (RPM)**
  Displays current CPU/system fan speed.

- **System/CPU Warning Temperature**
  Sets the warning threshold for system/CPU temperature. When system/CPU temperature exceeds the threshold, BIOS will emit warning sound. Options are: Disabled (default), 60°C/140°F, 70°C/158°F, 80°C/176°F, 90°C/194°F.

- **CPU/SYSTEM FAN Fail Warning**
  Allows the system to emit warning sound if the CPU/system fan is not connected or fails. Check the fan condition or fan connection when this occurs. (Default: Disabled)

- **CPU Smart FAN Control**
  Enables or disables the CPU fan speed control function. **Enabled** allows the CPU fan to run at different speed according to the CPU temperature. You can adjust the fan speed with EasyTune based on system requirements. If disabled, CPU fan runs at full speed. (Default: Enabled)
CPU Smart FAN Mode

Specifies how to control CPU fan speed. This item is configurable only if CPU Smart FAN Control is set to Enabled.

- **Auto**: Lets BIOS autodetect the type of CPU fan installed and sets the optimal CPU fan control mode. (Default)
- **Voltage**: Sets Voltage mode for a 3-pin CPU fan.
- **PWM**: Sets PWM mode for a 4-pin CPU fan.
2-9  Load Fail-Safe Defaults

Press <Enter> on this item and then press the <Y> key to load the safest BIOS default settings.
In case system instability occurs, you may try to load Fail-Safe defaults, which are the safest and most stable BIOS settings for the motherboard.

2-10  Load Optimized Defaults

Press <Enter> on this item and then press the <Y> key to load the optimal BIOS default settings. The BIOS defaults settings helps the system to operate in optimum state. Always load the Optimized defaults after updating the BIOS or after clearing the CMOS values.
### 2-11 Set Supervisor/User Password

Press <Enter> on this item and type the password with up to 8 characters and then press <Enter>. You will be requested to confirm the password. Type the password again and press <Enter>.

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

- **Supervisor Password**
  - When a system password is set and the **Password Check** item in **Advanced BIOS Features** is set to **Setup**, you must enter the supervisor password for entering BIOS Setup and making BIOS changes.
  - When the **Password Check** item is set to **System**, you must enter the supervisor password (or user password) at system startup and when entering BIOS Setup.

- **User Password**
  - When the **Password Check** item is set to **System**, you must enter the supervisor password (or user password) at system startup to continue system boot. In BIOS Setup, you must enter the supervisor password if you wish to make changes to BIOS settings. The user password only allows you to view the BIOS settings but not to make changes.

To clear the password, press <Enter> on the password item and when requested for the password, press <Enter> again. The message “PASSWORD DISABLED” will appear, indicating the password has been cancelled.
### 2-12 Save & Exit Setup

Press <Enter> on this item and press the <Y> key. This saves the changes to the CMOS and exits the BIOS Setup program. Press <N> or <Esc> to return to the BIOS Setup Main Menu.

### 2-13 Exit Without Saving

Press <Enter> on this item and press the <Y> key. This exits the BIOS Setup without saving the changes made in BIOS Setup to the CMOS. Press <N> or <Esc> to return to the BIOS Setup Main Menu.
Chapter 3  Drivers Installation

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

3-1  Installing Chipset Drivers

After inserting the driver disk, “Xpress Install” will automatically scan your system and then list all the drivers that are recommended to install. You can click the Install All button and “Xpress Install” will install all the recommended drivers. Or click Install Single Items to manually select the drivers you wish to install.

- Please ignore the popup dialog box(es) (e.g. the Found New Hardware Wizard) displayed when “Xpress Install” is installing the drivers. Failure to do so may affect the driver installation.
- 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 motherboard driver disk.
- 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 Application Software
This page displays all the utilities and applications that GIGABYTE develops and some free software. You can click the **Install** button on the right of an item to install it.

3-3 Technical Manuals
This page provides content descriptions for this driver disk and the motherboard manuals.
3-4 Contact
For the detailed contact information of the GIGABYTE Taiwan headquarter or worldwide branch offices, click the URL on this page to link to the GIGABYTE Website.

3-5 System
This page provides the basic system information.
3-6 Download Center

To update the BIOS, drivers, or applications, click the Download Center button to link to the GIGABYTE Web site. The latest version of the BIOS, drivers, or applications will be displayed.
Chapter 4  Unique Features

4-1  Xpress Recovery2

Xpress Recovery2 is a utility that allows you to quickly compress and back up your system data and perform restoration of it. Supporting NTFS, FAT32, and FAT16 file systems, Xpress Recovery2 can back up data on PATA and SATA hard drives and restore it.

Before You Begin:

- Xpress Recovery2 will check the first physical hard drive* for the operating system. Xpress Recovery2 can only back up/restore the first physical hard drive that has the operating system installed.
- As Xpress Recovery2 will save the backup file at the end of the hard drive, make sure to leave enough unallocated space in advanced (10 GB or more is recommended; actual size requirements vary, depending on the amount of data).
- It is recommended to back up your system soon after the operating system and drivers are installed.
- The amount of data and hard drive access speed may affect the speed at which the data is backed up/restored.
- It takes longer to back up a hard drive than to restore it.

System Requirements:

- At least 512 MB of system memory
- VESA compatible graphics card
- Windows® XP with SP1 or later, Windows® Vista

**NOTE**

- Xpress Recovery and Xpress Recovery2 are different utilities. For example, a backup file created with Xpress Recovery cannot be restored using Xpress Recovery2.
- USB hard drives are not supported.
- Hard drives in RAID/AHCI mode are not supported.

Installation and Configuration

Turn on your system to boot from the Windows Vista setup disk.

A. Installing Windows Vista and Partitioning the Hard Drive

**Step 1:**
Click *Drive options*.

**Step 2:**
Click *New*.

**Xpress Recovery2 checks the first physical hard drive in the following sequence: The first PATA IDE connector, the second PATA IDE connector, the first SATA connector, the second SATA connector and so forth. For example, when hard drives are attached to the first IDE and the first SATA connectors, the hard drive on the first IDE connector is the first physical drive. When hard drives are attached to the first and second SATA connectors, the hard drive on the first SATA connector is the first physical drive.**
Step 3:
When partitioning your hard drive, make sure to leave unallocated space (10 GB or more is recommended; actual size requirements vary, depending on the amount of data) and begin the installation of the operating system.

Step 4:
After the operating system is installed, right-click the **Computer** icon on your desktop and select **Manage**. Go to **Disk Management** to check disk allocation.

Step 5:
Xpress Recovery2 will save the backup file to the unallocated space (black stripe along the top). Please note that if there is no enough unallocated space, Xpress Recovery2 cannot save the backup file.

B. Accessing Xpress Recovery2
1. Boot from the motherboard driver disk to access Xpress Recovery2 for the first time. When you see the following message: **Press any key to startup Xpress Recovery2**, press any key to enter Xpress Recovery2.
2. After you use the backup function in Xpress Recovery2 for the first time, Xpress Recovery2 will stay permanent in your hard drive. If you wish to enter Xpress Recovery2 later, simply press <F9> during the POST.

C. Using the Backup Function in Xpress Recovery2

Step 1:
Select **BACKUP** to start backing up your hard drive data.

Step 2:
When finished, go to **Disk Management** to check disk allocation.
D. Using the Restore Function in Xpress Recovery2

Select **RESTORE** to restore the backup to your hard drive in case the system breaks down. The **RESTORE** option will not be present if no backup is created before.

E. Removing the Backup

Step 1:
If you wish to remove the backup file, select **REMOVE**.

Step 2:
After the backup file is removed, no backup image file will be present in **Disk Management** and hard drive space will be freed up.

F.Exiting Xpress Recovery2

Select **REBOOT** to exit Xpress Recovery2.
4-2 BIOS Update Utilities

GIGABYTE motherboards provide two unique BIOS update tools, Q-Flash™ and @BIOS™. GIGABYTE Q-Flash and @BIOS are easy-to-use and allow you to update the BIOS without the need to enter MS-DOS mode. Additionally, this motherboard features the DualBIOS™ design, which enhances protection for the safety and stability of your computer by adding one more physical BIOS chip.

What is DualBIOS™?
Motherboards that support DualBIOS have two BIOS onboard, a main BIOS and a backup BIOS. Normally, the system works on the main BIOS. However, if the main BIOS is corrupted or damaged, the backup BIOS will take over on the next system boot and copy the BIOS file to the main BIOS to ensure normal system operation. For the sake of system safety, users cannot update the backup BIOS manually.

What is Q-Flash™?
With Q-Flash you can update the system BIOS without having to enter operating systems like MS-DOS or Window first. Embedded in the BIOS, the Q-Flash tool frees you from the hassles of going through complicated BIOS flashing process.

What is @BIOS™?
@BIOS allows you to update the system BIOS while in the Windows environment. @BIOS will download the latest BIOS file from the nearest @BIOS server site and update the BIOS.

4-2-1 Updating the BIOS with the Q-Flash Utility

A. Before You Begin:
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. M61PME2P.F1) 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.

CAUTION
Because BIOS flashing is potentially risky, please do it with caution. Inadequate BIOS flashing may result in system malfunction.

Award Modular BIOS v6.00PG, An Energy Star Ally
Copyright (C) 1984-2008, Award Software, Inc.
GA-M61PME-S2P E8
12/18/2008-NV-MCP61-6A61K0AC-00
B. Updating the BIOS

When updating the BIOS, choose the location where the BIOS file is saved. The follow procedure assumes that you save the BIOS file to a floppy disk.

Step 1:
1. Insert the floppy disk containing the BIOS file into the floppy disk drive. In the main menu of Q-Flash, use the up or down arrow key to select Update BIOS from Drive and press <Enter>.
   - The Save Main BIOS to Drive option allows you to save the current BIOS file.
   - Q-Flash only supports USB flash drive or hard drives using FAT32/16/12 file system.
   - 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.

2. Select Floppy A and press <Enter>.

3. Select the BIOS update file and press <Enter>.
   - Make sure the BIOS update file matches your motherboard model.

Step 2:
The process of the 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> to begin the BIOS update. The monitor will display the update process.
   - Do not turn off or restart the system when the system is reading/updating the BIOS.
   - Do not remove the floppy disk, USB flash drive, or hard drive when the system is updating the BIOS.

Step 3:
When the update process is complete, press any key to return to the main menu.
Step 4:
Press <Esc> and then <Enter> to exit Q-Flash and reboot the system. As the system boots, you should see the new BIOS version is present on the POST screen.

Step 5:
During the POST, 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 a BIOS update, so we recommend that you reload BIOS defaults.

![CMOS Setup Utility](image)

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. The procedure is complete after the system restarts.
4-2-2 Updating the BIOS with the @BIOS Utility

A. Before You Begin:
1. In Windows, close all applications and TSR (Terminate and Stay Resident) programs. This helps prevent unexpected failures when performing a BIOS update.
2. During the BIOS update process, ensure the Internet connection is stable and do NOT interrupt the Internet connection (for example, avoid a power loss or switching off the Internet). Failure to do so may result in a corrupted BIOS or a system that is unable to start.
3. Do not use the C.O.M. (Corporate Online Management) function when using @BIOS.
4. GIGABYTE product warranty does not cover any BIOS damage or system failure resulting from an inadequate BIOS flashing.

B. Installing and Using @BIOS:
Use the motherboard driver disk included with the motherboard to install @BIOS.

- Installing the @BIOS utility.
- Accessing the @BIOS utility.

C. Options and Instructions:
1. Save the Current BIOS File
   In the main dialog box of @BIOS, Save Current BIOS allows you to save the current BIOS file.

2. Update the BIOS Using the Internet Update Function
   Step 1: Select the Find BIOS From Gigabyte check box and click Update New BIOS.
   Step 2: Select the @BIOS server site closest to your location and click OK.
Step 3:
First make sure the model name on the screen is correct, then click OK. Upon completion, restart your system.

- If more than one model is present when doing Step 3 above, recomfirm your motherboard model. Updating the BIOS with an incorrect BIOS file could result in an unbootable system.
- If the BIOS update file for your motherboard is not present on the @BIOS server site, please manually download the BIOS update file from GIGABYTE’s website and follow the instructions in “Update the BIOS without Using the Internet Update Function” below.

Step 4:
As the system reboots, press <Delete> to enter the BIOS Setup program. Select Load Optimized Defaults and press <Enter> to load BIOS defaults.

3. Update the BIOS without Using the Internet Update Function

Step 1:
Click Update New BIOS.

Step 2:
In the Open dialog box, select All Files (*) in the Files of type list. Select the location where you save the BIOS update file (e.g. M61PME2P.F1) obtained from the Internet or through other source.

Step 3:
Press OK to begin the BIOS update process. Upon completion, restart your system.

Make sure the extracted BIOS file matches your motherboard model. Updating the BIOS with an incorrect BIOS file could result in an unbootable system.

Step 4:
As the system boots, press <Delete> to enter the BIOS Setup program. Select Load Optimized Defaults and press <Enter> to load BIOS defaults.
EasyTune® 5, an easy-to-use and convenient system overclocking and management tool, lets you do overclock and overvoltage in Windows environment, eliminating the need to enter the BIOS Setup program. EasyTune 5 provides the following functions: (Note 1) overclocking/overvoltage, C.I.A./M.I.B. (Note 2), smart fan control, and hardware monitoring and warning. (For instructions on using EasyTune 5, read or download the information on/from the Support\Motherboard\Utility page on our website.)

The EasyTune 5 Interface

Button Information Table

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

Incorrectly doing overclock/overvoltage may result in damage to CPU, chipset, or memory and reduce the useful life of these components. Before you do the overclock/overvoltage, make sure that you fully know how to use each function of EasyTune 5, or system instability or other unexpected results may occur.

(Note 1) Available functions in EasyTune 5 may differ by motherboard model.
(Note 2) C.I.A. and M.I.B. may provide optimizations for CPU and memory, enhancing the performance of these components.
5-1 Configuring SATA Hard Drive(s)

To configure SATA hard drive(s), follow the steps below:
A. Install SATA hard drive(s) in your computer.
B. Configure SATA controller mode in BIOS Setup.
C. Configure a RAID array in RAID BIOS. (Note)
D. Make a floppy disk containing the SATA RAID/AHCI driver for Windows XP. (Note)
E. Install the SATA RAID driver (Note) and operating system.

Before you begin
Please prepare:
- At least two SATA hard drives (to ensure optimal performance, it is recommended that you use two hard drives with identical model and capacity). If you do not want to create RAID, you may prepare only one hard drive.
- An empty formatted floppy disk.
- Windows Vista/XP setup disk.
- Motherboard driver disk.

5-1-1 Configuring the Onboard SATA Controller

A. 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 on the motherboard. Then connect the power connector from your power supply to the hard drive.

(Note ) Skip this step if you do not want to create RAID array on the SATA controller.
B. Configuring SATA controller mode in BIOS Setup

Make sure to configure the SATA controller mode correctly in system BIOS Setup.

Step 1:

Turn on your computer and press <Delete> to enter BIOS Setup during the POST (Power-On Self-Test). Under Integrated Peripherals, ensure NV SATA Controller is enabled. To configure a RAID array, go to the Serial-ATA RAID Config submenu.

Set NV SATA RAID function to Enabled to enable RAID control for the first and second SATA connector. Make sure NV SATA 1 Primary RAID and NV SATA 1 Secondary RAID are enabled. (Figure 2)

Step 2:

Save changes and exit BIOS Setup.

The BIOS Setup menus described in this section may differ from 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.
C. Configuring RAID set in RAID BIOS

Enter the RAID BIOS setup utility to configure a RAID array. For a non-RAID configuration, please skip this step and proceed to the installation of Windows operating system.

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 3). Hit the <F10> key to enter the NVIDIA RAID setup utility.

![Figure 3](image)

Step 2:
The **Define a New Array** screen is the first option screen when you enter the NVIDIA RAID setup utility. (Figure 4). You can press the <Tab> key to move from field to field until the appropriate field is highlighted.

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, and Spanning. The following procedure demonstrates how a RAID 0 array (Striping) is created.

Step 4:
If RAID 0 (Striping) is selected, you can manually set the stripe block size. In the **Striping Block** field, use the up or down arrow key to set the striping block size. Striping block size is given in kilobytes. We recommend you leaving it at the default **Optimal**, which is 64KB. The striping block size can be set from 4 KB to 128 KB.

![Figure 4](image)
Step 5:
Next, select the hard drives which you wish to be included in the disk array. The **Free Disks** block displays the information about the SATA hard drives that are available for use as RAID array drives. Press <Tab> to move to the **Free Disks** block. 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** block (Figure 5).

![Figure 5](image)

Step 6:
After assigning the RAID drives, press <F7>. A message which says “Clear disk data?” appears (Figure 6). Press <Y> to confirm or press <N> to cancel. (If the hard drives contain a previously created RAID array, you need to press <Y> to clear the data in the hard drives.)

![Figure 6](image)
After that, the **Array List** screen appears, displaying the RAID array that you have created (Figure 7).

![Array List Screen](image)

To read more information about the RAID array, press <Enter> to enter the **Array Detail** screen (Figure 8), which shows various information about the array, including the RAID mode, stripe block size, hard drive model name, and hard drive capacity, etc.

![Array Detail Screen](image)

To delete the array, press <D> in the **Array Detail** screen. When the “Delete this array?” message appears, press <Y> to confirm or <N> to cancel. Press <Enter> to return to the **Array List** screen.

To exit the NVIDIA RAID setup utility, press <Esc> in the main menu or <Ctrl>+<X> in the **Array List** screen.

Now, you can proceed to the installation of the SATA controller driver and operating system.
5-1-2 Making a SATA RAID Driver Diskette for Windows XP
(Required for RAID Mode)

To successfully install Windows XP operating system onto SATA hard drives that are configured to RAID mode, you need to install the SATA controller driver during the OS installation. Without the driver, the hard drive may not be recognized during the Windows XP setup process (Note 1). First of all, copy the driver for the SATA controller from the motherboard driver disk to a floppy disk. See the instructions below about how to copy the driver in MS-DOS mode (Note 2). Prepare a startup disk that has CD-ROM support and one blank formatted floppy disk.

Step 1: Insert the prepared startup disk and motherboard driver disk in your system. Boot from the startup disk. Once at the A:\> prompt, change to your optical drive (example: D:\>). At the D:\> prompt, type the following two commands. Press <Enter> after each command (Figure 1):

```
cd bootdrv
menu
```

Step 2: When the controller menu (Figure 2) appears, remove the startup disk and insert the blank formatted disk. Select the controller driver by pressing the corresponding letter from the menu. For example, from the menu in Figure 2, to install Windows XP 32-bit to your RAID hard drives, select 2) NVIDIA GeForce 6100/nForce 520LE Series RAID Driver(XP). The 3) NVIDIA GeForce 6100/nForce 520LE Series RAID Driver(64-Bit) is for Windows XP 64-bit. Your system will then automatically zip and transfer this driver file to the floppy disk. Press <0> to exit when finished.

(Note 1) If you want to install Windows Vista, install all required motherboard drivers (including the SATA controller driver) after Windows Vista is installed.

(Note 2) For users without a startup disk:
Use an alternative system and insert the motherboard driver disk. From your optical drive folder, double click the MENU.exe file in the BootDrv folder (Figure 3). A command prompt window will open similar to that in Figure 2.
5-1-3 Installing the SATA RAID Driver and Operating System

With the SATA RAID driver diskette and correct BIOS settings, you are ready to install Windows operating system onto your hard drives. Please note that installation of Windows Vista does not require you to install the RAID driver during the OS installation process in advance. The following is an example of Windows XP installation.

Step 1:
Restart your system to boot from the Windows XP setup disk and press <F6> as soon as you see the message "Press F6 if you need to install a 3rd party SCSI or RAID driver" (Figure 1). A screen will then appear asking you to specify additional device. Insert the floppy disk containing the SATA RAID driver and press <S> and a screen similar to that in Figure 2 will appear.

Step 2:
The screen displays two drivers, both of which need to be installed. First select NVIDIA RAID Driver and press <Enter>. On the next screen, press <S> to return to the screen in Figure 2. Then select NVIDIA nForce Storage Controller and press <Enter>. When both of the two drivers appear on the confirmation screen, press <Enter> to continue the driver installation. When completed, proceed with the Windows XP installation.
Rebuilding an Array:
Rebuilding is the process of restoring data to a hard drive from other drives in the array. Rebuilding applies only to fault-tolerant arrays such as RAID 1 array. The procedures below assume a new drive is added to replace a failed drive to rebuild a RAID 1 array. (Note: The new drive must have equal or greater capacity than the old one.)

Turn off your computer and replace the failed hard drive with a new one. Restart your computer. While in the operating system, launch the NVIDIA Control Panel from All Programs in the Start Menu.

The rebuild is automatically performed after entering the operating system. You can see the rebuild progress on the View Storage Configuration sub-menu. When the rebuild is completed, the array status will display as Healthy.

Manually rebuilding a hard drive:
Refer to the following instructions if you want to manually rebuild a hard drive in the array.

Step 1:
In NVIDIA Control Panel, click Rebuild array under Storage in the Select a Task pane.

Step 2:
When the NVIDIA Rebuild Array Wizard appears, follow the on-screen instructions to complete the rebuilding.
5-2 Configuring Audio Input and Output

5-2-1 Configuring 2/4/5.1/7.1-Channel Audio

The motherboard provides three audio jacks on the back panel which can support 2/4/5.1-channel audio. To enable 7.1-channel audio, you need to install an additional 5.1/7.1 surround cable (optional) and enable the 7.1-channel audio function through the audio driver.

A. Installing the 5.1/7.1 Surround Cable:

![5.1/7.1 Surround Cable](image)

The 5.1/7.1 surround cable (optional) provides audio jacks for center/subwoofer, rear, and side speakers. Use of this cable is required if you wish to set up a multi-channel audio system and keep Line in and Mic in functionalities at the same time.

Step 1:
Connect the connector at the end of the 5.1/7.1 surround cable to the HDA_SUR header on your motherboard.

![Step 1](image)

Step 2:
Secure the bracket to the chassis back panel with a screw.

![Step 2](image)

(Note) 2/4/5.1/7.1 Channel Audio Configurations:
Refer to the following for multi-channel speaker configurations.
- 2 channel audio: Headphone or Line out.
- 4 channel audio: Front speaker out and Rear speaker out.
- 5.1 channel audio: Front speaker out, Rear speaker out, and Center/Subwoofer speaker out.
- 7.1 channel audio: Front speaker out, Rear speaker out, Center/Subwoofer speaker out, and Side speaker out.
Audio Jacks:
The 5.1/7.1 surround cable adds additional three audio jacks to the three onboard audio jacks. The picture to the right shows the default audio jack assignments.

The integrated HD (High Definition) audio provides jack retasking capability that allows the user to change the function for each jack through the audio driver. For example, in a 4-channel audio configuration, if a Rear speaker is plugged into the default Center/Subwoofer speaker out jack, you can retask the Center/Subwoofer speaker out jack to be Rear speaker out.

- To install a microphone, connect your microphone to the Mic in or Line in jack and manually configure the jack for microphone functionality.
- Audio signals will be present on both of the front and back panel audio connections simultaneously. If you want to mute the back panel audio (only supported when using an HD front panel audio module), refer to instructions on the next page.

High Definition Audio (HD Audio)
HD Audio includes multiple high quality digital-to-analog converters (DACs) that support 44.1KHz/48KHz/96KHz/192KHz sampling rate. HD Audio features multistreaming capabilities that allow multiple audio streams (in and out) to be simultaneously processed. For example, users can listen to MP3 music, have an Internet chat, make a telephone call over the Internet, and etc. all at the same time.

B. Configuring Speakers:
(The following instructions use Windows Vista as the example operating system.)

Step 1:
After installing the audio driver, the HD Audio Manager icon will appear in the notification area. Double-click the icon to access the HD Audio Manager.

Before installing the audio driver, make sure the "Microsoft UAA Bus driver for High Definition Audio" has been installed from the motherboard driver disk and your operating system has been updated with the latest Service Pack for Windows.
Step 2:
Connect an audio device to an audio jack. The **current connected device is** dialog box appears. Select the device according to the type of device you connect. Then click **OK**.

Step 3:
On the **Speakers** screen, click the **Speaker Configuration** tab. In the **Speaker Configuration** list, select **Stereo**, **Quadraphonic**, **5.1 Speaker**, or **7.1 Speaker** according to the type of speaker configuration you wish to set up. Then the speaker setup is completed.

C. Configuring Sound Effect:
You may configure an audio environment on the **Sound Effects** tab.

D. Activating an AC’97 Front Panel Audio Module:
If your chassis provides an AC’97 front panel audio module, to activate the AC’97 functionality, click the tool icon on the **Speaker Configuration** tab. On the **Connector Settings** dialog box, select the **Disable front panel jack detection** check box. Click **OK** to complete.

E. Muting the Back Panel Audio (For HD Audio Only):
Click **Device advanced settings** on the top right corner on the **Speaker Configuration** tab to open the **Device advanced settings** dialog box. Select the **Mute the rear output device, when a front headphone plugged in** check box. Click **OK** to complete.
5-2-2 Configuring S/PDIF In/Out

The S/PDIF in and out cable (optional) provides S/PDIF in and S/PDIF out functionalities.

S/PDIF in:
The S/PDIF in jacks allow you to input digital audio signals to the computer for audio processing.

S/PDIF out:
The S/PDIF out jacks can transmit audio signals to an external decoder for decoding to get the best audio quality. Install the S/PDIF in and out cable if you want to output S/PDIF digital audio signals to an external decoder (or you may use the optical S/PDIF out connector on the motherboard back panel).

A. Installing the S/PDIF In and Out Cable:

Step 1:
First, attach the connector at the end of the cable to the SPDIF_IO header on your motherboard.

Step 2:
Secure the metal bracket to the chassis back panel with a screw.

(Note) The actual locations of the SPDIF In and SPDIF Out connectors may differ by model.
Step 3: Connect a S/PDIF coaxial cable or a S/PDIF optical cable (either one) to an external decoder for transmitting the S/PDIF digital audio signals.

B. Configuring S/PDIF In and Out:

B-1. Configuring S/PDIF In:
On the Digital Input screen, click the Default Format tab to select the default format. Click OK to complete.

B-2. Configuring S/PDIF Out:
On the Digital Output screen, click the Default Format tab and then select the sample rate and bit depth. Click OK to complete.
5-2-3 Configuring Microphone Recording

Step 1:
After installing the audio driver, the **HD Audio Manager** icon will appear in the notification area. Double-click the icon to access the **HD Audio Manager**.

Step 2:
Connect your microphone to the Mic in jack (pink) on the back panel or the Mic in jack (pink) on the front panel. Then configure the jack for microphone functionality.

Note: The microphone functions on the front panel and back panel cannot be used at the same time.

Step 3:
Go to the **Microphone** screen. Do not mute the recording volume, or you’ll not be able to record the sound. To hear the sound being recorded during the recording process, do not mute the playback volume. It is recommended that you set the volumes at a middle level.

If you want to change the current sound input default device to microphone, right-click on **Microphone** and select **Set Default Device**.
Step 4:
To raise the recording and playback volume for the microphone, click the Microphone Boost icon on the right of the Recording Volume slider and set the Microphone Boost level.

Step 5:
After completing the settings above, click Start, point to All Programs, point to Accessories, and then click Sound Recorder to begin the sound recording.

* Enabling Stereo Mix
If the HD Audio Manager does not display the recording device you wish to use, refer to the steps below. The following steps explain how to enable Stereo Mix (which may be needed when you want to record sound from your computer).

Step 1:
Locate the Volume icon in the notification area and right-click on this icon. Select Recording Devices.

Step 2:
On the Recording tab, right-click on an empty space and select Show Disabled Devices.
Step 3:
When the **Stereo Mix** item appears, right-click on this item and select **Enable**. Then set it as the default device.

Step 4:
Now you can access the **HD Audio Manager** to configure **Stereo Mix** and use **Sound Recorder** to record the sound.

5-2-4 Using the Sound Recorder

A. Recording Sound:
1. Make sure you have connected the sound input device (e.g. microphone) to the computer.
2. To record the audio, click the **Start Recording** button.
3. To stop recording audio, click the **Stop Recording** button.

   Be sure to save the recorded audio file upon completion.

B. Playing the Recorded Sound:
You can play your recording in a digital media player program that supports your audio file format.
5-3 Troubleshooting

5-3-1 Frequently Asked Questions
To read more FAQs for your motherboard, please go to the Support\Motherboard\FAQ page on GIGABYTE's website.

Q: In the BIOS Setup program, why are some BIOS options missing?
A: Some advanced options are hidden in the BIOS Setup program. Press <Delete> to enter BIOS Setup during the POST. In the Main Menu, press <Ctrl>++F1> to show the advanced options.

Q: Why is the light of my keyboard/optical mouse still on after the computer shuts down?
A: Some motherboard provides a small amount of standby power after the computer shuts down and that's why the light is still on.

Q: How do I clear the CMOS values?
A: If your motherboard has a clearing CMOS jumper, refer to the instructions on the CLR_CMOS jumper in Chapter 1 to short the jumper to clear the CMOS values. If your board doesn't have this jumper, refer to the instructions on the motherboard battery in Chapter 1. You can temporarily remove the battery from the battery holder to stop supplying power to the CMOS, which will clear the CMOS values after about one minute. Refer to the steps below:
Steps:
1. Turn off your computer and unplug the power cord.
2. Gently remove the battery from the battery holder and wait for one minute.
   (Or use a metal object like a screwdriver to touch the positive and negative terminals of the battery holder, making them short for 5 seconds.)
3. Replace the battery.
4. Plug in the power cord and restart your computer.
5. Press <Delete> to enter BIOS Setup. Select "Load Fail-Safe Defaults" (or "Load Optimized Defaults") to load BIOS default settings.
6. Saves changes and exit BIOS Setup (select "Save & Exit Setup") to restart your computer.

Q: Why do I still get a weak sound even though I have turned my speaker to the maximum volume?
A: Make sure your speaker is equipped with an internal amplifier. If not, try a speaker with power/amplifier.

Q: What do the beeps emitted during the POST mean?
A: The following Award BIOS beep code descriptions may help you identify possible computer problems. (For reference only.)
   1 short: System boots successfully
   2 short: CMOS setting error
   1 long, 1 short: Memory or motherboard error
   1 long, 2 short: Monitor or graphics card error
   1 long, 3 short: Keyboard error
   1 long, 9 short: BIOS ROM error
   Continuous long beeps: Graphics card not inserted properly
   Continuous short beeps: Power error
5-3-2 Troubleshooting Procedure

If you encounter any troubles during system startup, follow the troubleshooting procedure below to solve the problem.

START

Turn off the power. Remove all peripherals, connecting cables, and power cord etc.

Make sure the motherboard does not short-circuit with the chassis or other metal objects.

Yes

The problem is verified and solved.

No

Check if the CPU cooler is attached to the CPU securely. Is the power connector of the CPU cooler connected to the CPU_FAN header properly?

Yes

The problem is verified and solved.

No

Secure the CPU cooler on the CPU. Connect the CPU cooler power cable to the motherboard.

Check if the memory is installed properly on the memory slot.

Yes

The problem is verified and solved.

No

Correctly insert the memory into the memory socket.

Insert the graphics card. Connect the ATX main power cable and the 12V power cable. Turn on the power to start the computer.

Press <Delete> to enter BIOS Setup. Select “Load Fail-Safe Defaults” (or “Load Optimized Defaults”). Select “Save & Exit Setup” to save changes and exit BIOS Setup.

A

(Continued...)

If the procedure above is unable to solve your problem, contact the place of purchase or local dealer for help. Or go to the Support\Technical Service Zone page to submit your question. Our customer service staff will reply you as soon as possible.
5-4  Regulatory Statements

Regulatory Notices
This document must not be copied without our written permission, and the contents there of must not be imparted to a third party nor be used for any unauthorized purpose. Contravention will be prosecuted. We believe that the information contained herein was accurate in all respects at the time of printing. GIGABYTE cannot, however, assume any responsibility for errors or omissions in this text. Also note that the information in this document is subject to change without notice and should not be construed as a commitment by GIGABYTE.

Our Commitment to Preserving the Environment
In addition to high-efficiency performance, all GIGABYTE motherboards fulfill European Union regulations for RoHS (Restriction of Certain Hazardous Substances in Electrical and Electronic Equipment) and WEEE (Waste Electrical and Electronic Equipment) environmental directives, as well as most major worldwide safety requirements. To prevent releases of harmful substances into the environment and to maximize the use of our natural resources, GIGABYTE provides the following information on how you can responsibly recycle or reuse most of the materials in your "end of life" product.

Restriction of Hazardous Substances (RoHS) Directive Statement
GIGABYTE products have not intended to add and safe from hazardous substances (Cd, Pb, Hg, Cr+6, PBDE and PBB). The parts and components have been carefully selected to meet RoHS requirement. Moreover, we at GIGABYTE are continuing our efforts to develop products that do not use internationally banned toxic chemicals.

Waste Electrical & Electronic Equipment (WEEE) Directive Statement
GIGABYTE will fulfill the national laws as interpreted from the 2002/96/EC WEEE (Waste Electrical and Electronic Equipment) directive. The WEEE Directive specifies the treatment, collection, recycling and disposal of electric and electronic devices and their components. Under the Directive, used equipment must be marked, collected separately, and disposed of properly.

WEEE Symbol Statement
The symbol shown below is on the product or on its packaging, which indicates that this product must not be disposed of with other waste. Instead, the device should be taken to the waste collection centers for activation of the treatment, collection, recycling and disposal procedure. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local government office, your household waste disposal service or where you purchased the product for details of environmentally safe recycling.

When your electrical or electronic equipment is no longer useful to you, "take it back" to your local or regional waste collection administration for recycling.

If you need further assistance in recycling, reusing in your "end of life" product, you may contact us at the Customer Care number listed in your product's user's manual and we will be glad to help you with your effort.
Finally, we suggest that you practice other environmentally friendly actions by understanding and using the energy-saving features of this product (where applicable), recycling the inner and outer packaging (including shipping containers) this product was delivered in, and by disposing of or recycling used batteries properly. With your help, we can reduce the amount of natural resources needed to produce electrical and electronic equipment, minimize the use of landfills for the disposal of "end of life" products, and generally improve our quality of life by ensuring that potentially hazardous substances are not released into the environment and are disposed of properly.

**China Restriction of Hazardous Substances Table**

The following table is supplied in compliance with China’s Restriction of Hazardous Substances (China RoHS) requirements:

<table>
<thead>
<tr>
<th>部件名称 (Parts)</th>
<th>需测有害物质或元素 (Hazardous Substances)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>铅 (Pb)</td>
</tr>
<tr>
<td>PCB板</td>
<td>×</td>
</tr>
<tr>
<td>结构件及风扇</td>
<td>×</td>
</tr>
<tr>
<td>机械件和风扇</td>
<td>×</td>
</tr>
<tr>
<td>芯片及其他主件</td>
<td>×</td>
</tr>
<tr>
<td>电源器</td>
<td>×</td>
</tr>
<tr>
<td>连接器</td>
<td>×</td>
</tr>
<tr>
<td>被动元件</td>
<td>×</td>
</tr>
<tr>
<td>线材</td>
<td>○</td>
</tr>
<tr>
<td>电缆</td>
<td>○</td>
</tr>
<tr>
<td>焊接金属</td>
<td>○</td>
</tr>
<tr>
<td>助焊剂、散热器、标签及其他耗材</td>
<td>○</td>
</tr>
</tbody>
</table>

○: 表示该有害物质在该部件所有均质材料中的含量均在SJ/T 11363-2006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.

×: 表示该有害物质至少在该部件的某一均质材料中的含量超过SJ/T 11363-2006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.

对销售之日所受产品，本表显示我公司供应链的电子信息产品可能含该物质。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.
Contact Us

- **GIGA-BYTE TECHNOLOGY CO., LTD.**
  Address: No.6, Bau Chiang Road, Hsin-Tien, Taipei 231, Taiwan
  TEL: +886-2-8912-4000
  FAX: +886-2-8912-4003
  Tech. and Non-Tech. Support (Sales/Marketing):
  http://gigts.gigabyte.com.tw
  WEB address (English): http://www.gigabyte.com.tw
  WEB address (Chinese): http://www.gigabyte.tw

- **G.B.T. INC. - U.S.A.**
  TEL: +1-626-854-9338
  FAX: +1-626-854-9339
  Tech. Support:
  http://rma.gigabyte-usa.com
  Web address: http://www.gigabyte.us

- **G.B.T. INC (USA) - Mexico**
  Tel: +1-626-854-9338 x 215 (Soporte de habla hispano)
  FAX: +1-626-854-9339
  Correo: soporte@gigabyte-usa.com
  Tech. Support:
  http://rma.gigabyte-usa.com
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- **NINGBO G.B.T. TECH. TRADING CO., LTD. - China**
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  FAX: +86-21-63410100
  Beijing
  TEL: +86-10-62102838
  FAX: +86-10-62102848
  Wuhan
  TEL: +86-27-87851312
  FAX: +86-27-87851330
  GuangZhou
  TEL: +86-20-87540700
  FAX: +86-20-87544306
  Chengdu
  TEL: +86-28-85236930
  FAX: +86-28-85258822
  Xian
  TEL: +86-29-85531943
  FAX: +86-29-85510930
  Shenyang
  TEL: +86-24-83992901
  FAX: +86-24-83992909

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  WEB address: http://www.gigabyte.in

- **Saudi Arabia**
  WEB address: http://www.gigabyte.com.sa

- **GIGABYTE TECHNOLOGY PTY. LTD. - Australia**
  WEB address: http://www.gigabyte.com.au
To submit a technical or non-technical (Sales/Marketing) question, please link to:
http://ggts.gigabyte.com.tw
Then select your language to enter the system.