GA-MA69G-S3H

AM2 socket motherboard for AMD Athlon[™] 64 FX processor/ AMD Athlon[™] 64 X2 Dual-Core processor/ AMD Athlon[™] 64 processor/AMD Sempron[™] processor

User's Manual

Rev. 1002 12ME-MA69GS3H-1002R



Declaration of Conformity
We, Manufacture/Importer
We, Manufacture/Importer
(full eddess)
G.B.T. Technology Trading GMbH
Ausschlager Weg 41, 1F 20837 Hamburg, Germany

	description of the apparatus, system, installation to which it refers) Moth befroard GA-MA6Ge-S3H Gandination under which conformity is declared) in accordance with 86305 EEC-EMC Directive	declare that the product declare that the product Mother board Mother board GA-MA69G-S3H is in conformity with the specification under which conformity is to the specification under which conformity is no accordance with 69/336 EEC-EMC Directive.	which it refers) ty is declared) clive
□ EN 55011	Limits and methods of measurement	⊠ EN 61000-3-2	Disturbances in supply systems caused
	industrial, scientific and medical (ISM) high frequency equipment	⊠ EN 61000-3-3	Disturbances in supply systems caused by household appliances and similar electrical equipment "Voltage fluctuations"
□ EN 55013	Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment	⊠ EN 55024	Information Technology equipment-immunity characteristics-Limits and methods of measurement
□ EN 55014-1	Limits and methods of measurement of radio disturbance characteristics of household electrical appliances, portable tools and similar electrical	□ EN 50082-1	Generic immunity standard Part 1: Residual, commercial and light industry Generic immunity standard Part 2:
□ EN 55015	Limits and methods of measurement of radio disturbance characteristics of	□ EN 55014-2	Immunity requirements for household appliances tools and similar apparatus
□ EN 55020	Immunity from radio interference of broadcast receivers and associated equipment	□ EN 50091- 2	EMC requirements for uninterruptible power systems (UPS)
⊠ EN 55022	Limits and methods of measurement of radio disturbance characteristics of information technology equipment		
□ DIN VDE 0855 □ part 10 □ part 12	Cabled distribution systems; Equipment for receiving and/or distribution from sound and television signals	5	
⊠ CE marking	The manufacturer also declarse the conformity of above mentioned product	ne conformity of above	(EC conformity marking) above mentioned product
□ EN 60065	Safety requirements for mains operated IN 60950 Safety for information electronic and related apparatus for including electrical by	⊠ EN 60950	Safety for information technology equipment including electrical business equipment
EN 60335	Outside of household and similar	EN 50004 4	Occasion and Cafety special control for

DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2.1077(a)



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

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hereby declares that the product

Product Name: Motherboard

Model Number: GA-MA69G-S3H

Conforms to the following specifications:

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

Supplementary Information:

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

Representative Person's Name: ERIC LU

Signature: Eric Lu

Date: May 16, 2007

(Stamp)

EN 60335

Safety of household and similar electrical appliances

□ EN 50091-1

General and Safety requirements for uninterruptible power systems (UPS)

Date: May 16, 2007

Manufacturer/Importer

Timmy Huang

Name : Timmy Huang

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Documentation Classifications

In order to assist in the use of this product, GIGABYTE provides the following types of documentations:

- For quick set-up of the product, read the Quick Installation Guide included with the product.
- 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.



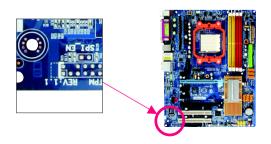


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Box Contents

- GA-MA69G-S3H motherboard
- ☑ Motherboard driver disk
- ✓ Motherboard driver disk (For Windows Vista)
- ✓ User's Manual
- Quick Installation Guide
- ✓ One IDE cable and one floppy disk drive cable
- ☑ Two SATA 3Gb/s cables
- One HDMI-to-DVI adapter(This motherboard only supports DVI-D)
- ✓ I/O Shield

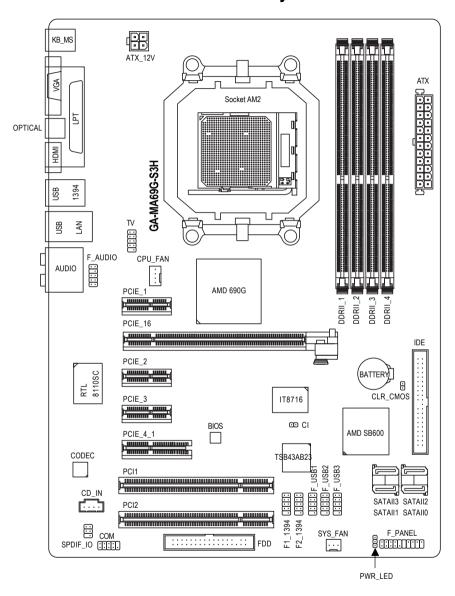


- The box contents above are for reference only and the actual items shall depend on product package you obtain.
 The box contents are subject to change without notice.
- The motherboard image is for reference only.

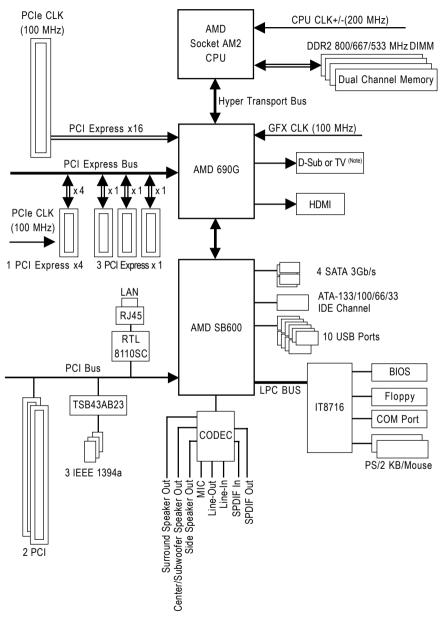
Optional Items

- □ 2-port USB 2.0 bracket (Part No. 12CR1-1UB030-51R)
- □ 2-port IEEE 1394a bracket (Part No. 12CF1-1IE008-01R)
- □ 2-port SATA power cable (Part No. 12CF1-2SERPW-01R)
- ☐ COM port cable (Part No. 12CF1-1CM001-31R)
- ☐ S/PDIF in and out cable (Part No. 12CR1-1SPINO-11R)
- TV out bracket (Part No. 12CR1-1AU001-01R)

GA-MA69G-S3H Motherboard Layout



Block Diagram



(Note) Simultaneous output for D-Sub and TV (S-Video, AV composite, or YPbPr component) is not supported.

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 a 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 processors:
	AMD Athlon™ 64 FX processor/AMD Athlon™ 64 X2 Dual-Core processor/
	AMD Athlon™ 64 processor/AMD Sempron™ processor
	(Go to GIGABYTE's website for the latest CPU support list.)
Front Side Bus	◆ 2000 MHz FSB
Chipset	North Bridge: AMD 690G
	South Bridge: AMD SB600
Memory	 4 x 1.8V DDR2 DIMM sockets supporting up to 16 GB of system memory (Note 1)
	Dual channel memory architecture
	 Support for DDR2 800/667/533 MHz memory modules
	(Go to GIGABYTE's website for the latest memory support list.)
Onboard Graphics	Integrated in the North Bridge
Audio	Realtek ALC889A codec
	High Definition Audio
	• 2/4/5.1/7.1-channel
	 Support for S/PDIF In/Out
	Support for CD In
LAN	• RTL 8110SC chip (10/100/1000 Mbit)
Expansion Slots	1 x PCI Express x16 slot
	 1 x PCI Express x4 slot
	3 x PCI Express x1 slots
	• 2 x PCI slots
Storage Interface	South Bridge:
	- 1 x floppy disk drive connector supporting up to 1 floppy disk drive
	- 1 x IDE connector supporting ATA-133/100/66/33 and up to 2 IDE devices
	- 4 x SATA 3Gb/s connectors supporting up to 4 SATA 3Gb/s devices
	 Support for SATA RAID 0, RAID 1, and RAID 10
IEEE 1394	T.I. TSB43AB23 chip
	• Up to 3 IEEE 1394a ports (1 on the back panel, 2 via the IEEE 1394 bracke
	connected to the internal IEEE 1394 headers)
USB	Integrated in the South Bridge
	 Up to 10 USB 2.0/1.1 ports (4 on the back panel, 6 via the USB brackets
	connected to the internal USB headers)
	connected to the internal con headers;

Internal Connectors	 1 x 24-pin ATX main power connector 1 x 4-pin ATX 12V power connector 			
	1 x 4-pin ATX 12V power connector			
	 1 x floppy disk drive connector 			
	1 x IDE connector			
	 4 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 CD In connector			
	1 x S/PDIF In/Out header			
	1 x TV Out header			
	• 2 x IEEE 1394a headers			
	• 3 x USB 2.0/1.1 headers			
	• 1 x COM header			
	 1 x chassis intrusion header 			
	• 1 x power LED header			
Back Panel	1 x PS/2 keyboard port			
Connectors	• 1 x PS/2 mouse port			
	• 1 x D-Sub port			
	1 x parallel port			
	• 1 x HDMI port			
	1 x optical S/PDIF Out connector			
	1 x IEEE 1394a port			
	• 4 x USB 2.0/1.1 ports			
	• 1 x RJ-45 port			
	• 6 x audio jacks (Center/Subwoofer Speaker Out/Rear Speaker Out/Side			
	Speaker Out/Line In/Line Out/Microphone)			
I/O Controller	iTE IT8716 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 2)			
BIOS	• 1 x 4 Mbit flash			
	 Use of licensed AWARD BIOS 			
	 PnP 1.0a, DMI 2.0, SM BIOS 2.4, ACPI 1.0b 			

	0
•	Support for @BIOS
•	Support for Download Center
•	Support for Q-Flash
•	Support for EasyTune (Note 3)
•	Support for Xpress Install
•	Support for Xpress Recovery2
•	Support for Virtual Dual BIOS
*	Norton Internet Security (OEM version)
+	Support for Microsoft® Windows® Vista/XP/2000
•	ATX form factor; 30.5cm x 22.9cm
	• • • •

(Note 1) Due to Windows 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) Whether the CPU fan speed control function is supported will depend on the CPU you install. (Note 3) Available functions in Easytune may differ by motherboard model.

1-3 Installing the CPU and CPU Cooler

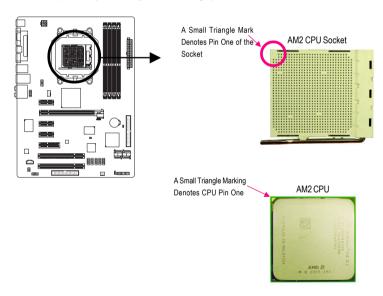


Read the following guidelines before you begin to install the CPU:

- 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

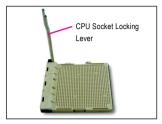
A. Locate the pin one (denoted by a small triangle) of the CPU socket and the CPU.



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.



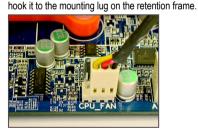
Step 2: Place the CPU cooler on the CPU.



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 the CPU cooler clip to



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.

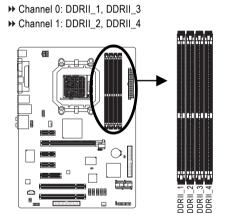
 (Capter CICADNITTE with its fact the latest appropriate list.)
 - (Go to GIGABYTE's website for the latest memory support list.)
- Always turn off the computer and unplug the power cord from the power outlet before installing the memory to prevent hardware damage.
- Memory modules have a foolproof design. 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 four 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 four DDR2 memory sockets are divided into two channels and each channel has two memory sockets as following:



>> Dual Channel Memory Configurations Table

	DDRII_1	DDRII_2	DDRII_3	DDRII_4
Two Modules	DS/SS	DS/SS		
			DS/SS	DS/SS
Four Modules	DS/SS	DS/SS	DS/SS	DS/SS

(SS=Single-Sided, DS=Double-Sided, "- - "=No Memory)



If two memory modules are to be installed, it is recommended that you install them in the DDRII_1 and DDRII_2 sockets.

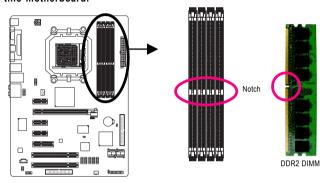
Due to CPU limitation, read the following guidelines before installing the memory in Dual Channel mode.

- 1. Dual Channel mode cannot be enabled if only one DDR2 memory module is installed.
- When enabling Dual Channel mode with two or four memory modules, it is recommended that memory of the same capacity, brand, speed, and chips be used and installed in the same colored DDR2 sockets for optimum performance.

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:

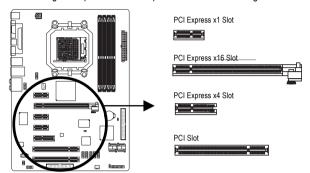
The clips at both ends of the socket will snap into place when the memory module is securely inserted.

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).
- 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 insert the graphics card into the PCI Express x16 slot. Make sure the small white-drawable bar securely locks the graphics card.

Removing the Card:

Pull out the small white- drawable bar at the end of the PCI Express x16 slot to release the card and then pull the card straight up from the slot.

You can also press the latch on the back of the white-drawable bar to release the card.

1-6 Configuring an ATI CrossFire™ System

To enable CrossFire™ technology, you need two graphics cards that support ATI CrossFire™ technology.

Before You Begin--

A. Power Requirements:

Use a power supply that is able to provide sufficient power to fully support an CrossFire configuration and other components in your system. We recommend a power supply that provides at least 20A 12V current. The exact power requirements depend on your overall system configurations.

B. Supported Operating Systems:

Only Windows XP operating system is currrently supported by the ATI CrossFire™ technology.

C. BIOS Settings:

Before configuring your system for CrossFire, make sure to set **Init Display First** under **Advanced BIOS Features** in BIOS Setup to **PEG** first. (Start your system with a single PCle x16 graphics card and then go to BIOS Setup to set **Init Display First** to **PEG**. Then install the second graphics card to enable CrossFire.)

Enabling CrossFire Mode--

Connecting Two Graphics Cards:

Step 1:

Observe the steps in "1-5 Installing an Expansion Card" and install the graphics cards in the PCIE 16 slot and the PCIE 4 1 slot.



Step 2:

Depending on your graphics cards, install the connecting bridges on the two cards.

(Note: Procedure for enabling CrossFire may slightly differ by graphics cards. Refer to the manual that came with your graphics cards for more information about enabling CrossFire.)



Connect your LCD monitor cable to the DVI-I port on the graphics card on the PCIE_16 slot (or connect your D-Sub monitor via a DVI-to-D-Sub adapter).



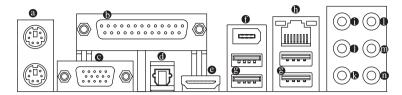


Graphics Card Driver Setting:

After installing the graphics card driver in your operating system, access the ATI CATALYST Control Center. From the ATI CATALYST Control Center, enter the CrossFire menu and select the Enable CrossFire checkbox to complete the configuration.



1-7 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.

O 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.

Optical S/PDIF Out Connector

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

HDMI Port

The HDMI (High-Definition Multimedia Interface) provides an all-digital audio/video interface to transmit the uncompressed audio/video signals and is HDCP compliant. Connect the HDMI audio/video device to this port. The HDMI Technology can support a maximum resolution of 1920x1080p but the actual resolutions supported depend on the monitor being used. Because of the limit of current DVD player, 1080p may not be displayed smoothly during the playback of an HD DVD or a Blu-ray disc.



- After installing the HDMI device, make sure the default device for sound playback is the HDMI device. (The item name may differ by operating system. Refer the figures below for details.)
- Please note the HDMI audio output only supports AC3, DTS and 2-channel-LPCM formats. (AC3 and DTS require the use of an external decoder for decoding.)

In Windows XP, select Start>Control Panel>Sounds and Audio Devices>Audio, set the Default device for sound playback to Realtek HDA HDMI Out.



In Windows Vista, select Start>Control Panel> Sound, select **Realtek HDMI Output** and then click



IEEE 1394a Port

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

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



Speed LED:					
State	Description				
Orange	1 Gpbs data rate				
Green	100 Mpbs data rate				
Off	10 Mpbs data rate				

	Connection/Activity LED:				
State Description					
Blinking Data transmission or receiving is oc		Data transmission or receiving is occurring			
	On	No data transmission or receiving is occurring			
Off LAN link is not established					

Center/Subwoofer Speaker Out Jack (Orange)

Use this audio jack to connect center/subwoofer speakers in a 5.1/7.1-channel audio configuration.

Rear Speaker Out Jack (Black)

Use this audio jack to connect rear speakers in a 4/5.1/7.1-channel audio configuration.

Side Speaker Out Jack (Gray)

Use this audio jack to connect side speakers in a 7.1-channel audio configuration.

Line In Jack (Blue)

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

Dut 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.

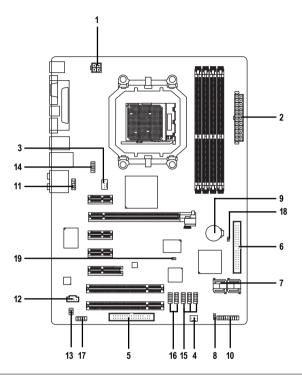


In addition to the default speakers settings, the $\bullet \sim \bullet$ audio jacks can be reconfigured to perform different functions via the audio software. Only microphones still MUST be connected to the default Mic in jack (\bullet). Refer to the instructions on setting up a 2/4/5.1/7.1-channel audio configuration in Chapter 5. "Configuring 2/4/5.1/7.1-Channel Audio."



- 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.

1-8 Internal Connectors



1)	ATX_12V	11)	F_AUDIO
2)	ATX (Power Connector)	12)	CD_IN
3)	CPU_FAN	13)	SPDIF_IO
4)	SYS_FAN	14)	TV
5)	FDD	15)	F_USB1 / F_USB2 / F_USB3
6)	IDE	16)	F1_1394 / F2_1394
7)	SATAII0 / 1 / 2 / 3	17)	COM
8)	PWR_LED	18)	CLR_CMOS
9)	BATTERY	19)	CI
10)	F_PANEL		



Read the following guidelines before connecting external devices:

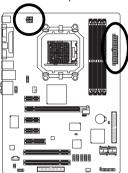
- · First make sure your devices are compliant with the connectors you wish to connect.
- Before installing the devices, be sure to turn off the devices and your computer. Unplug the
 power cord from the power outlet to prevent damage to the devices.
- After installing the device and before turning on the computer, make sure the device cable
 has been securely attached to the connector on the motherboard.

1/2) ATX_12V_2X/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.

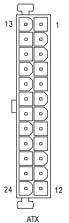


- To meet expansion requirements, it is recommended that a power supply that can withstand high power consumption be used (400W or greater). If a power supply is used that does not provide the required power, the result can lead to an unstable or unbootable system.
- The main power connector is compatible 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.





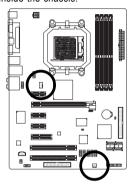
А٦	ATX_12V:				
	Pin No.	Definition			
	1	GND			
	2	GND			
	3	+12V			
	4	+12V			



AIX:			
Pin No.	Definition	Pin No.	Definition
1	3.3V	13	3.3V
2	3.3V	14	-12V
3	GND	15	GND
4	+5V	16	PS_ON(soft On/Off)
5	GND	17	GND
6	+5V	18	GND
7	GND	19	GND
8	Power Good	20	-5V
9	5V SB(stand by +5V)	21	+5V
10	+12V	22	+5V
11	+12V (Only for 2x12-pin ATX)	23	+5V (Only for 2x12-pin ATX)
12	3.3V (Only for 2x12-pin ATX)	24	GND (Only for 2x12-pin ATX

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). Each fan header supplies a +12V power voltage and possesses a foolproof insertion design. When connecting a fan cable, be sure to connect it in the correct orientation. Most fans are designed with color-coded power connector wires. A red power connector wire indicates a positive connection and requires a +12V voltage. 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.







CPU_FAN:

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

SYS_FAN:

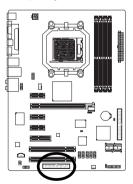
Pin No.	Definition
1	GND
2	+12V
3	Sense

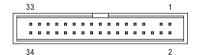


- Be sure to connect fan cables to the fan headers to prevent your CPU and system from overheating. Overheating may result in damage to the CPU or the system may hang.
- These fan headers are not configuration jumper blocks. Do not place a jumper cap on the headers.

5) FDD (Floppy Disk Drive Connector)

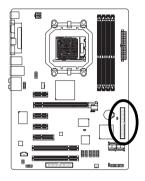
This connector is used to connect a floppy disk drive. The types of floppy disk drives supported are: 360 KB, 720 KB, 1.2 MB, 1.44 MB, and 2.88 MB. Before connecting a floppy disk drive, locate the foolproof groove on the connector.





6) IDE (IDE Connector)

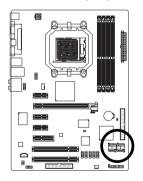
The IDE connector supports up to two IDE devices such as hard drives and optical drives. Before attaching the IDE cable, locate the foolproof groove on the connector. If you wish to connect two IDE devices, remember to set the jumpers and the cabling according to the role of the IDE devices (for example, master or slave). (For information about configuring master/slave settings for the IDE devices, read the instructions from the device manufacturers.)

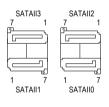




7) SATAII0/1/2/3 (SATA 3Gb/s Connectors)

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 AMD SB600 controller supports RAID 0, RAID 1, and RAID 10. Refer to Chapter 5, "Configuring SATA Hard Drive(s)," for instructions on configuring a RAID array.





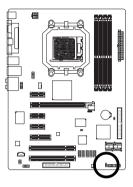
Definition
GND
TXP
TXN
GND
RXN
RXP
GND



- A RAID 0 or RAID 1 configuration requires at least two hard drives. If more than two hard drives are to be used, the total number of hard drives must be an even number.
- A RAID 10 configuration requires at least four hard drives and the total number of hard drives must be an even number.

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).



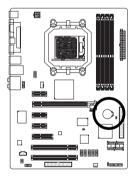


Pin No.	Definition
1	MPD+
2	MPD-
3	MPD-

System Status	LED
•	On
	÷
S1	Blinking
S3/S4/S5	Off
	System Status S0 S1 S3/S4/S5

9) 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:

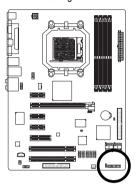
- 1. Turn off your computer and unplug the power cord.
- Gently remove the battery from the battery holder and wait for one minute.(Or use a metal object like a screwdriver to touch the positive and negative terminals of the battery holder, making them short for 5 seconds.)
- 3. Replace the battery.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

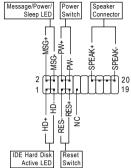


- Always turn off your computer and unplug the power cord before replacing the battery.
- Replace the battery with an equivalent one. Danger of explosion if the battery is replaced with an incorrect model.
- Contact the place of purchase or local dealer if you are not able to replace the battery by yourself 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.





• MSG (Message/Power/Sleep LED):

System Status	LED
S0	On
S1	Blinking
S3/S4/S5	Off

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):

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):

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 (IDE Hard Drive Activity LED)
 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):
 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:

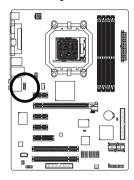
No connection



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

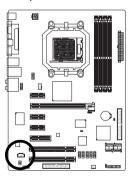
Pin No.	Definition
1	MIC
2	GND
3	MIC Power
4	NC
5	Line Out (R)
6	NC
7	NC
8	No Pin
9	Line Out (L)
10	NC



- 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 functioninality via the audio software in Chapter 5, "Configuring 2/4/5.1/7.1-Channel Audio."
- When using an AC'97 front panel audio module, you can use either the front or the back panel audio connectors, but not both at the same time.
- 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) CD_IN (CD In Connector)

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

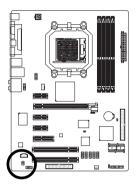




Pin No.	Definition
1	CD-L
2	GND
3	GND
4	CD-R

13) SPDIF_IO (S/PDIF In/Out Header, Red)

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

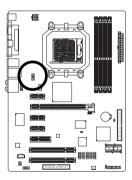




Pin No.	Definition
1	Power
2	No Pin
3	SPDIF
4	SPDIFI
5	GND
6	GND

14) TV (TV Output Header)

Use this header to connect a TV Out bracket to your computer for output of video signals. To connect the TV Out bracket, check the pin assignments carefully and install it correctly. Incorrect connection between the cable and connector will make the device unable to work or even damage it. Refer to Chapter 5, "Installing the TV Out Bracket," for installation instructions.

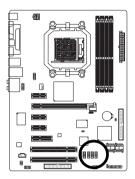




Pin No.	Definition
1	Υ
2	GND
3	С
4	GND
5	COMP
6	GND
7	GND
8	GND
9	No Pin
10	GND

15) F_USB1/F_USB2/F_USB3 (USB Headers, Yellow)

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.





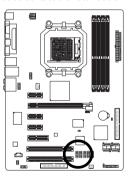
Pin No.	Definition
1	Power (5V)
2	Power (5V)
3	USB DX-
4	USB DY-
5	USB DX+
6	USB DY+
7	GND
8	GND
9	No Pin
10	NC



- 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) F1_1394/F2_1394 (IEEE 1394a Headers, Gray)

The headers conform to IEEE 1394a specification. Each IEEE 1394a header can provide one IEEE 1394a port via an optional IEEE 1394a bracket. For purchasing the optional IEEE 1394a bracket, please contact the local dealer.





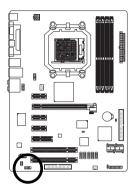
Definition
TPA+
TPA-
GND
GND
TPB+
TPB-
Power (12V)
Power (12V)
No Pin
GND



- Do not plug the USB bracket cable into the IEEE 1394a header.
- Prior to installing the IEEE 1394a bracket, be sure to turn off your computer and unplug
 the power cord from the power outlet to prevent damage to the IEEE 1394a bracket.
- To connect an IEEE 1394a device, attach one end of the device cable to your computer and then attach the other end of the cable to the IEEE 1394a device. Ensure that the cable is securely connected.

17) COM (Serial Port Header)

The COM header can provide one serial port via an optional COM port cable. For purchasing the optional COM port cable, please contact the local dealer.

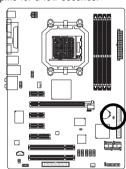




D: 11	D C 111
Pin No.	Definition
1	NDCD-
2	NSIN
3	NSOUT
4	NDTR-
5	GND
6	NDSR-
7	NRTS -
8	NCTS -
9	NRI-
10	No Pin

18) 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.





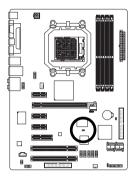
Short: Clear CMOS Values



- 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).

19) 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.





Pin No.	Definition
1	Signal
2	GND

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."

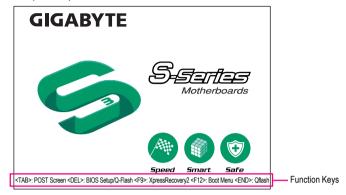


- Because BIOS flashing is potentially risky, if you do not encounter problems using the current version of BIOS, it is recommended that you not flash the BIOS. To flash the BIOS, do it with caution. Inadequate BIOS flashing may result in system malfunction.
- BIOS will emit a beep code during the POST. 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.)

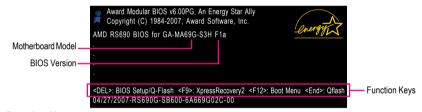
2-1 Startup Screen

The following screens may appear when the computer boots.

A. The LOGO Screen (Default)



B. The POST Screen



Function Keys:

<TAB> : POST Screen

Press the <Tab> key to show the BIOS POST screen. To show the BIOS POST screen at system startup, refer to the instructions on the **Full Screen LOGO Show** item on page 40.

: BIOS Setup/Q-Flash

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

<F9>: Xpress Recovery2

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 < \uparrow > or the down arrow key< \downarrow > 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: F1a)

	CMOS Setup Utility-Copyright (C) 1984-2007 Award Software			
•	Standard CMOS Features	Load Fail-Safe Defaults		
→	Advanced BIOS Features	Load Optimized Defaults		
→	Integrated Peripherals	Set Supervisor Password		
→	Power Management Setup	Set User Password		
→	PnP/PCI Configurations	Save & Exit Setup		
→	PC Health Status	Exit Without Saving		
▶	MB Intelligent Tweaker(M.I.T.)			
ESC	C: Quit	↑↓→←: Select Item		
F8:	Q-Flash	F10: Save & Exit Setup		
	Time, Date, Hard Disk Type			

BIOS Setup Program Function Kevs

· · · · · · · · · · · · · · · · · · ·	Move the selection bar to select an item
<enter></enter>	Execute command or enter the submenu
<esc></esc>	Main Menu: Exit the BIOS Setup program
	Submenus: Exit current submenu
<page up=""></page>	Increase the numeric value or make changes
<page down=""></page>	Decrease the numeric value or make changes
<f1></f1>	Show descriptions of the function keys
<f2></f2>	Move cursor to the Item Help block on the right (submenus only)
<f5></f5>	Restore the previous BIOS settings for the current submenus
<f6></f6>	Load the Fail-Safe BIOS default settings for the current submenus
<f7></f7>	Load the Optimized BIOS default settings for the current submenus
<f8></f8>	Access the Q-Flash utility
<f9></f9>	Display system information
<f10></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.

■ MB Intelligent Tweaker(M.I.T.)

Use this menu to configure the clock, frequency and voltages of your CPU, memory, 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.

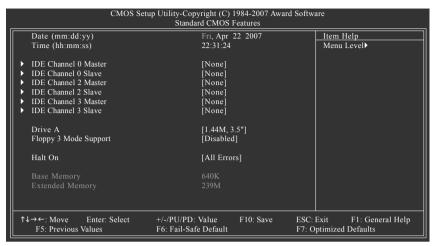
■ Save & Exit Setup

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



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.

→ IDF 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/Slave

▶ IDF Auto-Detection

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

▶ ▶ E	Extended IDE Drive	Configure your IDE/SATA devices 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 \textbf{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 selects 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 (default), 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.

(Default)

▶ All, But Keyboard The system boot will not stop for a keyboard error but stop for all other

errors.

▶ 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.

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

CMOS Setup Utility-Copyright (C) 1984-2007 Award Software Advanced BIOS Features			
AMD K8 Cool&Quiet control Hard Disk Boot Priority First Boot Device Second Boot Device Third Boot Device Password Check HDD S.M.A.R.T. Capability Away Mode Full Screen LOGO Show Init Display First X Surroundview Internal Graphics Mode Frame Buffer Size Current UMA Size	[Auto] [Press Enter] [Floppy] [Hard Disk] [CDROM] [Setup] [Disabled] [Disabled] [Enabled] [PCI Slot] Disabled [Auto] [Auto] 64 MB	Item Help Menu Level≯	
↑↓→←: Move Enter: Select F5: Previous Values		ESC: Exit F1: General Help F7: Optimized Defaults	

→ 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.

→ 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.

THOD 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)

→ Full Screen LOGO Show

Allows you to determine whether to display the GIGABYTE Logo at system startup. **Disabled** displays normal POST message. (Default: Enabled)

☐ 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. (Default)

▶ OnChipVGA Sets the onboard VGA as the first display.

▶ PEG Sets the PCI Express graphics card on the PCIE_16 slot as the first display.
 ▶ PEG1 Sets the PCI Express graphics card on the PCIE_4_1 slot as the first display.

→ Surroundview

Enables or disables the SurroundView function. This option is configurable only if an ATI graphics card is installed. (Default: Disabled)

□ Internal Graphics Mode

▶ Auto Outputs from the onboard VGA if no PCI Express VGA card is installed. Always

outputs from the PCI Express VGA card when a PCI Express VGA card is

installed. (Default)

▶ Disabled Always disables the onboard VGA, whether or not a PCI Express card is

installed.

→ 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: Auto (default), 32MB, 64MB, 128MB, 256MB, 512MB, 1024MB.

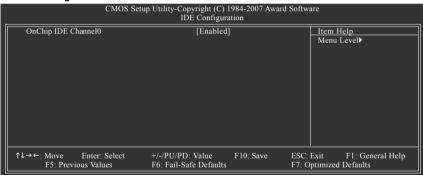
→ Current UMA Size

When Frame Buffer Size is set to Auto, this item will show the system memory size automatically allocated for the onboard graphics controller. If you manuanly change the Frame Buffer Size, this item will show the memory size you set.

2-5 Integrated Peripherals

CMOS Setup Utility-Copyright (C) 1984-2007 Award Software Integrated Peripherals			
▶ IDE Configuration OnChip SATA Controller OnChip SATA Controller OnChip SATA Type Onboard Audio Function Onboard 1394 Function Onboard LAN Boot ROM OnChip USB Controller USB EHCI Controller USB EHCI Controller USB Meyboard Support USB Mouse Support Legacy USB storage detect Onboard Serial Port Onboard Parallel Port Parallel Port Mode x ECP Mode Use DMA	[Press Enter] [Enabled] [Native IDE] [Auto] [Enabled] [Disabled] [Enabled] [Enabled] [Enabled] [Disabled] [Disabled] [Enabled] [Enabled] [Sabled] [Enabled] [Enabled] [Sabled]	Item Help Menu Level▶	
↑↓→←: Move Enter: Select F5: Previous Values	+/-/PU/PD: Value F10: Save F6: Fail-Safe Defaults	ESC: Exit F1: General Help F7: Optimized Defaults	

☞ IDE Configuration



→ OnChip IDE Channel0

Enables or disables the integrated IDE controller. (Default: Enabled)

OnChip SATA Controller

Enables or disables the integrated SATA controller. (Default: Enabled)

OnChip SATA Type

Configures the operating mode of the integrated SATA controller.

Native IDE Allows the SATA controller to operate in Native IDE mode. (Default)

Enable Native IDE mode if you wish to install operating systems that support

Native mode, e.g. Windows XP/2000.

▶ RAID Enables RAID for the SATA controller.

▶ Legacy IDE Allows the SATA controller to operate in Legacy IDE mode. In Legacy mode the

SATA controller uses dedicated IRQs that cannot be shared with other device. Set this option to **Legacy IDE** if you wish to install operating systems that do not

support Native mode, e.g. Windows 9X/ME

▶ SATA ->AHCI Configures the SATA controller to AHCI mode. Advanced Host Controller

Interface (AHCI) is an interface specification that allows the storage driver to enable advanced Serial ATA features such as Native Command Queuing and hot plug. For more information about AHCI, please visit Intel's website.

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

→ Onboard 1394 Function

Enables or disables the onboard IEEE 1394 function. (Default: Enabled)

Onboard LAN Function

Enables or disables the onboard LAN function. (Default: Enabled)

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)

→ OnChip USB Controller

Enables or disables the integrated USB 1.1 controller. (Default: Enabled)

Enables or disables the integrated USB 2.0 controller. (Default: Enabled)

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)

Onboard Serial Port

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

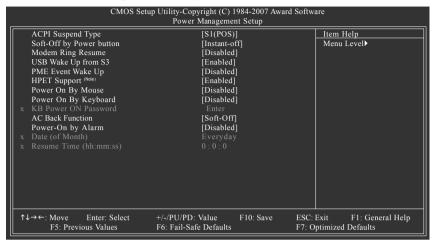
→ Parallel Port Mode

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.

2-6 Power Management Setup



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

(default). 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.

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.

Modem Ring Resume

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: Disabled)

→ USB Wake Up from S3

Allows the system to be awakened from ACPI S3 sleep state by a wake-up signal from the installed USB device. (Default: Enabled)

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

→ 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: Disabled)

→ HPET Support (Note)

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

→ 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
 ▶ Any KEY
 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.

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.

 \blacktriangleright 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.

▶ Memory The system returns to its last known awake state upon the return of the AC

power.

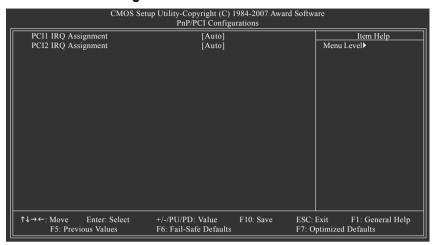
Power-On by Alarm

Determines whether to power on the system at a desired time. (Default: Disabled) If enabled, set the date and time as following:

- ▶ Date (of Month): Turn on the system at a specific time on each day or on a specific day in a month.
- ▶ Resume Time (hh: mm: ss): 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.

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

2-7 PnP/PCI Configurations



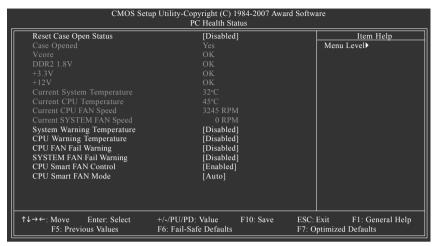
PCI1 IRQ Assignment

▶ 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.

PCI2 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



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

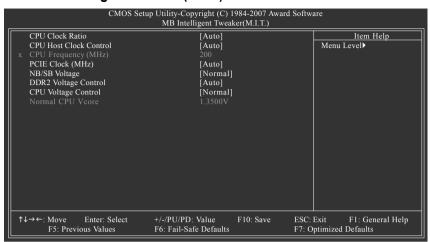
Specifies how to control CPU fan speed. This item is configurable only if CPU Smart FAN Control is set to Enabled.

▶ 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 MB Intelligent Tweaker(M.I.T.)





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

→ CPU Clock Ratio

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

CPU Host Clock Control

Enables or disables the control of CPU host clock. **Auto** (default) allows BIOS to automatically adjust the CPU host frequency. **Manual** allows the **CPU Frequency** (**Mhz**) item below to be configurable. Note: If your system fails to boot after overclocking, please wait for 20 seconds to allow for automated system reboot, or clear the CMOS values to reset the board to default values.

CPU Frequency (MHz)

Allows you to manually set the CPU host frequency.

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

→ PCIE Clock (MHz)

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

→ NB/SB Voltage

Allows you to set the voltage of the Northbridge and Southbridge.

- ▶ Normal Supplies the Northbridge/Sourthbridge voltage as required. (Default)
- ▶ +0.025V~+0.200V Increases the Northbridge/Sourthbridge voltage by 0.025V to 0.200V.

→ DDR2 Voltage Control

Allows you to to set memory voltage.

▶ Normal Supplies the memory voltage as required. (Default)

 \rightarrow +0.05V ~ +0.60V Increases memory voltage by 0.05V to 0.60V.

CPU Voltage Control

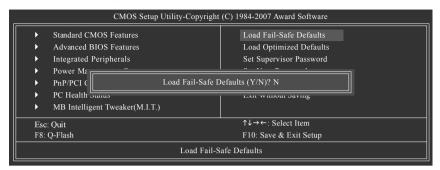
Allows you to set the CPU voltage. **Normal** sets the CPU voltage as required. The adjustable range is dependent on the CPU being installed. (Default: Normal)

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

→ Normal CPU Vcore

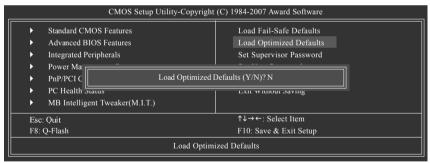
Displays the normal operating voltage of your CPU.

2-10 Load Fail-Safe Defaults



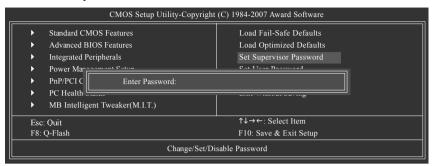
Press <Enter> on this item and then press the <Y> key to load the safest BIOS default settings. In case system instability occurs, you may try to load Fail-Safe defaults, which are the safest and most stable BIOS settings for the motherboard.

2-11 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.

2-12 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.

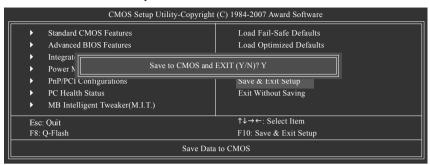
When the **Password Check** item is set to **System**, you must enter the supervisor password (or user password) at system startup and when entering BIOS Setup.

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.

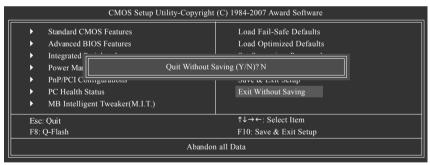
To clear the password, press <Enter> on the password item and when requested for the password, press <Enter> again. The message "PASSWORD DISABLED" will appear, indicating the password has been cancelled.

2-13 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.

2-14 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.

-		
<u> </u>	·	·

Chapter 3 Drivers Installation



- Before installing the drivers, first install the operating system. (The following instructions use Windows XP as the example operating system.)
- After installing the operating system, insert the motherboard driver disk into your optional 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

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

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

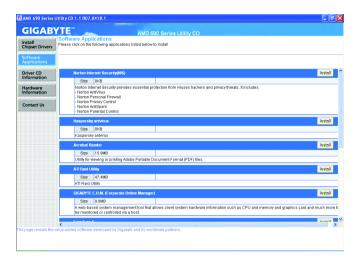




- Some device drivers will restart your system automatically during the driver installation.
 After the system restart, Xpress Install will continue to install other drivers.
- After the drivers are installed, follow the onscreen instructions to restart your system. You
 can install other applications included in the 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 Software Applications

This page displays all the tools and applications that GIGABYTE develops and some free software. You may press the **Install** button following an item to install it.



3-3 Driver CD Information

This page provides information about the drivers, applications and tools in this driver disk.



3-4 Hardware Information

This page provides information about the hardware devices on this motherboard.



3-5 Contact Us

Check the contacts information of the GIGABYTE headquarter in Taiwan and the overseas branch offices on the last page of this manual.



Chapter 4 Unique Features

4-1 Xpress Recovery2



Xpress Recovery2 is an 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:

- Intel® x86 platform
- · At least 64 MB of system memory
- VESA compatible graphics card
- · Windows® 2000 with SP3 or later; Windows® XP with SP1 or later



- 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.

"*" 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.

Installation and Configuration

(The following procedure uses Windows XP as the example operating system.)

A. Installing Windows XP and Partitioning the Hard Drive

- 1. Set CD-ROM drive as the first boot device under "Advanced BIOS Features" in the BIOS Setup program. Save the changes and exit.
- 2. When partitioning your hard drive (Figure 1), make sure to leave unallocated space for Xpress Recovery2 (10 GB or more is recommended; actual size requirements vary, depending on the amount of data) (Figure 2).

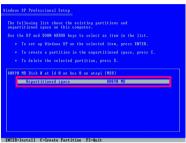




Figure 1

Figure 2

3. Select a file system (for example, NTFS) and begin the installation of the operating system (Figure 3).

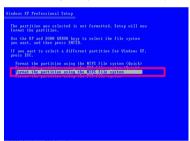


Figure 3

4. After the operating system is installed, right-click the My Computer icon on your desktop and select Manage (Figure 4). Go to Computer Management to check disk allocation. Xpress Recovery2 will save the backup file to the unallocated space (black stripe along the top)(Figure 5). Please note that if there is no enough unallocated space, Xpress Recovery2 cannot save the backup file.



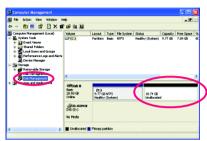


Figure 4

Figure 5

5. If your hard drive is not properly partitioned before you install the operating system, you may create new partitions using free space on your hard drive (Figure 6, 7). However, if **Disk Management** shows the hard drive only contains the System partition without any unallocated space, you will not be able to create new partitions or use Xpress Recovery2. If this occurs, reinstall the operating system and re-partition your hard drive.



Figure 6

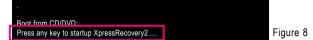


Figure 7

In the New Partition Wizard, you MUST select **Primary partition**. This will reserve unallocated space for Xpress Recovery2 to use.

B. Accessing Xpress Recovery2

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
(Figure 8), press any key to enter Xpress Recovery2.



 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 (Figure 9).



Figure 9

C. Using the Backup Function in Xpress Recovery2

- 1. Select **BACKUP** to start backing up your hard drive data (Figure 10).
- Xpress Recovery2 will then begin to search the first physical hard drive as the target drive and detect whether this hard drive contains the Windows operating system. When the Windows operating system is detected, Xpress Recovery2 will begin the backup process (Figure 11).



Figure 10



Figure 11

3. When finished, go to Disk Management to check disk allocation.



Xpress Recovery2 will automatically create a new partition to store the backup image file.

Figure 12

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 (Figure 13, 14).





13

E. Removing the Backup

- 1. If you wish to remove the backup file, select **REMOVE** (Figure 15).
- 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 (Figure 16).



Figure 15

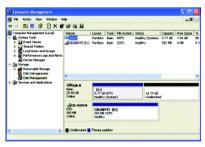


Figure 16

F. Exiting Xpress Recovery2

Select REBOOT to exit Xpress Recovery2.



Figure 17

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.



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:

- From GIGABYTE's website, download the latest compressed BIOS update file that matches your motherboard model.
- Extract the file and save the new BIOS file (e.g. MA69GS3.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.
- 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.





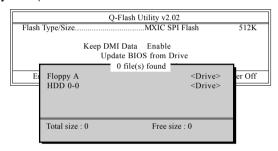
Because BIOS flashing is potentially risky, please do it with caution. Inadequate BIOS flashing may result in system malfunction.

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:

- 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:

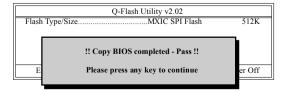
The process of the system reading the BIOS file from the floppy disk is displayed on the screen. When the message "Are you sure to update BIOS?" appears, press <Enter> to begin the BIOS update. The monitor will display the update process.



- 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.

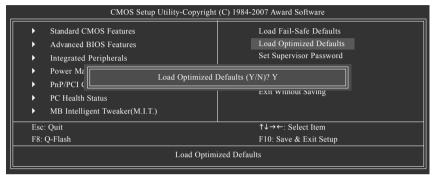


Step 4:

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.



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:

- In Windows, close all applications and TSR (Terminate and Stay Resident) programs. This helps prevent unexpected failures when performing a BIOS update.
- 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.
- GIGABYTE product warranty does not cover any BIOS damage or system failure resulting from an inadequate BIOS flashing.

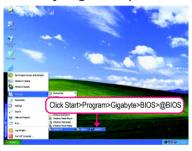
B. Installing and Using @BIOS:

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 **Internet Update** 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. MA69GS3. f1) obtained from the Internet or through other source.



Step 3

Press \mathbf{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.

4-3 EasyTune 5

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 EasyTune5, read or download the information on/from the Support\Motherboard\Utility page on our website.)

The EasyTune 5 Interface



Button Information Table

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



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.

4-4 Windows Vista ReadyBoost

Windows ReadyBoost allows you to use flash memory on a Windows Vista certified USB flash drive to boost your computer's performance. You may enable ReadyBoost and allocate part of your USB flash drive's memory to speed up your computer.

Follow the steps below to enable the ReadyBoost function:



Step 1:

Go to Computer. Right-click on the USB flash drive icon and choose Properties.



Step 2:

In the ReadyBoost tab, select Use this device. Under Space to reserve for system speed, set the amount of memory space to use for ReadyBoost using the slider or spin box. Click Apply and then OK to turn on ReadyBoost.



- The USB flash drive must have at least 256 MB of space.
- The recommended amount of memory to use for ReadyBoost acceleration is one to three times the amount of RAM installed in your computer.

Chapter 5 Appendix

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 1)
- D. Make a floppy disk containing the SATA RAID/AHCI driver. (Note 2)
- E. Install the SATA RAID/AHCI driver and operating system. (Note 2)

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/2000 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 1) Skip this step if you do not want to create RAID array on the SATA controller.

(Note 2) Required when the SATA controller is set to AHCI or RAID mode.

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 OnChip SATA Controller is enabled. To create RAID, set OnChip SATA Type under the Integrated Peripherals menu to RAID (Figure 1).

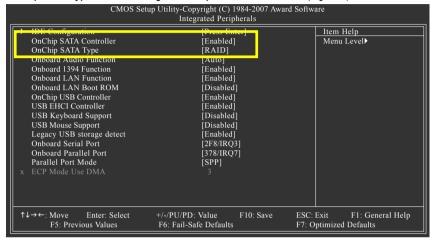


Figure 1

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. Skip this step if you do not want to create RAID.

Step 1:

After the POST memory test begins and before the operating system boot begins, look for a message which says "Press <Ctrl-F> to enter FastBuild (tm) Utility" (Figure 2). Hit the <Ctrl>+<F> key to enter the ATI RAID BIOS setup utility.

```
RAID BIOS Version 2.5.1540.32
(c) 2006 ATI Technology, Inc. All rights reserved.

No Array is defined..

Press <Ctrl-F> to enter FastBuild (tm) Utility...
```

Figure 2

Step 2:

Main Menu

This is the first option screen when you enter the ATI BIOS RAID Setup utility. (Figure 3).

To view the disk drives assigned to arrays, press <1> to enter the View Drive Assignments window.

To create an array, press <2> to enter the Define LD window.

To delete an array, press <3> to enter the *Delete LD* window.

To view controller settings, press <4> to enter the Controller Configuration window.

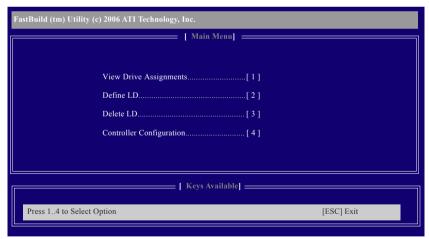


Figure 3

Create Arrays Manually

To create a new array, press <2> to enter the *Define LD* window (Figure 4). The Define LD selection from the Main Menu allows users to begin the process of manually defining the drive elements and RAID levels for one or multiple disk arrays attached to the AMD SB600 controller.



Figure 4

In Figure 4, use arrow keys [↑↓] to move to a logical disk set and press <Enter> to enter the RAID configuration menu (Figure 5).

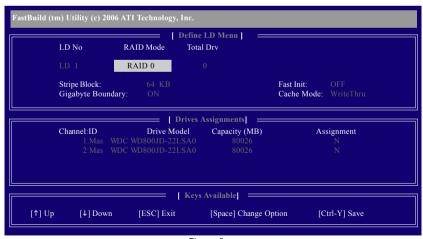


Figure 5

In the following procedure, we'll create RAID 0 as an example.

- 1. Under the RAID Mode section, press the Spacebar to select RAID 0.
- 2. Set the Stripe Block size. 64 KB is the default.
- 3. Under the Drives Assignments section, press the up or down arrow key to highlight a drive.
- Press the Spacebar or <Y>to change the Assignment option to Y. This action adds the drive to the disk array. The Total Dry section will show the number of disks assigned.
- 5. Press <Ctrl>+<Y> keys to save the information. The window below will appear.

Press Ctrl-Y to Modify Array Capacity or press any other key to use maximum capacity...

Figure 6

- Press <Ctrl>+<Y> to set the capacity of the RAID array or press other keys to set the array to its maximum capacity.
- After the creation is complete, the screen will return to Define LD Menu where you will see the newly-created array.
- Press <Esc> to return to Main Menu and press <Esc> again if you want to exit the RAID BIOS utility.

View Drive Assignments

The *View Drive Assignments* option in the Main Menu displays whether drives attached to the ATI SB600 controller are assigned to a disk array or are unassigned. Under the Assignment column, drives are labeled with their assigned disk array or shown as *Free* if unassigned.



Figure 7

Delete an Array

The Delete Array menu option allows for deletion of disk array assignments.



Deleting an existing disk array could result in loss of data. Record all array information including the array type, the disk members, and stripe block size in case you wish to undo a deletion.

- 1. To delete an array, press <3> in the Main Menu to enter the *Delete LD Menu*. Then highlight the array you wish to delete and press the <Delete> key or the <Alt>+<Delete> keys.
- 2. The View LD Definition Menu will appear (as shown in Figure 8) showing which drives are assigned to this array. Press <Ctrl>+<Y> if you are sure to delete the array or other keys to abort.
- When the array is deleted, the screen will return to Delete LD Menu. Press <Esc>to return to Main Menu.

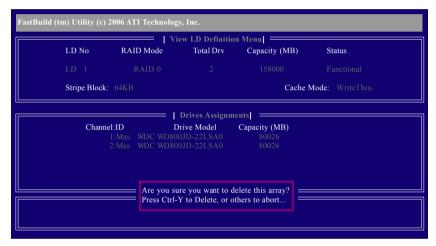


Figure 8

5-1-2 Making a SATA RAID/AHCI Driver Diskette (Required for AHCI and RAID Mode)

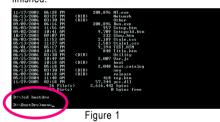
To successfully install operating system onto SATA hard drive(s) that is/are configured to RAID/AHCI mode, you need to install the SATA controller driver during the OS installation. Without the driver, the hard drive may not be recognized during the Windows setup process. First of all, copy the driver 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). Prepare a startup disk that has CD-ROM support and a blank formatted floppy disk.

A. Copying the driver for Windows XP

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

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, select (4) SB600 SATA for the AMD SB600 SATA controller. Your system will then automatically zip and transfer this driver file to the floppy disk. Press <0> to exit when finished.



äššiimain Ajsmend sain Ojexit Figure 2

(Note) 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.



Figure 3

B. Copying the driver for Windows Vista

Step 1: Insert the prepared startup disk and motherboard driver disk for Windows Vista 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 command to enter the folder where the RAID/AHCI driver is located. Press <Enter> after entering the command (Figure 4):

cd \chipset\rs690\vista\packages\drivers\sbdrv\sb6xx\raid\lh

(Note) The **LH** folder contains the RAID/AHCI driver for 32-bit Windows Vista; to install 64-bit Windows Vista, please change the directory to the **LH64A** folder.

Step 2: After entering the folder, type the following command to copy the driver to the location you wish to save the driver (e.g. A:) and press <Enter>

copy *.* a:

After copying the driver, in the location where you save the driver (e.g. A:), you should see the driver files similar to that in Figure 5.

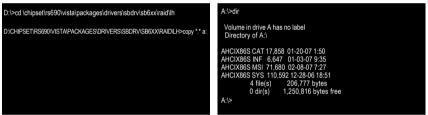


Figure 4 Figure 5

(Note) For users without a startup disk:

Use an alternative system and insert the motherboard driver disk. In your optical drive folder, go the following directory:

\Chipset\RS690\Vista\Packages\Drivers\SBDrv\SB6xx\RAID\LH (Figure 6).

Copy all the files in the folder to the location you want (e.g. floppy disk).



Figure 6

5-1-3 Installing the SATA RAID/AHCI Driver and Operating System

Now that you have prepared the SATA RAID/AHCI driver diskette and configured the required BIOS settings, you are ready to install Windows Vista/XP/2000 onto your hard drive(s). The following is an example of Windows XP and Vista installation.

A. Installing Windows XP

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). After pressing <F6>, there will be a few moments of some files being loaded before you see the next screen.



Figure 1

Step 2:

When a screen similar to that below appears, insert the floppy disk containing the SATA RAID/AHCI driver and press <S> (Figure 2).

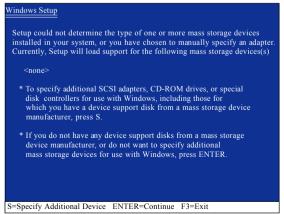


Figure 2

Step 3:

When Setup correctly recognizes the AMD SB600 SATA RAID/AHCI driver in the floppy disk, a controller menu similar to Figure 3 below will appear. Use the arrow keys to select ATI AHCI Compatible RAID Controller-x86 platform and press <Enter>.



Figure 3



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

When the screen as shown below appears, press <Enter> to continue the driver installation from the floppy disk. The driver installation will be finished in about one minute.

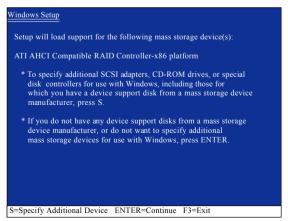


Figure 4

Step 4:

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

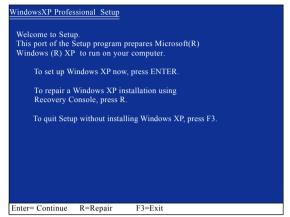


Figure 5

B. Installing Windows Vista

Step 1:

Restart your system to boot from the Windows Vista setup disk and perform standard OS installation steps. When a screen similar to that below appears (RAID or AHCI hard drive(s) will not be detected at this stage), select **Loading Drivers**. (Figure 6).

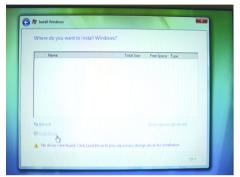


Figure 6

Step 2: Specify the location where the driver is saved, such as your floppy disk (Figure 7).



Figure 7

Step 3: Select the ATI AHCI Compatible RAID Controller driver and press Next. (Figure 8)

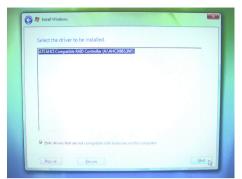


Figure 8

Step 4:

After the driver is loaded, the screen will show the RAID or AHCI hard drive(s). Select the location where you want to install the operating system and then press **Next** to continue the OS installation (Figure 9).

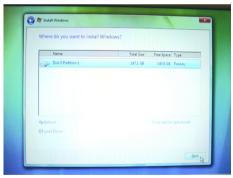


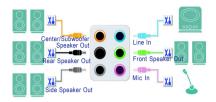
Figure 9

5-2 Configuring Audio Input and Output

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

The motherboard provides six audio jacks on the back panel which support 2/4/5.1/7.1-channel audio. 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.
- If your front panel audio supports Intel HD Audio standard, you can have both the front and back panel front audio connectors active simultaneously.

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.

A. Configuring Speakers:

(The following instructions use Windows XP as the example operating system.)

Step 1:

After installing the audio driver, the **Audio Manager** icon will appear in your system tray.

Double-click the icon to access the Audio Control Panel.







Before installing the audio driver, make sure the "Microsoft UAA Bus driver for High Defintion Audio" has been installed from the motherboard driver disk and your operating system has been updated with the latest Service Pack for Windows.

(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.

Step 2:

Click the Audio I/O tab. In the speaker list on the left, select 2CH Speaker, 4CH Speaker, 6CH Speaker, or 8CH Speaker according to the type of speaker configuration you wish to set up.



Step 3:

Everytime you connect an audio device to an audio jack, the **Connected device** box appears. Select the device according to the type of device you connect. Then click **OK** to complete the configuration.



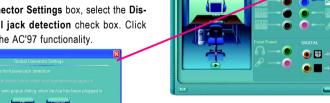
B. Configuring Sound Effect:

You may configure an audio environment on the **Sound Effect** tab.



C. Configuring AC'97 Audio:

If you want to connect an AC'97 front panel audio module, click the tool icon on the **Audio I/O** tab On the **Global Connector Settings** box, select the **Disable front panel jack detection** check box. Click **OK** to activiate the AC'97 functionality.

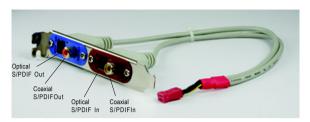




When using an AC'97 front panel audio module, you can only have audio signals present on either the front or the back panel audio connections, but not both at the same time.

5-2-2 Installing the S/PDIF In and Out Cable (Optional)

The S/PDIF in and out cable provides S/PDIF in and S/PDIF out functionalities.



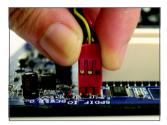
S/PDIF in:

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:



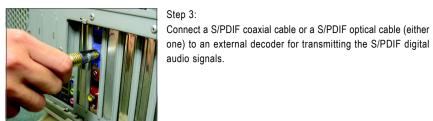
Step 1:

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.

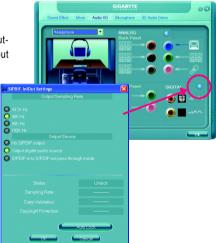


S/PDIF Coaxial Cable

S/PDIF Optical Cable

B. Configuring S/PDIF out:

Click the tool icon in the **DIGITAL** section. In the **S/PDIF In/Out Settings** dialog box, select an output sampling rate and select (or disable) the output source. Click **OK** to complete the configuration.

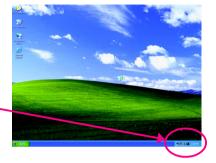


5-2-3 Configuring Microphone Recording

Step 1:

After installing the audio driver, the Audio Manager icon will appear in your system tray. Double-click the icon to access the Audio Control Panel





Step 2:

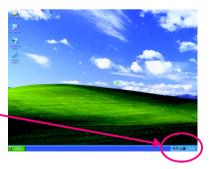
Connect your microphone to the Mic in jack (pink) on the back panel or the Line in jack on the front panel. Then configure the jack for microphone functionality.

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



Step 3:
Locate the **Volume** icon in your system tray and click it to open the volume control panel

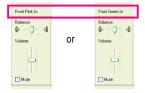




Step 4:

To hear the sound being recorded during the recording process when using the microphone function on the front panel, do not select the **Mute** check box under **Front Pink In** or **Front Green In** in **Master Volume**. It is recommended that you set the volume at a middle level.

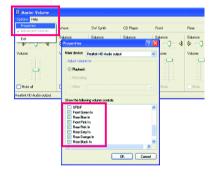
To hear the sound being recorded during the recording process when using the microphone function on the back panel, do not select the **Mute** check box under **Rear Pink In** in **Master Volume**. It is recommended that you set the volume at its middle level.





(Note)

If you cannot find the volume control options you need in **Master Volume**, go to the **Options** menu and then choose **Properties**. Select the volume control options you wish to show and click **OK** to complete.



Step 5:

Next, while in Master Volume, go to Options and click Properties. In the Mixer device list, select Realtek HD Audio Input. Then set the recording sound level properly. Do NOT mute the recording sound, or you will not hear any sound when playing back the recording you just made.



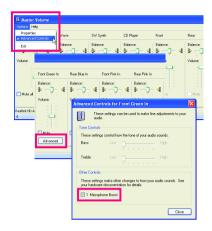
Select Realtek HD Audio Input in the Mixer devie list



Recording Control

Step 6:

To raise the recording and playing sound for the microphone, go to **Options** in **Master Volume** and select **Advanced Controls**. Click the **Advanced** button under a volume control option (e.g. Front Green In, Front Pink In). In the **Other Controls** field, select the **1 Microphone Boost** check box.



Step 7:

After completion, click **Start**, point to **Programs**, point to **Accessories**, point to **Entertainment**, and then click **Sound Recorder** to begin the sound recording.



5-2-4 Using the Sound Recorder

Recording the Sound:

- 1. Make sure you have connected the audio input device (e.g. microphone) to the computer.
- 2. On the File menu, choose New.
- 3. To record a sound file, click the **Recording** button

Playing the Sound:

- 1. On the File menu, choose Open.
- In the Open dialog box, select the sound (.wav) file you wish to play.
- 3. To play a sound file, click the **Play** button ...
- 5. You may use the Fast Forward button to move to the beginning of a file or the Fast Backward button to the end

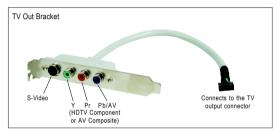


5-3 Installing the TV Out Bracket (Optional)

A TV output header is available on the motherboard (refer to page 29). Via the use of the TV out bracket, you can connect a TV to your computer for output of video signals.



- Turn off your system and the power switch on the power supply before installing or removing the TV out bracket to prevent damage to hardware.
- Securely insert the cable from the TV out bracket into the corresponding motherboard connector (TV) when installing.
- Simultaneous output for D-Sub and TV (S-Video, AV composite, or YPbPr component) is not supported. By default, when the onboard D-Sub and TV are connected at the same time, the D-Sub monior will be the primary display. To change the primary display to your TV, refer to the instructions on the next page.



Follow the steps below to install the TV out bracket:



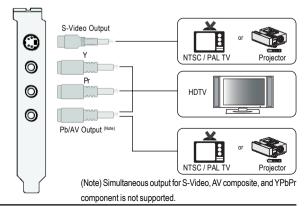
Step 1: Secure the TV out bracket to the chassis back panel with a screw.



Step 2: Connect TV out bracket connector to the motherboard TV output header.

Step 3: Refer to the figures below to connect your video device to the corresponding ports on the TV out bracket.





Setting Your TV as the Primary Display Through ATI Catalyst Control Center

Step 1:

Make sure the ATI VGA driver has been installed.



Step 2:

After the installation, you will find an ATI Catalyst Control Center icon in your system tray. Right-click the icon to select Catalyst Control Center. Or you can right-click on the desktop to select ATI CATALYST(R) Control Center.



Step 3:

The Basic View is the default view when Catalyst Control Center is launched for the first time. This interface provides access to the basic settings and advanced features of your ATI graphics products. You can switch between Basic View and Advanced View at any time. Please select Basic [Easy Setup Wizards and Quick Settings], then click Next.



Step 4:

Choose **Setup my display configuration** from the central list and click **Go**. The EasySetup Wizard will assist you in step-by-step configurations.



Step 5:

Select Standard TV, then click Go.



Step 6:

Depending on your requirements, select the type of content that you will view on your TV. Then click **Next**.



Step 7:

Accept or change the display resolution for your desktop area, then click **Finish** to apply your settings and return to the Easy Setup / Quick Settings page. The recommended settings for desktop viewing are preselected.



A. Dual Display Configurations:

This motherboard provides two ports for video output: D-Sub and HDMI. Via the use of the TV out bracket, the motherboard can support S-Video, AV composite and YPbPr component. The table below shows the supported dual display configurations.

Dual	Combination	Supported or Not
Display	D-Sub+HDMI	Yes
	D-Sub+TV	No
	HDMI+TV	Yes

(Note: TV can be S-Video, AV composite, or YPbPr component)

B. SURROUNDVIEW™:

ATI[™] SURROUNDVIEW[™] allows the onboard graphics to be active when one or two external graphics cards are installed, supporting up to six monitors to display at the same time. For example, 1 onboard D-Sub connection + 1 onboard HDMI connection + 4 external DVI-I connections from 2 ATI graphics cards.

C. Playback of HD DVD and Blu-ray Discs:

In order to get better playback quality, when playing the HD DVD or Blu-ray discs, refer to the recommended system requirements (or better) below.

- CPU: AMD Athlon™ 64 X2 Dual-Core processor (4200+)
- Memory: Two 1 GB DDR2 800 memory modules with dual channel mode enabled
- BIOS Setup: At least 256 MB of Frame Buffer Size (refer to Chapter 2, "BIOS Setup,"
 "Advanced BIOS Features," for more information)
- Playback software: CyberLink PowerDVD 7.3 (Note: Hardware Acceleration is not supported)

File Format	Suitable Resolution	
	Windows XP	Windows Vista
Non-protected contents	1920 x 1080p	1920 x 1080p
HD-DVD (MPEG2, VC1)	1920 x 1080i	1280 x 720p
Blu-ray (MPEG 2)	1280 x 720p	1280 x 720p

5-4 Configuring Your HDTV LCD TV's Resolution

After connecting an HDTV LCD TV to your computer, follow the steps below to configure your HDTV's resolution.

Configuring the Resolution:

After installing the ATI graphics driver from the motherboard driver disk, select the appropriate resolution.

Step 1:

You will find an ATI Catalyst Control Center icon in your system tray. Right-click the icon to select Catalyst Control Center. Or you can right-click on the desktop to select ATI CATALYST(R) Control Center.



Step 2:

Select **Advanced** view and click **Next**. Follow the on-screen instructions to enter CATALYST™ Control Center.



Step 3:

In the **Display Manager** menu, select the resolution that suits your HDTV. For example, for 1080p, select 1920x 1080 and set refresh rate at 60 Hz. And press **OK**.

HDTV Format	Resolution	Refresh Rate
1080p	1920 x1080	60 Hz
1080i	1920 x1080	30 Hz
720p	1280 x720	60 Hz

(Note): HDMI supports up to 1080p resolution; YPbpr component supports up to 1080i resolution.

If you cannot find the resolution you need in the Desktop area list in the Display Manager menu, go to DTV (HDMI) 2 > HDTV Support. In the HDTV modes supported by this display area, select the check box of a format for your HDTV and click OK to add it into the Display Manager menu.





5-5 Troubleshooting

5-5-1 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.
- 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.
- 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

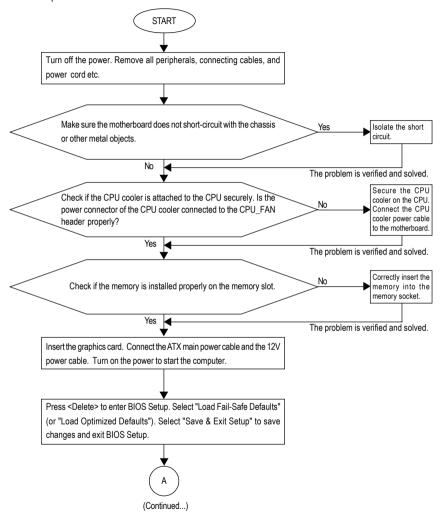
1 long, 3 short: Keyboard error 1 long, 9 short: BIOS ROM error

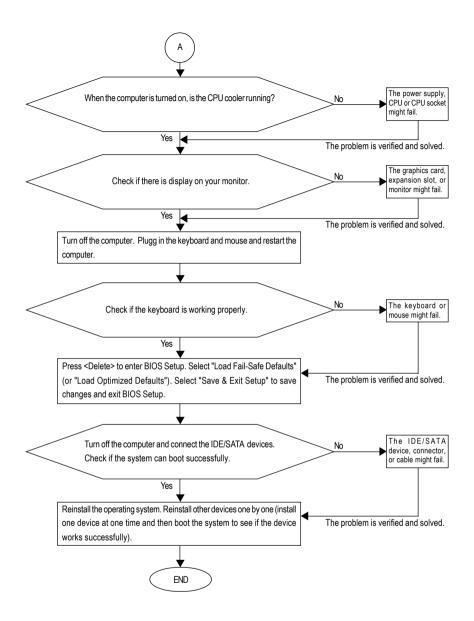
Continuous long beeps: Graphics card not inserted properly

Continuous short beeps: Power error

5-5-2 Troubleshooting Procedure

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







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.



• Taiwan (Headquarters)

GIGA-BYTE TECHNOLOGY CO., LTD.

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Taipei 231, Taiwan

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http://ggts.gigabyte.com.tw

WEB address (English): http://www.gigabyte.com.tw

WEB address (Chinese): http://www.gigabyte.tw

U.S.A.

G.B.T. INC.

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Correo: soporte@gigabyte-usa.com

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GIGA-BYTE SINGAPORE PTE. LTD.

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

Thailand

WEB address: http://th.giga-byte.com

Vietnam

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

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WEB address: http://www.gigabyte.com.sa

Australia

GIGABYTE TECHNOLOGY PTY, LTD.

WEB address: http://www.gigabyte.com.au

Germany

G.B.T. TECHNOLOGY TRADING GMBH WEB address: http://www.gigabyte.de

U.K.

G.B.T. TECH. CO., LTD.

WEB address: http://www.giga-byte.co.uk

The Netherlands

GIGA-BYTE TECHNOLOGY B.V. WEB address: http://www.giga-byte.nl

Sweden

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

France

GIGABYTE TECHNOLOGY FRANCE WEB address: http://www.gigabyte.fr

Italy

WEB address: http://www.giga-byte.it

Spain

GIGA-BYTE SPAIN

WEB address: http://www.giga-byte.es

Czech Republic

Representative Office Of GIGA-BYTE Technology Co., Ltd. in CZECH REPUBLIC

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

Turkey

 $\label{lem:conditional} \textbf{Representative Office Of GIGA-BYTE Technology Co., Ltd.}$

in TURKEY

WEB address: http://www.gigabyte.com.tr

Russia

Moscow Representative Office Of GIGA-BYTE Technology

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

Latvia

GIGA-BYTE Latvia

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

Poland

Office of GIGA-BYTE TECHNOLOGY Co., Ltd. in POLAND WEB address: http://www.gigabyte.pl

Ukraine

WEB address: http://www.giga-byte.com.ua

Romania

Representative Office Of GIGA-BYTE Technology Co., Ltd. in Romania

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

• GIGABYTE Global Service System



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

http://ggts.gigabyte.com.tw

Then select your language to enter the system.



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

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

有毒有害物质或元素(Hazardous Substances) 多溴二苯醚 部件名称(Parts) 铅(Pb) 汞(Hg) 镉(Cd) 多溴联苯 (Cr (VI)) (PBB) (PBDE) PCB板 PCB 结构件及风扇 0 × Mechanical parts and Fan 芯片及其他主动零件 0 × Chip and other Active components 连接器 × 0 Connectors 被动电子元器件 0 Passive Components 线材 0 0 0 Cables 焊接金属 Soldering metal 助焊剂,散热膏、标签及其他耗材

○:表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006标准规定的限量要求以下。 Indicates that this hazardous substance contained in all homogenous materials of this part is below the limit requirement SJ/T 11363-2006

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Flux, Solder Paste, Label and other Consumable Materials

※:表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006标准规定的限量要求。 Indicates that this hazardous substance contained in at least one of the homogenous materials of this part is above the limit requirement in SJ/T 11363-2006

对销售之日的所受售产品,本表显示我公司供应链的电子信息产品可能包含这些物质。注意:在所售产品中 可能会也可能不会含有所有所列的部件。

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.