GA-A75-DS3P

User's Manual

Rev. 1101

12ME-A75DS3P-1101R

Declaration of Conformity

è,
Manufacturer/Importer,

G.B.T. Technology Trading GMbH

Bullenkoppel 16, 22047 Hamburg, Germany

Declare that the product

Product Name: GA-A75-DS3P Motherboard

conforms with the essential requirements of the following directives:

\boxtimes	∑ 2004/108/EC EMC Directive:	
	☐ Conduction & Radiated Emissions:	EN55022:2006+A1:2007
		EN55024:1998+A1:2001+A2:2003
	□ Power-line harmonics:	EN61000-3-2:2006
	□ Power-line flicker:	EN61000-3-3:2008
\boxtimes		
	Safety:	EN60950-1:2006+A11:2009
⊴	2011/65/EII RoHS Directive	
	☐ Restriction of use of certain	This product does not contain any of the restricted
	substances in electronic equipment:	substances listed in Annex II, in concentrations
		and applications banned by the directive.

DECLARATION OF CONFORMITY



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

Address: 17358 Railroad Street

City of Industry, CA 91748

Phone/Fax No: (626) 854-9338/ (626) 854-9326

hereby declares that the product

Product Name: Motherboard

Model Number: GA-A75-DS3P

Conforms to the following specifications:

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

(a), Class B Digital Device

Supplementary Information:

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: <u>ERIC LU</u> including that may cause undesired operation.

Signature: Eric Lu

Date: Sept. 14, 2012

(Stamp)

(EC conformity marking)

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

Identifying Your Motherboard Revision

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

Example:

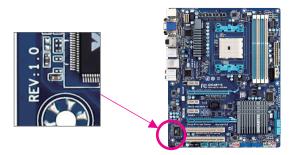


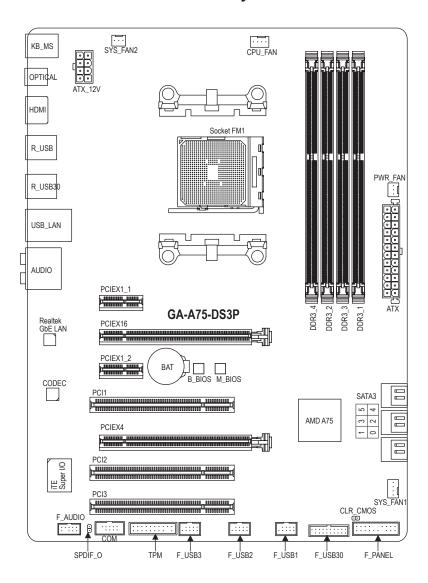
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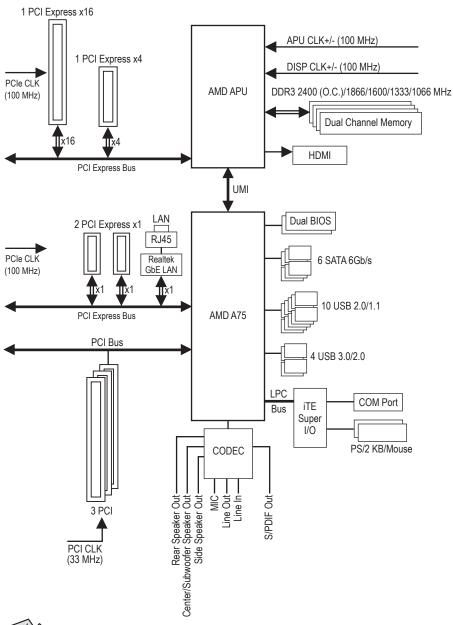
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Box	Contents
\checkmark	GA-A75-DS3P motherboard
\checkmark	Motherboard driver disk
\checkmark	User's Manual
\checkmark	Quick Installation Guide
	Two SATA cables
\checkmark	I/O Shield
	nox contents above are for reference only and the actual items shall depend on the product package you obtain.
Opt	ional Items
	2-port USB 2.0 bracket (Part No. 12CR1-1UB030-6*R)
	COM port cable (Part No. 12CF1-1CM001-3*R)
	eSATA bracket (Part No. 12CF1-3SATPW-4*R)
	3.5" Front Panel with 2 USB 3.0/2.0 ports (Part No. 12CR1-FPX582-0*R)
	HDMI-to-DVI adapter (Part No. 12CT2-HDMI01-1*R)

GA-A75-DS3P Motherboard Layout



GA-A75-DS3P Motherboard Block Diagram



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, make sure the chassis is suitable for the motherboard.
- 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, APU or memory. If you do not have an ESD wrist strap, keep your hands dry and first touch a metal object to eliminate static electricity.
- Prior to installing the motherboard, please have it on top of an antistatic pad or within an
 electrostatic shielding container.
- Before unplugging the power supply cable from the motherboard, make sure the power supply
 has been turned off.
- Before turning on the power, make sure the power supply voltage has been set according to the local voltage standard.
- Before using the product, please verify that all cables and power connectors of your hardware components are connected.
- To prevent damage to the motherboard, do not allow screws to come in contact with the motherboard circuit or its components.
- Make sure there are no leftover screws or metal components placed on the motherboard or within the computer casing.
- Do not place the computer system on an uneven surface.
- · Do not place the computer system in a high-temperature environment.
- Turning on the computer power during the installation process can lead to damage to system components as well as physical harm to the user.
- If you are uncertain about any installation steps or have a problem related to the use of the
 product, please consult a certified computer technician.

1-2 Product Specifications

APU	◆ FM1 Socket:
	- AMD A series processors/AMD E2 series processors
	- AMD Athlon™ II series processors/AMD Sempron™ series processors
	(Go to GIGABYTE's website for the latest APU support list.)
Chipset	◆ AMD A75
Memory	4 x 1.5V DDR3 DIMM sockets supporting up to 64 GB of system memory Due to Windows 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.
	Dual channel memory architecture
	 Support for DDR3 2400 (O.C.)/1866/1600/1333/1066 MHz memory modules * The 2133 MHz (or above) memory speed is supported only when one or two DIMMs are installed. It is not supported when four DIMMs are installed. (Dual channel memory
	mode must be enabled when installing two DIMMs.)
	 Support for Extreme Memory Profile (XMP) memory modules
	(Go to GIGABYTE's website for the latest supported memory speeds and memory
	modules.)
Onboard	◆ APU:
Graphics	 To use the onboard graphics, you must install an AMD APU with integrated graphics.
	- 1 x HDMl port, supporting a maximum resolution of 1920x1200
Audio	◆ Realtek ALC887 codec
	High Definition Audio
	◆ 2/4/5.1/7.1-channel
	Support for S/PDIF Out
₽ <u>LAN</u> LAN	Realtek GbE LAN chip (10/100/1000 Mbit)
Expansion Slots	1 x PCI Express x16 slot, running at x16 (PCIEX16) * For optimum performance, if only one PCI Express graphics card is to be installed, be sure to install it in the PCIEX16 slot.
	◆ 1 x PCI Express x16 slot, running at x4 (PCIEX4)
	◆ 2 x PCI Express x1 slots
	(All PCI Express slots conform to the PCI Express 2.0 standard.)
	◆ 3 x PCI slots
Multi-Graphics	◆ Support for AMD CrossFire™ technology
Technology	* The PCIEX16 slot operates at up to x4 mode when AMD CrossFire™ is enabled.
	 Support for AMD Dual Graphics technology Only A series APUs support AMD Dual Graphics.
Storage Interface	
Otorago interiace	- 6 x SATA 6Gb/s connectors supporting up to 6 SATA 6Gb/s devices
	- Support for RAID 0, RAID 1, RAID 10, and JBOD
USB	Chipset:
	- Up to 4 USB 3.0/2.0 ports (2 ports on the back panel, 2 ports available
	through the internal USB header)
	- Up to 10 USB 2.0/1.1 ports (4 ports on the back panel, 6 ports available
	through the internal USB headers)

Internal Connectors Back Panel Connectors	 1 x 24-pin ATX main power connector 1 x 8-pin ATX 12V power connector 6 x SATA 6Gb/s connectors 1 x APU fan header 2 x system fan headers 1 x power fan header 1 x front panel header 1 x front panel audio header 1 x S/PDIF Out header 1 x USB 3.0/2.0 header 3 x USB 2.0/1.1 headers 1 x serial port header 1 x Clear CMOS jumper 1 x Trusted Platform Module (TPM) header 1 x PS/2 keyboard port 1 x PS/2 mouse port 1 x HDMI port 1 x Optical S/PDIF Out connector 4 x USB 2.0/1.1 ports 2 x USB 3.0/2.0 ports 1 x RJ-45 port 6 x audio jacks (Center/Subwoofer Speaker Out/Rear Speaker Out/Side Speaker Out/I in a Put line Out Misresphane)
I/O Controller	Out/Line In/Line Out/Microphone)
I/O Controller	iTE I/O Controller chip
Hardware Monitor	 System voltage detection APU/System temperature detection APU/System/Power fan speed detection APU overheating warning APU/System/Power fan fail warning APU/System fan speed control Whether the APU/system fan speed control function is supported will depend on the APU/system cooler you install.
BIOS	 2 x 32 Mbit flash Use of licensed AWARD BIOS Support for DualBIOS™ PnP 1.0a, DMI 2.0, SM BIOS 2.4, ACPI 1.0b
Unique Features	 Support for @BIOS Support for Q-Flash Support for Xpress BIOS Rescue Support for Download Center Support for Xpress Install Support for Xpress Recovery2 Support for EasyTune Available functions in EasyTune may differ by motherboard model.

Unique Features	*	Support for Smart Recovery 2
	•	Support for Auto Green
	٠	Support for ON/OFF Charge
	•	Support for 3TB+ Unlock
	•	Support for Q-Share
Bundled Software	•	Norton Internet Security (OEM version)
Operating System	*	Support for Microsoft® Windows 8/7/Vista/XP
Form Factor	•	ATX Form Factor; 30.5cm x 22.5cm

- * GIGABYTE reserves the right to make any changes to the product specifications and product-related information without prior notice.
- * Please visit GIGABYTE's website to check the supported operating system(s) for the software listed in the "Unique Features" and "Bundled Software" columns.

1-3 Installing the APU and APU Cooler

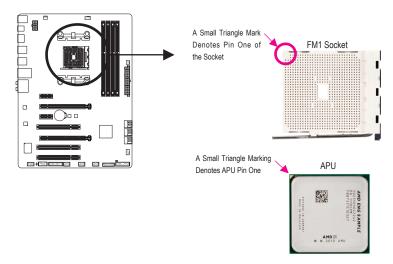


Read the following guidelines before you begin to install the APU:

- Make sure that the motherboard supports the APU.
 (Go to GIGABYTE's website for the latest APU support list.)
- Always turn off the computer and unplug the power cord from the power outlet before installing the APU to prevent hardware damage.
- · Locate the pin one of the APU. The APU cannot be inserted if oriented incorrectly.
- · Apply an even and thin layer of thermal grease on the surface of the APU.
- Do not turn on the computer if the APU cooler is not installed, otherwise overheating and damage
 of the APU may occur.
- Set the APU host frequency in accordance with the APU 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 APU, graphics
 card, memory, hard drive, etc.

1-3-1 Installing the APU

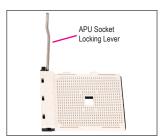
A. Locate the pin one (denoted by a small triangle) of the APU socket and the APU.



B. Follow the steps below to correctly install the APU into the motherboard APU socket.



- Before installing the APU, make sure to turn off the computer and unplug the power cord from the
 power outlet to prevent damage to the APU.
- Do not force the APU into the APU socket. The APU cannot fit in if oriented incorrectly. Adjust the APU orientation if this occurs.



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



Step 2:
Align the APU pin one (small triangle marking) with the triangle mark on the APU socket and gently insert the APU into the socket. Make sure that the APU pins fit perfectly into their holes. Once the APU is positioned into its socket, place one finger down on the middle of the APU, lowering the locking lever and latching it into the fully locked position.

1-3-2 Installing the APU Cooler

Follow the steps below to correctly install the APU cooler on the APU. (The following procedure uses the GIGABYTE cooler as the example.)



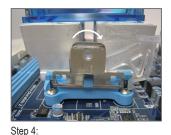
Step 1: Apply an even and thin layer of thermal grease on the surface of the installed APU.



Step 2: Place the APU cooler on the APU.



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



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



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



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

1-4 Installing the Memory



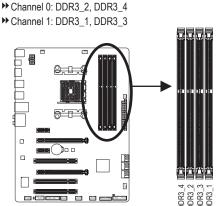
Read the following guidelines before you begin to install the memory:

- Make sure that the motherboard supports the memory. It is recommended that memory of the same capacity, brand, speed, and chips be used.
 - (Go to GIGABYTE's website for the latest supported memory speeds and memory modules.)
- 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 DDR3 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 DDR3 memory sockets are divided into two channels and each channel has two memory sockets as following:



▶ Dual Channel Memory Configurations Table

	DDR3_4	DDR3_2	DDR3_3	DDR3_1
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)

Due to APU limitations, read the following guidelines before installing the memory in Dual Channel mode.

- 1. Dual Channel mode cannot be enabled if only one DDR3 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 DDR3
 sockets. For optimum performance, when enabling Dual Channel mode with two memory modules,
 we recommend that you install them in the DDR3_1 and DDR3_2 sockets.



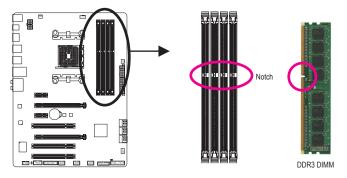
The 2133 MHz (or above) memory speed is supported only when one or two DIMMs are installed. It is not supported when four DIMMs are installed. (Dual channel memory mode must be enabled when installing two DIMMs.)

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.

DDR3 and DDR2 DIMMs are not compatible to each other or DDR DIMMs. Be sure to install DDR3 DIMMs on this motherboard.



A DDR3 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:

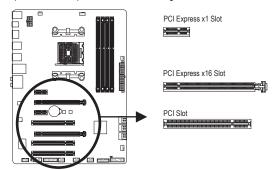
The clips at both ends of the socket will snap into place when the memory module is securely inserted.

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.

- 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 Graphics Card:



Installing a Graphics Card:

Gently push down on the top edge of the card until it is fully inserted into the PCI Express slot. Make sure the card is securely seated in the slot and does not rock.



Removing the Card:
 Gently push back on the lever on the slot and then lift the card straight out from the slot.

1-6 Setup of the AMD Dual Graphics Configuration

Combining the onboard GPU with a discrete graphics card, AMD's Dual Graphics technology can provide significantly advanced display performance for AMD platform. Read the following instructions on configuring a Dual Graphics system.

A. System Requirements

- AMD A series processor
- Windows 7 operating system
- An AMD Dual Graphics technology-supported motherboard (with the BIOS updated to the latest version) and correct driver (make sure the onboard graphics driver version is Rev. 8.881 or above)
- An AMD Radeon HD 6000 series graphics card that supports AMD Dual Graphics technology (for more details, please visit AMD's official website) and correct driver

B. Installing the Graphics Cards and Configuring BIOS Setup

Step 1:

Observe the steps in "1-5 Installing an Expansion Card" and install an AMD Dual Graphics technology-supported graphics card on the PCIEX16 slot. Plug the monitor cable into the graphics card or the motherboard internal graphic port and start up your computer.

Step 2:

Enter BIOS Setup to set the following items under the Advanced BIOS Features menu:

- Set Internal Graphics Mode to UMA.
- Set UMA Frame Buffer Size to 512MB or 1024MB.

Save the settings and exit BIOS Setup. Restart your computer.

C. Configuring the Graphics Driver

After installing the graphics card driver in the operating system, go to the AMD VISION Engine Control Center. Browse to Performance\
AMD Radeon™ Dual Graphics and ensure the Enable AMD Radeon
Dual Graphics check box is selected.

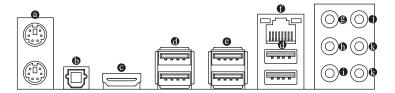


(Note) Make sure the drivers for the Chipset, onboard graphics, and external graphics card are properly installed.



Procedure and driver screen for enabling the AMD Dual Graphics technology may differ by graphics card and driver version. Refer to the manual that came with your graphics card for more information.

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.

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 port is HDCP compliant and supports Dolby True HD and DTS HD Master Audio formats. It also supports up to 192KHz/24bit 8-channel LPCM audio output. You can use this port to connect your HDMI-supported monitor. The maximum supported resolution is 1920x1200, but the actual resolutions supported are dependent on the monitor being used.



After installing the HDMI monitor, make sure to set the default sound playback device to HDMI. (The item name may differ depending on your operating system. The screenshot below is from Windows 7.)



In Windows 7, select Start>Control Panel>Hardware and Sound>Sound>Playback, set **Realtek HDMI Output - ATI HDMI Audio** to the default playback device.

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

- Processor: AMD A series/AMD E2 series APU
- Memory: Two 1 GB DDR3 1333 memory modules with dual channel mode enabled
- BIOS Setup: At least 256 MB of UMA Frame Buffer Size (refer to Chapter 2, "BIOS Setup," "Advanced BIOS Features," for more information)
- Playback software: CyberLink PowerDVD 10.0 or later (Note: Please ensure Hardware Acceleration is enabled. Whether Hardware Acceleration can be enabled for 3D Blu-ray discs is dependent on the APU being used.)
- HDCP compliant monitor(s)

USB 2.0/1.1 Port

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

USB 3.0/2.0 Port

The USB 3.0 port supports the USB 3.0 specification and is compatible to the USB 2.0/1.1 specification. Use this port for USB devices such as a 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.

Connection/ Speed LED Activity LED

I AN Port

 Connection/Speed LED:

 State
 Description

 Orange
 1 Gbps data rate

 Green
 100 Mbps data rate

 Off
 10 Mbps data rate

Activity LED:

State	Description
Blinking	Data transmission or receiving is occurring
Off	No data transmission or receiving is occurring

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.

Line Out Jack (Green)

The default line out jack. Use this audio jack for a headphone or 2-channel speaker. This jack can be used to connect front speakers in a 4/5.1/7.1-channel audio configuration.

Mic In Jack (Pink)

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

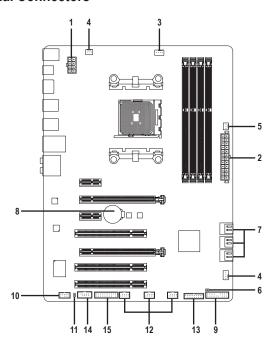


In addition to the default speakers settings, the \P audio jacks can be reconfigured to perform different functions via the audio software. Only microphones still MUST be connected to the default Mic in jack (\P). Refer to the instructions on setting up a 2/4/5.1/7.1-channel audio configuration in Chapter 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	9)	F_PANEL
2)	ATX	10)	F_AUDIO
3)	CPU_FAN	11)	SPDIF_O
4)	SYS_FAN1/SYS_FAN2	12)	F_USB1/F_USB2/F_USB3
5)	PWR_FAN	13)	F_USB30
6)	CLR_CMOS	14)	COM
7)	SATA3 0/1/2/3/4/5	15)	TPM
8)	BAT		



Read the following guidelines before connecting external devices:

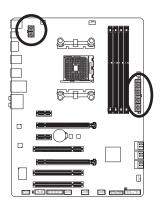
- First make sure your devices are compliant with the connectors you wish to connect.
- Before installing the devices, be sure to turn off the devices and your computer. Unplug the power cord from the power outlet to prevent damage to the devices.
- After installing the device and before turning on the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

1/2) ATX_12V/ATX (2x4 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.

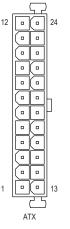


To meet expansion requirements, it is recommended that a power supply that can withstand high power consumption be used (300W or greater). If a power supply is used that does not provide the required power, the result can lead to an unstable or unbootable system.





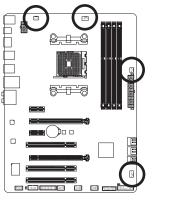
ATX_12V:	
Pin No.	Definition
1	GND (Only for 2x4-pin 12V)
2	GND (Only for 2x4-pin 12V)
3	GND
4	GND
5	+12V (Only for 2x4-pin 12V)
6	+12V (Only for 2x4-pin 12V)
7	+12V
8	+12V



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	5VSB (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)	

3/4/5) CPU_FAN/SYS_FAN1/SYS_FAN2/PWR_FAN (Fan Headers)

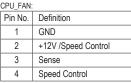
The motherboard has a 4-pin APU fan header (CPU_FAN), a 4-pin (SYS_FAN1) and a 3-pin (SYS_FAN2) system fan headers, and a 3-pin power fan header (PWR_FAN). Most fan headers possess a foolproof insertion design. When connecting a fan cable, be sure to connect it in the correct orientation (the black connector wire is the ground wire). The motherboard supports APU fan speed control, which requires the use of a APU fan with fan speed control design. For optimum heat dissipation, it is recommended that a system fan be installed inside the chassis.











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

Reserve

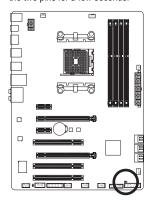
SYS_FAN2/PWR_FAN:				
Pin No.	Definition			
1	GND			
2	+12V			
3	Sense			



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

6) CLR CMOS (Clear 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, use a metal object like a screwdriver to touch the two pins for a few seconds.



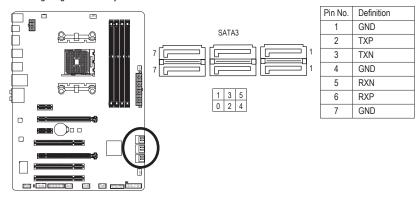
- Open: Normal
- Short: Clear CMOS Values



- Always turn off your computer and unplug the power cord from the power outlet before clearing the CMOS
- 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).

7) SATA3 0/1/2/3/4/5 (SATA 6Gb/s Connectors)

The SATA connectors conform to SATA 6Gb/s standard and are compatible with SATA 3Gb/s and SATA 1.5Gb/s standard. Each SATA connector supports a single SATA device. The AMD A75 Chipset supports RAID 0, RAID 1, RAID 10, and JBOD. Refer to Chapter 5, "Configuring SATA Hard Drive(s)," for instructions on configuring a RAID array.

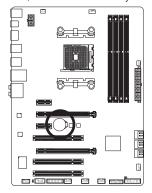




- A RAID 0 or RAID 1 configuration requires at least two hard drives. If more than two hard drives are to be used, the total number of hard drives must be an even number.
- A RAID 10 configuration requires four hard drives.

8) BAT (Battery)

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





You may clear the CMOS values by removing the battery:

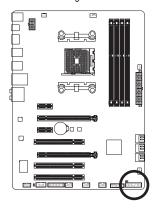
- 1. Turn off your computer and unplug the power cord.
- Gently remove the battery from the battery holder and wait for one minute. (Or use a metal object like a screwdriver to touch the positive and negative terminals of the battery holder, making them short for 5 seconds.)
- 3. Replace the battery.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

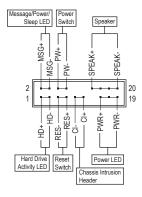


- Always turn off your computer and unplug the power cord before replacing the battery.
- Replace the battery with an equivalent one. Danger of explosion if the battery is replaced with an incorrect model.
- Contact the place of purchase or local dealer if you are not able to replace the battery by yourself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

9) F PANEL (Front Panel Header)

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





MSG/PWR (Message/Power/Sleep LED, Yellow/Purple):

	System Status	LED	Connects to the power status indicator on the chassis front panel. The LED
SO On is on when the system is operating. The LED is off when the system		is on when the system is operating. The LED is off when the system is in S3/	
	S3/S4/S5	Off	S4 sleep state or powered off (S5).

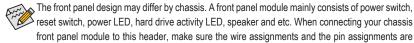
• PW (Power Switch, Red):

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

SPEAK (Speaker, Orange):

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

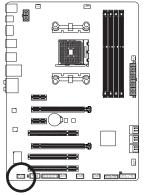
- HD (Hard Drive Activity LED, Blue)
 Connects to the hard drive activity LED on the chassis front panel. The LED is on when the hard drive is reading or writing data.
- RES (Reset Switch, Green):
 Connects to the reset switch on the chassis front panel. Press the reset switch to restart the computer if the computer freezes and fails to perform a normal restart.
- CI (Chassis Intrusion Header, Gray):
 Connects to the chassis intrusion switch/sensor on the chassis that can detect if the chassis cover has been removed. This function requires a chassis with a chassis intrusion switch/sensor.



matched correctly.

10) F AUDIO (Front Panel Audio Header)

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





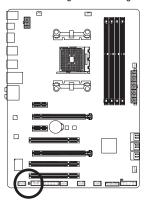
For AC'97 Front Panel Audio:			
Definition			
MIC			
GND			
MIC Power			
NC			
Line Out (R)			
NC			
NC			
No Pin			
Line Out (L)			
NC			



- 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 functionality via the audio software in Chapter 5, "Configuring 2/4/5.1/7.1-Channel Audio."
- Audio signals will be present on both of the front and back panel audio connections simultaneously. If you want to mute the back panel audio (only supported when using an HD front panel audio module), refer to Chapter 5, "Configuring 2/4/5.1/7.1-Channel Audio."
- Some chassis provide a front panel audio module that has separated connectors on each wire instead of a single plug. For information about connecting the front panel audio module that has different wire assignments, please contact the chassis manufacturer.

11) SPDIF O (S/PDIF Out Header)

This header supports digital S/PDIF Out and connects a S/PDIF digital audio cable (provided by expansion cards) for digital audio output from your motherboard to certain expansion cards like graphics cards and sound cards. For example, some graphics cards may require you to use a S/PDIF digital audio cable for digital audio output from your motherboard to your graphics card if you wish to connect an HDMI display to the graphics card and have digital audio output from the HDMI display at the same time. For information about connecting the S/PDIF digital audio cable, carefully read the manual for your expansion card.

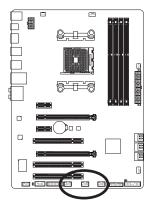




Pin No.	Definition
1	SPDIFO
2	GND

12) F_USB1/F_USB2/F_USB3 (USB 2.0/1.1 Headers)

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

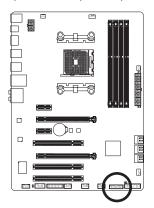


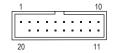


Pin No.	Definition
1	Power (5V)
2	Power (5V)
3	USB DX-
4	USB DY-
5	USB DX+
6	USB DY+
7	GND
8	GND
9	No Pin
10	NC

13) F_USB30 (USB 3.0/2.0 Header)

The header conforms to USB 3.0/2.0 specification and can provide two USB ports. For purchasing the optional 3.5" front panel that provides two USB 3.0/2.0 ports, please contact the local dealer.





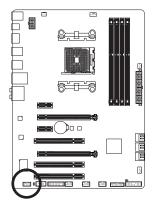
Pin No.	Definition	Pin No.	Definition
1	VBUS	11	D2+
2	SSRX1-	12	D2-
3	SSRX1+	13	GND
4	GND	14	SSTX2+
5	SSTX1-	15	SSTX2-
6	SSTX1+	16	GND
7	GND	17	SSRX2+
8	D1-	18	SSRX2-
9	D1+	19	VBUS
10	NC	20	No Pin

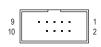


- Do not plug the IEEE 1394 bracket (2x5-pin) cable into the USB 2.0/1.1 header.
- Prior to installing the USB bracket, be sure to turn off your computer and unplug the power cord from the power outlet to prevent damage to the USB bracket.

14) 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.

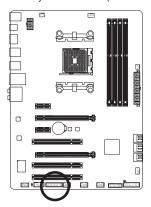


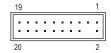


Pin No.	Definition
1	NDCD-
2	NSIN
3	NSOUT
4	NDTR-
5	GND
6	NDSR-
7	NRTS-
8	NCTS-
9	NRI-
10	No Pin

15) TPM (Trusted Platform Module Header)

You may connect a TPM (Trusted Platform Module) to this header.





Pin No.	Definition	Pin No.	Definition
1	LCLK	11	LAD0
2	GND	12	GND
3	LFRAME	13	NC
4	No Pin	14	ID
5	LRESET	15	SB3V
6	NC	16	SERIRQ
7	LAD3	17	GND
8	LAD2	18	NC
9	VCC3	19	NC
10	LAD1	20	SUSCLK

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 43.

: 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 driver disk, the <F9> key can be used for subsequent access to Xpress Recovery2 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 <1> or the down arrow key <1> 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.

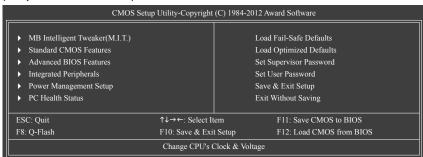
<END>: Q-FLASH

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: FAb)



BIOS Setup Program Function Keys

<↑><↓><←><→>	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
<f11></f11>	Save CMOS to BIOS
<f12></f12>	Load CMOS from BIOS

Main Menu Help

The on-screen 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.

■ The Functions of the <F11> and <F12> keys (For the Main Menu Only)

▶ F11: Save CMOS to BIOS

This function allows you to save the current BIOS settings to a profile. You can create up to 8 profiles (Profile 1-8) and name each profile. First enter the profile name (to erase the default profile name, use the SPACE key) and then press <Enter> to complete.

▶ F12: Load CMOS from BIOS

If your system becomes unstable and you have loaded the BIOS default settings, you can use this function to load the BIOS settings from a profile created before, without the hassles of reconfiguring the BIOS settings. First select the profile you wish to load, then press <Enter> to complete.

■ MB Intelligent Tweaker(M.I.T.)

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

Standard CMOS Features

Use this menu to configure the system time and date, hard 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 SATA, USB, integrated audio, and integrated LAN. etc.

■ Power Management Setup

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

■ PC Health Status

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

■ Load Fail-Safe Defaults

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

■ Load Optimized Defaults

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

Set Supervisor Password

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

Set User Password

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

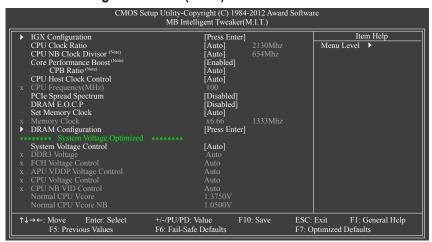
■ Save & Exit Setup

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 MB Intelligent Tweaker(M.I.T.)





Whether the system will work stably with the overclock/overvoltage settings you made is dependent on your overall system configurations. 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.)

IGX Configuration



Internal Graphics Mode

Allows you to determine whether to allocate system memory for the onboard graphics controller.

▶ Disabled Disables the onboard graphics controller.

▶ UMA Allocates memory for the onboard graphics controller from the system memory.

(Default)

UMA 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), 256MB, 512MB, 1024MB.

(Note) This item is present only when you install a CPU that supports this feature.

→ Surround View

Enables or disables the Surround View function. This option is configurable only when **Init Display First** under **Advanced BIOS Features** is set to **PEG** and an AMD/ATI graphics card is installed. (Default: Disabled)

▽ VGA Core Clock control

Allows you to determine whether to manually set the VGA Core clock. (Default: Auto)

→ VGA Core Clock(MHz)

Allows you to manually set the VGA Core clock. The adjustable range is from 300 MHz to 2000 MHz. This item is configurable only if the **VGA Core Clock control** option is set to **Manual**.

☐ CPU Clock Ratio

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

CPU NB Clock Divisor (Note)

Allows you to set the CPU North Bridge frequency divisor.

○ Core Performance Boost (Note)

Allows you to determine whether to enable the Core Performance Boost (CPB) technology, a CPU performance-boost technology. (Default: Enabled)

CPB Ratio (Note)

Allows you alter the ratio for the CPB. The adjustable range is dependent on the CPU being installed. (Default: Auto)

CPU Host Clock Control

Enables or disables the control of CPU host clock. **Auto** (default) allows the 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. This option is configurable only when **CPU Host Clock Control** is set to **Manual. Important** It is highly recommended that the CPU frequency be set in accordance with the CPU specifications.

PCle Spread Spectrum

Enables or disables PCIe Spread Spectrum. (Default: Disabled)

DRAM E.O.C.P

Allows you to determine whether to use the preset memory overclocking profile to achieve optimum overclocking performance. **Profile 1** and **Profile 2** will be available if an XMP memory module is installed. (Default: Disabled)

□ Set Memory Clock

Determines whether to manually set the memory clock. **Auto** lets BIOS automatically set the memory clock as required. **Manual** allows the memory clock control item below to be configurable. (Default: Auto)

Memory Clock

This option is configurable only when **Set Memory Clock** is set to **Manual**. Options are: X5.33, X6.66, X8.00, and X9.33.

→ DRAM Configuration

CMOS Setup Utility-Copyright (C) 1984-2012 Award Software DRAM Configuration							
	DDR3 Timing Items	[Auto	p]	SPD	Auto	A	Item Help
	1T/2T Command Timing						Menu Level ▶
	RAS to CAS R/W Delay						
	Row Precharge Time						
	Minimum RAS Active Time						
	TwTr Command Delay						
	Trfc0 for DIMM1, 3						
	Trfc1 for DIMM2, 4						
	Write Recovery Time						
	Precharge Time						
	Row Cycle Time						
	RAS to RAS Delay						
	Four Bank Activate Windows						
	DCTs Drive Strength	DCT		DC'	Γ1		
	Proc0dt (ohms)	[Auto]		[Auto]			
	DQS Drive Strength	[Auto]		[Auto]			
	Data Drive Strength	[Auto]		[Auto]			
	MEMCLK Drive Strength	[Auto]	1.25x	[Auto]		- ₹	
↑↓	→ : Move Enter: Select F5: Previous Values		J/PD: V	/alue Defaults	F10: Save	ESC:	Exit F1: General Help

CMOS Setup Utility-Copyright (C) 1984-2012 Award Software DRAM Configuration						
Addr/Cmd Drive Strength	[Auto]	1.5x	[Auto]	2.0x	A	Item Help
CS/ODT Drive Strength	[Auto]		[Auto]			Menu Level ▶
CKE Drive Strength	[Auto]		[Auto]			
DCTs Addr/Cmd Timing	DCT		DO			
Addr/Cmd Setup Time	[Auto]		[Auto]	1/2T		
Addr/Cmd Fine Delay	[Auto]		[Auto]			
CS/ODT Setup Time	[Auto]		[Auto]	1/2T		
CS/ODT Fine Delay	[Auto]		[Auto]			
CKE Setup Time	[Auto]		[Auto]	1/2T		
CKE Fine Delay	[Auto]		[Auto]			
Bank Interleaving	[Enal	bled]				
↑↓→←: Move Enter: Select F5: Previous Values		U/PD: V ail-Safe	alue Defaults	F10: Save	ESC: F7: O	Exit F1: General Help ptimized Defaults

→ DDR3 Timing Items

Manual allows all DDR3 Timing items below to be configurable. Options are: Auto (default), Manual.

→ 1T/2T Command Timing

Options are: Auto (default), 1T, 2T.

○ CAS# latency

Options are: Auto (default), 5T~14T.

□ RAS to CAS R/W Delay

Options are: Auto (default), 5T~14T.

Options are: Auto (default), 5T~14T.

Minimum RAS Active Time

Options are: Auto (default), 15T~36T.

→ TwTr Command Delay

Options are: Auto (default), 4T~8T.

☐ Trfc0 for DIMM1, 3

Options are: Auto (default), 90ns, 110ns, 160ns, 300ns, 350ns.

☐ Trfc1 for DIMM2, 4

Options are: Auto (default), 90ns, 110ns, 160ns, 300ns, 350ns.

→ Write Recovery Time

Options are: Auto (default), 5T~8T, 10T, 12T, 14T, 16T.

→ Precharge Time

Options are: Auto (default), 4T~8T.

☞ Row Cycle Time

Options are: Auto (default), 20T~54T.

Options are: Auto (default), 4T~8T.

→ Four Bank Activate Window

Options are: Auto (default), 16T~40T.

DCTs Drive Strength

→ ProcOdt(ohms)

Options are: Auto (default), 240 ohms, 120 ohms, 80 ohms, 60 ohms.

DQS Drive Strength

Options are: Auto (default), 0.75x, 1.0x, 1.25x, 1.5x.

Data Drive Strength

Options are: Auto (default), 0.75x, 1.0x, 1.25x, 1.5x.

MEMCLK Drive Strength

Options are: Auto (default), 0.75x, 1.0x, 1.25x, 1.5x.

Addr/Cmd Drive Strength

Options are: Auto (default), 1.0x, 1.25x, 1.5x, 2.0x.

○ CS/ODT Drive Strength

Options are: Auto (default), 1.0x, 1.25x, 1.5x, 2.0x.

CKE Drive Strength

Options are: Auto (default), 1.0x, 1.25x, 1.5x, 2.0x.

DCTs Addr/Cmd Timing

Options are: Auto (default), 1/2T, 1T.

Addr/Cmd Fine Delay

Options are: Auto (default), 0/64~31/64.

Options are: Auto (default), 1/2T, 1T.

○ CS/ODT Fine Delay

Options are: Auto (default), 0/64~31/64.

☐ CKE Setup Time

Options are: Auto (default), 1/2T, 1T.

☐ CKE Fine Delay

Options are: Auto (default), 0/64~31/64.

Bank Interleaving

Enables or disables memory bank interleaving. Enabled allows the system to simultaneously access different banks of the memory to increase memory performance and stability. (Default: Enabled)

******* System Voltage Optimized ********

System Voltage Control

Determines whether to manually set the system voltages. **Auto** lets the BIOS automatically set the system voltages as required. **Manual** allows all voltage control items below to be configurable. (Default: Auto)

→ DDR3 Voltage

Allows you to set memory voltage.

Normal Supplies the memory voltage as required. (Default)

 \rightarrow 1.100V ~ 1.800V The adjustable range is from 1.100V to 1.800V.

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

FCH Voltage Control

Allows you to set the Chipset voltage.

Normal Supplies the Chipset voltage as required. (Default)

 \rightarrow 0.900V ~ 1.400V The adjustable range is from 0.900V ~to 1.400V.

APU VDDP Voltage Control

Allows you to set the APU PCIe PLL voltage.

Normal Supplies the APU PCIe PLL voltage as required. (Default)

 \blacktriangleright 0.900V ~ 1.500V The adjustable range is from 0.900V to 1.500V.

CPU Voltage Control

Allows you to set the CPU voltage.

➤ Normal Supplies the CPU voltage as required. (Default)

 \rightarrow 1.4000V ~ 1.7000V The adjustable range is from 1.4000V to 1.7000V.

☐ CPU NB VID Control

Allows you to set the CPU North Bridge VID voltage.

➤ Normal Supplies the CPU NB VID voltage as required. (Default)

▶ 1.1125V ~ 1.4125V The adjustable range is from 1.1125V to 1.4125V.

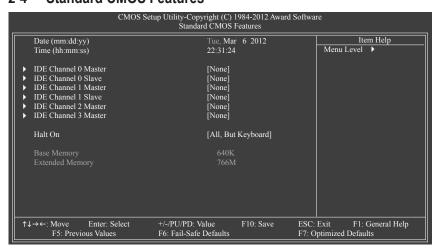
→ Normal CPU Vcore

Displays the normal operating voltage of your CPU.

Normal CPU Vcore NB

Displays the normal operating voltage of your CPU North Bridge.

2-4 Standard CMOS Features



→ Date (mm:dd:yy)

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 (hh:mm:ss)

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

□ IDE Channel 0, 1 Master/Slave

▶ IDE HDD Auto-Detection

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

▶ IDE Channel 0, 1 Master/Slave

Configure your SATA devices by using one of the two methods below:

Auto Lets the BIOS automatically detect SATA devices during the POST. (Default)
 None If no SATA devices are used, set this item to None so the system will skip the

detection of the device during the POST for faster system startup.

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

☐ IDE Channel 2. 3 Master

▶ IDE Auto-Detection

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

▶ Extended IDE Drive

Configure your SATA devices by using one of the two methods below:

Auto Lets the BIOS automatically detect SATA devices during the POST. (Default)
 None If no SATA devices are used, set this item to None so the system will skip the

detection of the device during the POST for faster system startup.

► Access Mode Sets the hard drive access mode. Options are: Auto (default), Large.

➤ Capacity Approximate capacity of the currently installed hard drive.

→ Halt On

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

▶ All Errors Whenever the BIOS detects a non-fatal error the system boot will stop.

No Errors The system boot will not stop for any error.

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

(Default)

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.

2-5 Advanced BIOS Features

CMOS Setup Utility-Copyright (C) 1984-2012 Award Software Advanced BIOS Features							
IGX Configuration Load Line Control AMD C6 Support Virtualization AMD K8 Cool&Quiet co C-state Pmin Hard Disk Boot Priority EFI CD/DVD Boot Optic First Boot Device Second Boot Device Third Boot Device Password Check HDD S.M.A.R.T. Capabi Away Mode Full Screen LOGO Show Init Display First	ÎAuto] Press Ente Auto] Hard Disk CDROM] USB-HDC Setup]		Item Help Menu Level ▶				
↑↓→←: Move Enter: Se F5: Previous Values	lect +/-/PU/PD: Value F F6: Fail-Safe Defaults	F10: Save ESC: F7: O	Exit F1: General Help ptimized Defaults				

□ IGX Configuration

The settings in this submenu are synchronous to those under the same items on the MB Intelligent Tweaker(M.I.T.) main menu.

Load Line Control

Enables or disables Load Line control. This item allows you to adjust Vdroop at different levels. Enabling Load Line control may keep the CPU voltage more constant under light and heavy CPU load. **Auto** lets the BIOS automatically configure this setting. (Default: Auto)

→ AMD C6 Support

Allows you to determine whether to let the CPU enter C6 mode in system halt state. When enabled, the CPU core frequency will be reduced during system halt state to decrease power consumption. The C6 state is a more enhanced power-saving state than C1. (Default: Disabled)

→ Virtualization

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

➤ Auto Lets the AMD Cool'n'Quiet driver dynamically adjust the CPU clock and VID to reduce

heat output from your computer and its power consumption. (Default)

▶ Disabled Disables this function.

Allows you to determine whether to let the CPU enter C1 mode in system halt state. When enabled, the CPU core frequency and voltage will be reduced during system halt state to decrease power con-sumption. Auto lets the BIOS automatically configure this setting. (Default: Auto)

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.

□ EFI CD/DVD Boot Option

Set this item to **EFI** if you want to install the operating system to a hard drive larger than 2.2 TB. Make sure the operating system to be installed supports booting from a GPT partition, such as Windows 7 64-bit and Windows Server 2003 64-bit. **Auto** lets the BIOS automatically configure this setting depending on the hard drive you install. (Default: Auto)

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: 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.

→ HDD S.M.A.R.T. Capability

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

Away Mode

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

Full Screen LOGO Show

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

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

➤ Onboard Sets the onboard graphics as the first display.

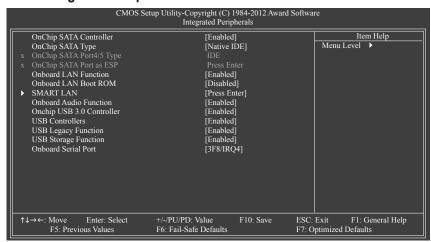
▶ PCI Slot Sets the PCI graphics card on the PCI slot as the first display.

▶PEG Sets the PCI Express graphics card on the PCIEX16 slot as the first display.

(Default)

▶ PEG1 Sets the PCI Express graphics card on the PCIEX4 slot as the first display.

2-6 Integrated Peripherals



OnChip SATA Controller

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

OnChip SATA Type (SATA3 0~SATA3 3 connectors)

Configures the operating mode of the SATA3 0~SATA3 3 connectors.

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.

▶ RAID Enables RAID for the SATA controller.

▶ AHCI Configures the SATA controllers 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.

OnChip SATA Port4/5 Type (SATA3 4 and SATA3 5 connector)

This option is configurable only when **OnChip SATA Type** is set to **RAID** or **AHCI**. Configures the operating mode of the SATA3 4 and SATA3 5 connectors connector.

➤ IDE Disables RAID for the SATA controller and configures the SATA controller to IDE mode. (Default)

As SATA Type The mode depends on the OnChip SATA Type settings.

OnChip SATA Port as ESP



Port0 as ESP/Port1 as ESP/Port2 as ESP/Port3 as ESP

This option is configurable only when **OnChip SATA Type** is set to **AHCI**. **Enabled** will speed up the hot plug detection of the connected SATA device. (Default: Disabled)

Port4 as ESP/Port5 as ESP

This option is configurable only when **OnChip SATA Type** is set to **AHCI** and **OnChip SATA Type Port4/5** is set to **As SATA Type**. **Enabled** will speed up the hot plug detection of the connected SATA device. (Default: Disabled)

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)

SMART LAN (LAN Cable Diagnostic Function)



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

When No LAN Cable Is Attached...

If no LAN cable is attached to the motherboard, the **Status** fields of all four pairs of wires will show **Open** and the **Length** fields show **0m**, as shown in the figure above.

→ When LAN Cable Is Functioning Normally...

If no cable problem is detected on the LAN cable connected to a Gigabit hub or a 10/100 Mbps hub, the following message will appear:

```
Start detecting at Port....
Link Detected --> 100Mbps
Cable Length=30m
```

- ▶ Link Detected Displays transmission speed.
- ➤ Cable Length Displays the approximate length of the attached LAN cable.

Note: The Gigabit hub will only operate at a speed of 10/100 Mbps in MS-DOS mode; it will operate at a normal speed of 10/100/1000 Mbps in Windows mode or when the LAN Boot ROM is activated.

When a Cable Problem Occurs...

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

```
Example: Part1-2 Status = Short / Length = 2m
```

Explanation: A fault or short might occur at about 2m on Part 1-2.

Note: Part 4-5 and Part 7-8 are not used in a 10/100 Mbps environment, so their **Status** fields will show **Open**, and the length shown is the approximate length of the attached LAN cable.

Onboard Audio Function

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

If you wish to install a 3rd party add-in audio card instead of using the onboard audio, set this item to

Onchip USB 3.0 Controller

Enables or disables the integrated USB 3.0 controllers. (Default: Enabled)

□ USB Controllers

Disabled.

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

Disabled will turn off all of the USB functionalities below.

→ USB Legacy Function

Allows USB keyboard to be used in MS-DOS. (Default: Enabled)

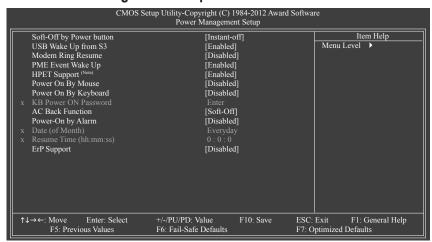
→ USB Storage Function

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 serial port and specifies its base I/O address and corresponding interrupt. Options are: Auto, 3F8/IRQ4 (default), 2F8/IRQ3, 3E8/IRQ4, 2E8/IRQ3, Disabled.

2-7 Power Management Setup



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.

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)

→ 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)

→ PME Event Wake Up

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

→ HPET Support (Note)

Enables or disables High Precision Event Timer (HPET) for Windows 7/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 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.

➤ 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) Alarm: 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.

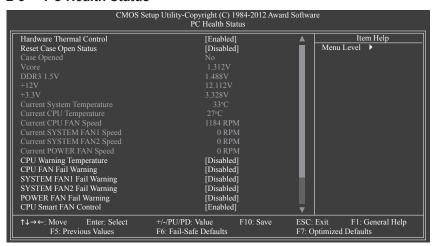
Note: When using this function, avoid inadequate shutdown from the operating system or removal of the AC power, or the settings may not be effective.

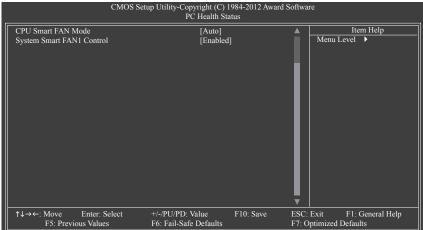
Determines whether to let the system consume less than 1W power in S5 (shutdown) state. (Default: Disabled)

Note: When this item is set to **Enabled**, the following four functions will become unavailable:

PME event wake up, power on by mouse, power on by keyboard, and wake on LAN.

2-8 PC Health Status





Hardware Thermal Control

Enables or disables the CPU overheating protection function. When enabled, the CPU core voltage and ratio will be reduced when the CPU is overheated. (Default: Enabled)

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 the CMOS, and then restart your system.

Current Voltage(V) Vcore/DDR3 1.5V/+3.3V/+12V

Displays the current system voltages.

Current System/CPU Temperature

Displays current system/CPU temperature.

Current CPU/SYSTEM/POWER FAN Speed (RPM)

Displays current CPU/system/power fan speed.

CPU Warning Temperature

Sets the warning threshold for CPU temperature. When 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/POWER FAN Fail Warning

Allows the system to emit warning sound if the CPU/system/power 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, the CPU fan runs at full speed. (Default: Enabled)

CPU Smart FAN Mode

Specifies how to control CPU fan speed. This item is configurable only when CPU Smart FAN Control is enabled.

Auto Lets the BIOS automatically detect 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.

System Smart FAN1 Control (for SYS FAN1 connector only)

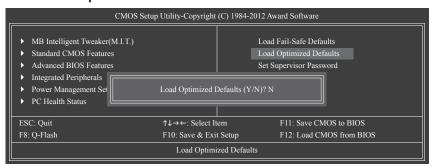
Enables or disables the system fan speed control function of the SYS_FAN1 connector. **Enabled** allows the system fan to run at different speed according to the system temperature. If disabled, system fan runs at full speed. (Default: Enabled)

2-9 Load Fail-Safe Defaults



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

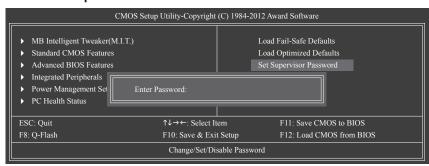
2-10 Load Optimized Defaults



 $\label{press} \textit{Press} \textit{Pre$

The BIOS defaults settings help the system to operate in optimum state. Always load the Optimized defaults after updating the BIOS or after clearing the CMOS values.

2-11 Set Supervisor/User Password



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

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

Supervisor Password

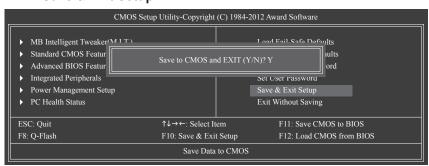
When a system password is set and the **Password Check** item in **Advanced BIOS Features** is set to **Setup**, you must enter the supervisor password for entering BIOS Setup and making BIOS changes. When the **Password Check** item is set to **System**, you must enter the supervisor password (or user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

User Password

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

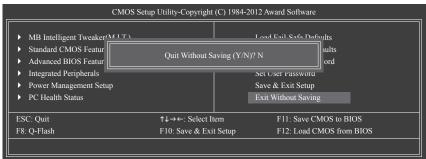
To clear the password, press <Enter> on the password item and when requested for the password, press <Enter> again. The message "PASSWORD DISABLED" will appear, indicating the password has been cancelled.

2-12 Save & Exit Setup



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

2-13 Exit Without Saving



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

-	

Chapter 3 Drivers Installation

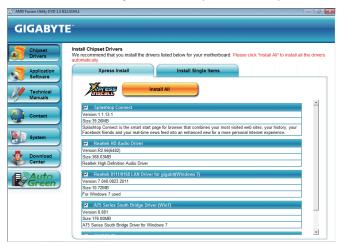


- Before installing the drivers, first install the operating system.
- After installing the operating system, insert the motherboard driver disk into your optical drive.
 The driver Autorun screen is automatically displayed which looks like that shown in the screen shot below. (If the driver Autorun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

3-1 Installing Chipset Drivers



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





- Please ignore the popup dialog box(es) (e.g. the **Found New Hardware Wizard**) displayed when "Xpress Install" is installing the drivers. Failure to do so may affect the driver installation.
- Some device drivers will restart your system automatically during the driver installation. After the system restart. "Xpress Install" will continue to install other drivers.
- After "Xpress Install" installs all of the drivers, a dialog box will appear asking whether to install
 new GIGABYTE utilities. Click Yes to automatically install the utilities. Or click No if you want to
 manually select the utilities to install on the Application Software page later.
- For USB 2.0 driver support under the Windows XP operating system, please install the Windows XP Service Pack 1 or later. After installing the SP1 (or later), if a question mark still exists in Universal Serial Bus Controller in Device Manager, please remove the question mark (by right-clicking your mouse and select Uninstall) and restart the system. (The system will then autodetect and install the USB 2.0 driver.)

3-2 Application Software

This page displays all the utilities and applications that GIGABYTE develops and some free software. You can click the **Install** button on the right of an item to install it.



3-3 Technical Manuals

This page provides GIGABYTE's application guides, content descriptions for this driver disk, and the motherboard manuals.



3-4 Contact

For the detailed contact information of the GIGABYTE Taiwan headquarter or worldwide branch offices, click the URL on this page to link to the GIGABYTE website.



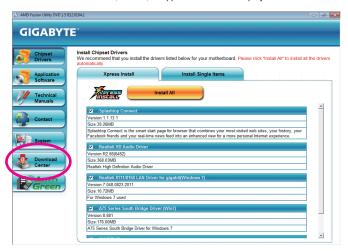
3-5 System

This page provides the basic system information.



3-6 Download Center

To update the BIOS, drivers, or applications, click the **Download Center** button to link to the GIGABYTE website. The latest version of the BIOS, drivers, or applications will be displayed.



3-7 New Utilities

This page provides a quick link to GIGABYTE's lately developed utilities for users to install. You can click the **Install** button on the right of an item to install it.



Chapter 4 Unique Features

4-1 Xpress Recovery2



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

Before You Begin:

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

System Requirements:

- · At least 512 MB of system memory
- · VESA compatible graphics card
- · Windows XP with SP1 or later, Windows Vista, Windows 7



- 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.
- RAID drives are not supported.
- · GPT partitions are not supported.
- · Hard drives larger than 2.2 TB are not supported.

Installation and Configuration:

Turn on your system to boot from the Windows 7 setup disk.

A. Installing Windows 7 and Partitioning the Hard Drive

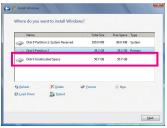


Step 1: Click **Drive options**.



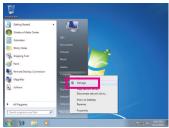
Step 2: Click **New**.

(Note) Xpress Recovery2 checks the first physical hard drive in the following sequence: The first SATA connector, the second SATA connector and so forth. For example, When hard drives are attached to the first and third SATA connectors, the hard drive on the first SATA connector is the first physical drive.



Step 3:

When partitioning your hard drive, make sure to leave unallocated space (10 GB or more is recommended; actual size requirements vary, depending on the amount of data) and begin the installation of the operating system.



Step 4:

After the operating system is installed, click **Start**, right-click the **Computer** and select **Manage**. Go to **Disk Management** to check disk allocation.



Step 5:

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

B. Accessing Xpress Recovery2

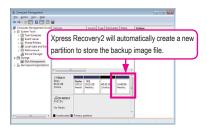
- Boot from the motherboard driver disk to access Xpress Recovery2 for the first time. When you see the following message: Press any key to startup Xpress Recovery2, press any key to enter Xpress Recovery2.
- After you use the backup function in Xpress Recovery2 for the first time, Xpress Recovery2 will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

C. Using the Backup Function in Xpress Recovery2



Step 1:

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



Step 2:

When finished, go to **Disk Management** to check disk allocation

D. Using the Restore Function in Xpress Recovery2



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

E. Removing the Backup



Step 1:

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



Step 2:

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

F. Exiting Xpress Recovery2



Select REBOOT to exit Xpress Recovery2.

4-2 BIOS Update Utilities

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



What is DualBIOS™?

Motherboards that support DualBIOS have two BIOS onboard, a main BIOS and a backup BIOS. Normally, the system works on the main BIOS. However, if the lamaged, the backup BIOS will take over on the next system boot and copy the to ensure normal system operation. For the sake of system safety, users cannot

main BIOS is corrupted or damaged, the backup BIOS will take over on the next system boot and copy the BIOS file to the main BIOS to ensure normal system operation. For the sake of system safety, users cannot update the backup BIOS manually.



What is Q-Flash™?

With Q-Flash you can update the system BIOS without having to enter operating systems like MS-DOS or Window first. Embedded in the BIOS, the Q-Flash tool

frees you from the hassles of going through complicated BIOS flashing process.



What is @BIOS™?

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

and update the BIOS.

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

A. Before You Begin

- 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. A75S3P11.FA) to your USB flash drive, or hard drive. Note: The USB flash drive or hard drive must use FAT32/16/12 file system.
- 3. Restart the system. During the POST, press the <End> key to enter Q-Flash. Note: You can access Q-Flash by either pressing the <End> key during the POST or pressing the <F8> key in BIOS Setup. However, if the BIOS update file is saved to a hard drive in RAID/AHCI mode or a hard drive attached to an independent 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

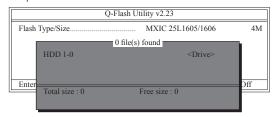
When updating the BIOS, choose the location where the BIOS file is saved. The following procedure assumes that you save the BIOS file to a USB flash drive.

Step 1:

 Insert the USB flash drive containing the BIOS file into the computer. 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 SATA controller, use the <End> key during the POST to access Q-Flash.
- 2. Select HDD 1-0 and press <Enter>.



3. Select the BIOS update file and press <Enter>.



Make sure the BIOS update file matches your motherboard model.

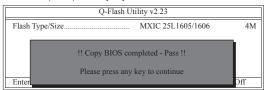
Step 2:

The process of the system reading the BIOS file from the USB flash drive 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 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.

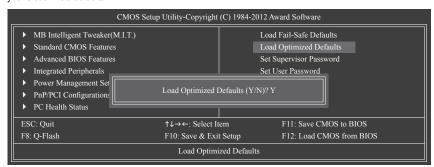


Step 4:

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 peripheral 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 G.O.M. (GIGABYTE 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. Using @BIOS



1. Update BIOS from GIGABITE Server 1 Update the BIOS Using the Internet Update Function:

Click **Update BIOS** from **GIGABYTE Server**, select the @BIOS server site closest to your location and then download the BIOS file that matches your motherboard model. Follow the on-screen instructions to complete.

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.

2. Update BIOS without Using the Internet Update Function:

Click **Update BIOS** from File, then select the location where you save the BIOS update file obtained from the Internet or through other source. Follow the on-screen instructions to complete.

- 3. Save Current BIOS to File Save the Current BIOS File:
 - Click Save Current BIOS to File to save the current BIOS file.
- 4. Select the Load CMOS default after BIOS update: Select the Load CMOS default after BIOS update check box and then the system will automatically load BIOS defaults after BIOS update and after the system restarts.

C. After Updating the BIOS

Restart your system after updating the BIOS.



Make sure that the BIOS file to be flashed matches your motherboard model. Updating the BIOS with an incorrect BIOS file could cause your system not to boot.

4-3 EasyTune 6

GIGABYTE's EasyTune 6 is a simple and easy-to-use interface that allows users to fine-tune their system settings or do overclock/overvoltage in Windows environment. The user-friendly EasyTune 6 interface also includes tabbed pages for CPU and memory information, letting users read their system-related information without the need to install additional software.

The EasyTune 6 Interface



Tahs Information

mation
Function
The CPU tab provides information on the installed CPU and motherboard.
The Memory tab provides information on the installed memory module(s). You can select memory module on
a specific slot to see its information.
The Tuner tab allows you to change memory settings and voltages.
Easy mode provides information on CPU/memory.
 Advanced mode allows you to individually change system clock settings and voltages settings using the sliders.
Save allows you to save the current settings to a new profile (.txt file).
Load allows you to load previous settings from a profile.
After making changes in Advanced mode, be sure to click Set for these changes to take effect or click Default
to restore to default values.
The Graphics tab allows you to change the core clock and memory clock for your AMD or NVIDIA graphics
card.
The Smart tab allows you to specify a Smart Fan mode. Smart Fan Advanced mode allows the CPU fan speed
to be changed linearly based on the CPU temperature thresholds you set.
The HW Monitor tab allows you to monitor hardware temperature, voltage and fan speed and set temperature.
fan speed alarm. You can choose the alert sound from the buzzer or use your own sound file (.wav file).



Available functions in EasyTune 6 may differ by motherboard model. Grayed-out area(s) indicates that the item is not configurable or the function is not supported.



Incorrectly doing overclock/overvoltage may result in damage to the hardware components such as CPU, chipset, and memory and reduce the useful life of these components. Before you do the overclock/overvoltage, make sure that you fully know each function of EasyTune 6, or system instability or other unexpected results may occur.

4-4 Q-Share

Q-Share is an easy and convenient data sharing tool. After configuring your LAN connection settings and Q-Share, you are able to share your data with computers on the same network, making full use of Internet resources.



Directions for using Q-Share

After installing Q-Share from the motherboard driver disk, go to Start>All Programs>GIGABYTE>Q-Share.exe to launch the Q-Share tool. Find the **Q-Share** icon in the notification area and right-click on this icon to configure the data sharing settings.



Figure 1. Data Sharing Disabled

Figure 2. Data Sharing Enabled

Options Descriptions

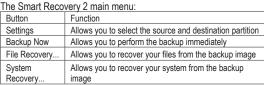
Option	Description Displays the computers with data sharing enabled		
Connect			
Enable Incoming Folder	Enables data sharing		
Disable Incoming Folder	Disables data sharing		
Open Incoming Folder:	Accesses the shared data folder		
C:\Q-ShareFolder			
Change Incoming Folder:	Changes the data folder to be shared (Note)		
C:\Q-ShareFolder			
Update Q-Share	Updates Q-Share online		
About Q-Share	Displays the current Q-Share version		
Exit	Exits Q-Share		

(Note) This option is available only when data sharing is NOT enabled.

4-5 Smart Recovery 2

Smart Recovery 2 allows you to back up a partition as an image file every hour. You can use these images to restore your system or files when needed.







- Supported operating systems: Windows 7 and Vista.
- · Smart Recovery 2 only supports NTFS file system.
- You need to select the destination partition in Settings the first time you use Smart Recovery 2.
- The Backup Now button will be available only after you log in Windows for ten minutes.

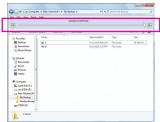


Creating a backup:

Click the **Settings** button on the main menu. In the **Settings** dialog box, select the source partition and destination partition and click **OK**. The initial backup will start after 10 minutes and regular backup will be performed hourly. Note: By default, all partitions on the system drive are selected as the backup source. The backup destination cannot be on the same partition as the backup source.

Saving the the backup to a network location:

If you want to save the backup to a network location, select **Browse network location**. Make sure your computer and the computer where you want to save the backup are in the same domain. Choose the network location where you want to store the backup and enter the user name and password. Follow the on-screen instructions to complete.



Recovering a file:

Click the **File Recovery** button on the main menu. Use the time slider on the top of the popped out window to select a previous backup time. The right pane will display the backed-up partitions in the backup destination (in the **My Backup** folder). Browse to the file you want and copy it.



Recovering your system with Smart Recovery 2 (Windows 7 only): Steps:

- 1. Click the System Recovery button on the main menu.
- 2. Select the location where your backup is saved.
- 3. Use the time slider to select a time point.
- Select a partition backup created on the selected time point and click Restore.
- Confirm whether to restart your system to proceed with the restore immediately or later. Once you respond "Yes" the system will restart to the Windows recovery environment. Follow the onscreen instructions to restore your system.

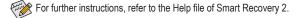


- For Windows Vista, refer to the steps below to use the original Windows installation disk for system recovery.
- All of your files and programs will be deleted and replaced with those on the selected backup. If needed, be sure to make a copy of your data before the restore.

Recovering your system using the original Windows installation disk:

In case Windows or your hard drive has serious errors, use the original Windows installation disk for system recovery. Steps:

- 1. Restart your computer to boot from the original Windows installation disk.
- 2. When the Windows installation screen appears, select your language and click Next.
- 3. Select Repair your computer.
- 4. Select Restore your computer using a system image that you created earlier and then click Next.
- 5. Select the backup you want to use and then follow the on-screen instructions to complete.



4-6 Auto Green

Auto Green is an easy-to-use tool that provides users with simple options to enable system power savings via a Bluetooth cell phone. When the phone is out of the range of the computer's Bluetooth receiver, the system will enter the specified power saving mode.



The Configuration dialog box:

First, you have to set your Bluetooth cell phone as a portable key. On the Auto Green main menu, click **Configure** and then click **Configure BT devices**. Select the Bluetooth cell phone that you want to use as the portable key (lift the screen doesn't display your Bluetooth cell phone, click **Refresh** to let Auto Green re-detect the device.)



Before creating a Bluetooth cell phone key, make sure your motherboard has a Bluetooth receiver and you have turned on the search and Bluetooth functions on your phone.

Configuring the Bluetooth cell phone key:

After you select a cell phone, the **Add Bluetooth Device Wizard** as shown on the left will appear. Enter a passkey (8~16 digits recommended) which will be used for pairing with the cell phone. Then enter the same passkey on your cell phone.



Configuring other Bluetooth settings:

On the **Other Settings** tab, you can set how much time it takes to scan your Bluetooth cell phone key, how many times to rescan the key to make sure it is in range of your computer, and when to turn off the hard drive if the system energy saving state lasts over the predetermined period of time. After completing the settings, click **Set** for the settings to take effect and then click **Exit** to quit.

- Configure ST dovices Other Settings

 Device Scan Time (See)

 Configure ST dovices Configure St dovice Scan India)

 Trum of to After 3 mins Set

 GIGABYTE

 Device Scan Time (Sec.):
- Device Scan Time (sec.):
 Set the length of time Auto Green scans your Bluetooth cell phone key, ranging from 5 to 30 seconds in 5-second increment.
 Auto Green searches for the key based on the length of time you set.
- Rescan Times:
 Set how many times Auto Green will rescan your Bluetooth cell phone key if it does not detect it, ranging from 2 to 5 times.
 Auto Green will keep rescanning according to the times you set. When the times limit is reached and your Bluetooth cell phone key is still not detected, the system will enter the selected energy saving mode.
- Turn off HD:
 Set when to turn off the hard drive. If the system inactivity time exceeds the specified time limit, the hard drive will be turned off.



Selecting a system energy saving mode:

Depending on your needs, select a system power saving mode on the Auto Green main menu and click **Save** to save the settings.

Button	Description	
Standby	Enters Power on Suspend mode	
Suspend	Enters Suspend to RAM mode	
Disable	Disables this function	



The Bluetooth dongle included in the motherboard package (Note 2) allows you to wake up the system from Suspend to RAM mode without the need to press the power button first.

- (Note 1) If your cell phone has been configured as the Auto Green key, you'll not be able to use it to connect to other Bluetooth device(s) when Auto Green is enabled.
- (Note 2) Whether the Bluetooth dongle is included depends on the motherboard models. Before installing the Bluetooth dongle, be sure to turn off other Bluetooth receiver on your computer.

Chapter 5 Appendix

5-1 Configuring SATA Hard Drive(s)

RAID Levels

	RAID 0	RAID 1	RAID 10
Minimum Number of Hard Drives	≥2	2	≥4
Array Capacity	Number of hard drives * Size of the smallest drive	Size of the smallest drive	(Number of hard drives/2) * Size of the smallest drive
Fault Tolerance	No	Yes	Yes

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. 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.
- · Windows 7/Vista/XP setup disk.
- · Motherboard driver disk.
- A USB floppy disk drive (needed during Windows XP installation)
- · An empty formatted floppy disk (needed during Windows XP installation)

5-1-1 Configuring SATA Controllers

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). Make sure OnChip SATA Controller is enabled. To enable RAID for the SATA3 0/1/2/3 connectors, set OnChip SATA Type to RAID. To enable RAID for the SATA3 4/5 connector, set OnChip SATA Type to RAID and set OnChip SATA Port4 Type to As SATA Type (Figure 1).

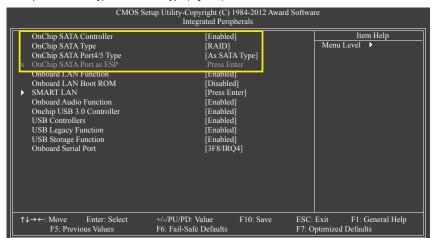


Figure 1

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 and proceed with the installation of Windows operating system for a non-RAID configuration.

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 RAID Option ROM Utility" (Figure 2). Press <Ctrl> + <F> to enter the RAID BIOS setup utility.

```
RAID Option ROM Version 3.3.1540.11
(c) 2011 Advanced Micro Devices, Inc. All rights reserved.

No Array is defined..

Press <Ctrl-F> to enter RAID Option ROM Utility...
```

Figure 2

Step 2:

Main Menu

This is the first option screen when you enter the 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 LD View/LD Define Menu window.

To delete an array, press <3> to enter the **Delete LD Menu** 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 **LD View Menu** window (Figure 4). To create an array, press <Ctrl+C> to access the **LD Define Menu**.

```
Option ROM Utility (c) 2011 Advanced Micro Devices, Inc.

[LD View Menu ]

< There is no any LD >

[↑] Up [↓] Down [PaUp/PaDn] Switch Page [Ctrl+C] Define LD

[Enter] View LD [Ctrl+V] View Single Disk [ESC] Exit
```

Figure 4

In the LD Define Menu, use the up or down arrow key to move to an item for further configuration (Figure 5).



Figure 5

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

- 1. Under the RAID Mode section, press the <SPACE> key 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 <SPACE> key or <Y> to change the Assignment option to Y. This action adds the drive to the disk array. The Drv section will show the number of disks assigned.
- 5. Press <Ctrl>+<Y> keys to save the information. The message in Figure 6 will appear. Press <Ctrl+Y> to input the array name. If you do not input the array name, the default array name will be used.

Please press Ctrl-Y key to input the LD name or press any key to exit. If you do not input any LD name, the default LD name will be used.

Figure 6

When the next message appears, press <Ctrl>+<Y> to clear the MBR or press other keys to ignore this option.

Fast Initialization option has been selected It will erase the MBR data of the disks.

<Press Ctrl-Y key if you are sure to erase it>
<Press any other key to ignore this option>

Figure 7

Then, the message in Figure 8 will appear. Press <Ctrl>+<Y> to set the capacity of the RAID array or press other keys to set the array to its maximum capacity.

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

Figure 8

- After the creation is complete, the screen will return to LD View Menu where you will see the newlycreated array.
- 9. 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 the attached hard drives 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.

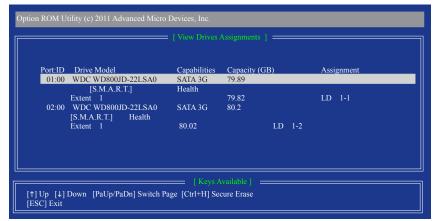


Figure 9

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.

- 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>+<D> keys.
- The View LD Defination Menu will appear (as shown in Figure 10) showing which drives are assigned to this array. Press <Ctrl>+<Y> if you are sure to delete the array or other keys to abort.
- 3. When the array is deleted, the screen will return to Delete LD Menu. Press <Esc>to return to Main Menu.



Figure 10

5-1-2 Installing the SATA RAID/AHCI Driver and Operating System

With the correct BIOS settings, you are ready to install Windows 7/Vista/XP.

A. Installing Windows 7/Vista

(The following instructions use Windows 7 as the example operating system.)

Step 1:

You need to install the SATA RAID/AHCI driver during the OS installation. Use an alternative system to copy the SATA RAID/AHCI driver from the motherboard driver disk to a USB flash drive. Copy the **Hw7** folder under **BootDrv** in the driver disk.

Step 2:

Boot from the Windows 7 setup disk and perform standard OS installation steps. When the screen requesting you to load the driver appears, select **Browse**.

Step 2:

Then browse to the USB flash drive and select the location of the driver. The locations of the drivers are as follows:

RAID driver for Windows 7 32-bit: Hw7\RAID\W7

RAID driver for Windows 7 64-bit: Hw7\RAID\W764A

AHCI driver for Windows 7 32-bit: Hw7\AHCI\W7

AHCI driver for Windows 7 64-bit: Hw7\AHCI\W764A

Step 3:

When a screen as shown in Figure 1 appears, select **AMD AHCI Compatible RAID Controller** and click **Next** to load the driver and continue the OS installation.

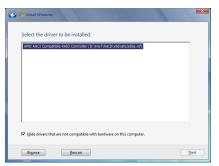


Figure 1

B. Installing Windows XP

Before installing Windows XP, connect a USB floppy disk drive to your computer first because you need to install the SATA RAID/AHCI driver from a floppy disk that contains the driver during the OS installation. Without the driver, the hard drive(s) may not be recognized during the Windows setup process. First, copy the driver from the motherboard driver disk to a floppy disk. Refer to the methods below.

Method A:

• For the AMD A75 Chipset, copy all files in the \BootDrv\Hxp folder to your floppy disk.

Method B:

Steps:

- 1. 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. A Command Prompt window will open similar to that in Figure 2.
- 3. Insert the blank formatted disk (if you're using a USB floppy disk drive, make sure it is designated as drive A). Select the controller driver by pressing the corresponding letter from the menu and press <Enter>. For example, from the menu in Figure 2, for the AMD A75 Chipset, select 11) hseries AHCI/RAID for XP. Your system will then automatically copy the driver files to the floppy disk. Press any key to exit when finished.

```
1)GIGABYTE GSATA driver for 32bit system
2)GIGABYTE GSATA driver for 64bit system
3)ATI AHCI/RAID Driver for XP
4)ATI AHCI Driver for Uista
5)ATI RAID Driver for Uista
6)ATI AHCI Driver for Windows 7
7)ATI RAID Driver for Windows 7
8)Marvell AHCI driver for 32bit system
9)Marvell AHCI driver for 54bit system
18)Marvell RAID driver
11)heries AHCI/RAID for XP
12)heries AHCI/RAID for XP
13)heries RAID for Uista/Win7
13)heries RAID for Uista/Win7
```

Figure 2

Refer to the following for installing the driver during the Windows setup process.

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." A screen will then appear asking you to specify an additional SCSI adapter. Press <S>.

Step 2:

Insert the floppy disk containing the SATA RAID/AHCI driver and press <Enter>. Then a controller menu similar to that in Figure 3 will appear. Select AMD AHCI Compatible RAID Controller-x86 platform and press <Enter>.

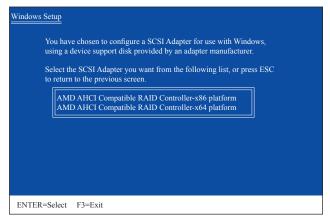


Figure 3

Step 3:

On the next screen, press <Enter> to continue the driver installation. After the driver installation, you can proceed with the Windows XP installation.

Rebuilding an Array:

Rebuilding is the process of restoring data to a hard drive from other drives in the array. Rebuilding applies only to fault-tolerant arrays such as RAID 1 or RAID 10. To replace the old drive, make sure to use a new drive of equal or greater capacity. The procedures below assume a new drive is added to replace a failed drive to rebuild a RAID 1 array.

While in the operating system, make sure the Chipset driver has been installed from the motherboard driver disk. Then install the AMD RAID Utility (go to Application Software\Install Application Software and select AMD RAID Utility to install). Then launch the AMD RAIDXpert from All Programs in the Start Menu.



Step 1:

Enter the login ID and password (default: "admin"), and then click **Sign in** to launch **AMD RAIDXpert**.



Step 3:

Select one available drive and click **Start Now** to start the rebuilding process.





Step 2:

Select the RAID array to be rebuilt under Logical Drive View and click the Rebuild tab in the Logical Drive Information pane.



Step 4:

The rebuilding progress is displayed on the screen and you can select Pause/Resume/Abort during the rebuilding process.

Step 5:

When done, the array's status on the **Information** page in the **Logical Drive Information** pane will display as **Functional**.

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

High Definition Audio (HD Audio)

HD Audio includes multiple high quality digital-to-analog converters (DACs) and 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 7 as the example operating system.)

Sten 1:

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





(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:

Connect an audio device to an audio jack. The **The current connected device is** dialog box appears. Select the device according to the type of device you connect. Then click **OK**.



Step 3:

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

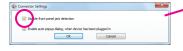


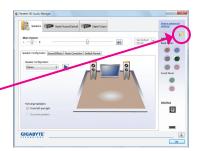
B. Configuring Sound Effect

You may configure an audio environment on the Sound Effects tab.

C. Activating an AC'97 Front Panel Audio Module

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





D. Muting the Back Panel Audio (For HD Audio Only)

Click **Device advanced settings** on the top right corner on the **Speaker Configuration** tab to open the **Device advanced settings** dialog box. Select the **Mute the rear output device, when a front headphone plugged in** check box. Click **OK** to complete.



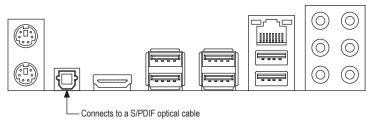


5-2-2 Configuring S/PDIF Out

The S/PDIF Out jack can transmit audio signals to an external decoder for decoding to get the best audio quality.

1. Connecting a S/PDIF Out Cable:

Connect a S/PDIF optical cable to the corresponding S/PDIF out connector as shown below and an external decoder for transmitting the S/PDIF digital audio signals.



2. Configuring S/PDIF Out:

On the **Digital Output(Optical)** screen (Note), click the **Default Format** tab and then select the sample rate and bit depth. Click **OK** to complete.



(Note) Enter the **Digital Output(Optical)** screen to configure further settings if you use the S/PDIF Out connector(s) on the back panel for digital audio output or enter the **Digital Output** screen if you use the internal S/PDIF Out connector (SPDIF_O) for digital audio output.

5-2-3 Configuring Microphone Recording

Step 1:

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





Step 2:

Connect your microphone to the Mic in jack (pink) on the back panel or the Mic in jack (pink) on the front panel. Then configure the jack for microphone functionality. Note: The microphone functions on the front panel and back panel cannot be used at the same time.



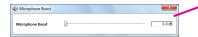
Step 3:

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



Step 4:

To raise the recording and playback volume for the microphone, click the **Microphone Boost** icon
on the right of the **Recording Volume** slider and set the Microphone Boost level.





Step 5:

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



* Enabling Stereo Mix

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

Step 1:

Locate the icon in the notification area and right-click on this icon. Select **Recording Devices**.





Step 2:

On the **Recording** tab, right-click on an empty space and select **Show Disabled Devices**.



Step 3:

When the **Stereo Mix** item appears, right-click on this item and select **Enable**. Then set it as the default device.



Step 4:

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



5-2-4 Using the Sound Recorder



A. Recording Sound

- 1. Make sure you have connected the sound input device (e.g. microphone) to the computer.
- 2. To record the audio, click the Start Recording button Start Recording.

Be sure to save the recorded audio file upon completion.

B. Playing the Recorded Sound

You can play your recording in a digital media player program that supports your audio file format.

5-3 Troubleshooting

5-3-1 Frequently Asked Questions

To read more FAQs for your motherboard, please go to the **Support & Downloads\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 motherboards provide 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: For motherboards that have a Clear CMOS button, press this button to clear the CMOS values (before doing this, please turn off the computer and unplug the power cord). For motherboards that have a Clear CMOS jumper, refer to the instructions in Chapter 1 to short the jumper to clear the CMOS values. If your board doesn't have this jumper/button, 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.
- 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: Why cannot I install the onboard HD audio driver successfully? (For Windows XP only)
- A: Step 1: First, make sure Service Pack 1 or Service Pack 2 has been installed (check in My Computer > Properties > General > System). If not, please update it from Microsoft's website. Then make sure the Microsoft UAA Bus Driver for High Definition Audio has been installed successfully (check in My Computer > Properties > Hardware > Device Manager > System Devices).
 - Step 2: Check if Audio Device on High Definition Audio Bus or Unknown device is present in Device Manager or Sound, video, and game controllers. If yes, please disable this device. (If not, skip this step.)
 - Step 3: Then go back to My Computer > Properties > Hardware > Device Manager > System devices and right-click on Microsoft UAA Bus Driver for High Definition Audio and select Disable and Uninstall.
 - Step 4: In **Device Manager**, right-click on the computer name and select **Scan for hardware changes**. When the **Add New Hardware Wizard** appears, click **Cancel**. Then install the onboard HD audio driver from the motherboard driver disk or download the audio driver from GIGABYTE's website to install.

For more details, go to the Support & Downloads\FAQ page on our website and search for "onboard HD audio driver."

- 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, 9 short: BIOS ROM error

1 long, 1 short: Memory or motherboard error

Continuous long beeps: Graphics card not inserted properly

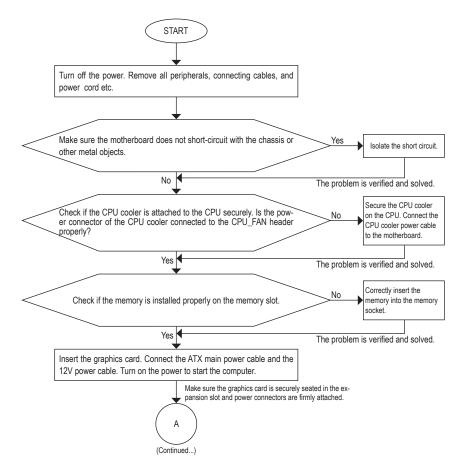
1 long, 2 short: Monitor or graphics card error

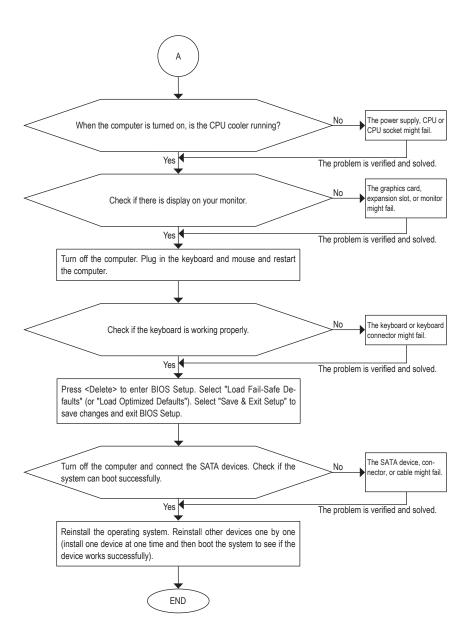
Continuous short beeps: Power error

1 long, 3 short: Keyboard error

5-3-2 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 & Downloads\Technical Support** page to submit your question. Our customer service staff will reply you as soon as possible.

5-3-3 Regulatory Statements

Regulatory Notices

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

Our Commitment to Preserving the Environment

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

Restriction of Hazardous Substances (RoHS) Directive Statement

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

Waste Electrical & Electronic Equipment (WEEE) Directive Statement

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

WEEE Symbol Statement



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

your local government office, your household waste disposal service or where you purchased the product for details of environmentally safe recycling.

- When your electrical or electronic equipment is no longer useful to you, "take it back" to your local or regional
 waste collection administration for recycling.
- If you need further assistance in recycling, reusing in your "end of life" product, you may contact us at the
 Customer Care number listed in your product's user's manual and we will be glad to help you with your effort.

Finally, we suggest that you practice other environmentally friendly actions by understanding and using the energy-saving features of this product (where applicable), recycling the inner and outer packaging (including shipping containers) this product was delivered in, and by disposing of or recycling used batteries properly. With your help, we can reduce the amount of natural resources needed to produce electrical and electronic equipment, minimize the use of landfills for the disposal of "end of life" products, and generally improve our quality of life by ensuring that potentially hazardous substances are not released into the environment and are disposed of properly.

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Appendix



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GIGABYTE Global Service System



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Then select your language to enter the system.