GA-8I945P-G-RH

Intel® Pentium® D / Pentium® 4 LGA775 Processor Motherboard

User's Manual

Rev. 1003 12ME-8I945PGR-1003R



* The WEEE marking on the product indicates this product must not be disposed of with user's other household waste and must be handed over to a designated collection point for the recycling of waste electrical and electronic equipment!!
* The WEEE marking applies only in European Union's member states.

		Date - 1107, 3, 2000	(dume)
		Date: Nov 0 2005	(Channel)
Date: Nov. 9, 2005	Signature : Finnny Huang	Manufacturer/Importer	
Signature: <u>Eric Lu</u>	General and Safety requirements for uninterruptible power systems (UPS)	Safety of household and similar electrical appliances	□ EN 60335
Representative Person's Name: ERIC LU	including electrical business equipment	electronic and related apparatus for household and similar general use	
including that may cause undesired operation.	se with LVD 73/23 EEC	The manufacture also declares the conformity of above mentioned product with the actual required safety standards in accordance with LVD 2732 EEC data manufacture in a second statement of the	
subject to the following two conditions: (1) This device may not	(EC conformity marking)		⊠ CE marking
This device complies with part 15 of the FCC Rules. Operation is		DIN VDE 0855 Cabled distribution systems: Equipment part 10 for receiving and/or distribution from part 12 sound and television signals	DIN VDE 0855 0 part 10 f part 12 s
(a), Class B Digital Device Sumplementary Information:		Limits and methods of measurement of radio disturbance characteristics of information technology equipment	⊠ EN 55022
FCC Part 15, Subpart B, Section 15.107(a) and Section 15.109	EMC requirements for uninterruptible power systems (UPS)	Immunity from radio interference of	-
Model Number: GA-81945P-G-RH Conforms to the following specifications:	Immunity requirements for household appliances tools and similar apparatus	Limits and methods of measurement of radio disturbance characteristics of fluorescent lamps and luminaries	□ EN 55015
Product Name: Motherboard	Generic immunity standard Part 2: Industrial environment	portable tools and similar electrical	
hereby declares that the product	Generic immunity standard Part 1: Residual, commercial and light industry	Limits and methods of measurement of radio disturbance characteristics of household electrical appliances.	EN 55014-1
City of Industry, CA 91748 Phone/Fax No: (818) 854-9338/ (818) 854-9339	Information Technology equipment-Immunity characteristics-Limits and methods of measurement	EN 55024 of radio disturbance characteristics of broadcast receivers and associated equipment	EN 55013
Address: 17358 Railroad Street	Disturbances in supply systems caused by household appliances and similar electrical equipment "Voltage fluctuations"	industrial, scientific and medical (ISM) If EN 61000-3-3 high frequency equipment	
Responsible Party Name: G.B.T. INC. (U.S.A.)	Disturbances in supply systems caused	Limits and methods of measurement III EN 61000-3-2 of radio disturbance characteristics of	EN 55011
	ntty is declared) rective	(reference to the specification under which conformity is declared in accordance with 89/336 EEC-EMC Directive	
5		GA-81945P-G-RH	
	o which it refers)	declare that the product (description of the apparatus, system, installation to which it refers)	
Per FCC Part 2 Section 2.1077(a)	4 Germany	G.B.T. Technology Trading GMbH Ausschlager Weg 41, 1F 20537 Hamburg, Germany	
DECLARATION OF CONFORMITY	nity		

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Product Manual Classification

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

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

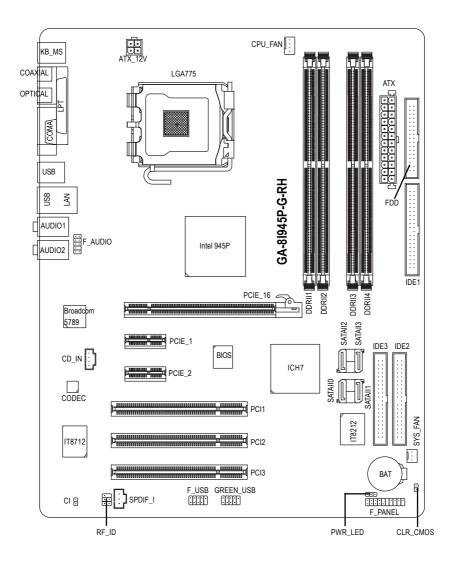
For more product details, please click onto Gigabyte's website at www.gigabyte.com.tw

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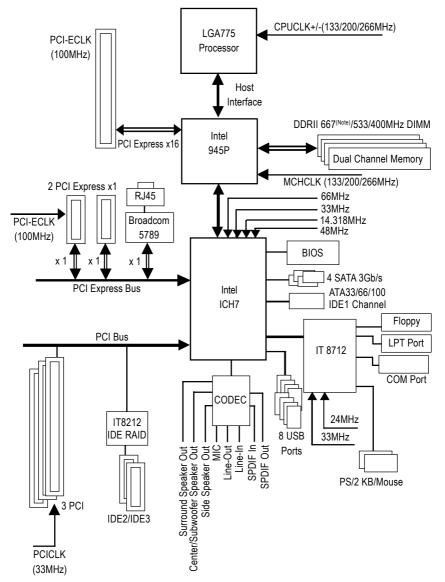
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GA-8I945P-G-RH Motherboard Layout



Block Diagram



(Note) To use a DDRII 667 memory module on the motherboard, you must install an 800/1066MHz FSB processor .



Chapter 1 Hardware Installation

1-1 Considerations Prior to Installation

Preparing Your Computer

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

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

Installation Notices

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

Instances of Non-Warranty

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

1-2 Feature Summary

CPU	 Supports Intel[®] Pentium[®] D / Pentium[®] 4 LGA775 CPU^(Note 1)
	 Supports 1066/800/533MHz FSB
	L2 cache varies with CPU
Chipset	Northbridge: Intel® 945P Express Chipset
	Southbridge: Intel [®] ICH7
	 Supported on the Win 2000/XP operating systems
Memory	 4 DDR II DIMM memory slots (supports up to 4GB memory) (Note 2)
	Supports 1.8V DDR II DIMM
	 Supports dual channel DDR II 667^(Note 3)/533/400 DIMM
Slots	1 PCI Express x 16 slot
	 2 PCI Express x 1 slots
	3 PCI slots
IDE Connections	1 IDE connection (UDMA 33/ATA 66/ATA 100), allows connection of 2
	IDE devices(IDE1)
	 Supported on the Win 2000/XP operating systems
	2 IDE connection (UDMA 33/ATA 66/ATA 100/ATA 133), compatible with
	RAID, allows connection of 4 IDE devices(IDE2,IDE3) (Note 4)
FDD Connections	 1 FDD connection, allows connection of 2 FDD devices
Onboard SATA 3Gb/s	4 SATA 3Gb/s connections
	 Supported on the Win 2000/XP operating systems
Peripherals	 1 parallel port supporting Normal/EPP/ECP mode
	 1 Serial port (COMA)
	 8 USB 2.0/1.1 ports (rear x 4, front x 4 via cable)
	1 front audio connector
	 1 PS/2 keyboard port
	 1 PS/2 mouse port
Onboard LAN	Onboard Broadcom 5789 chip (10/100/1000 Mbit)
	 1 RJ 45 port
	 Supported on the Win 2000/XP operating systems

(Note 1) For further CPU support information, please go to GIGABYTE's website.

(Note 2) Due to standard PC architecture, a certain amount of memory is reserved for system usage and therefore the actual memory size is less than the stated amount. For example, 4 GB of memory size will instead be shown as 3.xxGB memory during system startup.

- (Note 3) To use a DDRII 667 memory module on the motherboard, you must install an 800/1066MHz FSB processor .
- (Note 4) Only supports ATAPI mode for HDD.

Onboard Audio	ALC882 CODEC
	High Definition Audio
	 Supports 2 / 4 / 6 / 8 channel audio
	 Supports Line In ; Line Out (Front Speaker Out) ; MIC ; Surround Speaker Out
	(Rear Speaker Out) ; Center/Subwoofer Speaker Out ;
	Side Speaker Out connection
	SPDIF In connection
	SPDIF Out connection (coaxial+optical)
	CD In
	 Supported on the Win 2000/XP operating systems
On-Board IDE RAID	Onboard GigaRAID IT8212 chipset
(IDE2, IDE3)	 Supports disk striping (RAID 0) or disk mirroring (RAID 1) or
	striping + mirroring (RAID 0 + RAID 1)
	Supports JBOD function
	 Supports concurrent dual ATA133 IDE controller operation
	Supports ATAPI mode for HDD
	Supports IDE bus master operation
	 Supports ATA133/RAID mode switch by BIOS
	 Displays status and error checking messages during boot-up
	 Mirroring supports automatic background rebuilds
	 Features LBA and Extended Interrupt 13 drive translation in
	controller onboard BIOS
I/O Control	• IT8712
Hardware Monitor	System voltage detection
	CPU temperature detection
	CPU / System fan speed detection
	CPU warning temperature
	CPU / System fan failure warning
	CPU smart fan control
BIOS	Use of licensed AWARD BIOS
	Supports Q-Flash
Additional Features	Supports @BIOS
	 Supports EasyTune 5^(Note 5)
Overclocking	Over Voltage via BIOS (CPU/DDR/PCIE/FSB)
	Over Clock via BIOS (CPU/DDR/PCIE)
Form Factor	ATX form factor; 30.5cm x 22.0cm

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

1-3 Installation of the CPU and Heatsink



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

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



HT functionality requirement content :

Enabling the functionality of Hyper-Threading Technology for your computer system requires all of the following platform components:

- CPU: An Intel® Pentium 4 Processor with HT Technology
- Chipset: An Intel® Chipset that supports HT Technology
- BIOS: A BIOS that supports HT Technology and has it enabled
- OS: An operation system that has optimizations for HT Technology

1-3-1 Installation of the CPU

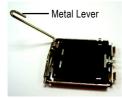


Fig. 1 Gently lift the metal lever located on the CPU socket to the upright position.



Fig. 2 Remove the plastic covering on the CPU socket.

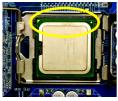


Fig. 3 Notice the small gold colored triangle located on the edge of the CPU socket. Align the indented corner of the

CPU with the triangle and gently insert the CPU into position. (Grasping the CPU firmly between your thumb and forefinger, carefully place it into the socket in a straight and downwards motion. Avoid twisting or bending motions that might cause damage to the CPU during installation.)



Fig. 4 Once the CPU is properly inserted, please replace the load plate and push the metal lever back into its original position.

1-3-2 Installation of the Heatsink



Fig.1

Please apply an even layer of heatsink paste on the surface of the installed CPU.

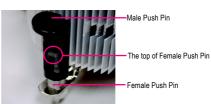


Fig. 2

(Turning the push pin along the direction of arrow is to remove the heatsink, on the contrary, is to install.) Please note the direction of arrow sign on the male push pin doesn't face inwards before installation. (This instruction is only for Intel boxed fan)



Fig. 3

Place the heatsink atop the CPU and make sure the push pins aim to the pin hole on the motherboard.Pressing down the push pins diagonally.

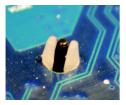


Fig. 5

Please check the back of motherboard after installing. If the push pin is inserted as the picture, the installation is complete.



Fig. 4

Please make sure the Male and Female push pin are joined closely. (for detailed installation instructions, please refer to the heatsink installation section of the user manual)



Fig. 6

Finally, please attach the power connector of the heatsink to the CPU fan header located on the motherboard.



The heatsink may adhere to the CPU as a result of hardening of the heatsink paste. To prevent such an occurrence, it is suggested that either thermal tape rather than heat sink paste be used for heat dissipation or using extreme care when removing the heatsink.

1-4 Installation of Memory



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

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

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

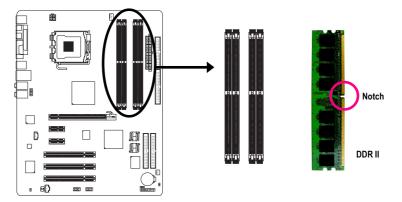






Fig.1

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

Fig.2

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

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



Dual Channel Memory Configuration

GA-8I945P-G-RH supports the Dual Channel Technology. After operating the Dual Channel Technology, the bandwidth of Memory Bus will add double. GA-8I945P-G-RH includes 4 DIMM sockets, and each Channel has two

DIMM sockets as following:

- ▶ Channel A : DDR II 1, DDR II 2
- ✤ Channel B : DDR II 3, DDR II 4

If you want to operate the Dual Channel Technology, please note the following explanations due to the limitation of Intel chipset specifications.

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

	DDR II 1	DDR II 2	DDR II 3	DDR II 4
2 memory modules	DS/SS	X	DS/SS	X
	Х	DS/SS	X	DS/SS
4 memory modules	DS/SS	DS/SS	DS/SS	DS/SS

The following is a Dual Channel Memory configuration table: (DS: Double Side, SS: Single Side)

1-5 Installation of Expansion Cards

You can install your expansion card by following the steps outlined below:

- 1. Read the related expansion card's instruction document before install the expansion card into the computer.
- 2. Remove your computer's chassis cover, screws and slot bracket from the computer.
- 3. Press the expansion card firmly into expansion slot in motherboard.
- 4. Be sure the metal contacts on the card are indeed seated in the slot.
- 5. Replace the screw to secure the slot bracket of the expansion card.
- 6. Replace your computer's chassis cover.
- 7. Power on the computer, if necessary, setup BIOS utility of expansion card from BIOS.
- 8. Install related driver from the operating system.

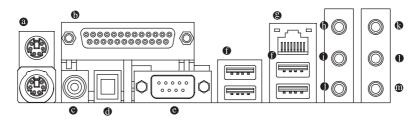
Installing a PCI Express x 16 expansion card:





Please align the VGA card to the onboard PCI Express x 16 slot and press firmly down on the slot. Make sure your VGA card is locked by the latch at the end of the PCI Express x 16 slot. When you try uninstall the VGA card, please press the latch as the picture to the left shows to release the card.

1-6 I/O Back Panel Introduction



PS/2 Keyboard and PS/2 Mouse Connector

To install a PS/2 port keyboard and mouse, plug the mouse to the upper port (green) and the keyboard to the lower port (purple).

LPT (Parallel Port)

The parallel port allows connection of a printer, scanner and other peripheral devices.

COAXIAL (SPDIF Out)

The SPDIF coaxial output port is capable of providing digital audio to external speakers or compressed AC3 data to an external Dolby Digital Decoder via a coaxial cable.

OPTICAL (SPDIF Out)

The SPDIF optical output port is capable of providing digital audio to external speakers or com pressed AC3 data to an external Dolby Digital Decoder via an optical cable.

COM A (Serial Port)

Connects to serial-based mouse or data processing devices.

USB Port

Before you connect your device(s) into USB connector(s), please make sure your device(s) such as USB keyboard, mouse, scanner, zip, speaker...etc. have a standard USB interface. Also make sure your OS supports USB controller. If your OS does not support USB controller, please contact OS vendor for possible patch or driver upgrade. For more information please contact your OS or device(s) vendors.

LAN Port

The provided Internet connection is Gigabit Ethernet, providing data transfer speeds of 10/100/1000Mbps.

Line In

The default Line In jack. Devices like CD-ROM, walkman etc. can be connected to Line In jack.

Line Out (Front Speaker Out)

The default Line Out (Front Speaker Out) jack. Stereo speakers, earphone or front surround speakers can be connected to Line Out (Front Speaker Out) jack.

MIC In

The default MIC In jack. Microphone must be connected to MIC In jack.

Surround Speaker Out (Rear Speaker Out)

The default Surround Speaker Out (Rear Speaker Out) jack. Rear surround speakers can be connected to Surround Speaker Out (Rear Speaker Out) jack.

Center/Subwoofer Speaker Out

The default Center/Subwoofer Speaker Out jack. Center/Subwoofer speakers can be connected to Center/Subwoofer Speaker Out jack.

Side Speaker Out

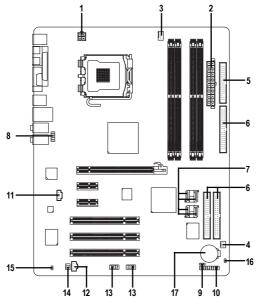
The default Side Speaker Out jack. Surround side speakers can be connected to Side Speaker Out jack.

NOTE

In addition to the default speakers settings, the $\[mathbb{D} \sim \]mathbb{D}$ audio jacks can be reconfigured to perform different functions via the audio software. Only microphones still MUST be connected to the de-

fault Mic In jack (\bullet) . Please refer to the 2-/4-/6-/8- channel audio setup steps for detailed software configuration information.

1-7 Connectors Introduction



1)	ATX_12V	10)	F_PANEL
2)	ATX (Power Connector)	11)	CD_IN
3)	CPU_FAN	12)	SPDIF_I
4)	SYS_FAN	13)	F_USB/GREEN_USB
5)	FDD	14)	RF_ID
6)	IDE1/IDE2/IDE3	15)	CI
7)	SATAIIO / SATAII1 / SATAII2 / SATAII3	16)	CLR_CMOS
8)	F_AUDIO	17)	BAT
9)	PWR_LED		

1/2) ATX_12V/ATX (Power Connector)

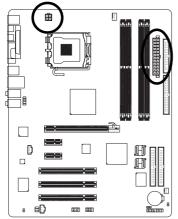
With the use of the power connector, the power supply can supply enough stable power to all the components on the motherboard. Before connecting the power connector, please make sure that all components and devices are properly installed. Align the power connector with its proper location on the motherboard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

The ATX_12V power connector mainly supplies power to the CPU. If the ATX_12V power connector is not connected, the system will not start.

Caution!

Please use a power supply that is able to handle the system voltage requirements. It is recommended that a power supply that can withstand high power consumption be used (300W or greater). If a power supply is used that does not provide the required power, the result can lead to an unstable system or a system that is unable to start.

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



	Pin No.	Definition
٦.	1	GND
4	2	GND
2	3	+12V
	4	+12V

12	24	Pin No.	Definition	Pin No.	Definition
		1	3.3V	13	3.3V
		2	3.3V	14	-12V
		3	GND	15	GND
		4	+5V	16	PS_ON(soft On/Off)
		5	GND	17	GND
		6	+5V	18	GND
		7	GND	19	GND
		8	Power Good	20	-5V
		9	5V SB(stand by +5V)	21	+5V
		10	+12V	22	+5V
	13	11	+12V(Onlyfor24-pin ATX)	23	+5V (Only for 24-pin ATX)
1		12	3.3V(Onlyfor 24-pin ATX)	24	GND(Only for 24-pin ATX)

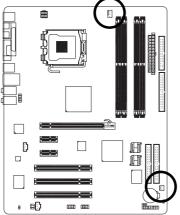
3/4) CPU_FAN / SYS_FAN (Cooler Fan Power Connector)

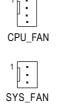
The cooler fan power connector supplies a +12V power voltage via a 3-pin/4-pin (only for CPU_FAN) power connector and possesses a foolproof connection design.

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

Please remember to connect the power to the cooler to prevent system overheating and failure. Caution!

Please remember to connect the power to the CPU fan to prevent CPU overheating and failure.

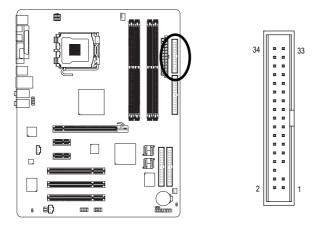




Pin No.	Definition
1	GND
2	+12V
3	Sense
4	Speed Control
	(Only for CPU_FAN)

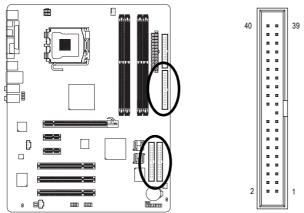
5) FDD (Floppy Connector)

The FDD connector is used to connect the FDD cable while the other end of the cable connects to the FDD drive. The types of FDD drives supported are: 360KB, 720KB, 1.2MB, 1.44MB and 2.88MB. Please connect the red power connector wire to the pin1 position.



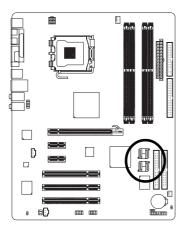
6) IDE1/IDE2/IDE3 (IDE Connector)

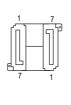
An IDE device connects to the computer via an IDE connector. One IDE connector can connect to one IDE cable, and the single IDE cable can then connect to two IDE devices (hard drive or optical drive). If you wish to connect two IDE devices, please set the jumper on one IDE device as Master and the other as Slave (for information on settings, please refer to the instructions located on the IDE device). To ensure that an IDE CD-ROM drive can work properly, please attach it to the IDE 1 connector.



7) SATAII0/SATAII1/SATAII2/SATAII3 (SATA 3Gb/s Connector)

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

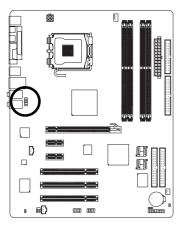




Pin No.	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

8) F_AUDIO (Front Audio Connector)

This connector supports either HD (High Definition) or AC97 front panel audio module. If you wish to use the front audio function, connect the front panel audio module to this connector. Check the pin assignments carefully while you connect the front panel audio module. Incorrect connection between the module and connector will make the audio device unable to work or even damage it. For optional front panel audio module, please contact your chassis manufacturer.



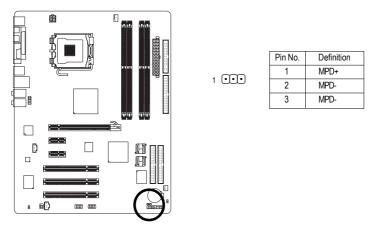
	9(•••) 10		
HD Audio:		AC'97 Auc	lio:
Pin No.	Definition	Pin No.	Definition
1	MIC2_L	1	MIC
2	GND	2	GND
3	MIC2_R	3	MIC Power
4	-ACZ_DET	4	NC
5	Line2_R	5	Line Out (R)
6	FSENSE1	6	NC
7	FAUDIO_JD	7	NC
8	No Pin	8	No Pin
9	LINE2_L	9	Line Out (L)
10	FSENSE2	10	NC



By default, the audio driver is configured to support HD Audio. To connect an AC97 front panel audio module to this connector, please refer to the instructions on Page 71 about the software settings.

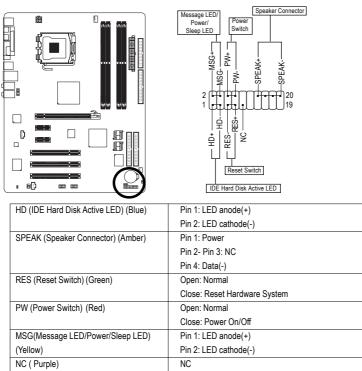
9) PWR_LED

PWR_LED is connected with the system power indicator to indicate whether the system is on/off. It will blink when the system enters suspend mode.



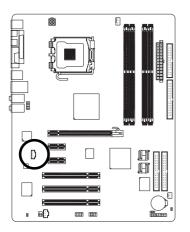
10) F_PANEL (Front Panel Jumper)

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



11) CD_IN (CD IN)

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



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

Definition

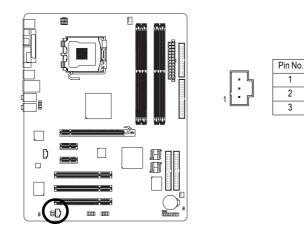
Power

SPDIFI

GND

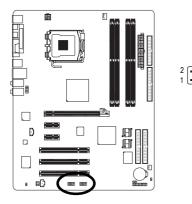
12) SPDIF_I (SPDIF In)

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



13) F_USB/GREEN_ USB (Front USB Connector)

Be careful with the polarity of the front USB connector. Check the pin assignments carefully while you connect the front USB cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional front USB cable, please contact your local dealer. The GREEN_USB connector provides no standby power when system is off and it does not support USB device to wake up from S3 mode. Users who wish to shut down the standby power^(note) for their USB devices during system power-off can connect the devices to the GREEN_USB connector via the optional front USB cable.

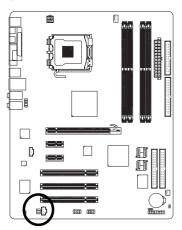


Pin No.	Definition
1	Power
2	Power
3	USB DX-
4	USB Dy-
5	USB DX+
6	USB Dy+
7	GND
8	GND
9	No Pin
10	NC

(Note) When the standby power is shut down, USB devices (example: optical mouses) will not light on during system power-off.

14) RF_ID

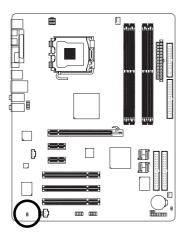
This connector allows you to connect external devices to use extra function. Check the pin assignments before you connect the external device cable. Please contact your nearest dealer for the optional GIGABYTE external device.



	Pin No.	Definition
į	1	Power
)) 1	2	RFID_RI-
	3	RF_TXD
	4	RF_RXD
	5	NC
	6	GND

15) CI (Chassis Intrusion, Case Open)

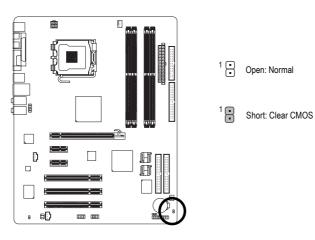
This 2-pin connector allows your system to detect if the chassis cover is removed. You can check the "Case Opened" status in BIOS Setup.



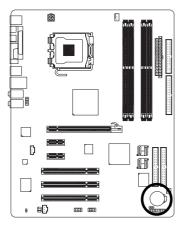
	Pin No.	Definition
1 🖸	1	Signal
	2	GND

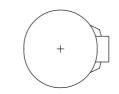
16) CLR_CMOS (Clear CMOS)

You may clear the CMOS data to its default values by this jumper. To clear CMOS, temporarily short 1-2 pin. Default doesn't include the "Shunter" to prevent from improper use this jumper.



17) BAT(Battery)





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

If you want to erase CMOS...

- 1. Turn OFF the computer and unplug the power cord.
- Take out the battery gently and put it aside for about 10 minutes (Or you can use a metal object to connect the positive and negative pins in the battery holder to make them short for one minute).
- 3. Re-install the battery.
- 4. Plug the power cord and turn ON the computer.

Chapter 2 BIOS Setup

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

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

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

When the power is turned on, pushing the button during the BIOS POST (Power-On Self Test) will take you to the CMOS SETUP screen. You can enter the BIOS setup screen by pressing "Ctrl + F1". When setting up BIOS for the first time, it is recommended that you save the current BIOS to a disk in the event that BIOS needs to be reset to its original settings. If you wish to upgrade to a new BIOS, either

Gigabyte's Q-Flash or @BIOS utility can be used.

Q-Flash allows the user to quickly and easily update or backup BIOS without entering the operating system. @BIOS is a Windows-based utility that does not require users to boot to DOS before upgrading BIOS but directly download and update BIOS from the Internet.

$\overline{<\!\!\uparrow\!>\!<\!\!\downarrow\!>\!<\!\leftarrow\!>\!<\!\rightarrow\!>}$	Move to select item
<enter></enter>	Select Item
<esc></esc>	Main Menu - Quit and not save changes into CMOS Status Page Setup Menu
	and Option Page Setup Menu - Exit current page and return to Main Menu
<page up=""></page>	Increase the numeric value or make changes
<page down=""></page>	Decrease the numeric value or make changes
<f1></f1>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<f2></f2>	Item Help
<f5></f5>	Restore the previous CMOS value from CMOS, only for Option Page Setup
	Menu
<f6></f6>	Load the file-safe default CMOS value from BIOS default table
<f7></f7>	Load the Optimized Defaults
<f8></f8>	Q-Flash utility
<f9></f9>	System Information
<f10></f10>	Save all the CMOS changes, only for Main Menu

CONTROL KEYS

Main Menu

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

Status Page Setup Menu / Option Page Setup Menu

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



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

<F12> : For Boot Menu

Select boot sequence for onboard (or add-on cards) device.



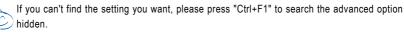
Use < \uparrow > or < \downarrow > to select a device, then press enter to accept . Press <ESC> to exit this menu.

D
Boot Menu
== Select a Boot First device ==
Floppy
LS120
Hard Disk
CDROM
ZIP
USB-FDD
USB-ZIP
USB-CDROM
USB-HDD
LAN
↑↓:Move Enter :Accept ESC:Exit

The Main Menu (For example: BIOS Ver. : F1a)

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

CMOS Setup Utility-Copyright (C) 1984-2005 Award Software		
►	Standard CMOS Features	Load Fail-Safe Defaults
▶	Advanced BIOS Features	Load Optimized Defaults
►	Integrated Peripherals	Set Supervisor Password
►	Power Management Setup	Set User Password
►	PnP/PCI Configurations	Save & Exit Setup
►	PC Health Status	Exit Without Saving
►	MB Intelligent Tweaker(M.I.T.)	
ESC	ESC: Quit ↑↓→←: Select Item	
F8:	F8: Q-Flash F10: Save & Exit Setup	
Time, Date, Hard Disk Type		



Please Load Optimized Defaults in the BIOS when somehow the system works not stable as usual. This action makes the system reset to the default for stability.

Standard CMOS Features

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

Advanced BIOS Features

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

Integrated Peripherals

This setup page includes all onboard peripherals.

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

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

PC Health Status

This setup page is the System auto detect Temperature, voltage, fan, speed.

MB Intelligent Tweaker(M.I.T.)

This setup page is control CPU clock and frequency ratio.

Load Fail-Safe Defaults

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

Load Optimized Defaults

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

Set Supervisor Password

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

Set User Password

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

Save & Exit Setup

Save CMOS value settings to CMOS and exit setup.

Exit Without Saving

Abandon all CMOS value changes and exit setup.

2-1 Standard CMOS Features

	CMOS Setu	p Utility-Copyright (C) 1984-2005 Award Standard CMOS Features	l Software
	Date (mm:dd:yy) Time (hh:mm:ss)	Fri, Mar 18 2005 18:25:04	Item Help Menu Level▶
	IDE Channel 0 Master IDE Channel 0 Slave IDE Channel 2 Master IDE Channel 2 Slave IDE Channel 3 Master IDE Channel 3 Master	[None] [None] [None] [None] [None] [None]	Change the day, month, year <week> Sun. to Sat.</week>
	Drive A Drive B Floppy 3 Mode Support Halt On	[1.44M, 3.5"] [None] [Disabled] [All, But Keyboard]	<month> Jan. to Dec. <day> I to 31 (or maximum allowed in the month)</day></month>
	Base Memory Extended Memory Total Memory	640K 511M 512M	<year> 1999 to 2098</year>
↑	↓→←: Move Enter: Select F5: Previous Values	+/-/PU/PD: Value F10: Save F6: Fail-Safe Defaults	ESC: Exit F1: General Help F7: Optimized Defaults

ං Date

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

- ✤ Month The month, Jan. Through Dec.
- Day The day, from 1 to 31 (or the maximum allowed in the month)

🗢 Time

••

The times format in <hour> <minute> <second>. The time is calculated base on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00.

☞ IDE Channel 0 Master, Slave

- >> IDE HDD Auto-Detection Press "Enter" to select this option for automatic device detection.
- ▶ IDE Device Setup. You can use one of three methods:

Auto	Allows BIOS to automatically detect IDE devices during POST(default)
None	Select this if no IDE devices are used and the system will skip the automatic
	detection step and allow for faster system start up.
Manual	User can manually input the correct settings
Access Mode	Use this to set the access mode for the hard drive. The four options are:
	CHS/LBA/Large/Auto(default:Auto)

☞ IDE Channel 2/3 Master, Slave

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

- ➤ Capacity Capacity of currently installed hard disk.
- ➤ Cylinder Number of cylinders
- ➡ Head Number of heads
- ► Precomp Write precomp
- ► Landing Zone Landing zone
- ➡ Sector Number of sectors

∽ Drive A / Drive B

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

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

☞ Floppy 3 Mode Support (for Japan Area)

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

つ Halt on

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

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

∽ Memory

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

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

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

>> Extended Memory

The BIOS determines how much extended memory is present during the POST. This is the amount of memory located above 1 MB in the CPU's memory address map.

➡ Total Memory

This item displays the memory size that used.

2-2 Advanced BIOS Features

CMOS Setup Utility-Copyright (C) 1984-2005 Award Software Advanced BIOS Features								
#	Hard Disk Boot Priority First Boot Device Second Boot Device Third Boot Device Password Check CPU Hyper-Threading Limit CPUID Max. to 3 No-Execute Memory Protect ^(Note) CPU Enhanced Halt (C1E) ^(Note) CPU Firmal Monitor 2(TM2) ^(Note) CPU EIST Function ^(Note)	[Press Enti [Floppy] [Hard Disk [CDROM] [Setup] [Enabled] [Enabled] [Enabled] [Enabled] [Enabled]						
↑	L→←: Move Enter: Select F5: Previous Values	+/-/PU/PD: Value F6: Fail-Safe Defaults	F10: Save	ESC: Exit F7: Optimized	F1: General Help Defaults			



" # " System will detect automatically and show up when you install the Intel[®] Pentium[®] 4 processor with HT Technology.

Hard Disk Boot Priority

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

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

> First / Second / Third Boot Device

- ➡ Floppy Select your boot device priority by Floppy.
- ► LS120 Select your boot device priority by LS120.
- ➡ Hard Disk Select your boot device priority by Hard Disk.
- ➤ CDROM Select your boot device priority by CDROM.
- ► ZIP Select your boot device priority by ZIP.
- ➡ USB-FDD Select your boot device priority by USB-FDD.
- ► USB-ZIP Select your boot device priority by USB-ZIP.
- ➡ USB-CDROM Select your boot device priority by USB-CDROM.
- ► USB-HDD Select your boot device priority by USB-HDD.
- ► LAN Select your boot device priority by LAN.
- Disabled Select your boot device priority by Disabled.

→ Password Check

Setup The system will boot but will not access to Setup page if the correct password is not entered at the prompt. (Default value)

System The system will not boot and will not access to Setup page if the correct password is not entered at the prompt.

If you want to cancel the setting of password, please just press ENTER to make [SETUP] empty.

(Note) This item will show up when you install a processor which supports this function.

→ CPU Hyper-Threading

- Enabled Enable CPU Hyper Threading Feature. Please note that this feature is only working for operating system with multi processors mode supported. (Default value)
- ✤ Disabled Disables CPU Hyper Threading.

∽ Limit CPUID Max. to 3

- ▶ Enabled Limit CPUID Maximum value to 3 when use older OS like NT4.
- ✤ Disabled Disable CPUID Limit for windows XP. (Default value)

∽ No-Execute Memory Protect (Note)

- ✤ Enabled Enable No-Execute Memory Protect function. (Default value)
- Disabled Disable No-Execute Memory Protect function.

∽ CPU Enhanced Halt (C1E)^(Note)

- ➡ Enabled Enable CPU Enhanced Halt (C1E) function. (Default value)
- ✤ Disabled Disable CPU Enhanced Halt (C1E) function.

○ CPU Thermal Monitor 2 (TM2) (Note)

- ▶ Enabled Enable CPU Thermal Monitor 2 (TM2) function. (Default value)
- ➡ Disabled Disable CPU Thermal Monitor 2 (TM2) function.

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

2-3 **Integrated Peripherals**

	CMOS Setup Utility-(Convright (C) 198	1-2005 Award So	ftware	`	
CMOS Setup Utility-Copyright (C) 1984-2005 Award Software Integrated Peripherals						
On-Chip Prima		[Enabled]			Item Help	
On-Chip SATA 1		[Auto]			Menu Level	
x PATA IDE Set to		Ch.0 Master/				
SATA Port 0/2 S	et to	Ch.2 Master/				
SATA Port 1/3 S		Ch.3 Master/				
USB Controller		[Enabled]				
USB 2.0 Control	ller	[Enabled]				
USB Keyboard	Support	[Disabled]				
USB Mouse Sup	port	[Disabled]				
Azalia Codec		[Auto]				
Onboard H/W C	GigaRAID	[Enabled]				
GigaRAID Func		[RAID]				
Onboard H/W I	LAN	[Enabled]				
OnBoard LAN E	Boot ROM	[Disabled]				
Onboard Serial	Port 1	[3F8/IRQ4]				
i-Lock		[Enabled]				
Onboard Paralle		[378/IRQ7]				
Parallel Port Mo		[SPP]				
x ECP Mode Use	DMA			▼		
↑↓→←: Move F5: Previo		PD: Value F Safe Defaults		SC: Ex 7: Opti	it F1: General Help imized Defaults	

∽ On-Chip Primary PCI IDE

➡ Enabled

Enable onboard 1st channel IDE port. (Default value)

➡ Disabled

Disable onboard 1st channel IDE port.

∽ On-Chip SATA Mode

➡ Disabled	Disable this function.
► Auto	BIOS will auto detect. (Default value)
➡ Combined	Set On-Chip SATA mode to Combined, you can use up to 4 HDDs on
	the motherboard; 2 for SATA and the other for PATA.
Enhanced	Set On-Chip SATA mode to Enhanced, the motherboard allows up to 6
	HDDs to use; 4 SATA HDDs plus PATA HDDs.
Non-Combined	Set On-Chip SATA mode to Non-Combined, SATA will be simulated to
	PATA mode. Support a maximum of 4 SATA devices. PATA devices will be
	ignored.

→ PATA IDE Set to

➡ Ch.1 Master/Slave Set PATA IDE to Ch. 1 Master/Slave. ➡ Ch.0 Master/Slave Set PATA IDE to Ch. 0 Master/Slave. (Default value)

∽ SATA Port 0/2 Set to

>> This value will auto make by the setting "On-Chip SATA Mode" and "PATA IDE Set to". If PATA IDE were set to Ch. 1 Master/Slave, this function will auto set to Ch. 0 Master/Slave.

∽ SATA Port 1/3 Set to

>> This value will auto make by the setting "On-Chip SATA Mode" and "PATA IDE Set to". If PATA IDE were set to Ch. 0 Master/Slave, this function will auto set to Ch. 1 Master/Slave.

Ċ	USB Controller	
	➡ Enabled	Enable USB Controller. (Default value)
	➡ Disabled	Disable USB Controller.
Ċ	USB 2.0 Controller	
	Disable this function if you	are not using onboard USB 2.0 feature.
	➡ Enabled	Enable USB 2.0 Controller. (Default value)
	➡ Disabled	Disable USB 2.0 Controller.
Ċ	USB Keyboard Suppor	t
	➡ Enabled	Enable USB Keyboard Support.
	➡ Disabled	Disable USB Keyboard Support. (Default value)
Ċ	USB Mouse Support	
	➡ Enabled	Enable USB Mouse Support.
	➡ Disabled	Disable USB Mouse Support. (Default value)
Ċ	Azalia Codec	
	► Auto	Auto detect Azalia audio function. (Default value)
	➡ Disabled	Disable Azalia audio function.
Ċ	Onboard H/W GigaRAII)
	➡ Enabled	Enable Onboard H/W GigaRAID function. (Default value)
	➡ Disabled	Disable this function.
Ċ	GigaRAID Function	
	► RAID	Select onboard GigaRAID chip function as RAID. (Default value)
	► ATA	Select onboard GigaRAID chip function as ATA.
Ċ	Onboard H/W LAN	
	➡ Enabled	Enable Onboard H/W LAN function. (Default value)
	Disabled	Disable this function.
Ċ	OnBoard LAN Boot RC	M
	This function decide whet	ner to invoke the boot ROM of the onboard LAN chip.
	➡ Enabled	Enable this function.
	EnabledDisabled	
Ċ		Enable this function. Disable this function. (Default value)
Ŷ	 Disabled Onboard Serial Port 1 Auto 	Enable this function. Disable this function. (Default value) BIOS will automatically setup the port 1 address.
Ģ	 Disabled Onboard Serial Port 1 Auto 3F8/IRQ4 	Enable this function. Disable this function. (Default value) BIOS will automatically setup the port 1 address. Enable onboard Serial port 1 and address is 3F8/IRQ4. (Default value)
¢	 Disabled Onboard Serial Port 1 Auto 3F8/IRQ4 2F8/IRQ3 	Enable this function. Disable this function. (Default value) BIOS will automatically setup the port 1 address. Enable onboard Serial port 1 and address is 3F8/IRQ4. (Default value) Enable onboard Serial port 1 and address is 2F8/IRQ3.
Ċ	 Disabled Onboard Serial Port 1 → Auto → 3F8/IRQ4 → 2F8/IRQ3 → 3E8/IRQ4 	Enable this function. Disable this function. (Default value) BIOS will automatically setup the port 1 address. Enable onboard Serial port 1 and address is 3F8/IRQ4. (Default value) Enable onboard Serial port 1 and address is 2F8/IRQ3. Enable onboard Serial port 1 and address is 3E8/IRQ4.
	 Disabled Onboard Serial Port 1 Auto 3F8/IRQ4 2F8/IRQ3 3E8/IRQ4 2E8/IRQ4 2E8/IRQ3 	Enable this function. Disable this function. (Default value) BIOS will automatically setup the port 1 address. Enable onboard Serial port 1 and address is 3F8/IRQ4. (Default value) Enable onboard Serial port 1 and address is 2F8/IRQ3.
	 Disabled Onboard Serial Port 1 Auto > 3F8/IRQ4 > 2F8/IRQ3 > 3E8/IRQ4 > 2E8/IRQ3 i-Lock 	Enable this function. Disable this function. (Default value) BIOS will automatically setup the port 1 address. Enable onboard Serial port 1 and address is 3F8/IRQ4. (Default value) Enable onboard Serial port 1 and address is 2F8/IRQ3. Enable onboard Serial port 1 and address is 3E8/IRQ4. Enable onboard Serial port 1 and address is 2E8/IRQ3.
	 Disabled Onboard Serial Port 1 Auto 3F8/IRQ4 2F8/IRQ3 3E8/IRQ4 2E8/IRQ4 2E8/IRQ3 	Enable this function. Disable this function. (Default value) BIOS will automatically setup the port 1 address. Enable onboard Serial port 1 and address is 3F8/IRQ4. (Default value) Enable onboard Serial port 1 and address is 2F8/IRQ3. Enable onboard Serial port 1 and address is 3E8/IRQ4.

○ Onboard Parallel port

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

∽ Parallel Port Mode

▶ SPP

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

☞ ECP Mode Use DMA

- ▶ 3 Set
- ₩1

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

2-4 Power Management Setup

CMOS Setu	p Utility-Copyright (C) 1984-2005 Award S Power Management Setup	oftware
ACPI Suspend Type Soft-Off by PWR-BTIN PME Event Wake Up Power On by Ring Resume by Alarm > Date (of Month) Alarm > Time (hh:mn:ss) Alarm Power On By Mouse Power On By Keyboard X KB Power ON Password AC BACK Function	[S1(POS)] [Instant-Off] [Enabled] [Enabled] [Disabled] Everyday 0 · 0 · 0 [Disabled] [Disabled] Enter [Soft-Off]	Item Help Menu Level>
↑↓→←: Move Enter: Select F5: Previous Values		ESC: Exit F1: General Help F7: Optimized Defaults

☞ ACPI Suspend Type

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

∽ Soft-Off by PWR-BTTN

▶ Instant-Off Press power button then Power off instantly. (Default value)

✤ Delay 4 Sec. Press power button 4 sec. to Power off. Enter suspend if button is pressed less than 4 sec.

☞ PME Event Wake Up

- Disabled Disable this function.
- Enabled Enable PME Event Wake up. (Default value)

☞ Power On by Ring

- Disabled Disable Power on by Ring function.
- Enabled Enable Power on by Ring function. (Default value)

☞ Resume by Alarm

You can set "Resume by Alarm" item to enabled and key in Date/time to power on system.

- ✤ Disabled Disable this function. (Default value)
- ➡ Enabled Enable alarm function to POWER ON system.
- If Resume by Alarm is Enabled.
- Date (of Month) Alarm : Everyday, 1~31
- ➡ Time (hh: mm: ss) Alarm : (0~23) : (0~59) : (0~59)

☞ Power On By Mouse

- Disabled Disabled this function. (Default value)
- >> Double C lick Double click on PS/2 mouse left button to power on the system.

∽ Power On By Keyboard

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

∽ KB Power ON Password

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

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

○ AC BACK Function

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

2-5 PnP/PCI Configurations

C	MOS Setup Utility-Copyright (C) 1984-2005 Award PnP/PCI Configurations	d Software
PCI 1 IRQ Assignment PCI 2 IRQ Assignment PCI 3 IRQ Assignment	[Auto] [Auto] [Auto]	Item Help Menu Level▶
↑↓→←: Move Enter: So F5: Previous Value		ESC: Exit F1: General Help F7: Optimized Defaults

☞ PCI 1 IRQ Assignment

▶ Auto
▶ 3,4,5,7,9,10,11,12,14,15

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

→ PCI 2 IRQ Assignment → Auto → 3,4,5,7,9,10,11,12,14,15

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

∽ PCI 3 IRQ Assignment → Auto

▶ 3,4,5,7,9,10,11,12,14,15

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

2-6 PC Health Status

CMOS Setu	p Utility-Copyright (C) 1984-2005 Award S PC Health Status	oftware
Reset Case Open Status	[Disabled]	Item Help
Case Opened		Menu Level
Vcore	OK	i
DDR18V	OK	i
+3.3V	OK	i
+12V	OK	i
Current CPU Temperature		i
Current CPU FAN Speed	3375 RPM	i
Current SYSTEM FAN Speed	0 RPM	i
CPU Warning Temperature	[Disabled]	i
CPU FAN Fail Warning	[Disabled]	
SYSTEM FAN Fail Warning	[Disabled]	
CPU Smart FAN Control	[Enabled]	
CPU Smart FAN Mode	[Auto]	
↑↓→←: Move Enter: Select	+/-/PU/PD: Value F10: Save E	SC: Exit F1: General Help
F5: Previous Values		7: Optimized Defaults

Reset Case Open Status

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

∽ Case Opened

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

If the case have been opened, "Case Opened" will show "Yes".

If you want to reset "Case Opened" value, set "Reset Case Open Status" to "Enabled" and save CMOS, your computer will restart.

∽ Current Voltage(V) Vcore / DDR18V / +3.3V / +12V

➡ Detect system's voltage status automatically.

∽ Current CPU Temperature

► Detect CPU temperature automatically.

∽ Current CPU/SYSTEM FAN Speed (RPM)

▶ Detect CPU/SYSTEM Fan speed status automatically.

∽ CPU Warning Temperature

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

∽ CPU/SYSTEM FAN Fail Warning

- Disabled Disable the fan fail warning function. (Default value)
- Enabled Enable the fan fail warning function.

☞ CPU Smart FAN Control

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

∽ CPU Smart FAN Mode

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

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

▶ PWM Set to PWM when you use a CPU fan with a 4-pin fan power cable.

Note: In fact, the Voltage option can be used for CPU fans with 3-pin or 4-pin power cables. However, some 4-pin CPU fan power cables are not designed following Intel 4-Wire fans PWM control specifications. With such CPU fans, selecting PWM will not effectively reduce the fan speed.

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

CMOS Setu	p Utility-Copyright (C) 1984-2005 Award S MB Intelligent Tweaker(M.I.T.)	oftware
CPU Clock Ratio (Nete) C.A.M (Nete) Robust Graphics Booster C.I.A. 2 CPU Host Clock Control x CPU Host Frequency (Mhz) x PCI Experss Frequency (Mhz) System Memory Multiplier Memory Frequency (Mhz) DIMM OverVoltage Control PCI-E OverVoltage Control PCI-E OverVoltage Control CPU Voltage Control Normal CPU Vcore	[16X] [High] [Auto] [Disabled] 200 Auto [Auto] 533 [Norma1] [Norma1] [Norma1] [Norma1] 1.3875V	Item Help Menu Level≯
↑↓→←: Move Enter: Select F5: Previous Values		ESC: Exit F1: General Help F7: Optimized Defaults



Incorrect using these features may cause your system broken. For power end-user use only.

☞ CPU Clock Ratio (Note)

This setup option will automatically assign by CPU detection.

The option will display "Locked" and read only if the CPU ratio is not changeable.

- C.A.M (Note)
 - High Set clock ratio for frequency-locked CPU to High. (Default value)
 - ▶ Low Set clock ratio for frequency-locked CPU to Low.

○ Robust Graphics Booster

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

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

ு C.I.A.2

C.I.A.2 (CPU Intelligent Acelerator 2) is designed to detect CPU loading during software program executing, and automatically adjust CPU computing power to maximize system performance.

- ➡ Disabled Disable this function. (Default value)
- ➤ Cruise Set C.I.A.2 to Cruise. (Automatically increase CPU frequency(5%,7%) by CPU loading.
- ✤ Sports Set C.I.A.2 to Sports. (Automatically increase CPU frequency(7%,9%) by CPU loading.
- Racing Set C.I.A.2 to Racing. (Automatically increase CPU frequency(9%,11%) by CPU loading.

(Note) This item will show up when you install a processor which supports this function.

- ➤ Turbo Set C.I.A.2 to Turbo. (Automatically increase CPU frequency(15%,17%) by CPU loading.
- Full Thrust Set C.I.A.2 to Full Thrust. (Automatically increase CPU frequency(17%, 19%) by CPU loading.

Warning: Stability is highly dependent on system components.

☞ CPU Host Clock Control

Please note that if your system is overclocked and cannot restart, please wait 20secs. for automatic system restart or clear the CMOS setup data and perform a safe restart.

- ➡ Disabled Disable CPU Host Clock Control. (Default value)
- Enabled Enable CPU Host Clock Control.

∽ CPU Host Frequency (Mhz)

► 100MHz ~ 600MHz Set CPU Host Frequency from 100MHz to 600MHz.

If you use FSB533 Pentium 4 processor, please set "CPU Host Frequency" to 133MHz.If you use FSB800 Pentium 4 processor, please set "CPU Host Frequency" to 200MHz.

Incorrect using it may cause your system broken. For power End-User use only!

∽ PCI Express Frequency (Mhz)

➡ Auto Set PCI Express frequency automatically. (Default value)

▶ 90~150 Set PCI Express frequency from 90MHz to 150MHz.

System Memory Multiplier

Wrong frequency may make system can't boot, clear CMOS to overcome wrong frequency issue. for FSB(Front Side Bus) frequency=533Mhz,

- ✤ 3.00 Memory Frequency = Host clock X 3.00.
- ✤ 4.00 Memory Frequency = Host clock X 4.00.
- ✤ 2.00 Memory Frequency = Host clock X 2.00.
- ✤ 2.66 Memory Frequency = Host clock X 2.66.
- ➤ 3.33 Memory Frequency = Host clock X 3.33.
- ▶ 1.50 Memory Frequency = Host clock X 1.50.
- ▶ 2.0- Memory Frequency = Host clock X 2.0-.
- ▶ 2.50 Memory Frequency = Host clock X 2.50.
- ✤ Auto Set Memory frequency by DRAM SPD data. (Default value)

for FSB(Front Side Bus) frequency=800MHz,

- ✤ 2.00 Memory Frequency = Host clock X 2.00.
- ▶ 2.66 Memory Frequency = Host clock X 2.66.
- ✤ 3.33 Memory Frequency = Host clock X 3.33.
- ✤ 3.00 Memory Frequency = Host clock X 3.00.
- ✤ 4.00 Memory Frequency = Host clock X 4.00.
- ▶ 1.50 Memory Frequency = Host clock X 1.50.
- ▶ 2.0- Memory Frequency = Host clock X 2.0-.
- ▶ 2.50 Memory Frequency = Host clock X 2.50.
- ✤ Auto Set Memory frequency by DRAM SPD data. (Default value)

for FSB(Front Side Bus) frequency=1066MHz,

- ▶ 1.50 Memory Frequency = Host clock X 1.50.
- ▶ 2.00 Memory Frequency = Host clock X 2.00.
- ▶ 2.50 Memory Frequency = Host clock X 2.50.
- ▶ 2.0+ Memory Frequency = Host clock X 2.0+.
- 2.66 Memory Frequency = Host clock X 2.66.
- ▶ 3.33 Memory Frequency = Host clock X 3.33.
- ▶ 3.00 Memory Frequency = Host clock X 3.00.
- ▶ 4.00 Memory Frequency = Host clock X 4.00.
- ➤ Auto Set Memory frequency by DRAM SPD data. (Default value)

Memory Frequency (Mhz)

The values depend on CPU Host Frequency (Mhz) and System Memory Multiplier setting.

☞ DIMM OverVoltage Control

Please note that by overclocking your system through the increase of the DIMM voltage, damage to the memory may occur.

- ➡ Normal Set DIMM OverVoltage Control to Normal. (Default value)
- ➡ +0.1V Set DIMM OverVoltage Control to +0.1V.
- ► +0.2V Set DIMM OverVoltage Control to +0.2V.
- ► +0.3V Set DIMM OverVoltage Control to +0.3V.
- ► +0.4V Set DIMM OverVoltage Control to +0.4V.
- ➡ +0.5V Set DIMM OverVoltage Control to +0.5V.
- ➡ +0.6V Set DIMM OverVoltage Control to +0.6V.

Incorrect using it may cause your system broken. For power End-User use only!

∽ PCI-E OverVoltage Control

- ➡ Normal Set PCI-E OverVoltrage Control to Normal. (Default value)
- ➡ +0.1V Set PCI-E OverVoltrage Control to +0.1V.
- ➡ +0.2V Set PCI-E OverVoltrage Control to +0.2V.
- ▶ +0.3V Set PCI-E OverVoltrage Control to +0.3V.

Incorrect using it may cause your system broken. For power End-User use only!

☞ FSB OverVoltage Control

- ▶ Normal Set FSB OverVoltage Control to Normal. (Default value)
- ➡ +0.1V Set FSB OverVoltage Control to +0.1V.
- ➡ +0.2V Set FSB OverVoltage Control to +0.2V.
- ▶ +0.3V Set FSB OverVoltage Control to +0.3V.

☞ CPU Voltage Control

▶ Supports adjustable CPU Vcore from 0.8375V to 1.6000V. (Default value: Normal)

∽ Normal CPU Vcore

Display your CPU Vcore Voltage.

2-8 Load Fail-Safe Defaults

CMOS Setup	Utility-Copyright (C	C) 1984-2005 Award Software	
Standard CMOS Features Advanced BIOS Features Integrated Peripherals Power Mar PnP/PCI C PC Health curves	Load Fail-Safe Defa	Load Fail-Safe Defaults Load Optimized Defaults Set Supervisor Password]
MB Intelligent Tweaker(M.I.T.)			
ESC: Quit	I	↑↓→←: Select Item	
F8: Q-Flash		F10: Save & Exit Setup	
	Load Fail-Safe	è Defaults	

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

2-9 Load Optimized Defaults

CMOS Setup Utility-Copyright	t (C) 1984-2005 Award Software
Standard CMOS Features Advanced BIOS Features Integrated Peripherals Power Mar	Load Fail-Safe Defaults Load Optimized Defaults Set Supervisor Password
	Defaults (Y/N)? N
ESC: Quit F8: Q-Flash	↑↓→←: Select Item F10: Save & Exit Setup
Load Optim	ized Defaults

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

2-10 Set Supervisor/User Password

CMOS Setup Utility-Copyright	(C) 1984-2005 Award Software
 Standard CMOS Features Advanced BIOS Features Integrated Peripherals Power Management Seature PnP/PCI C Enter Password: PC Health Seature MB Intelligent Tweaker(M.I.T.) 	Load Fail-Safe Defaults Load Optimized Defaults Set Supervisor Password
ESC: Quit F8: Q-Flash	↑↓→←: Select Item F10: Save & Exit Setup
Change/Set/Di	sable Password

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

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

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

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

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

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

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

2-11 Save & Exit Setup

	CMOS Setup Utility-Copyright	(C) 1984-2005 Award Software
•	Standard CMOS Features	Load Fail-Safe Defaults
•	Advanced BIOS Features	Load Optimized Defaults
•	Power N Save to CMOS and	EXIT (Y/N)? Y
•	PnP/PCi Contigurations	Save & Exit Setup
•	PC Health Status	Exit Without Saving
•	MB Intelligent Tweaker(M.I.T.)	
ESC	2: Quit	$\uparrow \downarrow \rightarrow \leftarrow$: Select Item
F8:	Q-Flash	F10: Save & Exit Setup
	Save Data	to CMOS

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

2-12 Exit Without Saving

CMOS Setup Utility-Copy	right (C) 1984-2005 Award Software
Standard CMOS Features Advanced BIOS Features Integrated Power Ma Quit With PnP/PCI Compguations PC Health Status	Load Fail-Safe Defaults Load Optimized Defaults out Saving (Y/N)? N Save & EAR Scrup Exit Without Saving
MB Intelligent Tweaker(M.I.T.)	LAR WINDUR Saving
ESC: Quit	↑↓→←: Select Item
F8: Q-Flash	F10: Save & Exit Setup
Aba	andon all Data

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

Type "N" will return to Setup Utility.

Chapter 3 Install Drivers



Pictures below are shown in Windows XP.

Insert the driver CD-title that came with your motherboard into your CD-ROM drive, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the Run.exe.

3-1 Install Chipset Drivers

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

After insert the driver CD, "Xpress Install" will scan automatically the system and then list all the drivers that recommended to install. Please pick the item that you want and press "install" followed the item; or you can press "Xpress Install" to install all items defaulted.

formation ardware formation ontact Us	Size 930.9KB This utility installs INF files that inform th Microsoft® UAA Bus driver for Intel® Size 59.0MB	Version 7.0.0.1018 e operating system how to properly configure the chipset for specific fur tigh Definition Audio	nctionality such as PCI-Express or USB interface.
formation	Microsoft@UAA Bus driver for Intel®		nctionality such as PCI-Express or USB interface.
			Install
ntact Us		Version 1.0	
	tollowing versions of Windows: 1.Microsoft Windows Server 2003 2.Microsoft Windows XP Service Pack 3.Microsoft Windows 2000 Service Pa		
	Realtek Audio Codec Driver		Install
	Size 33.6MB	Version \$.10.0.5120	
	The Realtek Audio Codec driver provide		
	BroadCom PCI-Express Interface Gig		Install
	Size 26.4MB	Version 7.97	
	Installs drivers for BroadCom Gigabit L	A Driver.	
P	GIGARAID IT8212 RAID Driver		Install
	Size 8.0MB	Version 99 des susport for ATA133 mode and RAD 0. RAD 1 & RAD 0+1	
L	The GRANAD TR212 RAD driver prov	des support for ATA133 mode and RAD 0, RAD 1 & RAD 0+1	

NOTE

Some device drivers will restart your system automatically. After restarting your system the "Xpress Install" will continue to install other drivers. System will reboot automatically after install the drivers, afterward you can install others application.



For USB2.0 driver support under Windows XP operating system, please use Windows Service Pack. After install Windows Service Pack, it will show a question mark "?" in "Universal Serial Bus controller" under "Device Manager". Please remove the question mark and restart the system (System will auto-detect the right USB2.0 driver).

3-2 Software Applications

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

	offware Applications see cick on the following applications listed below to install	
Software Applications		
Driver CD Information	GIGABYTE C.O.M. (Corporate Online Manager) Size 0.eWD	Install
Hardware	A web-based system management tool that allows client system hardware information such as CPU and memory and graphics card and m controlled via a host.	ich more to be monitored or
	EasyTune 5	Install
Contact Us	Size 4.7MB	
	An easy-to-use Windows-based system enhancement utility allowing quick access to a variety of performance features.	
	DMI Viewer	Install
	Size 1012.9KB	
	DMI Viewer provides a management tool for viewing motherboard hardware information.	
	Face-Witzerd	Install
	Sze 1.8MD	
	Face Wizard provides utility for customizing BIOS boot up screen.	
	geos	Install
	Size 1.0MB	
	@BIOS provides utility for updating BIOS through internet.	
	Acrobat Reader	Install
	Size 0.9MD	
	Utility for viewing or printing Adobe Portable Document Format (PDF) files.	
	Norton Internet Security(NIS)	Install
	Size S1.1MB	

3-3 Driver CD Information

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

nformation	Chipset7/IA		
	Directory Name	Description	
lardware nformation	 INFUpdate 	- Innel® chipest software installation utility for Windows XP Innel® chipest software installation utility for Windows 2000 - Innel® chipest software installation utility for Windows ME - Innel® chipest software installation utility for Windows 98	
Contact Us	IAA.	Intel® application accelerator for Windows XP Intel® application accelerator for Windows 2000	
	• VOA	Win2k_XP -Intel® Graphics Media Accelerator Driver for Windows XP Win2k_XP -Intel® Graphics Media Accelerator Driver for Windows 2000	
	 EnableUSBS30p 	Enable USB device back form S3 mode	
	Sudio		_
	Xirectory Name	Description rmedia ACR7 Audio Driver	
	 cmedia 		
le l	 Realtek 	Reatek AC'97 Audio Driver	
1	Network		
1	Strectory Name	Description	-
	 Rtl8139 	LAN Driver for RealTek 8139/8100/8110s	
	Marvell	Marvell 10/100/1000 Base LAN driver	
	 BroadCom 	BroadCom PCI-E LAN driver	_
	Other		
	Arectory Name	Description	
	• VIA	VIA VT6410 RAID Controller driver	
		Silicon Imane Serial-ATA RAID Driver	

3-4 Hardware Information

This page lists all device you have for this motherboard.

nstall Chipset Drivers	Hardware information The following information shows the detail hardware information of your motherboard.	
oftware Applications		
Driver CD Information Hardware Information	System He	
Contact Us	Staftm	
	Dexicd DriverProvider Microsoft Dexice DescriptionsPCI standard PCI-to-PCI bridge Dexicd DriverProvider Microsoft	
	Device Description=PC is standard ISA bridge Device DeveryProvider:Microsoft Device Description=PC is standard PCH-to-PCI bridge Device Description=PC is standard PCH-to-PCI bridge Device Diverse Pointer Microsoft Device Diverse Pointer Pointer Microsoft Device Diverse Pointer Pointer Pointer Pointer Device Diverse Pointer Pointer Pointer Device Diverse Pointer Pointer Device Diverse Pointer Device Pointer Device Diverse Pointer Device Divers	
	Device Description:PCI standard PCI-b-PCI bridge Devict Diversity obterolitics out	
	58	

3-5 Contact Us

Please see the last page for details.



Chapter 4 Appendix

4-1 Unique Software Utilities

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

U-PLUS D.P.S. (Universal Plus Dual Power System)

The U-Plus Dual Power System (U-Plus DPS) is a revolutionary eight-phase power circuit built for ultimate system protection. Designed to withstand varying current levels and changes, the U-Plus D.P.S. provides an immensely durable and stable power circuit to the CPU for solid system stability. These characteristics make it the ideal companion with the latest LGA775 Intel® Pentium® 4 Processor as well as future Intel® processors. As well, 4 blue LED's are mounted on the U-Plus D.P.S. for intelligent indication of system loading.



M.I.T. (Motherboard Intelligent Tweaker)

Motherboard Intelligent Tweaker (M.I.T.) allows user to access and change BIOS feature settings with relative speed and ease. Through GIGABYTE M.I.T. feature the user is no longer required to switch into different modes within BIOS setup in order to change system settings such as the CPU system bus, memory timings or to enabled Gigabyte's unique C.I.A. 2 and M.I.B. 2 features. M.I.T.'s integration of all platform performance settings into a single mode now gives any user the ability to control and enhance their computer system to the desired level.



C.I.A.2 (CPU Intelligent Accelerator 2)

GIGABYTE CPU Intelligent Accelerator 2(C.I.A. 2) is designed to automatically adjust CPU computing power to maximize system performance. When enabled, the program detects the current CPU loading and automatically accelerates the CPU computing performance to allow for a faster and smoother execution of programs. When the function is disabled, the CPU is returned to its initial status.



505





M.I.B.2 (Memory Intelligent Booster 2)

Built on the original M.I.B., the new Memory Intelligent Booster 2 (M.I.B. 2) is designed especially to maximize memory performance and boost memory bandwidth up to 10%. With added branded memory module information, users are able to optimize memory performance by selecting from a recommended memory module list.

S.O.S. (System Overclock Saver)

System Overclock Saver (S.O.S.) is a unique feature that eliminates system boot-up errors resulting from system over-enhancement by the user. With GIGABYTE's proprietary S.O.S. feature, users no longer need to open up the PC chassis and short-circuit the "Clear CMOS" pins or the battery on the motherboard to reset the system back to factory default settings. Instead, S.O.S. automatically resets the overclocked system settings back to their factory defaults to provide a more user-friendly and reliable platform for users.

Download Center

Download Center allows users to quickly download and update their BIOS as well as the latest drivers for their system. Download Center automatically runs a system check of the user PC and provides the user with the current system information as well as displaying a detailed list of all new drivers with the option for download.

C.O.M. (Corporate Online Management)

A web-based system management tool that allows system hardware information such as CPU, memory, graphics card, etc. to be monitored and controlled via the Internet, C.O.M. allows corporate MIS engineers to easily maintain corporate computers such as providing the most up-to-date drivers and BIOS.(Do not use C.O.M. and @BIOS at the same time.)

4-1-1 EasyTune 5 Introduction

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

User Interface Overview



	Button / Display	Description
1.	Overclocking	Enters the Overclocking setting page
2.	C.I.A./C.I.A.2 and M.I.B./M.I.B.2	Enters the C.I.A./2 and M.I.B./2 setting page
3.	Smart-Fan	Enters the Smart-Fan setting page
4.	PC Health	Enters the PC Health setting page
5.	GO	Confirmation and Execution button
6.	"Easy Mode" & "Advance Mode"	Toggles between Easy and Advance Mode
7.	Display screen	Display panel of CPU frequency
8.	Function display LEDs	Shows the current functions status
9.	GIGABYTE Logo	Log on to GIGABYTE website
10.	Help button	Display EasyTune [™] 5 Help file
11.	Exit or Minimize button	Quit or Minimize EasyTune™ 5 software

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

4-1-2 Xpress Recovery2 Introduction



Xpress Recovery2 is designed to provide quick backup and restoration of hard disk data. Supporting Microsoft operating systems including Windows XP/2000/NT/98/Me and DOS, and file systems including FAT16, FAT32, and NTFS, Xpress Recovery2 is able to back up data

on hard disks on PATA and SATA IDE controllers. After Xpress Recovery2 is executed from CD-ROM for the first time, it will stay permanent in your hard disk. If you wish to run Xpress Recovery2 later, you can simply press F9 during system bootup to enter Xpress Recovery2 without the CD-ROM.

System requirements:

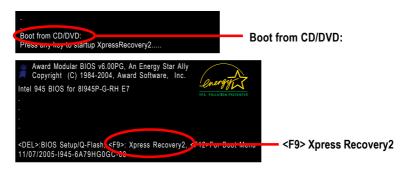
- 1. Intel x86 platforms
- 2. At least 64M bytes of system memory
- 3. VESA-supported VGA cards

How to use the Xpress Recovery2

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

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

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





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

The Main Screen of Xpress Recovery2



1. RESTORE:

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

2. BACKUP:

Back up data from hard disk.

3. REMOVE:

Remove previously-created backup files to release disk space. (This button will not appear if there is no backup

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

4. REBOOT:

Exit the main screen and restart the system.

Limitations:

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

Hard disks detection sequence is as follows:

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

Precautions:

- 1. When using hard disks with more than 128G under Windows 2000, be sure to execute the EnableBigLba.exe program from the driver CD before data backup.
- 2. It is normal that data backup takes longer time than data restoration.
- 3. Xpress Recovery2 is compliant with the GPL regulations.
- 4. On a few motherboards based on Nvidia chipsets, BIOS update is required for Xpress Recovery2 to correctly identify RAID and SATA IDE mode. Please contact your motherboard manufacturer.
- Xpress Recovery2 supports only PATA hard disks and not SATA hard disks on the following motherboards (As this is a BIOS-related issue, it can be solved by BIOS update)

GA-K8U	GA-K8NXP-9	GA-8N-SLI Royal
GA-K8U-9	GA-K8N Ultra-9	GA-8N-SLI Pro
GA-K8NXP-SLI	GA-K8NF-9 (PCB Ver. 1.0)	GA-8N-SLI
GA-K8N Ultra-SLI	GA-K8NE (PCB Ver. 1.0)	
GA-K8N Pro-SLI	GA-K8NMF-9	

4-1-3 Flash BIOS Method Introduction



Method 1 : Q-Flash[™] Utility

Q-Flash[™] is a BIOS flash utility embedded in Flash ROM. With this utility, users only have to stay in the BIOS menu when they want to update BIOS. Q-Flash[™] allows users to flash BIOS without any utility in

DOS or Windows. Using Q-Flash[™] indicating no more fooling around with any complicated instructions and operating system since it is in the BIOS menu.



Please note that because updating BIOS has potential risk, please do it with caution!! We are sorry that Gigabyte Technology Co., Ltd is not responsible for damages of system because of incorrect manipulation of updating BIOS to avoid any claims from end-users.

Before You Begin:

Before you start updating BIOS with the Q-Flash™ utility, please follow the steps below first.

- 1. Download the latest BIOS for your motherboard from Gigabyte's website.
- Extract the BIOS file downloaded and save the BIOS file (the one with model name.Fxx. For example, 8KNXPU.Fba) to a floppy disk.
- 3. Reboot your PC and press Del to enter BIOS menu.

The BIOS upgrading guides below are separated into two parts. If your motherboard has dual-BIOS, please refer to **Part One**. If your motherboard has single-BIOS, please refer to **Part Two**.

Part One:

Updating BIOS with Q-Flash[™] Utility on Dual BIOS Motherboards.

Some of Gigabyte motherboards are equipped with dual BIOS. In the BIOS menu of the motherboards supporting Q-Flash and Dual BIOS, the Q-Flash utility and Dual BIOS utility are combined in the same screen. This section only deals with how to use Q-Flash utility.

In the following sections, we take GA-8KNXP Ultra as the example to guide you how to flash BIOS from an older version to the latest version. For example, from Fa3 to Fba.

Award Modular BIOS v6.00PG, An Energy Star Ally Copyright (C) 1984-2003, Award Software, Inc. Intel i875P AGPset BIOS for 8KNXP Ultra Fa3	
met 18/37 AGPset BIOS IN SKNAP UITE PES Check System Health OK, V. Owene 1: 15:250 Main Processor : Intel Pentium(R) 4 1.6GHz (133x12) <cpuid 0027-<br="" 0627="" :="" id="" parch="">Memory Testing : 131072K OK</cpuid>	DELS DUD
Memory Frequency 266 MHz in Single Channel Primary Master : FUJITSU MPE3170AT ED-03-08 Primary Slave : None Secondary Master : CREATIVEDVD-RM DVD1242E BC101 Secondary Slave : None	
Press DEL to enter SETUP / Dual BIOS / Q-Flash / F9 For Xpress Recovery 08/07/2003-i875P-6A79BG03C-00	

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The BIOS file is Fa3 before updating

Entering the Q-Flash[™] utility:

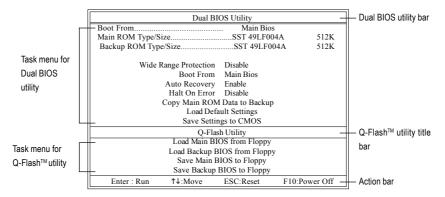
Step1: To use Q-Flash utility, you must press Del in the boot screen to enter BIOS menu.

CMOS Setup Utility-Copyright (C) 1984-2004 Award Software			
 Standard CMOS 	Features	Select Language	
 Advanced BIOS 	Features	Load Fail-Safe Defaults	
 Integrated Periph 	nerals	Load Optimized Defaults	
 Power Managem 	ent Setup	Set Supervisor Password	
 PnP/PCI Configu 	urations	Set User Password	
PC Health Status		Save & Exit Setup	
MB Intelligent T	weaker(M.I.T.)	Exit Without Saving	
ESC. Quit	FSC Quit F3: Change Language		
F8: Dual BIOS/Q-Flas	F8: Dual BIOS/Q-Flash F10: Save & Exit Setup		
	Time, Date, Hard Disk Type		

Step 2: Press F8 button on your keyboard and then Y button to enter the Dual BIOS/Q-Flash utility.

Exploring the Q-Flash[™] / Dual BIOS utility screen

The Q-Flash / Dual BIOS utility screen consists of the following key components.



Task menu for Dual BIOS utility:

Contains the names of eight tasks and two item showing information about the BIOS ROM type. Blocking a task and pressing Enter key on your keyboard to enable execution of the task.

Task menu for Q-Flash utility:

Contains the names of four tasks. Blocking a task and pressing Enter key on your keyboard to enable execution of the task.

Action bar:

Contains the names of four actions needed to operate the Q-Flash/Dual BIOS utility. Pressing the buttons mentioned on your keyboards to perform these actions.

Using the Q-Flash[™] utility:

This section tells you how to update BIOS using the Q-Flash utility. As described in the "Before you begin" section above, you must prepare a floppy disk having the BIOS file for your motherboard and insert it to your computer. If you have already put the floppy disk into your system and have entered the Q-Flash utility, please follow the steps below to flash BIOS.

Steps:

1. Press arrow buttons on your keyboard to move the light bar to "Load Main BIOS from Floppy" item in the Q-Flash menu and press Enter button.

Later, you will see a box pop up showing the BIOS files you previously downloaded to the floppy disk.



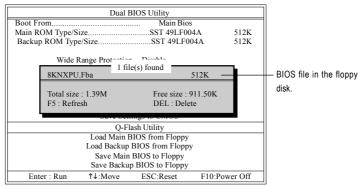
If you want to save the current BIOS for backup purpose, you can begin Step 1 with "Save Main BIOS to Floppy" item.

2. Move to the BIOS file you want to flash and press Enter.

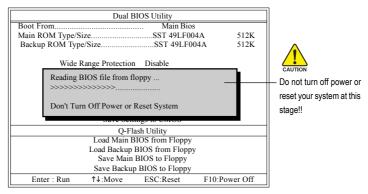
In this example, we only download one BIOS file to the floppy disk so only one BIOS file, 8KNXPU.Fba, is listed.



Please confirm again you have the correct BIOS file for your motherboard.



After pressing **Enter**, you'll then see the progress of reading the BIOS file from the floppy disk.



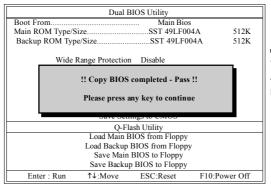
After BIOS file is read, you'll see a confirmation dialog box asking you "Are you sure to update BIOS?"

 Press Y button on your keyboard after you are sure to update BIOS. Then it will begin to update BIOS. The progress of updating BIOS will be displayed.



Please do not take out the floppy disk when it begins flashing BIOS.

4. Press any keys to return to the Q-Flash menu when the BIOS updating procedure is completed.



ou can repeat

You can repeat Step 1 to 4 to flash the backup BIOS, too.

 Press Esc and then Y button to exit the Q-Flash utility. The computer will restart automatically after you exit Q-Flash.

Dual BIOS Utility					
Boot From Main Bios Main ROM Type/SizeSST 49LF004A 512K					
Backup ROM Type/SizeSST 49LF004A 512K					
Wide Range Protection Disable					
Are you sure to RESET ? [Enter] to continure or [Esc] to abort					
Save Settings to Onrob					
Q-Flash Utility					
Load Main BIOS from Floppy					
	Load Backup	BIOS from Floppy	,		
	Save Main BIOS to Floppy				
	Save Backu	p BIOS to Floppy			
Enter : Run	↑↓:Move	ESC:Reset	F10:Power Off		

After system reboots, you may find the BIOS version on your boot screen becomes the one you flashed.

	Award Modular BIOS v6.00PG, An Energy Star Ally Copyright (C) 1984-2003, Award Software, Inc.
The BIOS file	Intel i875P AGPset BIOS for 8KNXP Ultra Fba
becomes Fab after	Main Processor : Intel Pentium(R) 4 1.6GHz (133x12)
updating.	Memory Testing : 131072K OK
	Memory Frequency 266 MHz in Single Channel
	Primary Master : FUJITSU MPE3170AT ED-03-08 Primary Slave : None
	Secondary Master : CREATIVEDVD-RM DVD1242E BC101
	Secondary Slave : None
	Press DEL to enter SETUP / Dual BIOS / Q-Flash / F9 For Xpress Recovery
	09/23/2003-i875P-6A79BG03C-00

6. Press Del to enter BIOS menu after system reboots. When you are in BIOS menu, move to Load Fail-Safe Defaults item and press Enter to load BIOS Fail-Safe Defaults. Normally the system redetects all devices after BIOS has been upgraded. Therefore, we highly recommend reloading the BIOS defaults after BIOS has been upgraded.

	CMOS Setup Utility-Copyright (C) 1984-2004 Award Software			
	►	Standard CMOS Features	Select Language	
	►	Advanced BIOS Features	Load Fail-Safe Defaults	
	►	Integrated Perinherals	Load Ontimized Defaults	
	►	Power Mana: Load Fail-Safe Def	aults (Y/N)? Y	
	►	PnP/PCI Cor		
	►	PC Health Status	Save & Exit Setup	
	►	MB Intelligent Tweaker(M.I.T.)	Exit Without Saving	
╟	ESC: Quit		F3: Change Language	
	F8: Dual BIOS/Q-Flash		F10: Save & Exit Setup	
	Time, Date, Hard Disk Type			

Press Y on your keyboard to load defaults.

 Select Save & Exit Setup item to save the settings to CMOS and exit the BIOS menu. System will reboot after you exit the BIOS menu. The procedure is completed.

CMOS Setup Utility-Copyrigh	t (C) 1984-2004 Award Software	
Standard CMOS Features	Select Language	
 Advanced BIOS Features 	Load Fail-Safe Defaults	
Integrated Perinherale	Load Ontimized Defaulte	
 Power Mana; Save to CMOS and 	EXIT (Y/N)? Y	
▶ PnP/PCI Cor		
 PC Health Status 	Save & Exit Setup	
 MB Intelligent Tweaker(M.I.T.) 	Exit Without Saving	
ESC: Quit	F3: Change Language	
F8: Dual BIOS/Q-Flash	F10: Save & Exit Setup	
Time, Date, Hard Disk Type		

Press Y on your keyboard to save and exit.

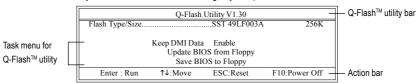
Part Two:

Updating BIOS with Q-Flash[™] Utility on Single-BIOS Motherboards.

This part guides users of single-BIOS motherboards how to update BIOS using the Q-Flash™utility.

CMOS Setup Utility-Copyright (C) 1984-2004 Award Software			
 Standard CMOS Features 	Top Performance		
 Advanced BIOS Features 	Load Fail-Safe Defaults		
 Integrated Peripherals 	Load Optimized Defaults		
 Power Management Setup 	Set Supervisor Password		
 PnP/PCI Configurations 	Set User Password		
PC Health Status	Save & Exit Setup		
▶ MB Intelligent Tweaker(M.I.T.)	Exit Without Saving		
ESC. Quit	F3: Change Language		
F8: Q-Flash	F10: Save & Exit Setup		
Time, Date, Hard Disk Type			

Exploring the Q-Flash[™] utility screen



The Q-FlashBIOS utility screen consists of the following key components.

Task menu for Q-Flash utility:

Contains the names of three tasks. Blocking a task and pressing Enter key on your keyboard to enable execution of the task.

Action bar:

Contains the names of four actions needed to operate the Q-Flash utility. Pressing the buttons mentioned on your keyboards to perform these actions.

Using the Q-Flash[™] utility:

This section tells you how to update BIOS using the Q-Flash utility. As described in the "Before you begin" section above, you must prepare a floppy disk having the BIOS file for your motherboard and insert it to your computer. If you have already put the floppy disk into your system and have entered the Q-Flash utility, please follow the steps below to flash BIOS.

Steps:

1. Press arrow buttons on your keyboard to move the light bar to "Update BIOS from Floppy" item in the Q-Flash menu and press Enter button.

Later, you will see a box pop up showing the BIOS files you previously downloaded to the floppy disk.

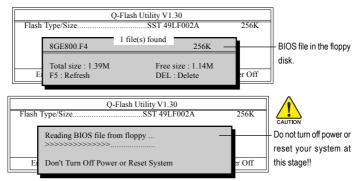


If you want to save the current BIOS for backup purpose, you can begin Step 1 with "Save BIOS to Floppy" item.

2. Move to the BIOS file you want to flash and press Enter.

In this example, we only download one BIOS file to the floppy disk so only one BIOS file, 8GE800.F4, is listed.

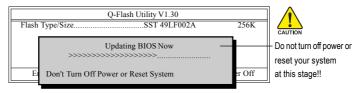
Please confirm again you have the correct BIOS file for your motherboard.



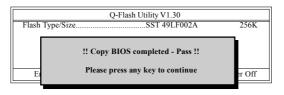
After BIOS file is read, you'll see a confirmation dialog box asking you "Are you sure to update BIOS?"

Please do not take out the floppy disk when it begins flashing BIOS.

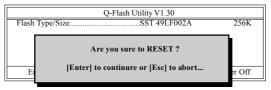
3. Press Y button on your keyboard after you are sure to update BIOS. Then it will begin to update BIOS. The progress of updating BIOS will be shown at the same time.



4. Press any keys to return to the Q-Flash menu when the BIOS updating procedure is completed.



5. Press Esc and then Y button to exit the Q-Flash utility. The computer will restart automatically after you exit Q-Flash.



After system reboots, you may find the BIOS version on your boot screen becomes the one you flashed.



updating

6. Press Del to enter BIOS menu after system reboots and "Load BIOS Fail-Safe Defaults". See how to Load BIOS Fail-Safe Defaults, please kindly refer to Step 6 to 7 in Part One.

Congratulation!! You have updated BIOS successfully!!



Method 2 : @BIOS™ Utility

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

Fig 1. Installing the @BIOS utility



Fig 3. The @BIOS Utility



Fig 2. Installation Complete and Run @BIOS



Fig 4. Select the desired @BIOS server



1. Methods and steps:

- I. Update BIOS through Internet
 - a. Click "Internet Update" icon
 - b. Click "Update New BIOS" icon
 - c. Select @BIOS™ sever
 - d. Select the exact model name on your motherboard
 - e. System will automatically download and update the BIOS.
- II. Update BIOS NOT through Internet:
 - a. Do not click "Internet Update" icon
 - b. Click "Update New BIOS"
 - c. Please select "All Files" in dialog box while opening the old file.
 - Please search for BIOS unzip file, downloading from internet or any other methods (such as: 8I945P Pro.F2a).
 - e. Complete update process following the instruction.

III. Save BIOS

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

IV. Check out supported motherboard and Flash ROM:

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

2. Note:

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



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

This motherboard provide 6 audio connector. You are able to use 2-/4-/6-/8-channnels audio feature by audio software selection.

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



Please follow the steps to install the function. (Following pictures are in Windows XP)



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

HD Audio

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

Stereo Speakers Connection and Settings:

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

STFP 1 ·

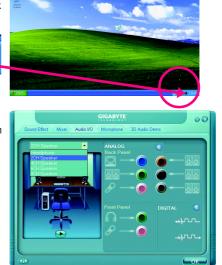
After installation of the audio driver, you should find

an Audio Manager 🗿 icon in your system tray (you can also find the icon in Control Panel). Double-click the icon to open the Audio Control Panel.



STEP 2

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



STEP 3:

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

GIGAB			03
Sound Effect Mixer Audio VO Microph	ione 3D Audio I	Demo	
Connected device :		•	
Which device did you plug in?		[
Line In Mic In Headphone			
✓ Line Out Rear Speaker Out			2 10 1
Center/Subwoofer Speaker Out Side Speaker Out	0	O	
	el		
		-+ } -	. I
OK Cancel		- در	
		-++- 1	
ŵ		6	
			ок

4 Channel Audio Setup

STEP 1 :

After installation of the audio driver, you should find an Audio Manager **1** icon in your system tray (you can also find the icon in Control Panel). Double-click the icon to open the Audio Control Panel.



STEP 2:

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





STEP 3:

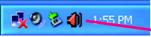
After plugging in 4-channel speakers to the rear speaker jacks, a small window will pop up and ask you what type of equipment is connected. Choose a device depending on the type of speaker connected (4-channel audio consists of Front Speaker Out (Line Out) and Rear Speaker Out and then click **OK**.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



6 Channel Audio Setup

STEP 1 :

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



1-55 PM

STEP 2:

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





STEP 3:

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



8 Channel Audio Setup

STEP 1 :

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





STEP 2:

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



STEP 3:

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

GIGABY	ιę:		03
Sound Effect Mixer Audio VO Microphon	e 3D Audio D	lemo	
Connected device : Which device did you plug in? Line In Mic In	iel	• •	38
Headohone ✓ Line Dut Rear Speaker Out Center/Subwoofer Speaker Out Side Speaker Out	0		30 30
	el 		©
		_} 7	r.,
60		C	ок

Sound Effect Configuration:

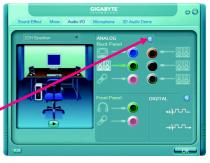
At the **Sound Effect** menu, users can adjust sound option settings as desired.



AC'97 Audio Configuration:

To enable the front panel audio connector to support AC97 Audio mode, go to the Audio Control Panel and click the **Audio I/O** tab. In the **ANALOG** area, click the **Tool** icon and then select the **Disable front panel jack detection** check box. This action completes the AC'97 Audio configuration.





4-2 Troubleshooting

Below is a collection of general asked questions. To check general asked questions based on a specific motherboard model, please log on to http://www.gigabyte.com.tw

Question 1: I cannot see some options that were included in previous BIOS after updating BIOS. Why? Answer: Some advanced options are hidden in new BIOS version. Please press Ctrl and F1 keys after entering BIOS menu and you will be able to see these options.

Questions 2: Why is the light of my keyboard/optical mouse still on after computer shuts down? Answer: In some boards, a small amount of electricity is kept on standby after computer shuts down and that's why the light is still on.

Question 3: How do I clear CMOS?

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

Steps:

- 1. Turn off power.
- 2. Disconnect the power cord from MB.
- Take out the battery gently and put it aside for about 10 minutes (Or you can use a metal object to connect the positive and negative pins in the battery holder to makethem short for one minute).
- 4. Re-insert the battery to the battery holder.
- 5. Connect power cord to MB again and turn on power.
- 6. Press Del to enter BIOS and load Fail-Safe Defaults(or load Optimized Defaults).
- 7. Save changes and reboot the system.

Question 4: Why do I still get a weak sound after turning up the speaker to the maximum volume? Answer: Please make sure the speaker you are using is equipped with an internal amplifier. If not, please change another speaker with power/amplifier and try again later.

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

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

→AMI BIOS Beep Codes

*Computer gives 1 short beep when system boots successfully. *Except for beep code 8, these codes are always fatal.

- 1 beep Refresh failure
- 2 beeps Parity error
- 3 beeps Base 64K memory failure
- 4 beeps Timer not operational
- 5 beeps Processor error
- 6 beeps 8042 gate A20 failure
- 7 beeps Processor exception interrupt error
- 8 beeps Display memory read/write failure
- 9 beeps ROM checksum error
- 10 beeps CMOS shutdown register read/write error
- 11 beeps Cache memory bad

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

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Taiwan (Headquarters)

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Tech. Support :

http://tw.giga-byte.com/TechSupport/ServiceCenter.htm Non-Tech. Support(Sales/Marketing) :

http://ggts.gigabyte.com.tw/nontech.asp

WEB address (English): http://www.gigabyte.com.tw WEB address (Chinese): http://chinese.giga-byte.com

• U.S.A.

G.B.T. INC. TEL:+1-626-854-9338 FAX:+1-626-854-9339 Tech. Support: http://rma.gigabyte-usa.com Web Address: http://www.gigabyte-usa.com

Mexico

G.B.T Inc (USA) Tel: +1-626-854-9338 x 215 (Soporte de habla hispano) FAX: +1-626-854-9339 Correo: soporte@gigabyte-usa.com Tech. Support: http://rma.gigabyte-usa.com Web Address: http://www.gigabyte-latam.com

Germany

G.B.T. TECHNOLOGY TRADING GMBH Tech. Support : http://tw.giga-byte.com/TechSupport/ServiceCenter.htm Non-Tech. Support(Sales/Marketing) : http://ggts.gigabyte.com.tw/nontech.asp WEB address : http://www.gigabyte.de

Japan

NIPPON GIGA-BYTE CORPORATION WEB address : http://www.gigabyte.co.jp

Singapore

GIGA-BYTE SINGAPORE PTE. LTD. Tech. Support : http://tw.giga-byte.com/TechSupport/ServiceCenter.htm Non-Tech. Support(Sales/Marketing) : http://ggts.gigabyte.com.tw/nontech.asp

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

U.K.

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

Tech. Support :

http://tw.giga-byte.com/TechSupport/ServiceCenter.htm Non-Tech. Support(Sales/Marketing):

Non-rech. Support(Sales/Marketing).

http://ggts.gigabyte.com.tw/nontech.asp WEB address : http://uk.giga-byte.com

The Netherlands

GIGA-BYTE TECHNOLOGY B.V. Tech. Support : http://tw.giga-byte.com/TechSupport/ServiceCenter.htm

Non-Tech. Support(Sales/Marketing) :

http://ggts.gigabyte.com.tw/nontech.asp

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

China . NINGBO G.B.T. TECH. TRADING CO., LTD. Tech. Support : http://tw.giga-byte.com/TechSupport/ServiceCenter.htm Non-Tech. Support(Sales/Marketing) : http://ggts.gigabyte.com.tw/nontech.asp WEB address : http://www.gigabyte.com.cn Shanghai TEL:+86-021-63410999 FAX: +86-021-63410100 Beiiina TEL: +86-10-62102838 FAX: +86-10-62102848 Wuhan TEL: +86-27-87851061 FAX: +86-27-87851330 GuangZhou TEL: +86-20-87586074 FAX: +86-20-85517843 Chenadu TEL: +86-28-85236930 FAX: +86-28-85256822 Xian TEL:+86-29-85531943 FAX: +86-29-85539821 Shenvang TEL: +86-24-23960918 FAX: +86-24-23960918-809 Australia GIGABYTE TECHNOLOGY PTY I TD Tech. Support : http://tw.giga-byte.com/TechSupport/ServiceCenter.htm Non-Tech, Support(Sales/Marketing) : http://ggts.gigabyte.com.tw/nontech.asp WEB address : http://www.giga-byte.com.au

France

GIGABYTE TECHNOLOGY FRANCE S.A.R.L. Tech. Support : http://tw.giga-byte.com/TechSupport/ServiceCenter.htm Non-Tech. Support(Sales/Marketing) : http://ggts.gigabyte.com.tw/nontech.asp

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

Russia

Moscow Representative Office Of GIGA-BYTE Technology Co., Ltd. Tech. Support : http://tw.giga-byte.com/TechSupport/ServiceCenter.htm Non-Tech. Support(Sales/Marketing) : http://ggts.gigabyte.com.tw/nontech.asp WEB address : http://www.gigabyte.ru

Poland

Office of GIGA-BYTE TECHNOLOGY Co., Ltd. in POLAND Tech. Support : http://tw.giga-byte.com/TechSupport/ServiceCenter.htm Non-Tech. Support(Sales/Marketing) : http://gqts.gigabyte.com.tw/nontech.asp

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

Serbia & Montenegro

Representative Office Of GIGA-BYTE Technology Co., Ltd. in SERBIA & MONTENEGRO

Tech. Support :

http://tw.giga-byte.com/TechSupport/ServiceCenter.htm

Non-Tech. Support(Sales/Marketing) :

http://ggts.gigabyte.com.tw/nontech.asp

WEB address: http://www.gigabyte.co.yu

Czech Republic

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

Tech. Support :

http://tw.giga-byte.com/TechSupport/ServiceCenter.htm

Non-Tech. Support(Sales/Marketing) :

http://ggts.gigabyte.com.tw/nontech.asp

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

Romania

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

Tech. Support :

http://tw.giga-byte.com/TechSupport/ServiceCenter.htm

Non-Tech. Support(Sales/Marketing) :

http://ggts.gigabyte.com.tw/nontech.asp

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