# **GA-8I945GMF**

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

User's Manual

Rev. 1005 12ME-8I945GMF-1005R



\* 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.

	Name : Timmy Huang	Date :Apr. 26, 2005	(qr	(Stamp)
Date: Apr. 26, 2005	Signature: Timmy Hurang	Manufacturer/Importer		
Signature: $Eric Lu$	General and Safety requirements for uninterruptible power systems (UPS)	Id and similar II EN 50091-1 98	Safety of household and similar electrical appliances	□ EN 60335
Representative Person's Name: ERIC LU	Satery for information recrinology equipment including electrical business equipment	Sarety requirements for mains operated Li EN 60950 electronic and related apparatus for household and similar general use	Sarrey requirements for mains oper electronic and related apparatus for household and similar general use	
including that may cause undesired operation.	ee mentioned product se with LVD 73/23 EEC Se fait for information instantion continuent	es the c y stand	The manuf with the ac	
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		systems; Equipment r distribution from on signals	DIN VDE 0855 Cabled distribution systems; Equipment     part 10 for receiving and/or distribution from     part 12 sound and television signals	<ul> <li>DIN VDE 08</li> <li>part 10</li> <li>part 12</li> </ul>
(a),Class B Digital Device		s of measurement e characteristics of logy equipment	Limits and methods of measurement of radio disturbance characteristics of information technology equipment	IX EN 55022
FCC Part 15, Subpart B, Section 15.107(a) and Section 15.109	EMC requirements for uninterruptible power systems (UPS)	io interference of EN 50091-2 s and associated	Immunity from radio interference of broadcast receivers and associated equipment	□ EN 55020
Model Number: GA-81945GMF Conforms to the following specifications:	Immunity requirements for household appliances tools and similar apparatus	s of measurement EN 55014-2 e characteristics of and luminaries	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	similar electrical	apparatus	
hereby declares that the product	Generic immunity standard Part 1: Residual, commercial and light industry	s of measurement e characteristics of al anniances	Limits and methods of measurement of radio disturbance characteristics of household electrical annuances	EN 55014-1
City of Industry, CA 91748 Phone/Fax No: (818) 854-9338/ (818) 854-9339	Information Technology equipment-immunity charadensistes.Limits and methods of measurement	s of measurement III EN 55024 e characteristics of s and associated	Limits and methods of measurement 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"	: and medical (ISM) I EN 61000-3-3 Jipment	industrial, scientific and medical (ISM) high frequency equipment	
Responsible Party Name: G.B.T. INC. (U.S.A.)	Disturbances in supply systems caused	- -	Limits and methods of measurement of radio disturbance characteristics of	🗆 EN 55011
	nty is declared) rective	GA-01949 JOINT Is in contromity with (reference to the specification under which conformity is declared) in accordance with 89/336 EEC-EMC Directive	(rel	
	o which it refers)	(description of the apparatus, system, installation to which it refers) Motherboard	(de	
Per FCC Part 2 Section 2.1077(a)	Germany	G.B.T. Technology Trading GMbH Ausschlager Weg 41, 1F 20537 Hamburg, Germany declare that the product		
DECLARATION OF CONFORMITY	nity	Declaration of Conformity We. Manufacturer/Importer (full address)		

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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 detailed product information and specifications, please carefully read the "Product User Manual".
- For detailed information related to Gigabyte's unique features, please go to the "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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## GA-8I945GMF 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.
- 5. Please verify that you 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 <sup>®</sup> Pentium <sup>®</sup> D / Pentium <sup>®</sup> 4 LGA775 CPU <sup>(Note 1)</sup>		
0.0	•	Supports 1066/800/533MHz FSB		
	٠	L2 cache varies with CPU		
Chipset	٠	Northbridge: Intel <sup>®</sup> 945G Express chipset		
	٠	Southbridge: Intel® ICH7		
	٠	Supported on the Win 2000/XP operating systems		
Memory	٠	4 DDRII DIMM memory slots (supports up to 4GB memory) (Note 2)		
,	٠	Supports dual channel DDRII 667 <sup>(Note 3)</sup> /533/400 DIMM		
	٠	Supports 1.8V DDR II DIMM		
Slots	٠	1 PCI Express x 16 slot		
	٠	1 PCI Express x 1 slot		
	٠	2 PCI slots		
IDE Connections	٠	1 IDE connection (UDMA 33/ATA 66/ATA 100), allows connection of 2 IDE		
		devices		
	٠	Supported on the Win 2000/XP operating systems		
FDD Connections	٠	1 FDD connection, allows connection of 2 FDD devices		
Onboard SATA3Gb/s	٠	4 SATA 3Gb/s connections		
	٠	Supported on the Win 2000/XP operating systems		
Peripherals	٠	1 parallel port supporting Normal/EPP/ECP mode		
	٠	1 VGA port, onboard COMA/COMB connection		
	٠	8 USB 2.0/1.1 ports (rear x 4, front x 4 via cable)		
	٠	3 IEEE1394 ports (rear x 1, front x2 via cable)		
	٠	1 front audio connector		
	٠	1 PS/2 keyboard port		
	٠	1 PS/2 mouse port		
Onboard LAN	٠	Onboard Marvell 8053 chip (10/100/1000 Mbit)		
	٠	1 RJ 45 port		
	٠	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 .

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/Out connection		
	CD In		
	<ul> <li>Supported on the Win 2000/XP operating systems</li> </ul>		
I/O Control	• IT8712F		
Hardware Monitor	System voltage detection		
	CPU / System temperature detection		
	CPU / System fan speed detection		
	CPU / System warning temperature		
	CPU / System fan failure warning		
	CPU smart fan control		
	System smart fan control		
BIOS	Use of licensed AWARD BIOS		
	Supports Q-Flash		
Additional Features	Supports @BIOS		
	<ul> <li>Supports EasyTune5 (only supports Hardware Monitor function)</li> </ul>		
Overclocking	Over Clock via BIOS (DDRII)		
Form Factor	<ul> <li>Micro ATX form factor; 24.4 cm x 24.4 cm</li> </ul>		

## 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 plastic covering 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. 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.



-Male Push Pin

The top of Female Push Pin

- Female Push Pin

#### 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. 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:

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

The motherboard supports 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 DDR II

GA-8I945GMF supports the Dual Channel Technology. After operating the Dual Channel Technology, the bandwidth of Memory Bus will double.

GA-8I945GMF 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 memory cannot be used if one or three DDR II memory modules are installed.
- If two DDR II memory modules are installed (same storage capacity), one must be added to the Channel A slot and the other in the Channel B slot in order to use dual channel memory. Dual channel memory cannot function if both DDR II memory modules are installed on the same channel.
- 3. If four DDR II memory modules are installed, please use memory of the same storage capacity in order to use dual channel memory and for BIOS to detect all the DDR II memory modules.

We'll strongly recommend our user to slot two DDR II memory modules into the DIMMs with the same color in order for Dual Channel Technology to work.

The following table is for Dual Channel Technology combination: (DS: Double Side, SS: Single Side)

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

## 1-5 Install 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 carefully pull out the small whitedrawable bar at the end of the PCI Express x 16 slot when you try to install/Uninstall the VGA 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 small white-drawable bar.

## 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 o the lower port (purple).

#### Parallel Port

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

#### COM A (Serial Port)

Connects to serial-based mouse or data processing devices.

#### Ø VGA Port

Monitor can be connected to VGA port.

#### IEEE 1394 Port

Serial interface standard set by Institute of Electrical and Electronics Engineers, which has features like high speed, highbandwidth and hot plug. (For optional IEEE1394 cable, please contact your local dealer.)

#### 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 (PCI Express Gigabit), 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.



In addition to the default speakers settings, the • • • audio jacks can be reconfigured to perform different functions via the audio software. Only microphones still MUST be connected to the default Mic In jack (•). 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)	PWR_LED (Optional)
2)	ATX (Power Connector)	11)	CD_IN
3)	CPU_FAN	12)	GREEN_USB/F_USB
4)	SYS_FAN	13)	F1_1394 / F2_1394
5)	FDD	14)	СОМВ
6)	IDE	15)	SPDIF_IO
7)	SATAII0_1 / SATAII2_3	16)	CI
8)	F_PANEL	17)	CLR_CMOS
9)	F_AUDIO	18)	RF_ID
		19)	BATTERY

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

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

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

Caution!

8

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.

		4 2	Pin No.	Definition
ノ」 🖬 🖌 🛯 🖬 🌆 乙酸			1	GND
			2	GND
			3	+12V
		5 1	4	+12V
			Pin No.	Definition
	12		1	3.3V
	12	<u> </u>	2	3.3V
			3	GND
			4	+5V
			5	GND
			6	+5V
			7	GND
			8	Power Good
			9	5V SB(stand by +5V)
			10	+12V
			11	+12V
			12	3.3V
	1	□ □ 13		(Only for 24pins ATX)
	1		13	3.3V
			14	-12V
			15	GND
			16	PS_ON(soft On/Off)
			17	GND
			18	GND
			19	GND
			20	-5V
			21	+5V
			22	+5V
			23	+5V
			24	GND

#### 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 wireindicates 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.





#### 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) IDE (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).



#### 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 and install the proper driver in order to work properly.



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

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

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





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

#### 9) 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.

10 9



2	1		
HD Audi	0:	AC'97 Au	idio:
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 69 about the software settings.

#### 10) PWR\_LED (Optional)

NOTE

PWR\_LED is connect with the system power indicator to indicate whether the system is on/off. It will blink when the system enters suspend mode.



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

#### 11) CD\_IN (CD IN)

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



1	[	-

Definition
Definition
CD-L
GND
GND
CD-R

#### 12) 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 <sup>(note)</sup> for their USB devices during system power-off can connect the devices to this connector via the optional front USB cable.

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

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

#### 13) F1\_1394/F2\_1394 (IEEE 1394 Connector)

Serial interface standard set by Institute of Electrical and Electronics Engineers, which has features like high speed, highbandwidth and hot plug. Be careful with the polarity of the IEEE1394 connector. Check the pin assignment carefully while you connect the IEEE1394 cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional IEEE1394 cable, please contact your local dealer.

2



	Pin No.	Definition	
	1	TPA+	
	2	TPA-	
$\prod_{9}^{10}$	3	GND	
وللعا	4	GND	
	5	TPB+	
	6	TPB-	
	7	Power	
	8	Power	
	9	No Pin	
	10	GND	

#### 14) COMB (Serial Port Connector)

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



#### 15) SPDIF\_IO (SPDIF In/ Out)

The SPDIF output is capable of providing digital audio to external speakers or compressed AC3 data to an external Dolby Digital Decoder. Use this feature only when your stereo system has digital input function. Use SPDIF IN feature only when your device has digital output function. Be careful with the polarity of the SPDIF\_IO connector. Check the pin assignment carefully while you connect the SPDIF\_IO cable. Incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional SPDIF\_IO cable, please contact your local dealer.

6 • • 5 2 • • 1



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

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

This 2-pin connector allows your system to enable or disable the "Case Open" item in BIOS, if the system case begin remove.



#### 17) 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.



• 1 Open: Normal

1 Short : Clear CMOS

#### 18) 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.

E



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

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

$<\!\!\uparrow\!\!>\!\!<\!\!\downarrow\!\!>\!\!<\!\!\leftrightarrow\!\!>\!\!<\!\!\rightarrow\!\!>$	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>.

## The Main Menu (For example: BIOS Ver. : F2)

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				
<ul> <li>Standard CMOS Features</li> </ul>	Load Fail-Safe Defaults			
<ul> <li>Advanced BIOS Features</li> </ul>	Load Optimized Defaults			
<ul> <li>Integrated Peripherals</li> </ul>	Set Supervisor Password			
<ul> <li>Power Management Setup</li> </ul>	Set User Password			
<ul> <li>PnP/PCI Configurations</li> </ul>	Save & Exit Setup			
PC Health Status	Exit Without Saving			
<ul> <li>Frequency/Voltage Control</li> </ul>				
ESC: Quit	↑↓→←: Select Item			
F8: Q-Flash	F10: Save & Exit Setup			
Time, Date, Hard Disk Type				



If you can't find the setting you want, please press "Ctrl+F1" to search the advanced option hidden.

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.

#### Frequency / Voltage Control

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 Setup Utility-Copyright (C) 1984-2005 Award Software					
	Standard CMOS Features				
Date (mm:dd:yy)	Mon, Mar 28 2005	Item Help			
Time (hh:mm:ss)	22:31:24	Menu Level			
	22.3 1.24	Went Level			
▶ IDE Channel 0 Master	[None]	Change the day, month,			
<ul> <li>IDE Channel 0 Slave</li> </ul>	[None]	vear			
r ibe chamer o share	[itone]	ycui			
		<week></week>			
Drive A	[1.44M, 3.5"]	Sun. to Sat.			
Drive B	[None]	Suil to Sat.			
Floppy 3 Mode Suport	[Disabled]	<month></month>			
rioppy 5 Mode Suport	[Disabled]	Jan. to Dec.			
Holt On	[All Dut Kauhaard]	Jan. to Dec.			
Holt On	[All, But Keyboard]	< Dava			
Deer Manager	640K	<day></day>			
Base Memory		1 to 31 (or maximum			
Extended Memory	127M	allowed in the month)			
Total Memory	128M				
		<year></year>			
		1999 to 2098			
		<b>v</b>			
$\uparrow \downarrow \rightarrow \leftarrow$ : Move Enter: Select	+/-/PU/PD: Value F10: Save	ESC: Exit F1: General Help			
F5: Previous Values	F6: Fail-Save Default	F7: Optimized Defaults			
F5. Flevious values	ro. raii-save Delauit	r7. Optimized Defaults			

#### ං Date

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

- ▶ Week The week, from Sun to Sat, determined by the BIOS and is display only
- ✤ Month The month, Jan. Through Dec.
- ▶ Day The day, from 1 to 31 (or the maximum allowed in the month)
- · 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 Channel 0 Master(Slave) 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)

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

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

If a hard disk has not been installed, select NONE and press <Enter>.

#### ∽ 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)
- HII, 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.

## 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 ( <sup>Note)</sup> CPU Enhanced Halt (C1E) ( <sup>Note)</sup> CPU Thermal Monitor 2(TM2) ( <sup>Note)</sup> CPU EIST Function ( <sup>Note)</sup> On-Chip Frame Buffer Size	Revalced Didos 1 (Press En [Floppy] [Hard Dis [CDROM [Setup] [Enabled [Enabled [Enabled [Enabled [Enabled [Babled [SMB]	k]           	M	m Help enu Level≯ lect Hard Disk Boot vvice Priority	
	↑↓	→←: Move Enter: Select F5: Previous Values	+/-/PU/PD: Value F6: Fail-Save Default	F10: Save	ESC: Exit F7: Optimi	F1: General Help zed 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. ▶ 7IP 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 Disabled this function

#### ☞ 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.

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

#### ☞ CPU Hyper-Threading

 Enabled Enables 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 Disables CPUID Limit for windows XP.(Default value)

#### ∽ No-Execute Memory Protect <sup>(Note)</sup>

- ➡ Enabled Enables No-Execute Memory Protect function. (Default value)
- Disabled Disables No-Execute Memory Protect function.

#### → CPU Enhanced Halt (C1E)<sup>(Note)</sup>

- ▶ Enabled Enables CPU Enhanced Halt (C1E) function. (Default value)
- ✤ Disabled Disables CPU Enhanced Halt (C1E) function.

#### ∽ CPU Thermal Monitor 2 (TM2) <sup>(Note)</sup>

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

#### ∽ CPU EIST Function (Note)

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

#### ∽ On-Chip Frame Buffer Size

- ▶ 1MB Set On-chip frame buffer size to 1MB.
- ▶ 8MB Set On-chip frame buffer size to 8MB. (Default value)

(Note) This item will show up when you install a processor which supports this function.
#### 2-3 **Integrated Peripherals**

	CMOS Setup Utility-Copyright (C) 1984-2004 Award Software Integrated Peripherals				
	On-Chip Primary PCI IDE	[Enabled]	▲ Item Help		
	On-Chip Secondary PCI IDE	[Enabled]	Menu Level		
	On-Chip SATA Mode	[Auto]			
2	x PATA IDE Set to	Ch.0 Master/Slave			
	SATA Port 0/2 Set to	Ch.2 Master/Slave			
	SATA Port 1/3 Set to	Ch.3 Master/Slave			
	USB Controller	[Enabled]			
	USB 2.0 Controller	[Enabled]			
	USB Keyboard Support	[Disabled]			
	USB Mouse Support	[Disabled]			
	Azalia Codec	[Auto]			
	Onboard H/W 1394	[Enabled]			
	Onboard H/W LAN	[Enabled]			
	Onboard LAN Boot ROM	[Disabled]			
	Onboard Serial Port 1	[3F8/IRQ4]			
	G-Keyless Port	[Enabled]			
	Onboard Parallel Port	[378/IRQ7]			
	Parallel Port Mode	[SPP]			
,	K ECP Mode Use DMA	3	Ŧ		
	↑↓→←: Move Enter: Select F5: Previous Values	+/-/PU/PD: Value F10: Save F6: Fail-Save Default	ESC: Exit F1: General Help F7: Optimized Defaults		

#### ∽ On-Chip Primary PCI IDE

- ➡ Enabled Enable onboard 1st channel IDE port. (Default value) ➡ Disabled
  - Disable onboard 1st channel IDE port.

#### ∽ On-Chip Secondary PCI IDE

➡ Enabled	Enable onboard 2nd channel IDE port. (Default value)
➡ Disabled	Disable onboard 2nd channel IDE port.

#### ∽ On-Chip SATA Mode

N. Dischlad	Disable this function
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 IDE.
Enhanced	Set On-Chip SATA mode to Enhanced, the motherboard allows up to 6
	HDDs to use.
➡ Non-Combined	Set On-Chip SATA mode to Non-Combined, SATA will be simulated to
	PATA mode.
DATA IDE Sat to	

#### → PATA IDE Set to

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

#### ∽ 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.

#### → USB Controller

➡ Enabled	Enable USB Controller. (Default value)
➡ Disabled	Disable USB Controller.

# English

#### → 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.

#### ☞ USB Keyboard Support

➡ Enabled	Enable USB Keyboard Support.
Disabled	Disable USB Keyboard Support. (Default value)

#### ☞ USB Mouse Support

➡ Enabled	Enable USB Mouse Support.
Disabled	Disable USB Mouse Support. (Default value)

#### Azalia Codec

➡ Auto	Auto detect Azalia audio function. (Default value)
➡ Disabled	Disable Azalia audio function.

#### Onboard H/W 1394

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

#### ∽ Onboard H/W LAN

Enabled Enable Onboard H/W LAN function. (Default value)
 Disabled Disable this function.

#### ∽ Onboard LAN Boot ROM

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

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

#### Onboard Serial Port 1

Auto BIOS will automatically setup the port 1 address.

- ▶ 3F8/IRQ4 Enable onboard Serial port 1 and address is 3F8/IRQ4. (Default value)
- ▶ 2F8/IRQ3 Enable onboard Serial port 1 and address is 2F8/IRQ3.
- ➡ 3E8/IRQ4 Enable onboard Serial port 1 and address is 3E8/IRQ4.
- >> 2E8/IRQ3 Enable onboard Serial port 1 and address is 2E8/IRQ3.
- Disabled Disable onboard Serial port 1.

#### ☞ G-Keyless Port

- ➡ Enabled Enable G-Keyless port function. (Default value)
- ► Disabled Disable this function.

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

## 2-4 Power Management Setup

CMOS Setup Utility-Copyright (C) 1984-2005 Award Software Power Management Setup				
ACPI Suspend Type Soft-Off by PWR-BTTN PME Event Wake Up Power On by Ring Resume by Alarm x Date (of Month) Alarm Yower On By Mouse Power On By Mouse 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] [Disabled] Enter [Soft-Off]	Item Help Menu Level►		
↑↓→←: Move Enter: Select F5: Previous Values	+/-/PU/PD: Value F10: Sa F6: Fail-Save Default	ve 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 Data/time to power on system.

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

If RTC Alarm Lead To Power On 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 Disable this function. (Default value)
- >> Double Click 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.
 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

	CMOS Setup Utility-Copyright (C PnP/PCI Config		are
PCI 1 IRQ Assignment	[Auto]		Item Help
PCI 2 IRQ Assignment	[Auto]		Menu Level
↑↓→←: Move Enter: 5 F5: Previous Value		F10: Save ESC: F7: O	Exit F1: General Help ptimized 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.

## 2-6 PC Health Status

CMOS Setup Utility-Copyright (C) 1984-2005 Award Software PC Health Status				
Reset Case Open Status	[Disabled]	Item Help		
Case Opened		Menu Level▶		
Vcore	OK			
DDRV	OK			
+3.3V	OK			
+12V	OK			
Current System Temperature				
Current CPU Temperature				
Current CPU FAN Speed	4687 RPM			
Current SYSTEM FAN Speed	0 RPM			
System Warning Temperature	[Disabled]			
CPU Warning Temperature	[Disabled]			
CPU FAN Fail Warning	[Disabled]			
SYSTEM FAN Fail Warning	[Disabled]			
CPU Smart FAN Control	[Enabled]			
CPU Smart FAN Mode	[Auto]			
System Smart FAN Control	[Enabled]			
↑↓→←: Move Enter: Select F5: Previous Values	+/-/PU/PD: Value F10: Save F6: Fail-Save Default	ESC: Exit F1: General Help F7: Optimized Defaults		

#### Reset Case Open Status

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

#### ∽ Case Opened

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

If the case 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 / DDRV / +3.3V / +12V

➡ Detect system's voltage status automatically.

#### ∽ Current System/CPU Temperature

➡ Detect System/CPU temperature automatically.

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

▶ Detect CPU/SYSTEM Fan speed status automatically.

#### ∽ CPU/System Warning Temperature

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

#### ∽ CPU/SYSEM FAN Fail Warning

- ✤ Disabled Fan warning function disable. (Default value)
- ➡ Enabled Fan warning function enable.

#### ∽ 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.

#### ∽ System Smart FAN Control

- Disabled Disable this function.
- Enabled When this function is enabled, System fan will run at different speed depending on System temperature. (Default Value)

## 2-7 Frequency/Voltage Control

CMOS Setup Utility-Copyright (C) 1984-2005 Award Software Frequency/Voltage Control				
CPU Clock Ratio	[16X]	Item Help		
System Memory Multiplier Memory Frequency (Mhz)	[Auto] 533	Menu Level		
↑↓→←: Move Enter: Select	+/-/PU/PD: Value F10: Save E	SC: Exit F1: General Help		
F5: Previous Values	F6: Fail-Save Default F	7: 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.

#### ∽ 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 Memory Frequency = Host clock X 3.
- ▶ 4 Memory Frequency = Host clock X 4.

➡ Auto Set Memory frequency by DRAM SPD data. (Default value)

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

- ▶ 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.

➡ Auto Set Memory frequency by DRAM SPD data. (Default value)

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

- ▶ 1.5 Memory Frequency = Host clock X 1.5.
- ▶ 2.0 Memory Frequency = Host clock X 2.0.
- ▶ 2.5 Memory Frequency = Host clock X 2.5.
- ✤ Auto Set Memory frequency by DRAM SPD data. (Default value)

#### ∽ Memory Frequency (Mhz)

The values depend on "System Memory Multiplier" item.

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

## 2-8 Load Fail-Safe Defaults

	CMOS Setup Utility-Copyright	(C) 1984-2005 Award Software	
	Standard CMOS Features	Load Fail-Safe Defaults	
• A	Advanced BIOS Features	Load Optimized Defaults	
▶ 1ı	ntegrated Peripherals	Set Supervisor Password	
▶ Р	Power Ma		
▶ P	PnP/PCI C Load Fail-Safe D	efaults (Y/N)? N	
▶ P	PC Health Sumus	LAR WRIDUR Saving	
► F	Frequency/Voltage Control		
ESC: (	Quit	↑↓→←: Select Item	
F8: Q-	Flash	F10: Save & Exit Setup	
Load Fail-Safe Defaults			

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

## 2-9 Load Optimized Defaults

CMOS Setup Utility-Copyright	t (C) 1984-2005 Award Software		
Standard CMOS Features     Advanced BIOS Features     Integrated Peripherals     Power Ma     PnP/PCI C Load Optimized     PC Health succes     Frequency/Voltage Control	Load Fail-Safe Defaults Load Optimized Defaults Set Supervisor Password		
ESC: Quit F8: Q-Flash	↑↓→←: Select Item F10: Save & Exit Setup		
Load Optimized Defaults			

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

## 2-10 Set Supervisor/User Password

CMOS Setup Utility-Copyright (C) 1984-2005 Award Software				
Standard CMOS Features     Advanced BIOS Features     Integrated Peripherals     Power Management Contemportation     PnP/PCI C     Enter Password:     PC Health     Frequency/Voltage Control	Load Fail-Safe Defaults Load Optimized Defaults Set Supervisor Password Set How Document			
ESC: Quit	↑↓→←: Select Item			
F8: Q-Flash	F10: Save & Exit Setup			
Change/Set/Disable Password				

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

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		
•	Integrated Peripherals	Set Supervisor Password		
•	Power Management Setup	Set User Password		
•	PnP/PCI C	0 0. F-:: 4. 0-4		
▶	PC Health Save to CMOS ar	nd EXIT (Y/N)? Y		
▶	Frequency,			
ESC	: Quit	↑↓→←: Select Item		
F8: C	2-Flash	F10: Save & Exit Setup		
Save & Exit Setup				

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

## 2-12 Exit Without Saving

CMOS Setup Utility-Copyright	t (C) 1984-2005 Award Software	
Standard CMOS Features     Advanced BIOS Features     Integrated Peripherals     Power Ma	Load Fail-Safe Defaults Load Optimized Defaults Set Supervisor Password	
PnP/PCI C     Quit Without S     PC Health Junua     Frequency/Voltage Control	EAR WRINNESSEYING	
ESC: Quit F8: Q-Flash	↑↓→←: Select Item F10: Save & Exit Setup	
Abando	n 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.

#### **Install Chipset Drivers** 3-1

#### "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.

945/955 1.0 Be	ta 85.0321.1	
GIGAB		tilities CD
Install Chipset Drives Software Applications	In a function of the second proves in the following diversion below are eccommended to be installed for your antiferboard. Peese cick on the "Spor advanticals, By default the three are checked to be installed, uncheck the selected drivers will not be installed. XPress Install	ss Install" to install all dri
Driver CD	INF Update Utility	Install
Information	Size 935.1KB Version 7.0.0.1019	
Hardware Information	This utility installs NF files that inform the operating system how to properly configure the chipset for spec as PCI-Express or USB interface.	fic functionality such
	🗾 Intel® Graphics Media Accelerator Driver(Win2KXP)	Install
Contact Us	Size 12.3MB Version 14.12.0.4282	
	Installs drivers for the integrated graphics controller of Intel® chipsets. This is not to be used if the system graphics card.	has a third party
	Microsoft@UAA Bus driver for Intel@High Definition Audio	Install
	Size 69.0MB Version 1.0	
	The Microsoft U.M.A. (Iniversal Audio Anthecture) Bus drive provides support for Intel®High Definition - driver is designed to work within the following versions of Windows: 1. Microsoft Windows 2005 Server 2000 2. Microsoft Windows 2005 Server Pack 1 (SP1) 3. Microsoft Windows 2000 Service Pack 1 (SP4)	Audio (Azalia). This
	🔀 Realtek Audio Codec Driver	Install
	Size 33.6MB Version 5.10.0.5120	
	The Realtek Audio Codec driver provides support for 7.1 channel audio.	
	Marvell Yukon Glaabit LAN driver for 8053	Install
"Xpress Install" use:	the "Click and Go" technology to install the drivers automatically. Just select the drivers you want then click the "Go"	
	on for you automatically.	



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 AUTION a guestion 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.

GIGABY		D	
	oftware Applications see click on the following applications listed below to install		
Software Applications			
Driver CD Information	GIGABYTE C.O.M. (Corporate Online Manager)	Install	
Hardware Information	Size 8.4MB A web-based system management tool that allows client system hardware information such as CPU and memory and graphics card and much more to be monitored or controlled via a host.		
Contact Us	EasyTune 5	Install	
	Size 4.7MB An easy-to-use Windows-based system enhancement utility allowing quick access to a variety of performance feature	15.	
	DMI Viewer	Install	
	Size 1012.9KB DMI Viewer provides a management tool for viewing motherboard hardware information.		
	Face-Wizard	Install	
	Size 1.5MB Face Wizard provides utility for customizing BIOS boot up screen.		
	geios	Install	
	Size 1.0MB		
	@BIOS provides utility for updating BIOS through internet.		

## 3-3 Driver CD Information

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

Install Chipset Drivers	Driver CD informati The following information show	OT ws the detail contents stored in this Driver CD.	
Software Applications			
Driver CD	/Chipset1/1A		
Information	Directory Name	Description	
Hardware Information	<ul> <li>INFUpdate</li> </ul>	Intel® chipset software installation utility for Windows XP Intel® chipset software installation utility for Windows 2000 Intel® chipset software installation utility for Windows ME Intel® chipset software installation utility for Windows 98	
Contact Us	• IAA	Intel® application accelerator for Windows XP Intel® application accelerator for Windows 2000 VMin2k XP Intel® Craphics Media Accelerator Driver for Windows XP	
	<ul> <li>VGA</li> </ul>	-Win2K_XP -Intel® Graphics Media Accelerator Driver for Windows XP -Win2K_XP -Intel® Graphics Media Accelerator Driver for Windows 2000	
	<ul> <li>EnableUSBS3Xp</li> </ul>	Enable USB device back form S3 mode	
	Audio		
	Directory Name	Description	
	• cmedia	cmedia AC'97 Audio Driver	
	Realtek	Realtek AC'97 Audio Driver	
	Wetwork		
	Directory Name	Description	
	<ul> <li>Rtl8139</li> </ul>	LAN Driver for RealTek 8139/8100/8110s	

## 3-4 Hardware Information

This page lists all device you have for this motherboard.

Install Chipset Drivers	Hardware information The following information shows the detail hardware information of your motherboard.
Software Applications	
Driver CD Information	System Info  IOS for BIRS for BIRS SMF E9  CPU Info:CPU : Infel Cemunenteb
Hardware Information	CPU InteCCPU : Intel (denuinement)     Memory Info:515,564 KB RAM
Contact Us	1334
	Display.
	Control Description:Mannell Yulkon BBEB063 PCHE Gligabit Ethernet Controller     Description:Mannell Yulkon BBEB063 PCHE Gligabit Ethernet Controller
	System  Perce Description:Infel(R) 82801 PCI Bridge - 244E

## 3-5 Contact Us

Please see the last page for details.

	С	ontact Us Contact Us
	Tahvan ( Haadquarters ) Dian Byrt TECHNOLOGY COUTO, NO 8 Sau Charg Road Naim-Ten Tahoti Huten Taiwan Tai Seb-2691 2 4003 Fax-896-2691 2 4003 Fax-896-2691 2	U.S.A. G.B.T. INC, Tel. + 1 (528) (551-5538) Fax: + 1 (528) (554-3339 Fax: + 1 (528) (554-3339 Fax: + 1 (528) (554-3339
A Star	China (Office) Shanghai Tel:+85.021-63410889 Fax:+85.021-63410100 Ffax:+85.021-63410100	U.R. G.B.T. TECH. CO., LTD. Tel: +44-1908-362700 Fax: +44-1908-362709
	Pdp Investor grading a cost of China (Cfrice) Beijing Tel:+86-010-82898651 Fac:+86-010-82888651 Fac:+86-010-828886013 Pdc Investor and M	Germany Germany 6.B.T. TECHNOLOGY TRADING GMBH Tel:+49-40-2533040 (Sales) +49-1003-420640 (Tech.) Fax:+49-40-25492341 (Salea)
	China (Office)	Hat His House State ( Service) +43+100342239 (Tech.) The Netherlands GIGA-UTTE TICHNOLODY B.V.
	Europathol Tel:+68-020-87595074 Fax:+98-020-85517843 http://www.gigsbyte.com.cm/	Tell + 91 40 290 2088 NL Tech Support : 0900 GIGABYTE (0900- 44422883) BE Tech Support : 0900-84034 Fac + 91 40 293 0999
A Partition	China (Office)	nno Arrene grandyte nV Japan
	Chengdu 141 : 486-028-65238300 Fax: +380:028-65238320 Fax: +380:028-65226822 Fax: 4580:028-65226822 Fax: 4580:028-65226822	NIPPON GIGA-BYTE CORPORATION Tel: +81-36781-5438 Pax: +81-35781-6439 Pax: +81-35781-6439 Pap://www.gigabyte.co.jp/
		Back


## **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.<sup>(Note)</sup>

#### **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.
- 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-SL	GA-K8NF-9 (PCB Ver. 1.0)	GA-8N-SLI
GA-K8N Ultra-		
GA-K8N Pro-S	<u>,</u>	
GA-RON FIU-3		

#### 4-1-3 Flash BIOS Method Introduction



#### Method 1 : Q-Flash<sup>™</sup> Utility

Q-Flash<sup>™</sup> 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<sup>™</sup> allows users to flash BIOS without any utility in

DOS or Windows. Using Q-Flash<sup>™</sup> 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.



#### Entering the Q-Flash<sup>™</sup> 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			
<ul> <li>Standard CMOS</li> </ul>	Features	Select Language		
<ul> <li>Advanced BIOS</li> </ul>	Features	Load Fail-Safe Defaults		
<ul> <li>Integrated Periph</li> </ul>	nerals	Load Optimized Defaults		
<ul> <li>Power Managem</li> </ul>	ent Setup	Set Supervisor Password		
<ul> <li>PnP/PCI Configu</li> </ul>	urations	Set User Password		
PC Health Status		Save & Exit Setup		
MB Intelligent T	weaker(M.I.T.)	Exit Without Saving		
ESC. Quit	FSe. Juit F3: Change Language			
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<sup>™</sup> / 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<sup>™</sup> 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.



OTE

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/S	size	SST 49LF00	3A 512K	
Backup ROM Typ	e/Size	SST 49LF00	3A 512K	
Wide	Range Protection	n Disable		
Are you sure to RESET ? [Enter] to continure or [Ese] to abort				
Save Settings to Chrob				
	Q-FI	ash Utility		
Load Main BIOS from Floppy				
Load Backup BIOS from Floppy				
Save Main BIOS to Floppy				
Save Backup 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 BlOS 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 : FUITSU 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	
	<ul> <li>Advanced BIOS Features</li> </ul>		Load Fail-Safe Defaults	
	►	Integrated Perinherals	Load Ontimized Defaults	
	Power Mana; Load Fail-Safe Def		aults (Y/N)? Y	
	PnP/PCI Cor			
	<ul> <li>PC Health Status</li> </ul>		Save & Exit Setup	
	<ul> <li>MB Intelligent Tweaker(M.I.T.)</li> </ul>		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-Copyright (C) 1984-2004 Award Software			
Standard CMOS Features	Select Language		
<ul> <li>Advanced BIOS Features</li> </ul>	Load Fail-Safe Defaults		
Integrated Perinherale	Load Ontimized Defaulte		
<ul> <li>Power Mana; Save to CMOS and</li> </ul>	EXIT (Y/N)? Y		
▶ PnP/PCI Cor			
<ul> <li>PC Health Status</li> </ul>	Save & Exit Setup		
<ul> <li>MB Intelligent Tweaker(M.I.T.)</li> </ul>	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<sup>™</sup> 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				
<ul> <li>Standard CMOS Features</li> </ul>	Top Performance			
<ul> <li>Advanced BIOS Features</li> </ul>	Load Fail-Safe Defaults			
<ul> <li>Integrated Peripherals</li> </ul>	Load Optimized Defaults			
<ul> <li>Power Management Setup</li> </ul>	Set Supervisor Password			
<ul> <li>PnP/PCI Configurations</li> </ul>	Set User Password			
PC Health Status	Save & Exit Setup			
<ul> <li>MB Intelligent Tweaker(M.I.T.)</li> </ul>	Exit Without Saving			
ESC. Quit	F3: Change Language			
F8: Q-Flash F10: Save & Exit Setup				
Time, Date, Hard Disk Type				

#### Exploring the Q-Flash<sup>™</sup> 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<sup>™</sup> 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: 8I945GMF.F2).
  - 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 @BIOS<sup>™</sup> 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 provides 6 audio connector. You are able to use 2-/4-/6-/8-channels 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 quality and multi-streaming applications, HD Audio is able to handle multiple audio streams (in and out) simultaneously. Multi-channel audio experiences have become a reality so you can, for instance, listen to MP3 music, have an Internet chat, make a telephone call over the Internet, and etc. all at the same time.

#### **Stereo Speakers Connection and Settings:**

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

#### STEP 1:

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

Panel.



#### STEP 2:

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



#### STEP 3:

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



#### 4 Channel Audio Setup

STEP 1 :

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

Panel.



#### STEP 2:

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





#### STEP 3:

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



#### 8 Channel Audio Setup

#### STEP 1 :

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

Panel.





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#### STEP 2:

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

#### STEP 3:

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



#### Sound Effect Configuration:

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



#### AC'97 Audio Configuration:

To enable the front panel audio connector to support AC97 Audio mode, go to the Audio Control Panel and click the **Audio I/O** tab. In the **ANA-LOG** 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 fai	lure	
2 beeps Parity erro	or →	AWARD BIOS Beep Codes
3 beeps Base 64K	5	1 short: System boots successfully
4 beeps Timer not	•	2 short: CMOS setting error
5 beeps Processo		1 long 1 short: DRAM or M/B error
6 beeps 8042 - gat		1 long 2 short: Monitor or display card error
•	exception interrupt error	1 long 3 short: Keyboard error
	emory read/write failure	1 long 9 short: BIOS ROM error
9 beeps ROM che		5
10 beeps CMOS s	hutdown register read/write error	Continuous long beeps: DRAM error
11 beeps Cache n	,	Continuous short beeps: Power error

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