GA-8I945GME

Intel® Pentium® 4 LGA775 Processor Motherboard

User's Manual

Rev. 1002
12ME-945GME-1002R

Declaration of Conformity
We, Manufacturer/Importer
(full address)

G.B.T. Technology Trading GMbH
Ausschlager Weg 41, 1F 20537 Hamburg, Germany

declare that the product
(description of the apparatus, system, installation to which it refers)

Motherboard
GA-8I945GME

is in conformity with
(reference to the specification under which conformity is declared)
in accordance with 89/336 EEC-EMC Directive

☐ EN 55011	Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM) high frequency equipment	☒ EN 61000-3-2 Disturbances in supply systems caused by household appliances and similar electrical equipment "Voltage fluctuations"
		☒ EN 61000-3-3
☐ EN 55013	Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment	☒ EN 55024 Information Technology equipment-Immunity characteristics-Limits and methods of measurement
☐ EN 55014-1	Limits and methods of measurement of radio disturbance characteristics of household electrical appliances, portable tools and similar electrical apparatus	☐ EN 50082-1 Generic immunity standard Part 1: Residual, commercial and light industry
		☐ EN 50082-2 Generic immunity standard Part 2: Industrial environment
☐ EN 55015	Limits and methods of measurement of radio disturbance characteristics of fluorescent lamps and luminaries	☐ EN 55014-2 Immunity requirements for household appliances tools and similar apparatus
☐ EN 55020	Immunity from radio interference of broadcast receivers and associated equipment	☐ EN 50091-2 EMC requirements for uninterruptible power systems (UPS)
☒ EN 55022	Limits and methods of measurement of radio disturbance characteristics of information technology equipment	
☐ DIN VDE 0855	Cabled distribution systems; Equipment for receiving and/or distribution from sound and television signals	
☐ part 10		
☐ part 12		
☒ CE marking		

CE

(EC conformity marking)

The manufacturer also declares the conformity of above mentioned product with the actual required safety standards in accordance with LVD 73/23 EEC

☐ EN 60065	Safety requirements for mains operated electronic and related apparatus for household and similar general use	☐ EN 60950 Safety for information technology equipment including electrical business equipment
☐ EN 60335	Safety of household and similar electrical appliances	☐ EN 50091-1 General and Safety requirements for uninterruptible power systems (UPS)

Manufacturer/Importer

Signature: *Timmy Huang*

Date: Dec. 10, 2005   Name: Timmy Huang

(Stamp)

DECLARATION OF CONFORMITY
Per FCC Part 2 Section 2.1077(a)

FC

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

Address: 17358 Railroad Street

City of Industry, CA 91748

Phone/Fax No: (818) 854-9338/ (818) 854-9339

hereby declares that the product

Product Name: Motherboard

Model Number: GA-8I945GME

Conforms to the following specifications:

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

Supplementary Information:

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

Representative Person's Name: ERIC LU

Signature: *Eric Lu*

Date: Dec. 10, 2005

Copyright

Notice

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 "Technology Guide" section on Gigabyte's website to read or download the information you need.
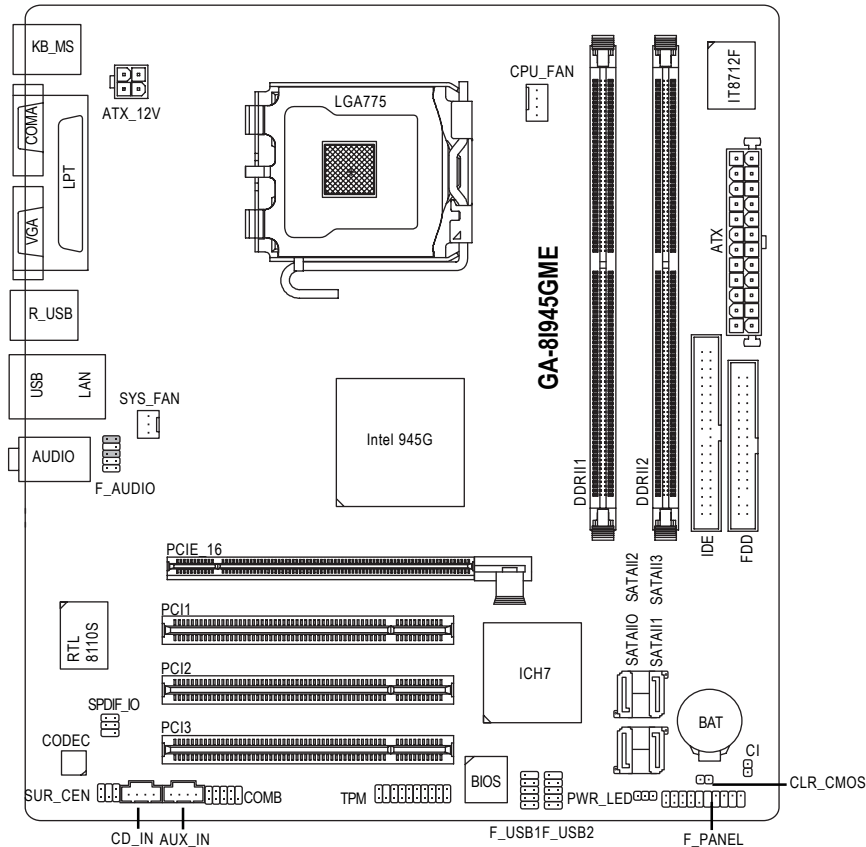
For more product details, please click onto Gigabyte's website at www.gigabyte.com.tw

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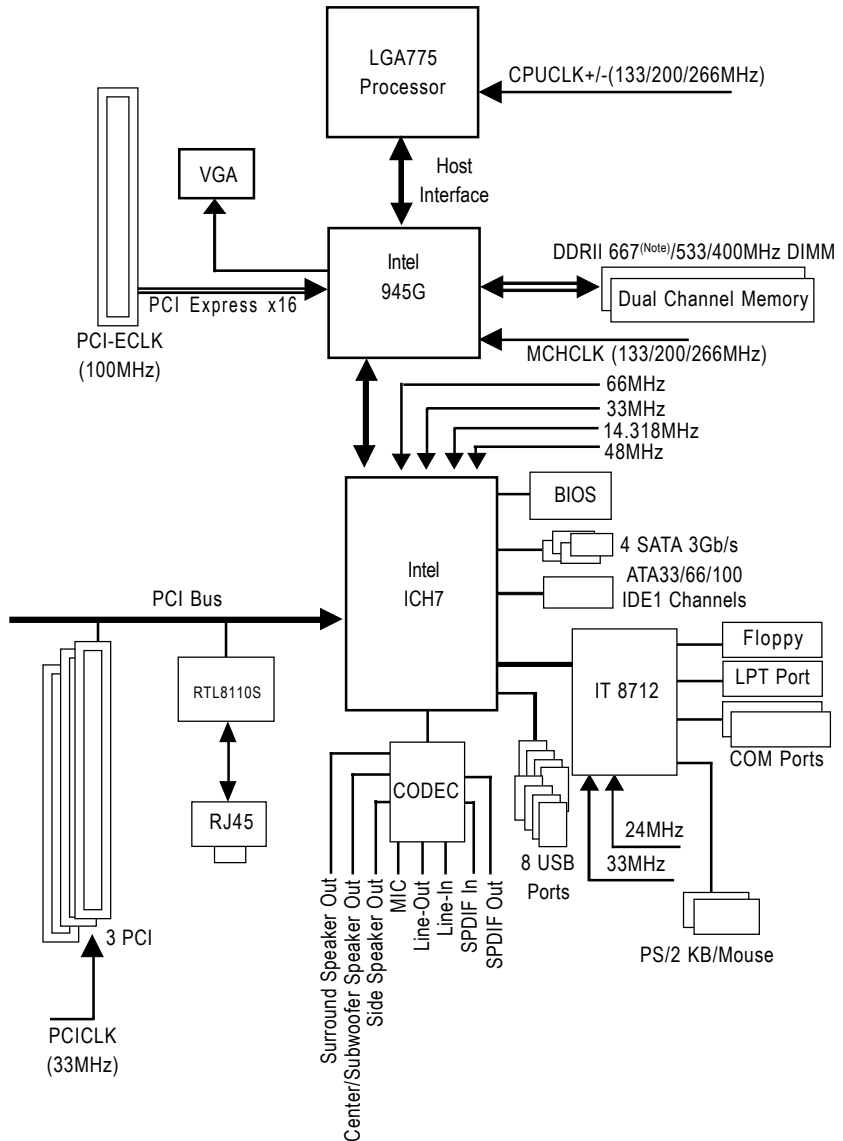
GA-8I945GME Motherboard Layout

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.
3.   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 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 LGA775 Intel® Pentium® 4 Processor [Note 1]
	◆ L2 cache varies with CPU
Front Side Bus	◆ Supports 1066/800/533MHz FSB
Chipset	◆ Northbridge: Intel 945G Chipset
	◆ Southbridge: Intel ICH7
LAN	◆ Onboard Realtek RTL8110S chip (10/100/1000 Mbit)
Audio	◆ Onboard Realtek ALC655 chip
	◆ Supports 2 / 4 / 6 channel audio
	◆ Supports SPDIF In/Out connection
Storage	◆ ICH7 Southbridge
	- 1 FDD connector, allowing connection of 2 FDD devices
	- 1 IDE connectors (IDE1) with UDMA 33/ATA 66/ATA 100 suppport, allowing connection of 2 IDE devices
	- 4 SATAII connectors (SATAII0,SATAII1,SATAII2,SATAII3), allowing connection of 4 SATA devices
O.S Support	◆ Microsoft Windows 2000/XP
Memory	◆ 2 DDR II DIMM memory slots (supports up to 2GB memory)
	◆ Supports DDR II 667[Note 2]/533/400 unbuffered DIMMs
	◆ Supports 1.8V DDR II DIMMs
Expanstion Slots	◆ 1 PCIEx16 slot
	◆ 3 PCI slots
Internal Connectors	◆ 1 20-pin ATX power connector
	◆ 1 4-pin ATX 12V power connector
	◆ 1 floppy connector
	◆ 1 IDE connector
	◆ 4 SATAII connectors
	◆ 1 CPU fan connector
	◆ 1 system fan connector
	◆ 1 front panel connector
	◆ 1 front audio connector
	◆ 1 CD In connector
	◆ 1 AUX In connector
	◆ 1 COMB connector
	◆ 2 USB 2.0/1.1 connectors for additional 4 USB 2.0/1.1 ports by cables
	◆ 1 SUR_CEN connector
	◆ 1 SPDIF In/Out connector
	◆ 1 power LED connector
	◆ 1 TPM connector

Rear Panel I/O	◆	1 PS/2 keyboard port
	◆	1 PS/2 mouse port
	◆	1 parallel port
	◆	1 serial port (COMA)
	◆	1 VGA port
	◆	4 USB 2.0/1.1 ports
	◆	1 RJ-45 port
	◆	3 audio jacks (Line In / Line Out / MIC In)
I/O Control	◆	ITE 8712 chip
Hardware Monitor	◆	System voltage detection
	◆	CPU / System temperature detection
	◆	CPU / System fan speed detection
	◆	CPU / System fan failure warning
	◆	CPU smart fan control
BIOS	◆	1 4Mbit flash ROM
	◆	Use of licensed AWARD BIOS
Additional Features	◆	Supports @BIOS
	◆	Supports Download Center
	◆	Supports Q-Flash
	◆	Supports EasyTune (only supports Hardware Monitor function)(Note 3)
	◆	Supports Xpress Install
	◆	Supports Xpress Recovery2
	◆	Supports Xpress Rescue
Bundle Software	◆	Norton Internet Security (OEM version)
Form Factor	◆	Micro ATX form factor; 24.4cm x 22.0cm

(Note 1) For further CPU support information, please go to GIGABYTE's website.
(Note 2) To use a DDRII 667 memory module on the motherboard, you must install an 800/1066MHz
        FSB processor .
(Note 3) EasyTune functions may vary depending on different motherboards.

1-3   Installation of the CPU and Heatsink

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

1.   Please make sure that the motherboard supports the CPU.
2.   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
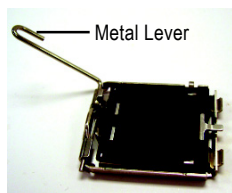
Metal Lever

Fig. 1
Gently lift the metal lever located on the CPU socket to the upright position.
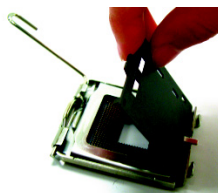
Fig. 2
Remove the plastic covering on the CPU socket.
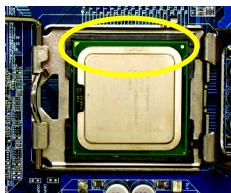
Fig. 3
Notice the small gold colored triangle located on the edge of the CPU socket. Align the indented corner of the

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

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.)

1-3-2 Installation of the Heatsink
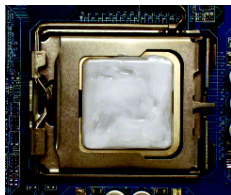
Fig.1
Please apply an even layer of heatsink paste on the surface of the installed CPU.

Male Push Pin

The top of Female Push Pin
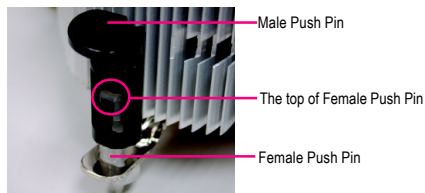
Female Push Pin

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)
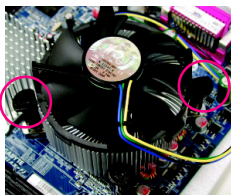
Fig. 3
Place the heatsink atop the CPU and make sure the push pins aim to the pin hole on the motherboard.Pressing down the push pins diagonally.
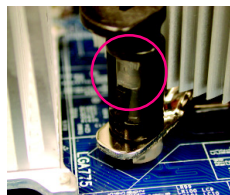
Fig. 4
Please make sure the Male and Female push pin are joined closely. (for detailed installation instructions, please refer to the heatsink installation section of the user manual)
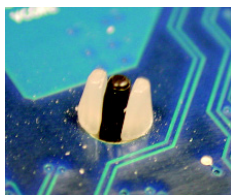
Fig. 5
Please check the back of motherboard after installing. If the push pin is inserted as the picture, the installation is complete.
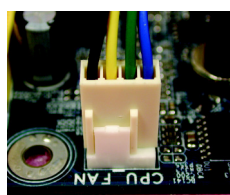
Fig. 6
Finally, please attach the power connector of the heatsink to the CPU fan header located on the motherboard.

NOTE
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

⚠️ **CAUTION**

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

1.   Please make sure that the memory used is supported by the motherboard. It is recommended that memory of similar capacity, specifications and brand be used.
2.   Before installing or removing memory modules, please make sure that the computer power is switched off to prevent hardware damage.
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.

Notch

DDR II
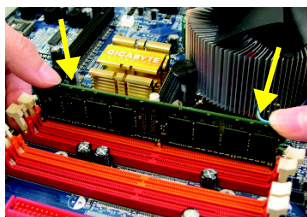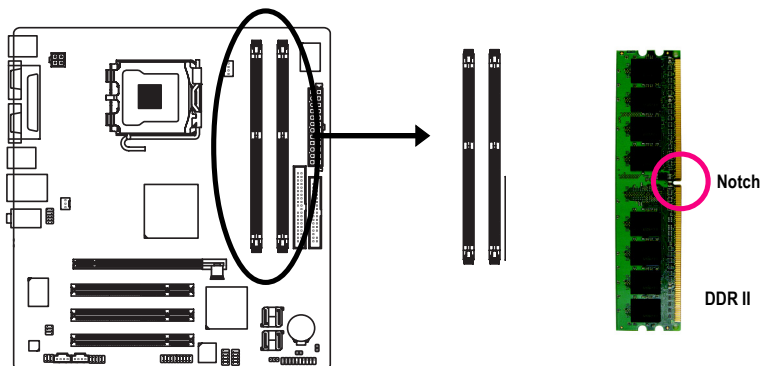
Fig.1
The DIMM socket has a notch, so the DIMM memory module can only fit in one direction. Insert the DIMM memory module vertically into the DIMM socket. Then push it down.
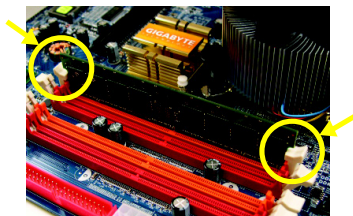
Fig.2
Close the plastic clip at both edges of the DIMM sockets to lock the DIMM module.
Reverse the installation steps when you wish to remove the DIMM module.

Dual Channel Memory Configuration

The GA-8I945GME supports the Dual Channel Technology. After operating the Dual Channel Technology, the bandwidth of Memory Bus will add double.

The GA-8I945GME includes 2 DIMM sockets.

If you want to operate the Dual Channel Technology, please note the following explanations due to the limitation of Intel chipset specifications.
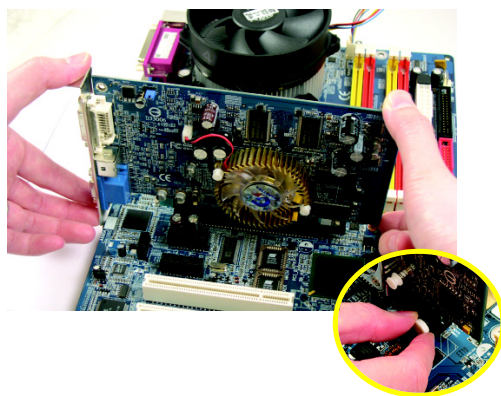
1. Dual Channel mode will not be enabled if only one DDR II memory module is installed.
2. To enable Dual Channel mode, please insert two DDR II memory modules (it is recommended to use memory modules of identical brand, size, chips, and speed) into DDRII1 and DDRII memory sockets.

1-5 Installation of Expansion Cards

You can install your expansion card by following the steps outlined below:
1. Read the related expansion card's instruction document before install the expansion card into the computer.
2. Remove your computer's chassis cover, screws and slot bracket from the computer.
3. Press the expansion card firmly into expansion slot in motherboard.
4. Be sure the metal contacts on the card are indeed seated in the slot.
5. Replace the screw to secure the slot bracket of the expansion card.
6. Replace your computer's chassis cover.
7. Power on the computer, if necessary, setup BIOS utility of expansion card from BIOS.
8. Install related driver from the operating system.
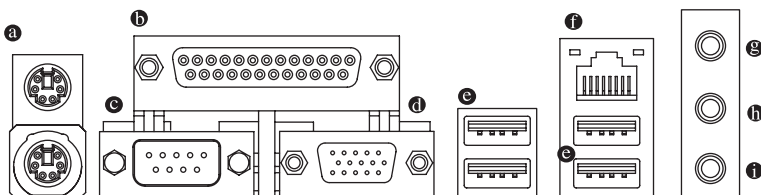
Installing a PCI Express x 16 expansion card:

⚠ CAUTION

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

1-6 I/O Back Panel Introduction

ⓐ **PS/2 Keyboard and PS/2 Mouse Connector**

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

ⓑ **Parallel Port**

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

ⓒ **COMA (Serial Port)**

Connects to serial-based mouse or data processing devices.

ⓓ **VGA Port**

Monitor can be connected to VGA port.

ⓔ **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 LAN port provides Internet connection.

ⓖ **Line In**

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

ⓗ **Line Out**

Connect the stereo speakers or earphone to this connector.
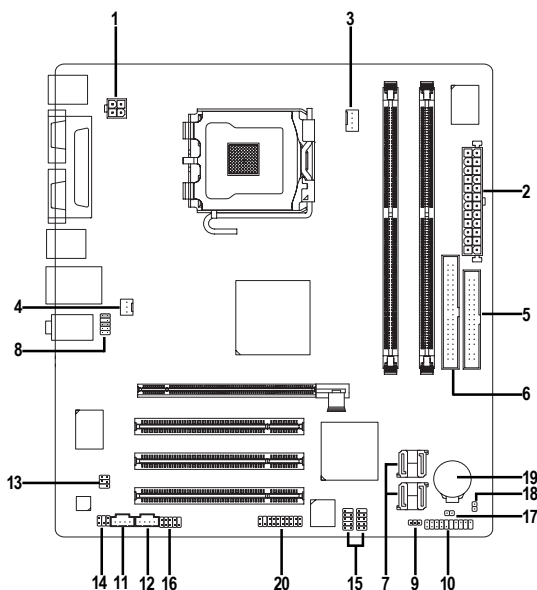
ⓘ **MIC In**

Microphone can be connected to MIC In jack.

You can use audio software to configure 2-/4-/6-channel audio functioning.

1-7 Connectors Introduction

1)	**ATX_12V**	**11)**	**CD_IN**
2)	**ATX (Power Connector)**	**12)**	**AUX_IN**
3)	**CPU_FAN**	**13)**	**SPDIF_IO**
4)	**SYS_FAN**	**14)**	**SUR_CEN**
5)	**FDD**	**15)**	**F_USB1/F_USB2**
6)	**IDE**	**16)**	**COMB**
7)	**SATAII0 / SATAII1 / SATAII2 / SATAII3**	**17)**	**CLR_CMOS**
8)	**F_AUDIO**	**18)**	**CI**
9)	**PWR_LED**	**19)**	**BAT**
10)	**F_PANEL**	**20)**	**TPM**

1/2) ATX_12V/ATX (Power Connector)
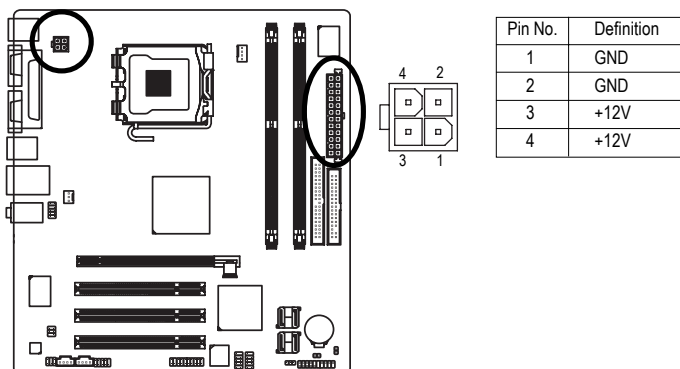
With the use of the power connector, the power supply can supply enough stable power to all the components on the motherboard. Before connecting the power connector, please make sure that all components and devices are properly installed. Align the power connector with its proper location on the motherboard and connect tightly.

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

Caution!

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

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

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

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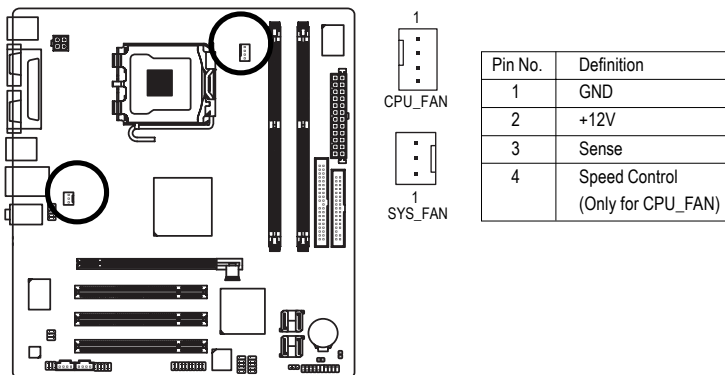
3/4)   CPU_FAN / SYS_FAN (Cooler Fan Power Connector)

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

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

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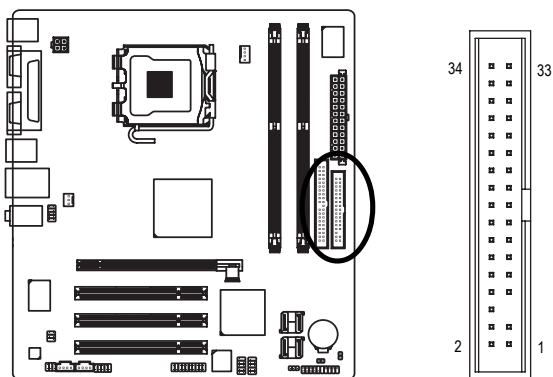
Please remember to connect the power to the CPU fan to prevent CPU overheating and failure.

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

5)   FDD (Floppy Connector)
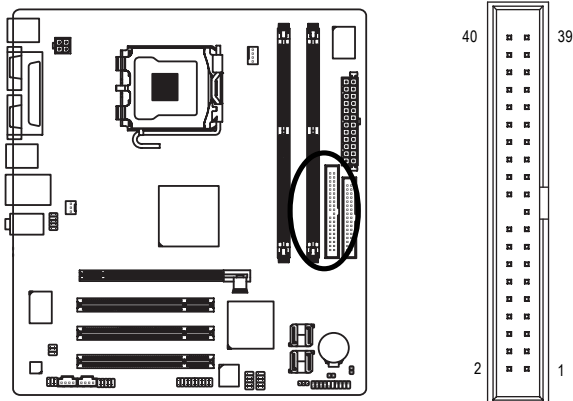
The FDD connector is used to connect the FDD cable while the other end of the cable connects to the FDD drive. The types of FDD drives supported are: 360KB, 720KB, 1.2MB, 1.44MB and 2.88MB. Please connect the red power connector wire to the pin1 position.
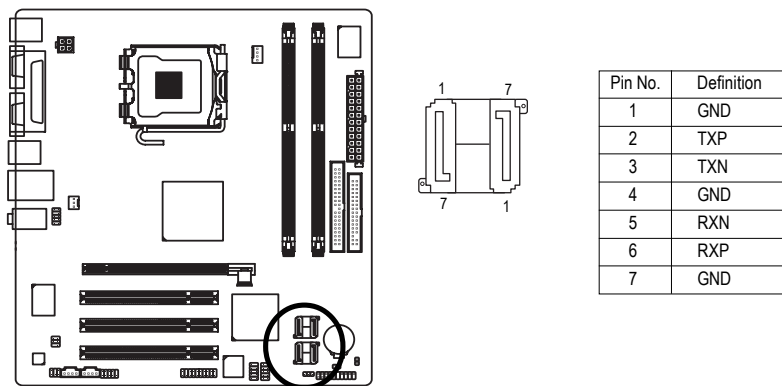
6) IDE1 (IDE Connector)

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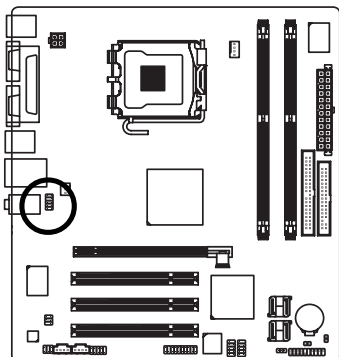
SATA 3Gb/s can provide up to 300MB/s transfer rate. Please refer to the BIOS setting for the Serial ATA II and install the proper driver in order to work properly.

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

8) F_AUDIO (Front Audio Panel Connector)

If you want to use Front Audio connector, you must remove 5-6, 9-10 Jumper.
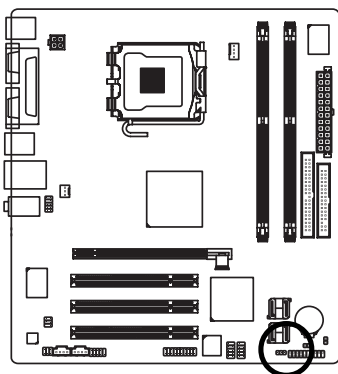
In order to utilize the front audio header, your chassis must have front audio connector. Also please make sure the pin assigment on the cable is the same as the pin assigment on the MB header. To find out if the chassis you are buying support front audio connector, please contact your dealer. Please note, you can have the alternative of using front audio connector or of using rear audio connector to play sound.

Pin No.	Definition
1	MIC
2	GND
3	MIC_BIAS
4	Power
5	Front Audio (R)
6	Rear Audio (R)/ Return R
7	NC
8	No Pin
9	Front Audio (L)
10	Rear Audio (L)/ Return L

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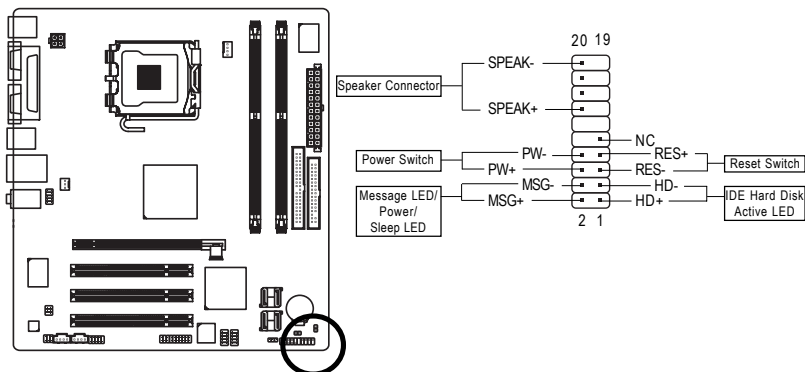
PWR_LED is connect with the system power indicator to indicate whether the system is on/off. It will blink when the system enters suspend mode.

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

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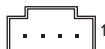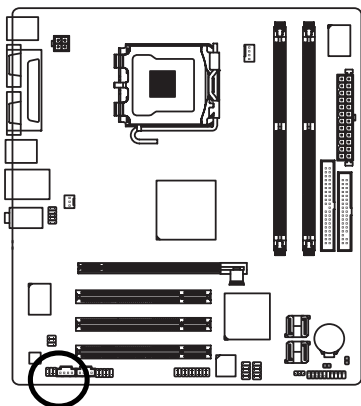
Please connect the power LED, PC speaker, reset switch and power switch etc of your chassis front panel to the F_PANEL connector according to the pin assignment below.

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

11) CD_IN (CD IN)
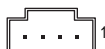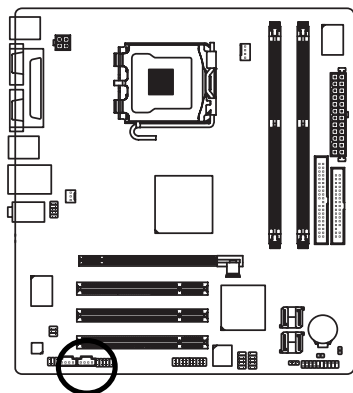
Connect CD-ROM or DVD-ROM audio out to the connector.

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

12) AUX_IN (AUX In Connector)
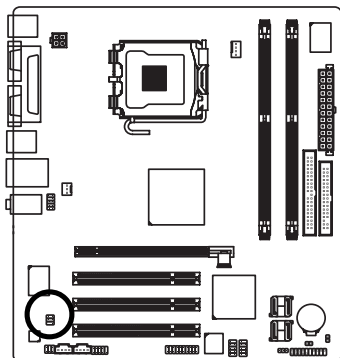
Connect other device (such as PCI TV Tunner audio out) to the connector.

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

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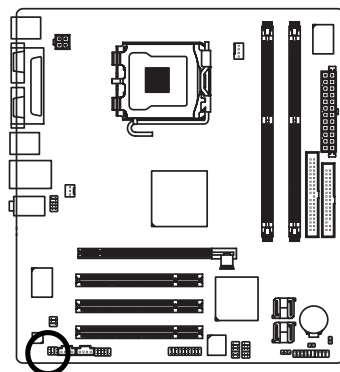
The SPDIF output is capable of providing digital audio to external speakers or compressed AC3 data to an external Dolby Digital Decoder. Use this feature only when your stereo system has digital input function. Use SPDIF IN feature only when your device has digital output function. Be careful with the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

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

14) SUR_CEN
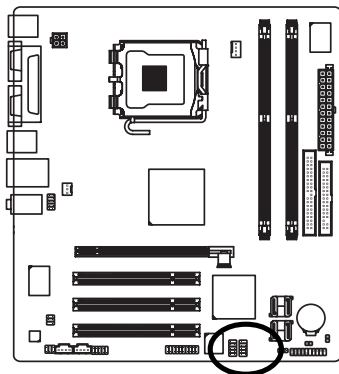
Please contact your nearest dealer for optional SUR_CEN cable.

Pin No.	Definition
1	SUR OUTL
2	SUR OUTR
3	GND
4	No Pin
5	CENTER_OUT
6	BASS_OUT

15) F1_USB / F2_USB (Front USB Connectors)
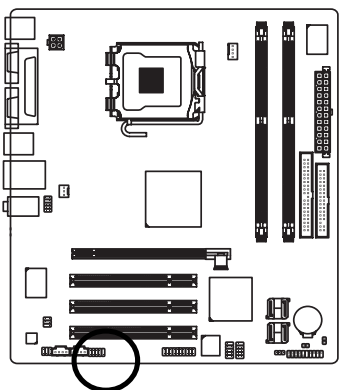
Be careful with the polarity of the front USB connector. Check the pin assignment carefully while you connect the front USB cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional front USB cable, please contact your local dealer.

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

16) COMB (COMB Connector)
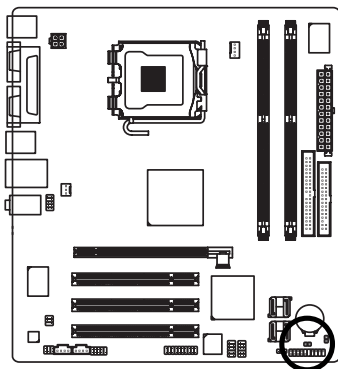
Be careful with the polarity of the COMB connector. Check the pin assignments while you connect the COMB cable. Please contact your nearest dealer for optional COMB cable.

Pin No.	Definition
1	NDCDB-
2	NSINB
3	NSOUTB
4	NDTRB-
5	GND
6	NDSRB-
7	NRTSB-
8	NCTSB-
9	NRIB-
10	No Pin

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.
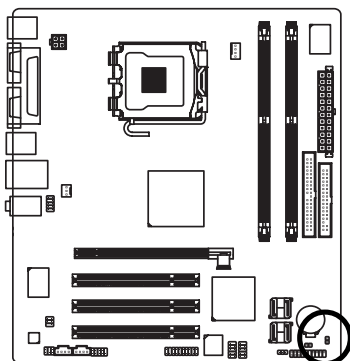
Open: Normal

Short: Clear CMOS

18) CI (Chassis Intrusion, Case Open)
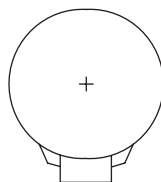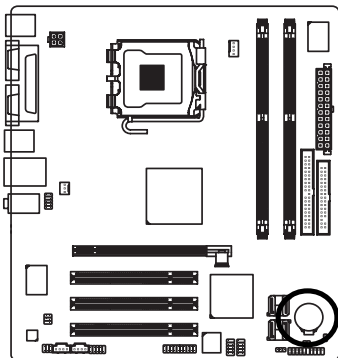
This 2-pin connector allows your system to detect if the chassis cover is removed. You can check the "Case Opened" status in BIOS Setup.

Pin No.	Definition
1	Signal
2	GND

Hardware Installation

19) BAT(Battery)
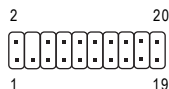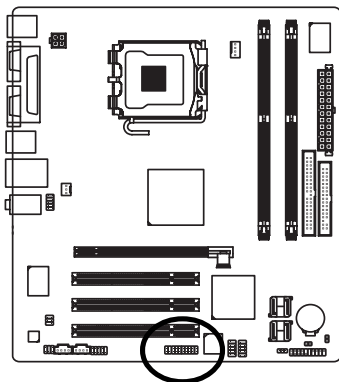
❖ Danger of explosion if battery is incorrectly replaced.

❖ 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.

2. 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.

20) TPM

Please contact your nearest dealer for optional TPM cable.

Pin No.	Definition	Pin No.	Definition
1	LCLK	11	LAD0
2	GND	12	GND
3	LFRAME	13	RSVO
4	NC	14	RSV1
5	LRESET	15	SB3V
6	VCC5	16	SERIRQ
7	LAD3	17	GND
8	LAD2	18	CLKRUN
9	VCC3	19	LPCPD
10	LAD1	20	RSV2

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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.

CONTROL KEYS

< ↑ >< ↓ >< ← >< → >	Move to select item
<Enter>	Select Item
<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>	Increase the numeric value or make changes
<Page Down>	Decrease the numeric value or make changes
<F1>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<F2>	Item Help
<F5>	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
<F6>	Load the file-safe default CMOS value from BIOS default table
<F7>	Load the Optimized Defaults
<F8>	Q-Flash utility
<F9>	System Information
<F10>	Save all the CMOS changes, only for Main Menu

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>.
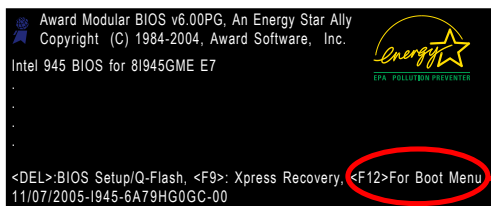
⚠ **CAUTION** Because BIOS flashing is potentially risky, please do it with caution and avoid inadequate operation that may result in system malfunction.
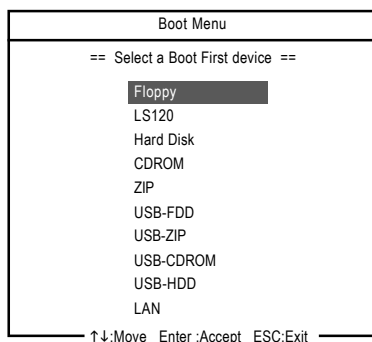
<F12> : For Boot Menu

Select boot sequence for onboard (or add-on cards) device.
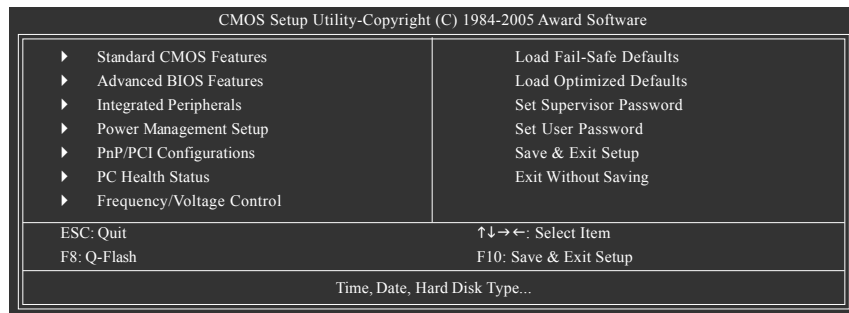
```
Award Modular BIOS v6.00PG, An Energy Star Ally
Copyright (C) 1984-2004, Award Software, Inc.

Intel 945 BIOS for 8I945GME E7
.
.
.
.
<DEL>:BIOS Setup/Q-Flash, <F9>: Xpress Recovery, <F12>For Boot Menu
11/07/2005-I945-6A79HG0GC-00
```
<F12> For Boot Menu

Use < ↑ > or < ↓ > to select a device, then press enter to accept . Press <ESC> to exit this menu.

```
                    Boot Menu

            ==  Select a Boot First device  ==

                  Floppy
                  LS120
                  Hard Disk
                  CDROM
                  ZIP
                  USB-FDD
                  USB-ZIP
                  USB-CDROM
                  USB-HDD
                  LAN
            ↑↓:Move  Enter :Accept  ESC:Exit
```

The Main Menu (For example: BIOS Ver. : D2)

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

CMOS Setup Utility-Copyright (C) 1984-2005 Award Software	
▸ Standard CMOS Features	Load Fail-Safe Defaults
▸ Advanced BIOS Features	Load Optimized Defaults
▸ Integrated Peripherals	Set Supervisor Password
▸ Power Management Setup	Set User Password
▸ PnP/PCI Configurations	Save & Exit Setup
▸ PC Health Status	Exit Without Saving
▸ Frequency/Voltage Control	
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.
> The BIOS Setup menus described in this chapter are for reference only and may differ from the exact settings for your motherboard.

■ **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▶

   ▶  IDE Channel 0 Master            [None]                 Change the day, month,
   ▶  IDE Channel 0 Slave             [None]                 year
   ▶  IDE Channel 2 Master            [None]
   ▶  IDE Channel 2 Slave             [None]                 <Week>
   ▶  IDE Channel 3 Master            [None]                 Sun. to Sat.
   ▶  IDE Channel 3 Slave             [None]
                                                             <Month>
      Drive A                          [1.44M, 3.5"]         Jan. to Dec.
      Drive  B                         [None]
      Floppy 3 Mode Suport            [Disabled]             <Day>
                                                             1 to 31 (or maximum
      Holt On                         [All, But Keyboard]    allowed in the month)

      Base  Memory                     640K                  <Year>
      Extended  Memory                 127M                  1999 to 2098
      Total  Memory                    128M

   ↑↓→←: Move      Enter: Select     +/-/PU/PD: Value    F10: Save      ESC: Exit      F1: General Help
         F5: Previous Values          F6: Fail-Save Default             F7: 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)
- ▶▶ Year   The year, from 1999 through 2098

☞ **Time**

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

☞ **IDE Channel 0 Master, Slave**

- ▶▶ IDE HDD Auto-Detection Press "Enter" to select this option for automatic device detection.
- ▶▶ IDE Device Setup. You can use one of three methods:
  - Auto   Allows BIOS to automatically detect IDE devices during POST(default)
  - None   Select this if no IDE devices are used and the system will skip the automatic detection step and allow for faster system start up.
  - Manual   User can manually input the correct settings
- ▶▶ Access Mode Use this to set the access mode for the hard drive. The four options are: CHS/LBA/Large/Auto(default:Auto)

☞ **IDE Channel 2/3 Master, Slave**
▶▶ IDE HDD Auto-Detection Press "Enter" to select this option for automatic device detection.
▶▶ Extended IDE Drive SATA devices setup. You can use one of two methods:
　　Auto　　　　Allows BIOS to automatically detect SATA IDE devices during POST.
　　　　　　　　(Default value)
　　None　　　Select this if no SATA IDE devices are used and the system will skip the
　　　　　　　　automatic detection step and allow for faster system start up.
▶▶ Access Mode Use this to set the access mode for the hard drive. The two options are:
　　　　　　　　Large/Auto(default:Auto)
▶▶ Capacity　　Capacity of currently installed hard disk.
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

☞ **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.

☞ **Halt on**
The category determines whether the computer will stop if an error is detected during power up.
▶▶ No Errors　　　The system boot will not stop for any error that may be detected and you
　　　　　　　　　will be prompted.
▶▶ All Errors　　　Whenever the BIOS detects a non-fatal error the system will be stopped.
▶▶ All, But Keyboard The system boot will not stop for a keyboard error; it will stop for all other
　　　　　　　　　errors. (Default value)
▶▶ All, But Diskette The system boot will not stop for a disk error; it will stop for all other errors.
▶▶ All, But Disk/Key The system boot will not stop for a keyboard or disk error; it will stop for all
　　　　　　　　　other errors.

☞ **Memory**

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

▶▶ **Base Memory**

The POST of the BIOS will determine the amount of base (or conventional) memory installed in the system.
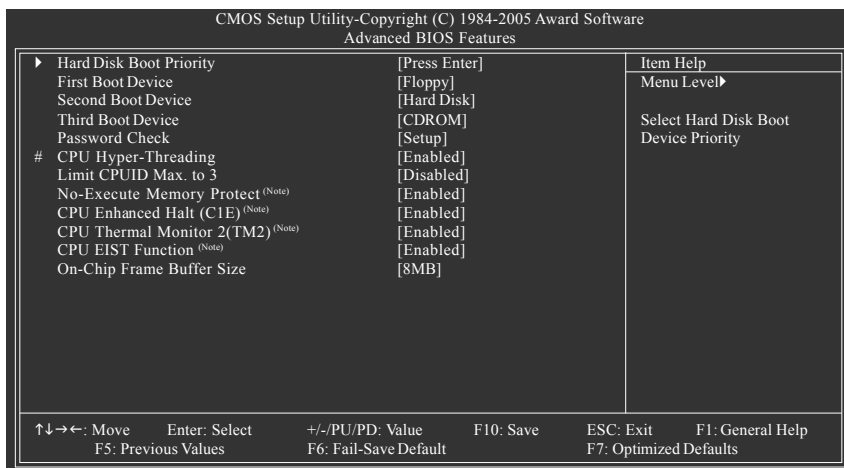
The value of the base memory is typically 512K for systems with 512K memory installed on the motherboard, or 640K for systems with 640K or more memory installed on the motherboard.

▶▶ **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               [Press Enter]           Item Help
    First Boot Device                     [Floppy]                Menu Level▶
    Second Boot Device                    [Hard Disk]
    Third Boot Device                     [CDROM]                 Select Hard Disk Boot
    Password Check                        [Setup]                 Device Priority
 #  CPU Hyper-Threading                   [Enabled]
    Limit CPUID Max. to 3                 [Disabled]
    No-Execute Memory Protect (Note)      [Enabled]
    CPU Enhanced Halt (C1E) (Note)        [Enabled]
    CPU Thermal Monitor 2(TM2) (Note)     [Enabled]
    CPU EIST Function (Note)              [Enabled]
    On-Chip Frame Buffer Size            [8MB]




 ↑↓→←: Move     Enter: Select      +/-/PU/PD: Value     F10: Save     ESC: Exit     F1: General Help
        F5: Previous Values         F6: Fail-Save Default            F7: Optimized Defaults
```

> **NOTE** " # " 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 < ↑ > or < ↓ > to select a device, then press<+> to move it up, or <-> to move it down the list. Press <ESC> to exit this menu.

☞ **First / Second / Third Boot Device**
  ▶▶ Floppy   Select your boot device priority by Floppy.
  ▶▶ LS120   Select your boot device priority by LS120.
  ▶▶ Hard Disk   Select your boot device priority by Hard Disk.
  ▶▶ CDROM   Select your boot device priority by CDROM.
  ▶▶ ZIP   Select your boot device priority by ZIP.
  ▶▶ USB-FDD   Select your boot device priority by USB-FDD.
  ▶▶ USB-ZIP   Select your boot device priority by USB-ZIP.
  ▶▶ USB-CDROM   Select your boot device priority by USB-CDROM.
  ▶▶ USB-HDD   Select your boot device priority by USB-HDD.
  ▶▶ LAN   Select your boot device priority by LAN.
  ▶▶ Disabled   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 (Note)
- ▶ Enabled   Enables No-Execute Memory Protect function. (Default value)
- ▶ Disabled   Disables No-Execute Memory Protect function.

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

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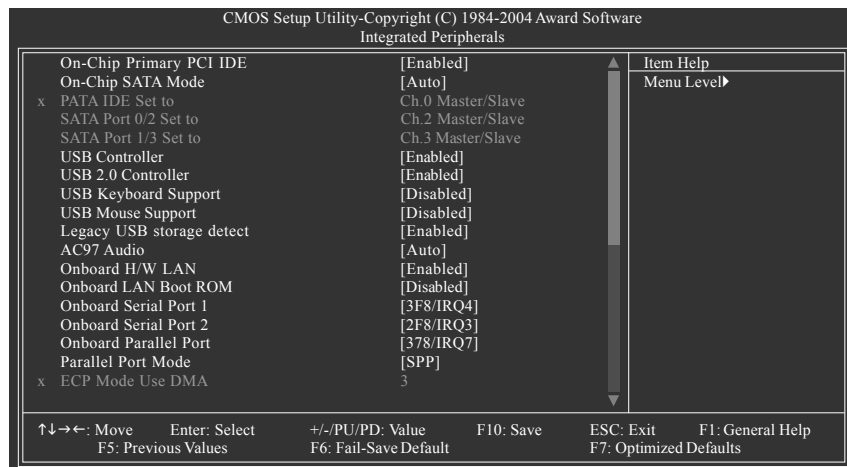
 CPU EIST Function (Note)
- ▶ Enabled   Enable CPU EIST function. (Default value)
- ▶ Disabled   Disable EIST function.

 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 SATA Mode                    [Auto]                     Menu Level▶
  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]
     Legacy USB storage detect            [Enabled]
     AC97 Audio                           [Auto]
     Onboard H/W LAN                      [Enabled]
     Onboard LAN Boot ROM                 [Disabled]
     Onboard Serial Port 1                [3F8/IRQ4]
     Onboard Serial Port 2                [2F8/IRQ3]
     Onboard Parallel Port                [378/IRQ7]
     Parallel Port Mode                   [SPP]
  x  ECP Mode Use DMA                     3                      ▼

  ↑↓→←: Move      Enter: Select      +/-/PU/PD: Value    F10: Save    ESC: Exit    F1: General Help
         F5: Previous Values           F6: Fail-Save Default              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 SATA Mode**

   ▶▶ Disabled   Disable this function.

   ▶▶ Auto   BIOS will auto detect. (Default value)

   ▶▶ Combined   Set On-Chip SATA mode to Combined, you can use up to 4 HDDs on
                              the motherboard; 2 for SATA and the other for PATA 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.

☞ **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.

 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)

 Legacy USB storage detect

▶▶ Enabled   Enable USB storage device boot.(Default value)
▶▶ Disabled   Disable this function.

 AC97 Audio

▶▶ Auto   Auto detect AC97 audio function. (Default value)
▶▶ Disabled   Disable AC97 audio 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.

 Onboard Serial Port 2

▶▶ Auto   BIOS will automatically setup the port 2 address.
▶▶ 3F8/IRQ4   Enable onboard Serial port 2 and address is 3F8/IRQ4.
▶▶ 2F8/IRQ3   Enable onboard Serial port 2 and address is 2F8/IRQ3. (Default value)
▶▶ 3E8/IRQ4   Enable onboard Serial port 2 and address is 3E8/IRQ4.
▶▶ 2E8/IRQ3   Enable onboard Serial port 2 and address is 2E8/IRQ3.
▶▶ Disabled   Disable onboard Serial port 2.

 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.

C **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.

C **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                       [S1(POS)]                Item Help
    Soft-Off by PWR-BTTN                    [Instant-off]           Menu Level▶
    PME Event Wake Up                       [Enabled]
    Power On by Ring                        [Enabled]
    Resume by Alarm                         [Disabled]
  x Date (of Month) Alarm                   Everyday
  x Time (hh:mm:ss) Alarm                   0 : 0 : 0
    Power On By Mouse                       [Disabled]
    Power On By Keyboard                    [Disabled]
  x KB Power ON Password                    Enter
    AC Back Function                        [Soft-Off]




    ↑↓→←: Move      Enter: Select      +/-/PU/PD: Value     F10: Save      ESC: Exit      F1: General Help
          F5: Previous Values          F6: Fail-Save Default             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
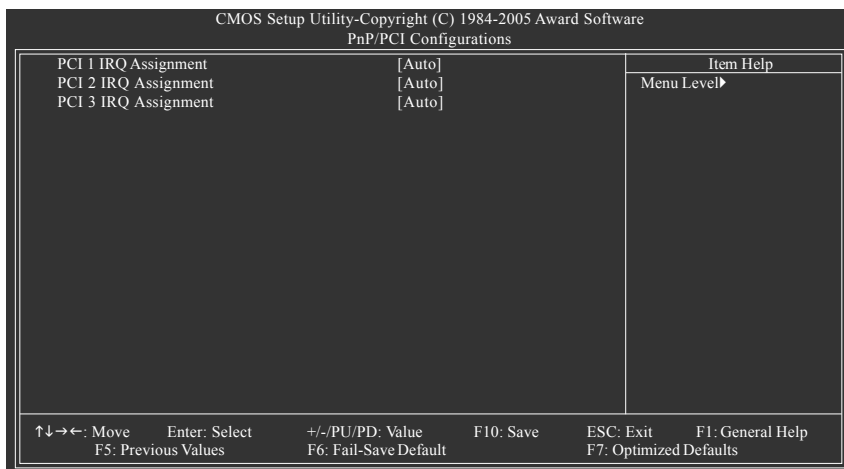
When "Power On by Keyboard" set at Password, you can set the password here.
- ▶ Enter   Input password (from 1 to 5 characters) and press Enter to set the Keyboard Power On password.

⌐ 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) 1984-2005 Award Software
                                  PnP/PCI Configurations
   PCI 1 IRQ Assignment                    [Auto]                      Item Help
   PCI 2 IRQ Assignment                    [Auto]             Menu Level▶
   PCI 3 IRQ Assignment                    [Auto]




   ↑↓→←: Move      Enter: Select       +/-/PU/PD: Value    F10: Save     ESC: Exit    F1: General Help
         F5: Previous Values             F6: Fail-Save Default            F7: Optimized Defaults
```

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

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

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

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                        Yes               Menu Level▶
Vcore                              OK
DDRV                               OK
+3.3V                              OK
+12V                               OK
Current System Temperature         30ºC
Current CPU Temperature            38ºC
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]


↑↓→←: Move    Enter: Select      +/-/PU/PD: Value    F10: Save    ESC: Exit    F1: General Help
      F5: Previous Values        F6: Fail-Save Default             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
- 60ºC / 140ºF   Monitor CPU/System temperature at 60ºC / 140ºF.
- 70ºC / 158ºF   Monitor CPU/System temperature at 70ºC / 158ºF.
- 80ºC / 176ºF   Monitor CPU/System temperature at 80ºC / 176ºF.
- 90ºC / 194ºF   Monitor CPU/System temperature at 90ºC / 194ºF.
- 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)
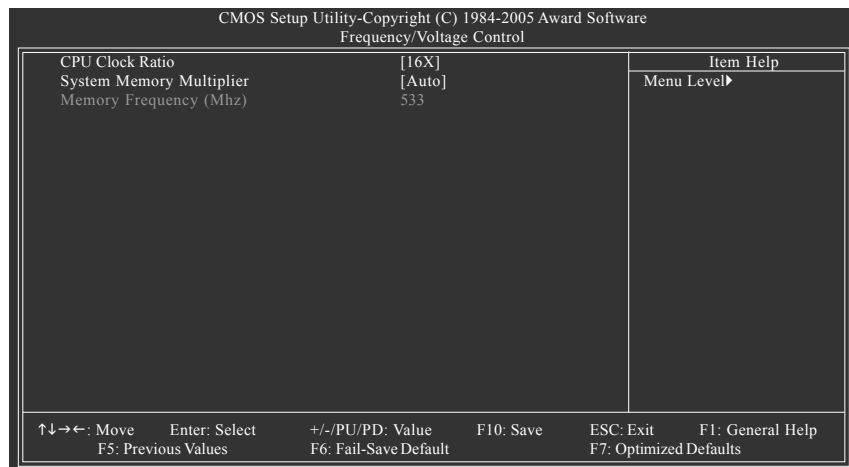
☞ **CPU Smart FAN Mode**
 This option is available only when CPU Smart FAN Control is enabled.
 ▶ Auto   BIOS autodetects the type of CPU fan you installed and sets the optimal CPU Smart FAN control mode for it. (Default Value)
 ▶ Voltage   Set to Voltage when you use a CPU fan with a 3-pin fan power 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.

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            [Auto]              Menu Level▶
    Memory Frequency (Mhz)              533




  ↑↓→←: Move    Enter: Select    +/-/PU/PD: Value    F10: Save    ESC: Exit    F1: General Help
       F5: Previous Values         F6: Fail-Save Default            F7: Optimized Defaults
```

⚠ **CAUTION** 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)
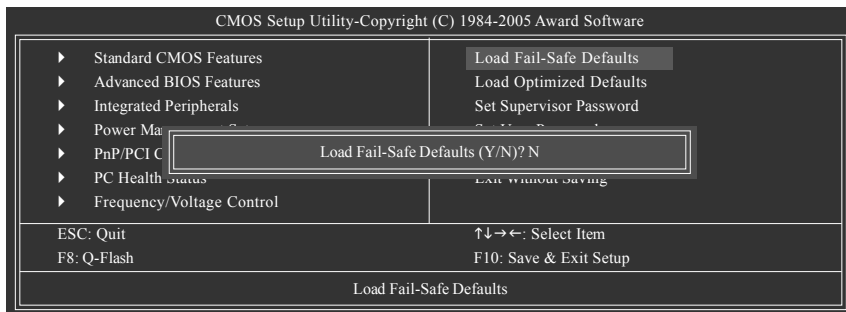
☞ **Memory Frequency (Mhz)**

The values depend on "System Memory Multiplier" item.
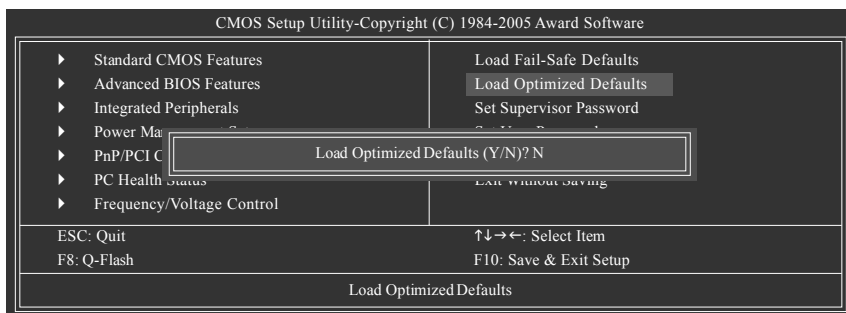
(Note) This item will show up when you install a processor which supports this function.

2-8 Load Fail-Safe Defaults

CMOS Setup Utility-Copyright (C) 1984-2005 Award Software

▶ Standard CMOS Features	Load Fail-Safe Defaults
▶ Advanced BIOS Features	Load Optimized Defaults
▶ Integrated Peripherals	Set Supervisor Password
▶ Power Ma___	
▶ PnP/PCI C	Load Fail-Safe Defaults (Y/N)? N
▶ PC Health Status	Exit Without Saving
▶ 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 (C) 1984-2005 Award Software

▶ Standard CMOS Features	Load Fail-Safe Defaults
▶ Advanced BIOS Features	Load Optimized Defaults
▶ Integrated Peripherals	Set Supervisor Password
▶ Power Ma___	
▶ PnP/PCI C	Load Optimized Defaults (Y/N)? N
▶ PC Health Status	Exit Without Saving
▶ Frequency/Voltage Control	

ESC: Quit	↑↓→←: Select Item
F8: Q-Flash	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	Load Fail-Safe Defaults
▸ Advanced BIOS Features	Load Optimized Defaults
▸ Integrated Peripherals	Set Supervisor Password
▸ Power Management Setup	Set User Password
▸ PnP/PCI C Enter Password:	
▸ PC Health	Exit Without Saving
▸ Frequency/Voltage Control	
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.
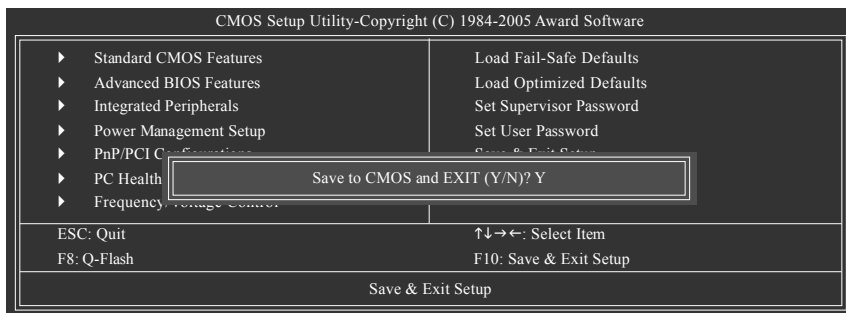
The BIOS Setup program allows you to specify two separate passwords:

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 Configurations	Save & Exit Setup
▶ PC Health	Save to CMOS and EXIT (Y/N)? Y
▶ Frequency/Voltage Control	
ESC: Quit	↑↓→←: Select Item
F8: Q-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 (C) 1984-2005 Award Software	
▶ Standard CMOS Features	Load Fail-Safe Defaults
▶ Advanced BIOS Features	Load Optimized Defaults
▶ Integrated Peripherals	Set Supervisor Password
▶ Power Management Setup	Set User Password
▶ PnP/PCI Configurations	Quit Without Saving (Y/N)? N
▶ PC Health Status	Exit Without Saving
▶ Frequency/Voltage Control	
ESC: Quit	↑↓→←: Select Item
F8: Q-Flash	F10: Save & Exit Setup
Abandon all Data	

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

BIOS Setup

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Chapter 3 Install Drivers

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

3-1 Install Chipset Drivers

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

After insert the driver CD, "Xpress Install" will scan automatically the system and then list all the drivers that recommended to install. Please pick the item that you want and press "install" followed the item; or you can press "Xpress Install" to install all items defaulted.
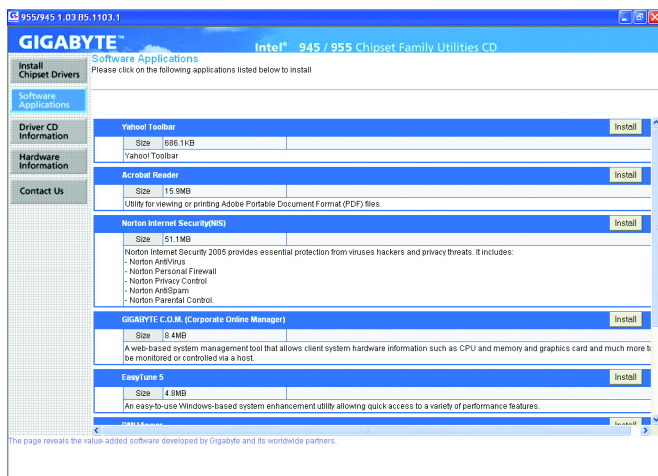
NOTE
Some device drivers will restart your system automatically. After restarting your system the "Xpress Install" will continue to install other drivers. System will reboot automatically after install the drivers, afterward you can install others application.

CAUTION
For USB2.0 driver support under Windows XP operating system, please use Windows Service Pack. After install Windows Service Pack, it will show a question mark "?" in "Universal Serial Bus controller" under "Device Manager". Please remove the question mark and restart the system (System will auto-detect the right USB2.0 driver).
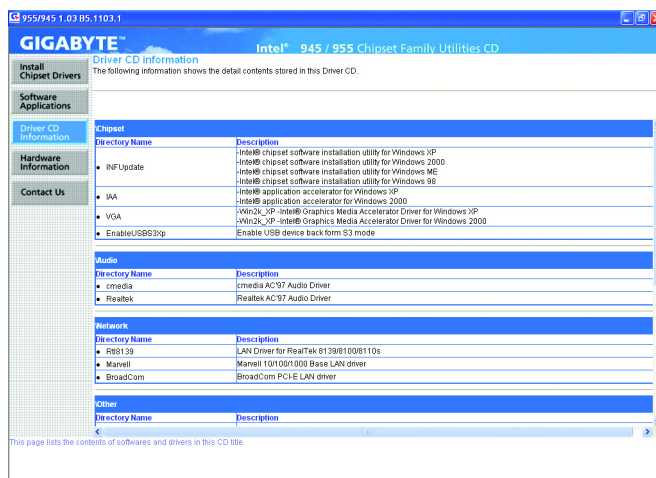
3-2 Software Applications

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

3-3 Driver CD Information

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

3-4 Hardware Information

This page lists all device you have for this motherboard.

3-5 Contact Us

Please see the last page for details.

English

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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.

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 espe-cially to maximize memory performance and boost memory bandwidth up to 10%. With added branded memory module information, users are able to optimize memory performance by selecting from a recommended memory module list.

S.O.S. (System Overclock Saver)

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

Download Center

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

C.O.M. (Corporate Online Management)

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

4-1-1 EasyTune 5 Introduction

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

User Interface Overview

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

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

4-1-2   Xpress Recovery2 Introduction

Xpress Recovery2 is designed to provide quick backup and restoration of hard disk data. Supporting Microsoft operating systems including Windows XP/2000/NT/98/Me and DOS, and file systems including FAT16, FAT32, and NTFS, Xpress Recovery2 is able to back up data on hard disks on PATA and SATA IDE controllers. After Xpress Recovery2 is executed from CD-ROM for the first time, it will stay permanent in your hard disk. If you wish to run Xpress Recovery2 later, you can simply press F9 during system bootup to enter Xpress Recovery2 without the CD-ROM.

System requirements:

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

How to use the Xpress Recovery2
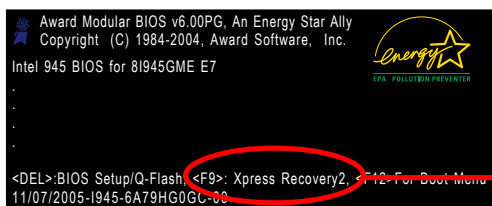
Initial access by booting from CD-ROM and subsequent access by pressing the F9 key:

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

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

Boot from CD/DVD:

<F9> Xpress Recovery2

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

The Main Screen of Xpress Recovery2

1. RESTORE:

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

2. BACKUP:

Back up data from hard disk.

3. REMOVE:

Remove previously-created backup files to release disk space. (This button will not appear if there is no backup 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)
4. 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.
5. Xpress Recovery2 supports only PATA hard disks and not SATA hard disks on the following motherboards (As this is a BIOS-related issue, it can be solved by BIOS update)

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

4-1-3   Flash BIOS Method Introduction

Method 1 : Q-Flash™ Utility

Q-Flash™ is a BIOS flash utility embedded in Flash ROM. With this utility, users only have to stay in the BIOS menu when they want to update BIOS. Q-Flash™ allows users to flash BIOS without any utility in DOS or Windows. Using Q-Flash™ indicating no more fooling around with any complicated instructions and operating system since it is in the BIOS menu.

> ⚠️ CAUTION
>
> 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.
2.   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**.
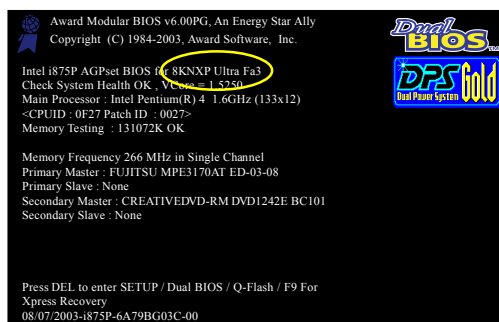
Part One:

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.
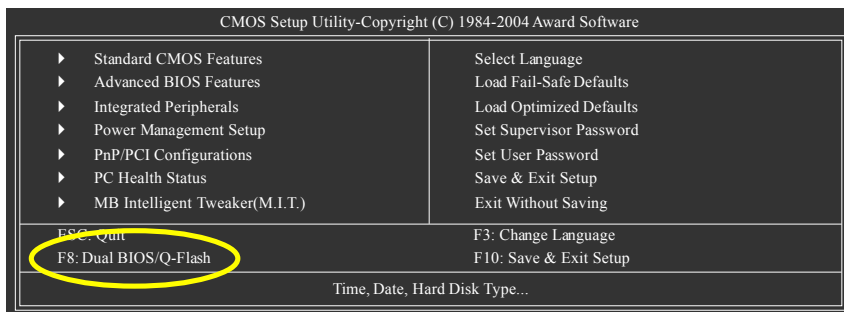
The BIOS file is Fa3 before updating

```
Award Modular BIOS v6.00PG, An Energy Star Ally
Copyright (C) 1984-2003, Award Software,  Inc.

Intel i875P AGPset BIOS for 8KNXP Ultra Fa3
Check System Health OK , VCore = 1.5250
Main Processor : Intel Pentium(R) 4  1.6GHz (133x12)
<CPUID : 0F27 Patch ID  : 0027>
Memory Testing  : 131072K OK

Memory Frequency 266 MHz in Single Channel
Primary Master : FUJITSU MPE3170AT ED-03-08
Primary Slave : None
Secondary Master : CREATIVEDVD-RM DVD1242E BC101
Secondary Slave : None



Press DEL to enter SETUP / Dual BIOS / Q-Flash / F9 For
Xpress Recovery
08/07/2003-i875P-6A79BG03C-00
```

Entering the Q-Flash™ utility:

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

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

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

Exploring the Q-Flash™ / Dual BIOS utility screen

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

```
                         Dual BIOS Utility                          ── Dual BIOS utility bar
        Boot From........................................    Main Bios
        Main ROM Type/Size............................SST 49LF003A      512K
         Backup ROM Type/Size.........................SST 49LF003A      512K

                      Wide Range Protection    Disable
                            Boot From     Main Bios
                        Auto Recovery    Enable
                        Halt On Error    Disable
                    Copy Main ROM Data to Backup
                          Load Default Settings
                        Save Settings to CMOS
                         Q-Flash Utility                           ── Q-Flash™ utility title
                     Load Main BIOS from Floppy                         bar
                    Load Backup BIOS from Floppy
                     Save Main BIOS to Floppy
                    Save Backup BIOS to Floppy
        Enter : Run      ↑↓:Move        ESC:Reset       F10:Power Off   ── Action bar
```

Task menu for Dual BIOS utility

Task menu for Q-Flash™ utility

Task menu for Dual BIOS utility:

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

Task menu for Q-Flash utility:

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

Action bar:

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

Using the Q-Flash™ utility:

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

Steps:

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

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

    NOTE   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.

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

Dual BIOS Utility

```
Boot From........................................    Main Bios
Main ROM Type/Size...........................SST 49LF003A         512K
 Backup ROM Type/Size........................SST 49LF003A         512K

              Wide Range Protection   Disable
                        1 file(s) found
       8KNXPU.Fba                            512K                          ──── BIOS file in the floppy
                                                                                disk.
       Total size : 1.39M             Free size : 911.50K
       F5 : Refresh                   DEL : Delete
                        Save Settings to CMOS
                         Q-Flash 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 pressing **Enter**, you'll then see the progress of reading the BIOS file from the floppy disk.

Dual BIOS Utility

```
Boot From........................................    Main Bios
Main ROM Type/Size...........................SST 49LF003A         512K
 Backup ROM Type/Size........................SST 49LF003A         512K

              Wide Range Protection   Disable                              CAUTION
       Reading BIOS file from floppy ...                                   Do not trun off power or
       >>>>>>>>>>>>>>>......................                          ──── reset your system at this
                                                                           stage!!
       Don't Turn Off Power or Reset System
                        Save Settings to CMOS
                         Q-Flash 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 BIOS file is read, you'll see a confirmation dialog box asking you "Are you sure to update 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 displayed.

   ⚠ **CAUTION** 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.

| Dual Bios Utility |
|---|
| Boot From.. Main Bios |
| Main ROM Type/Size............................SST 49LF003A   512K |
| Backup ROM Type/Size........................SST 49LF003A   512K |
| Wide Range Protection   Disable |
| **!! Copy BIOS completed - Pass !!** |
| **Please press any key to continue** |
| ~~Save Settings to CMOS~~ |
| Q-Flash 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 |

◯ **NOTE**

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

5. Press Esc and then Y button to exit the Q-Flash utility. The computer will restart automatically after you exit Q-Flash.
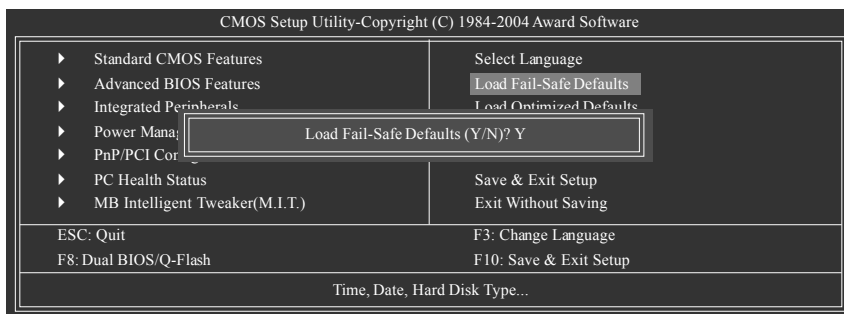
Dual Bios Utility
Boot From.. Main Bios
Main ROM Type/Size............................SST 49LF003A   512K
Backup ROM Type/Size........................SST 49LF003A   512K
Wide Range Protection   Disable
Are you sure to RESET ?
[Enter] to continure or [Esc] to abort...
~~Save Settings to CMOS~~
Q-Flash 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.

The BIOS file becomes Fab after updating.
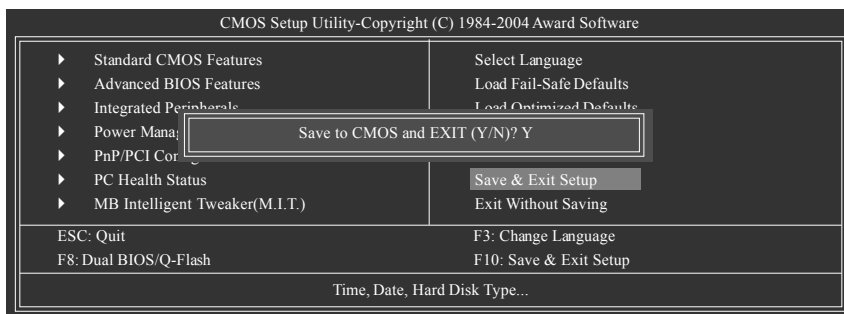
Award Modular BIOS v6.00PG, An Energy Star Ally
Copyright (C) 1984-2003, Award Software, Inc.

Intel i875P AGPset BIOS for 8KNXP Ultra Fba
Check System Health OK , VCore = 1.5250
Main Processor : Intel Pentium(R) 4 1.6GHz (133x12)
<CPUID : 0F27 Patch ID : 0027>
Memory Testing : 131072K OK

Memory Frequency 266 MHz in Single Channel
Primary Master : FUJITSU MPE3170AT ED-03-08
Primary Slave : None
Secondary Master : CREATIVEDVD-RM DVD1242E BC101
Secondary Slave : None

Press DEL to enter SETUP / Dual BIOS / Q-Flash / F9 For Xpress Recovery
09/23/2003-i875P-6A79BG03C-00

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

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

Press **Y** on your keyboard to load defaults.

7. 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
▶ Advanced BIOS Features	Load Fail-Safe Defaults
▶ Integrated Peripherals	Load Optimized Defaults
▶ Power Mana; Save to CMOS and EXIT (Y/N)? Y	
▶ PnP/PCI Conf	
▶ PC Health Status	Save & Exit Setup
▶ MB Intelligent Tweaker(M.I.T.)	Exit Without Saving
ESC: Quit	F3: Change Language
F8: Dual BIOS/Q-Flash	F10: Save & Exit Setup
Time, Date, Hard Disk Type...	

Press **Y** on your keyboard to save and exit.

Part Two:
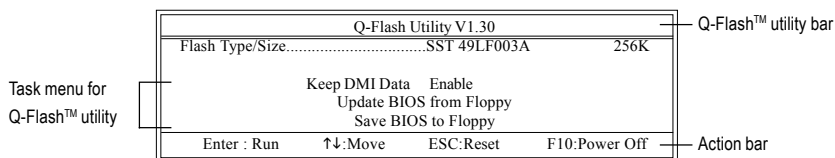
Updating BIOS with Q-Flash™ Utility on Single-BIOS Motherboards.

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

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

Exploring the Q-Flash™ utility screen

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

```
                    Q-Flash Utility V1.30                          —— Q-Flash™ utility bar
        Flash Type/Size................................SST 49LF003A        256K

                      Keep DMI Data    Enable
                     Update BIOS from Floppy
                      Save BIOS to Floppy
        Enter : Run        ↑↓:Move       ESC:Reset       F10:Power Off      —— Action bar
```

Task menu for Q-Flash™ utility

Task menu for Q-Flash utility:

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

Action bar:

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

Using the Q-Flash™ utility:

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

Steps:

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

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

   NOTE If you want to save the current BIOS for backup purpose, you can begin Step 1 with "Save BIOS to Floppy" item.
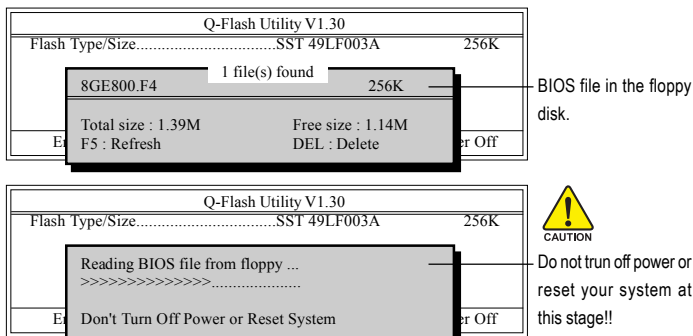
2. Move to the BIOS file you want to flash and press Enter.

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

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

```
                    Q-Flash Utility V1.30
        Flash Type/Size................................SST 49LF003A        256K

                      1 file(s) found
        8GE800.F4                              256K              —— BIOS file in the floppy
                                                                       disk.
        Total size : 1.39M            Free size : 1.14M
        En  F5 : Refresh              DEL : Delete    er Off
```

```
                    Q-Flash Utility V1.30
        Flash Type/Size................................SST 49LF003A        256K       ⚠ CAUTION

        Reading BIOS file from floppy ...                                 —— Do not trun off power or
        >>>>>>>>>>>>>>>.....................                                  reset your system at
        En  Don't Turn Off Power or Reset System        er Off                this stage!!
```
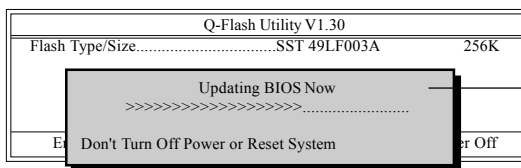
After BIOS file is read, you'll see a confirmation dialog box asking you "Are you sure to update BIOS?"

⚠ **CAUTION** Please do not take out the floppy disk when it begins flashing BIOS.
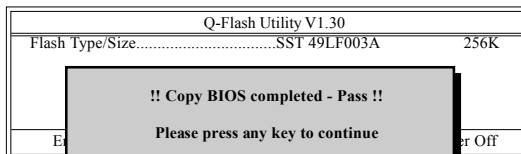
GA-8I945GME Motherboard   - 66 -

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.
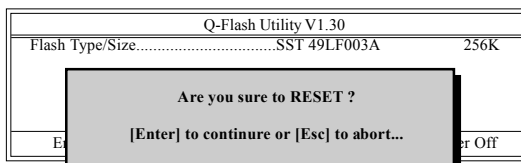
Q-Flash Utility V1.30	
Flash Type/Size................................SST 49LF003A	256K

⚠ CAUTION

Updating BIOS Now
>>>>>>>>>>>>>>>>>>.........................

— Do not trun off power or reset your system

En Don't Turn Off Power or Reset System   er Off   at this stage!!

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

Q-Flash Utility V1.30	
Flash Type/Size................................SST 49LF003A	256K

!! Copy BIOS completed - Pass !!

Please press any key to continue

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

Q-Flash Utility V1.30	
Flash Type/Size................................SST 49LF003A	256K

Are you sure to RESET ?

[Enter] to continure or [Esc] to abort...
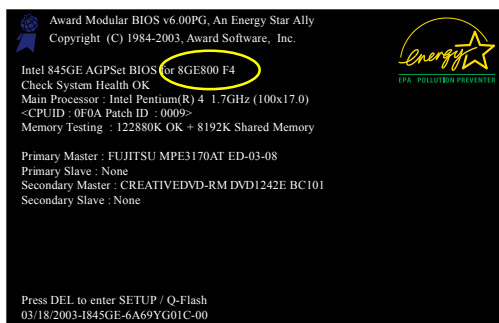
After system reboots, you may find the BIOS version on your boot screen becomes the one you flashed.

The BIOS file becomes F4 after updating

Award Modular BIOS v6.00PG, An Energy Star Ally
Copyright (C) 1984-2003, Award Software, Inc.

Intel 845GE AGPSet BIOS for 8GE800 F4
Check System Health OK
Main Processor : Intel Pentium(R) 4 1.7GHz (100x17.0)
<CPUID : 0F0A Patch ID : 0009>
Memory Testing : 122880K OK + 8192K Shared Memory

Primary Master : FUJITSU MPE3170AT ED-03-08
Primary Slave : None
Secondary Master : CREATIVEDVD-RM DVD1242E BC101
Secondary Slave : None

Press DEL to enter SETUP / Q-Flash
03/18/2003-I845GE-6A69YG01C-00

energy
EPA POLLUTION PREVENTER

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
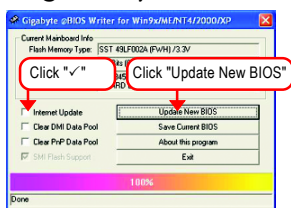
Fig 2. Installation complete and run @BIOS

Click Start/ Programs/ GIGABYTE/@BIOS

Select **@BIOS** item, and click **Install**.

Fig 3. The @BIOS utility

Click "✓"   Click "Update New BIOS"
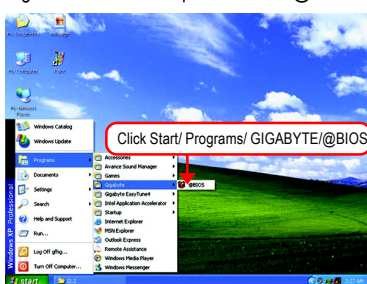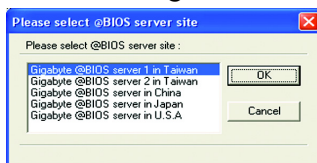
Fig 4. Select the desired @BIOS server

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.
   d. Please search for BIOS unzip file, downloading from internet or any other methods (such as: 8I945GME.D2).
   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:

I.   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™ 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.
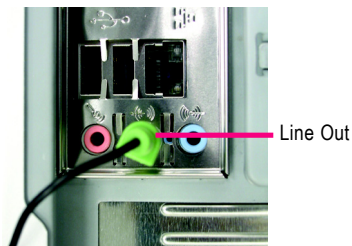
4-1-4   2 / 4 / 6 Channel Audio Function Introduction

2 Channel Audio Setup

We recommend that you use speakers with amplifier to get the best sound effect if the stereo output is applied.
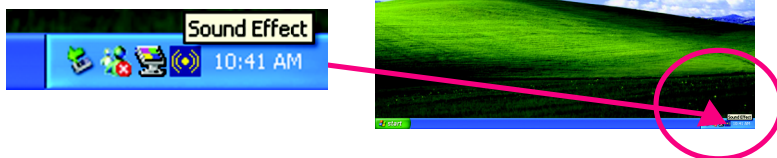
STEP 1:

Connect the stereo speakers or earphone to
"Line Out."
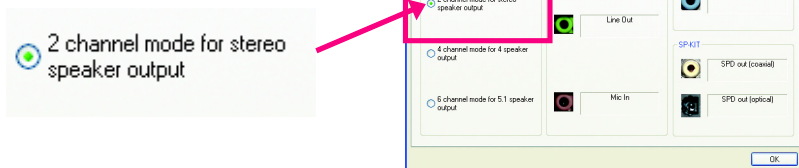
Line Out

STEP 2:

After installing the audio driver, you'll find a Sound Effect icon on the lower right hand taskbar. Click the icon to select the function.

STEP 3:
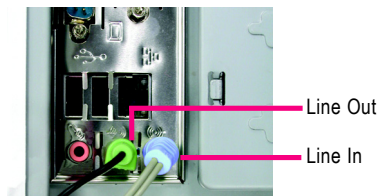
On the AC97 Audio Configuration menu, click the **Speaker Configuration** tab and select the **2-channel mode for stereo speaker output** check box.

4 Channel Analog Audio Output Mode

STEP 1:
Connect the front channels to "Line Out,"
the rear channels to "Line In."
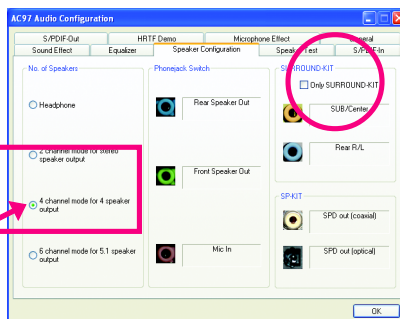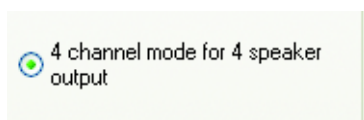
Line Out

Line In

STEP 2:
After installing the audio driver, you'll find a Sound Effect icon on the lower right hand taskbar. Click the icon to select the function.
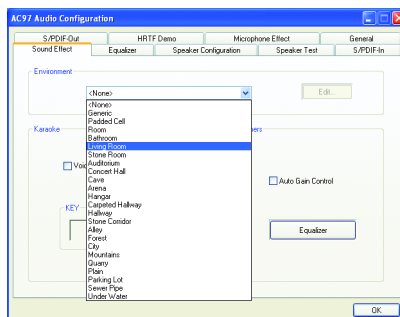
STEP 3:
On the AC97 Audio Configuration menu, click the **Speaker Configuration** tab and select the **4-channel mode for 4 speaker output** check box. Clear the **Only SURROUND-KIT** check box and press **OK.**

When the **Environment** setting is **None**, the sound would be performed as stereo mode (2-channel output). Please select other settings (ex: **Living Room**) for 4-channel output.
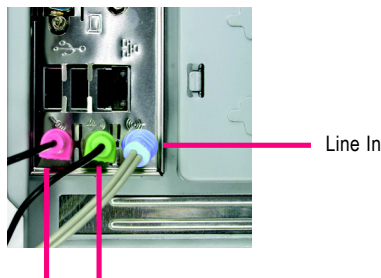
Basic 6 Channel Analog Audio Output Mode

Use the back audio panel to connect the audio output without any additional module.
STEP 1:
Connect the front channels to "Line Out",the rear channels to "Line In", and the Center/Subwoofer channels to "MIC In".
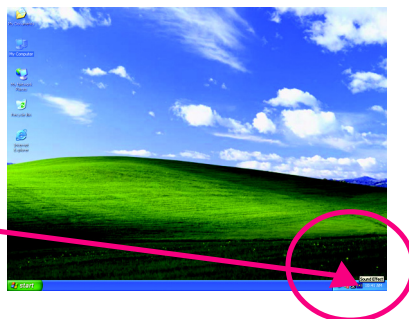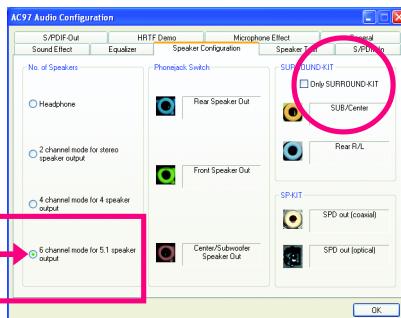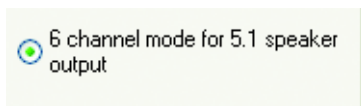
Line In

MIC In Line Out

STEP 2:
After installing the audio driver, you'll find a Sound Effect icon on the lower right hand taskbar. Click the icon to select the function.
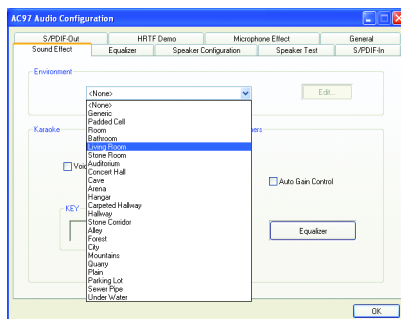
STEP 3:
On the AC97 Audio Configuration menu, click the **Speaker Configuration** tab and select the **6-channel mode for 5.1 speaker output** check box. Clear the **Only SURROUND-KIT** check box and press **OK.**

Basic 6 Channel Analog Audio Output Mode Notes:
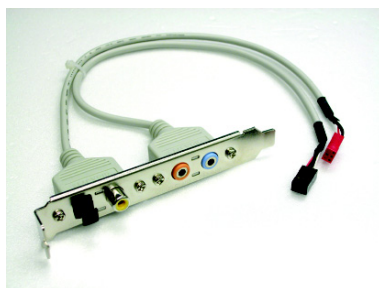
When the **Environment** setting is **None**, the sound would be performed as stereo mode (2-channel output). Please select the other settings for 6 channels output.

Advanced 6 Channel Analog Audio Output Mode (using Audio Combo Kit,Optional Device):
(Audio Combo Kit provides SPDIF output port : optical & coaxial and SURROUND-KIT : Rear R/L & CEN /Subwoofer)

SURROUND-KIT access analog output to rear channels and Center/Subwoofer channels. It is the best solution if you need 6 channel output, Line In and MIC at the same time. "SURROUND-KIT" is included in the GIGABYTE unique "Audio Combo Kit" as picture.
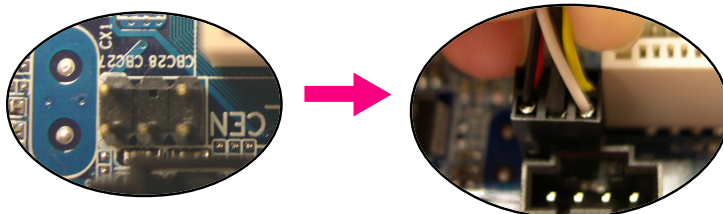
STEP 1:
Secure the metal bracket of the "Surround Kit" to the chassis back panel with a screw.
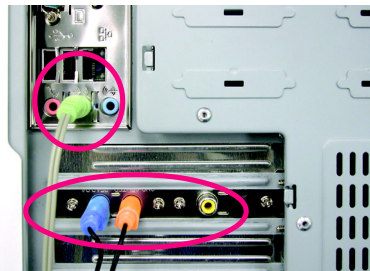
STEP 2:
Connect the "SURROUND-KIT" cable to the SUR_CEN connector on the M/B.
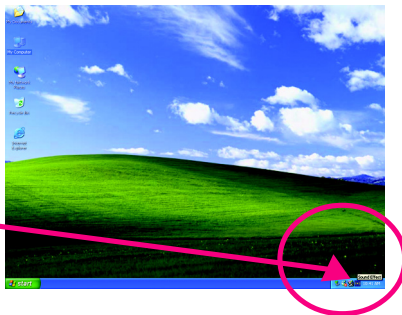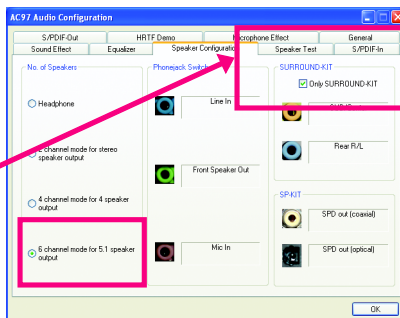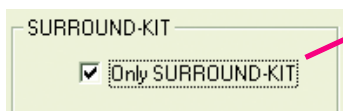
STEP 3:
Connect the front channels to back audio panel's "Line Out", the rear channels to SURROUND-KIT's REAR R/L, and the Center/Subwoofer channels to SURROUND-KIT's SUB CENTER.
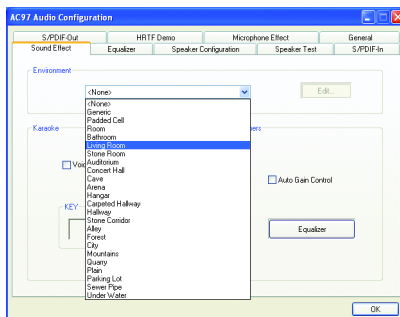
STEP 4:
After installing the audio driver, you'll find a Sound Effect icon 🔊 on the lower right hand taskbar. Click the icon to select the function.

STEP 5:
On the AC97 Audio Configuration menu, click the **Speaker Configuration** tab and select the **6-channel mode for 5.1 speaker output** check box. Select the **Only SURROUND-KIT** check box and press **OK.**
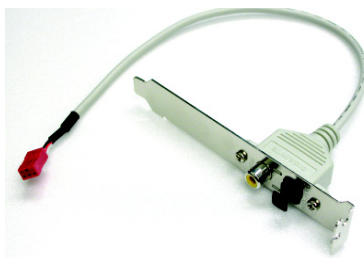
Basic & Advanced 6 Channel Analog Audio Output Mode Notes:

When the **Environment** setting is **None**, the sound would be performed as stereo mode (2-channel output). Please select the other settings for 6 channels output.
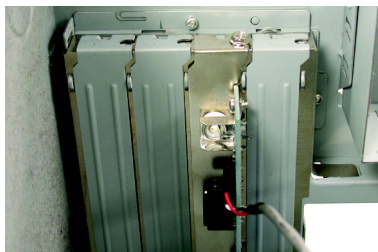
SPDIF Output Device (Optional Device)

A "SPDIF output" device is an optional device. The
SPDIF_IO cable with rear bracket could link to the
"SPDIF_IO" connector (As picture.) For the further
linkage to decoder, rear bracket provides coaxial
cable and Fiber connecting port.
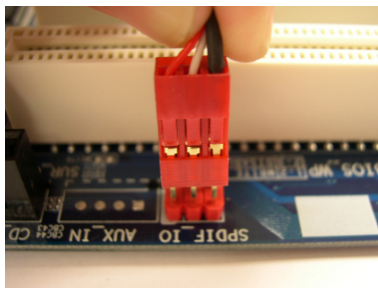
STEP 1:

Secure the metal bracket of the SPDIF Output
device to the chassis back panel with a screw.

STEP 2:
Connect the SPDIF device cable to the SPDIF_IO
connector on the motherboard.

STEP 3:
Connect SPDIF to the SPDIF decoder.

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

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

Question 5: Sometimes I hear different continuous beeps from computer after system boots up. What do these beeps usually stand for?
Answer: The beep codes below may help you identify the possible computer problems. However, they are only for reference purposes. The situations might differ from case to case.

→AMI BIOS Beep Codes
*Computer gives 1 short beep when system boots successfully.
*Except for beep code 8, these codes are always fatal.
    1 beep Refresh failure
    2 beeps Parity error
    3 beeps Base 64K memory failure
    4 beeps Timer not operational
    5 beeps Processor error
    6 beeps 8042 - gate A20 failure
    7 beeps Processor exception interrupt error
    8 beeps Display memory read/write failure
    9 beeps ROM checksum error
    10 beeps CMOS shutdown register read/write error
    11 beeps Cache memory bad

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

Appendix

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