GA-8GEM800

Intel® Pentium® 4 Socket 478 Processor Motherboard

User's Manual

Rev. 1001

12ME-8GEM800-1001

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-8GEM800
is in conformity with
(reference to the specification under which conformity is decared)
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
		☒ **EN 61000-3-3**	Disturbances in supply systems caused by household appliances and similar electrical equipment "Voltage fluctuations"
☐ **EN 55013**	Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment	☒ **EN 55024**	Information Technology equipment-Immunity characteristics-Limits and methods of measurement
☐ **EN 55014-1**	Limits and methods of measurement of radio disturbance characteristics of household electrical appliances, portable tools and similar electrical 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** ☐ **part 10** ☐ **part 12**	Cabled distribution systems; Equipment for receiving and/or distribution from sound and television signals		

☒ **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*

(Stamp)

Date Sept. 1, 2004

Name : Timmy Huang

DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2.1077(a)

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-8GEM800

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: Sept. 1, 2004

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 quick installation, please refer to the "Hardware Installation Guide" included with the product.
- For detailed product information and specifications, please carefully read the "Product User Manual".
- For detailed information related to Gigabyte's unique features, please go to Gigabyte's website under "Technology Guide" where information can be downloaded in .pdf format.

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

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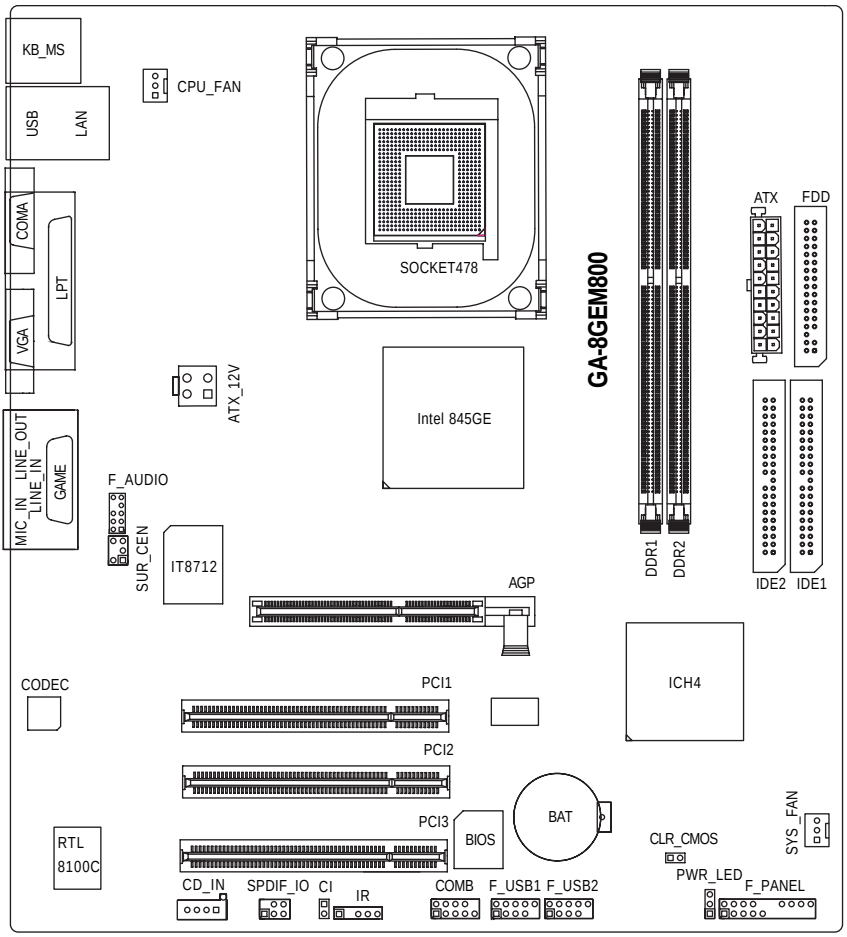
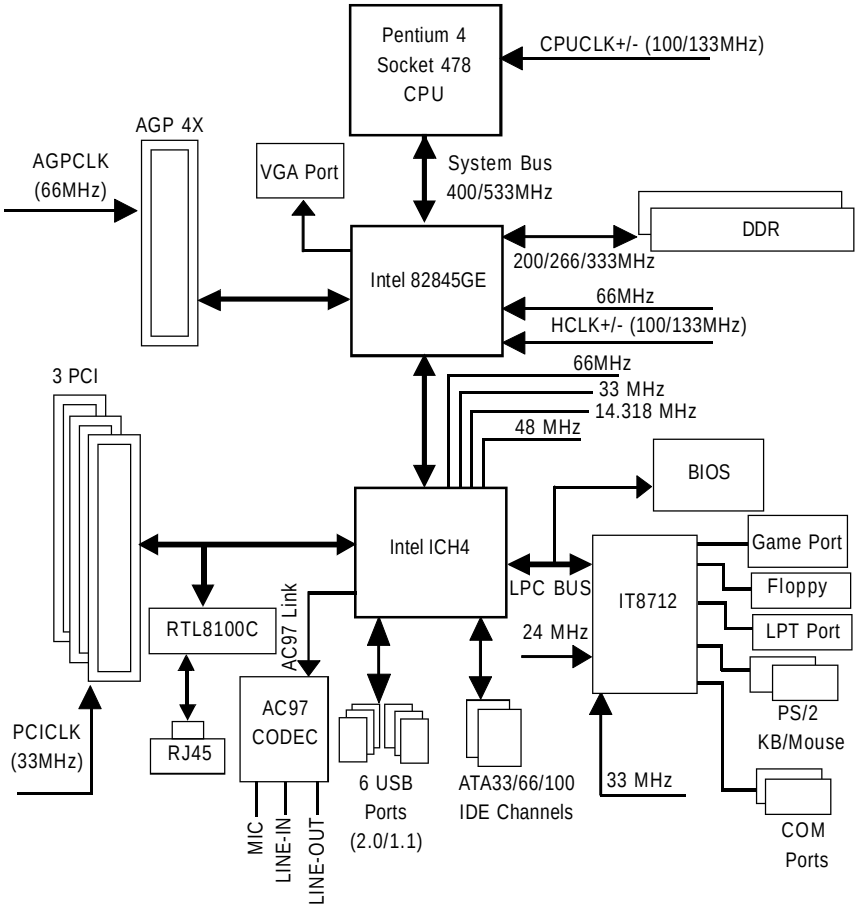
GA-8GEM800 Motherboard Layout



Block Diagram



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 you the power supply is switched off before unplugging the power supply connector from the motherboard.

Installation Notices

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

Instances of Non-Warranty

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

1-2 Feature Summary

CPU	◆	Socket 478 for Intel® Pentium® 4 (Northwood, Prescott) processor with HT Technology
	◆	Supports 400/533MHz FSB
	◆	L2 cache varies with processors
Chipset	◆	Northbridge:Intel® 845GE
	◆	Southbridge: Intel® ICH4
Memory	◆	2 184-pin DDR DIMM sockets
	◆	Supports DDR333/DDR266/DDR200 DIMM (note 1)
	◆	Supports up to 2GB DRAM (Max.)
	◆	Supports only 2.5V DDR DIMM
Slots	◆	1 AGP slot 4X (1.5V) device support
	◆	3 PCI slot supports 33MHz & PCI 2.2 compliant
IDE Connections	◆	2 IDE connection (UDMA 33/ATA 66/ATA 100), allows connection of 4 IDE devices
FDD Connections	◆	1 FDD connection, allows connection of 2 FDD devices
Peripherals	◆	1 parallel port supporting Normal/EPP/ECP mode
	◆	1 VGA port, 1 COMA port, onboard COMB connection
	◆	6 USB 2.0/1.1 ports (2 x rear, 4 x front by cable)
	◆	1 Front Audio Connector
	◆	1 IrDA connector for IR
	◆	1 PS/2 keyboard port
	◆	1 PS/2 mouse port
Onboard VGA	◆	Built-in Intel® 845GE Chipset
Onboard LAN	◆	Built-in RTL8100C chip
	◆	1 RJ45 port
Onboard Audio	◆	Realtek ALC655 CODEC
	◆	Supports Line In ; Line Out ; MIC In
	◆	Supports 2 / 4 / 6 channel audio
	◆	Supports SPDIF In/Out connection
	◆	CD In/ Game port
I/O Control	◆	IT8712

(Note 1) Due to (Intel 845PE/GE/GV) chipset architecture limitation, DDR333 memory modules are supported only when you install a Pentium 4 processor with 533MHz FSB.
A Pentium 4 processor with 400MHz FSB will support DDR200/266 memory modules.

Hardware Monitor	◆	CPU / System fan speed detection
	◆	CPU overheating warning
	◆	System voltage detection
	◆	CPU / System fan failure warning
BIOS	◆	Use of licensed AWARD BIOS
	◆	Supports Q-Flash
Additional Features	◆	Supports @BIOS
	◆	Supports EasyTune
Overclocking	◆	Over Clock via BIOS (CPU/DDR/AGP)
Form Factor	◆	Micro-ATX form factor; 24.4cm x 22cm

1-3 Installation of the CPU and Heatsink

CAUTION

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 pin one marks on the processor and socket. 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.

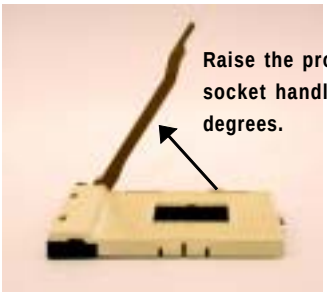
NOTE

HT functionality requirement content :

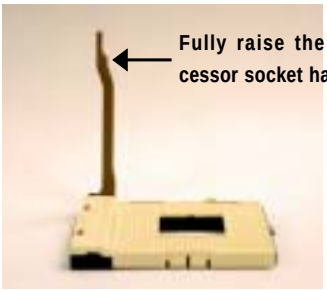
Enabling the functionality of Hyper-Threading Technology for your computer system requires all of the following platform components:

- 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

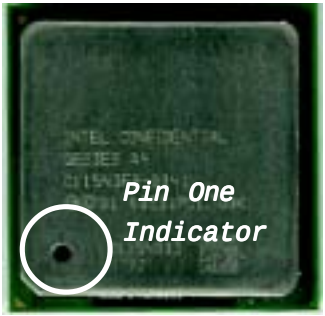
1-3-1 Installation of the CPU



1. Raise the processor socket handle to 65 degrees. You maybe feel a kind of tight.



2. Raise the processor socket handle all the way up to a fully raised position (around 90 degrees) till you hear a "click."

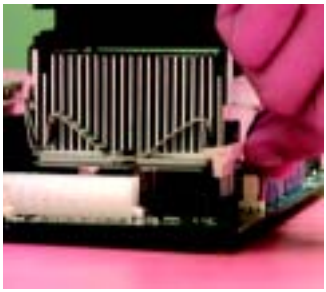


3. Locate the Pin One Indicator on the processor.

4. Locate Pin One in the socket and look for a (golden) cut edge on the CPU upper corner. Then insert the CPU into the socket and close the socket handle.

1-3-2 Installation of the Heatsink

1. Push down the cooler clip to secure to the retention mechanism hooks for all four corners.



2. Plug the cooler power cable into the CPU fan connector on the motherboard.

- **Please use Intel® approved cooling fan.**
- **We recommend you to apply the thermal tape to provide better heat conduc tion between your CPU and heatsink. (The CPU cooling fan might stick to the CPU due to the hardening of the thermal paste. During this condition if you try to remove the cooling fan, you might pull the processor out of the CPU socket alone with the cooling fan, and might damage the processor. To avoid this from happening, we suggest you to either use thermal tape in stead of thermal paste, or remove the cooling fan with extreme caution.)**
- **Make sure the CPU fan power cable is plugged in to the CPU fan connector, this completes the installation.**
- **Please refer to CPU heat sink user's manual for more detail installation procedure.**

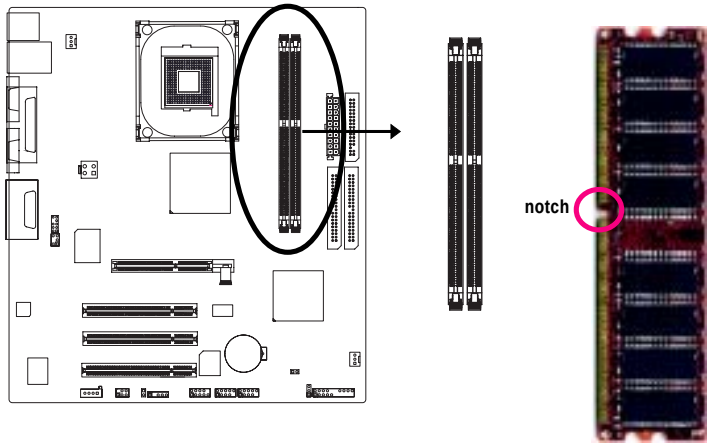
1-4 Installation of Memory

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 has 2 dual inline memory module (DIMM) sockets. The BIOS will automatically detects memory type and size. To install the memory module, just push it vertically into the DIMM socket. The DIMM module can only fit in one direction due to the notch. Memory size can vary between sockets.



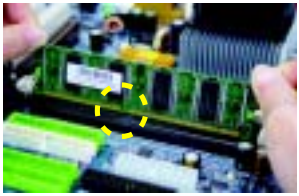
DDR memory module

DDR1	DDR2
S	S
D	S
D	D
D	X
S	D
S	X

D:Double Sided DIMM S:Single Sided DIMM

X:Not Use

1. The DIMM slot has a notch, so the DIMM memory module can only fit in one direction.



2. Insert the DIMM memory module vertically into the DIMM slot. Then push it down.

3. Close the plastic clip at both edges of the DIMM slots to lock the DIMM module.
   Reverse the installation steps when you wish to remove the DIMM module.

1-5 Installation of Expansion Cards

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

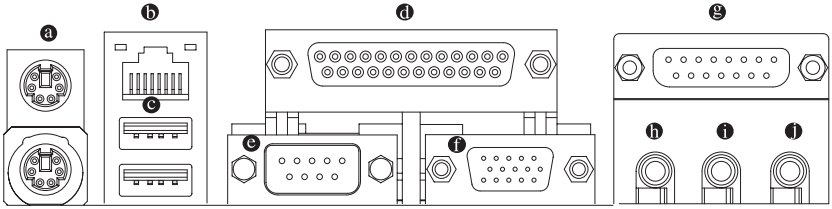
1. Read the related expansion card's instruction document before installing the expansion card into the computer.
2. Remove your computer's chassis cover, screws and slot bracket from the computer.
3. Press the expansion card firmly into expansion slot in motherboard.
4. Be sure the metal contacts on 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 an AGP expansion card:

AGP Card

Please carefully pull out the small white-drawable bar at the end of the AGP slot when you try to install/uninstall the VGA card. Please align the VGA card to the onboard AGP slot and press firmly down on the slot. Make sure your VGA card is locked by the small white-drawable bar.

1-6 I/O Back Panel Introduction



a 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).

b LAN Port

The LAN port provides Internet connection.

c 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.

d Parallel Port

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

e Serial Port

Devices like mouses, modems, and etc. can be connected to Serial port.

f VGA Port

Monitor can be connected to VGA port.

g Game/MIDI Port

This connector supports joystick, MIDI keyboard and other related audio devices.

h Line Out (Front Speaker Out)

Connect the stereo speakers, earphone or front surround channels to this connector.

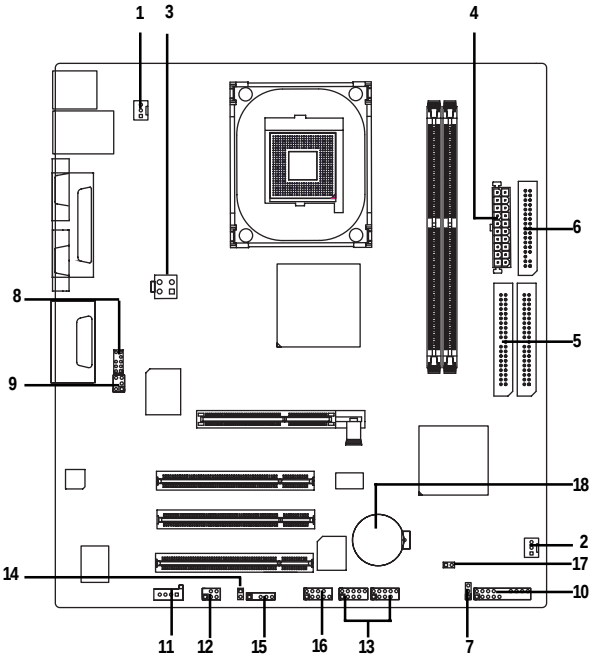
i Line In

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

j MIC In

Microphone can be connected to MIC In jack.

1-7 Connectors Introduction

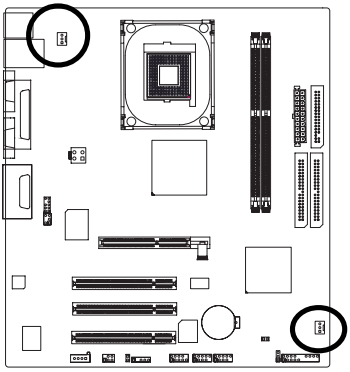


1)	CPU_FAN	10)	F_PANEL
2)	SYS_FAN	11)	CD_IN
3)	ATX_12V	12)	SPDIF_IO
4)	ATX	13)	F_USB1/F_USB2
5)	IDE1/IDE2	14)	CI
6)	FDD	15)	IR
7)	PWR_LED	16)	COMB
8)	F_AUDIO	17)	CLR_CMOS
9)	SUR_CEN	18)	BAT

1/2) CPU_FAN / SYS_FAN (CPU Fan Connector/System Fan Connector)

Please note, a proper installation of the CPU cooler is essential to prevent the CPU from running under abnormal condition or damaged by overheating. The CPU fan connector supports max. current up to 600 mA.

SYS_FAN connector allows you to link with the cooling fan on the system case to lower the system temperature.

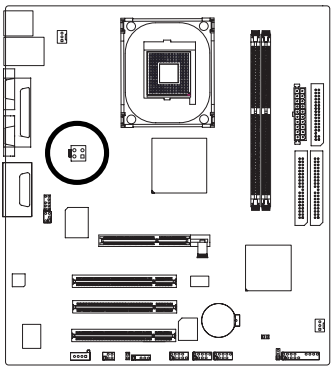


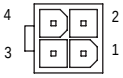
Pin No.	Definition
1	GND
2	+12V
3	Sense

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

3) ATX_12V (+12V Power Connector)

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.



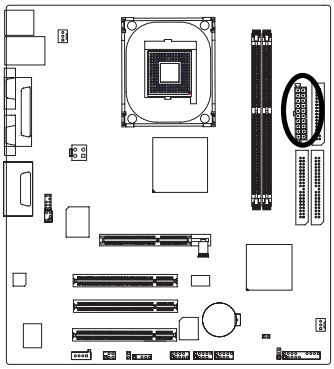


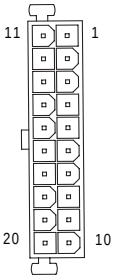
Pin No.	Definition
1	GND
2	GND
3	+12V
4	+12V

4) ATX (ATX Power)

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.

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 that does not provide the required power is used, the result can lead to an unstable system or a system that is unable to start.

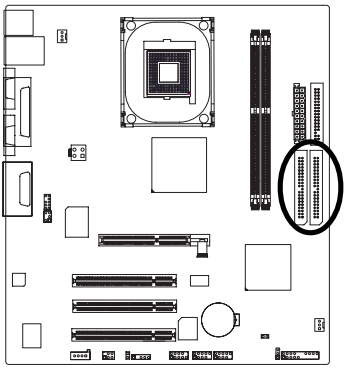


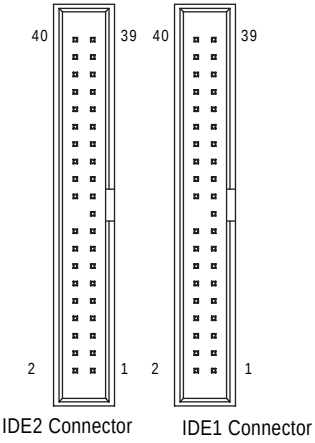


Pin No.	Definition
1	3.3V
2	3.3V
3	GND
4	VCC
5	GND
6	VCC
7	GND
8	Power Good
9	5V SB (stand by +5V)
10	+12V
11	3.3V
12	-12V
13	GND
14	PS_ON (soft on/off)
15	GND
16	GND
17	GND
18	-5V
19	VCC
20	VCC

5) IDE1/IDE2 (IDE Connector)

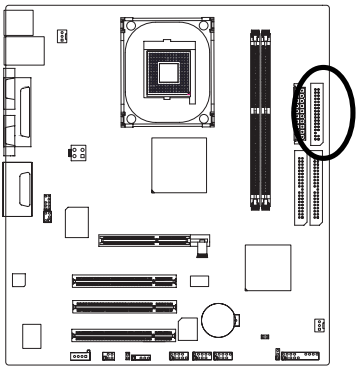
An IDE device connects to the computer via an IDE connector. One IDE connector can connect to one IDE cable, and the single IDE cable can then connect to two IDE devices (hard drive or optical drive). If you wish to connect two IDE devices, please set the jumper on one IDE device as Master and the other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

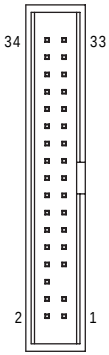




6) FDD (FDD Connector)

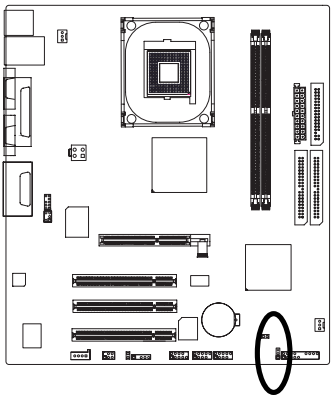
The FDD connector is used to connect the FDD cable while the other end of the cable connects to the FDD drive. The types of FDD drives supported are: 360KB, 720KB, 1.2MB, 1.44MB and 2.88MB. Please connect the red power connector wire to the pin1 position.





7) PWR_LED

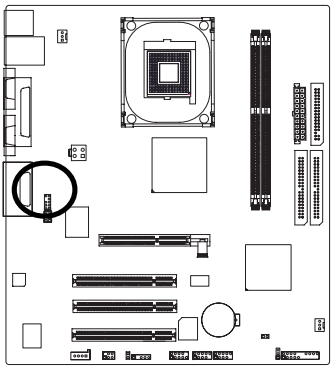
PWR_LED is connected with the system power indicator to indicate whether the system is on/off. It will blink when the system enters suspend mode.



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

8) F_AUDIO (Front Audio Panel Connector)

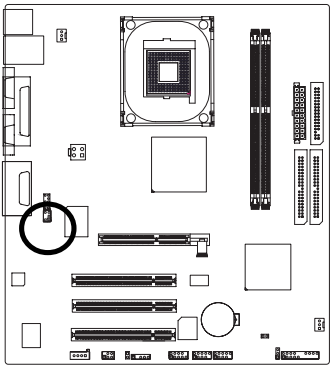
Please make sure the pin assigment on the cable is the same as the pin assigment on the MB header. To find out if the chassis you are buying support front audio panel connector, please contact your dealer. If you want to use "Front Audio" connector, you must remove the jumpers on Pin 5-6, 9-10.



Pin No.	Definition
1	MIC
2	GND
3	REF
4	POWER
5	FrontAudio(R)
6	RearAudio(R)
7	Reserved
8	No Pin
9	FrontAudio (L)
10	RearAudio (L)

9) SUR_CEN

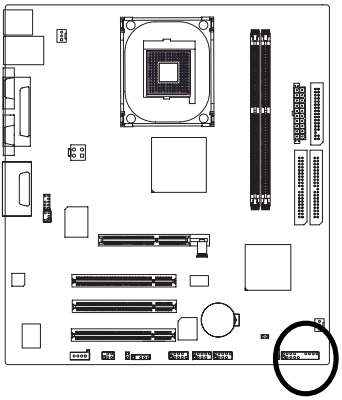
Please contact your nearest dealer for optional SUR_CEN cable.

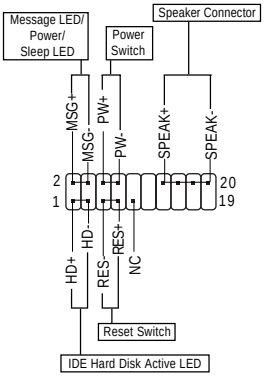


Pin No.	Definition
1	SUR OUTL
2	SUR OUTR
3	GND
4	No Pin
5	CENTER_OUT
6	BASS_OUT

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.

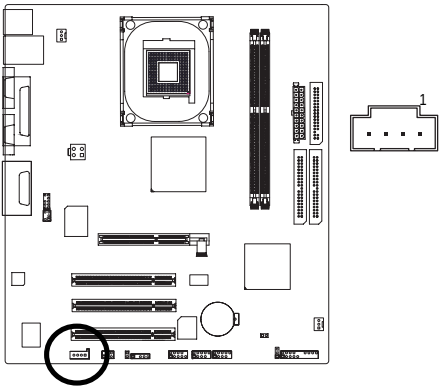




HD (IDE Hard Disk Active LED)	Pin 1: LED anode(+) Pin 2: LED cathode(-)
SPEAK (Speaker Connector)	Pin 1: VCC(+) Pin 2- Pin 3: NC Pin 4: Data(-)
RES (Reset Switch)	Open: Normal Operation Close: Reset Hardware System
PW (Power Switch)	Open: Normal Operation Close: Power On/Off
MSG(Message LED/Power/Sleep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

11) CD_IN (CD IN, Black)

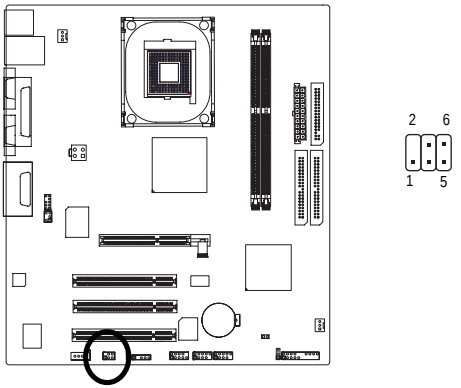
Connect CD-ROM or DVD-ROM audio out to the connector.



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

12) SPDIF_IO (SPDIF In/ Out)

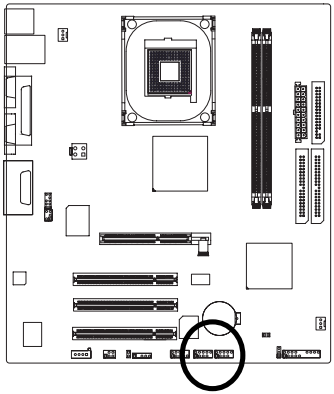
The SPDIF output is capable of providing digital audio to external speakers or compressed AC3 data to an external Dolby Digital Decoder. Use this feature only when your stereo system has digital input function. Use SPDIF IN feature only when your device has digital output function. Be careful with the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

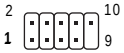


Pin No.	Definition
1	VCC
2	No Pin
3	SPDIF
4	SPDIFI
5	GND
6	GND

13) F1_USB / F2_USB (Front USB Connectors, Yellow)

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.

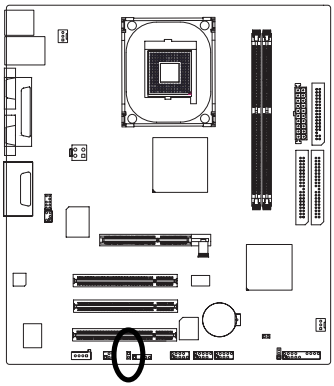




Pin No.	Definition
1	Power
2	Power
3	USB0 DX-
4	USB1 Dy-
5	USB0 DX+
6	USB1 Dy+
7	GND
8	GND
9	No Pin
10	NC

14) CI (Chassis Intrusion, Case Open)

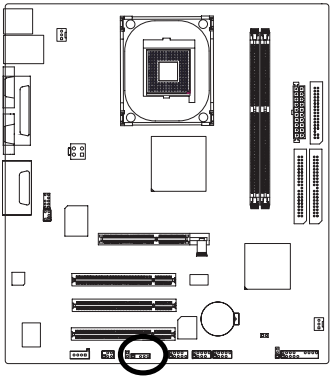
This 2-pin connector allows your system to enable or disable the "Case Open" item in BIOS, if the system case begins remove.



Pin No.	Definition
1	Signal
2	GND

15) IR

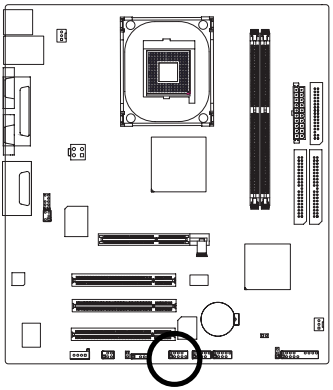
Be careful with the polarity of the IR connector while you connect the IR. Please contact you nearest dealer for optional IR device.



Pin No.	Definition
1	VCC
2	No Pin
3	IR RX
4	GND
5	IR TX

16) COMB (COMB Connector)

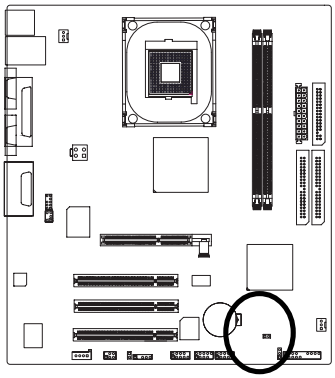
Be careful with the polarity of the COMB connector. Check the pin assignment while you connect the COMB cable. Please contact your nearest dealer for optional COMB cable.



Pin No.	Definition
1	NDCDA-
2	NSINA
3	NSOUTA
4	NDTRA-
5	GND
6	NDSRA-
7	NRTSA-
8	NCTSA-
9	NRIA-
10	No Pin

17) CLR_CMOS (Clear CMOS)

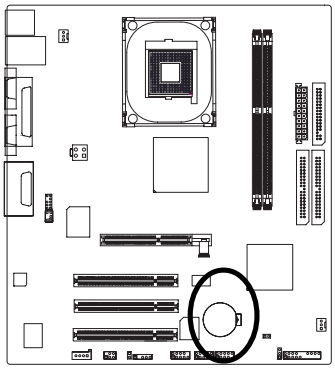
You may clear the CMOS data to its default values by this jumper. To clear CMOS, temporarily short 1-2 pin. Default doesn't include the "Shunter" to prevent improper use of this jumper.

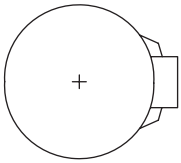


1 **Open: Normal**

1 Short: Clear CMOS

18) 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.Remove the battery, wait for 30 second.
3.Re-install the battery.
4.Plug the power cord and turn ON the computer.

Chapter 2 BIOS Setup

BIOS (Basic Input and Output System) includes a CMOS SETUP utility which allows user to configure required settings or to activate certain system features.
The CMOS SETUP saves the configuration in the CMOS SRAM of the motherboard.
When the power is turned off, the battery on the motherboard supplies the necessary power to the CMOS SRAM.
When the power is turned on, pushing the <Del> button during the BIOS POST (Power-On Self Test) will take you to the CMOS SETUP screen. You can enter the BIOS setup screen by pressing "Ctrl + F1".
When setting up BIOS for the first time, it is recommended that you save the current BIOS to a disk in the event that BIOS needs to be reset to its original settings. If you wish to upgrade to a new BIOS, either Gigabyte's Q-Flash or @BIOS utility can be used.
Q-Flash allows the user to quickly and easily update or backup BIOS without entering the operating system.
@BIOS is a Windows-based utility that does not require users to boot to DOS before upgrading BIOS but directly download and update BIOS from the Internet.

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

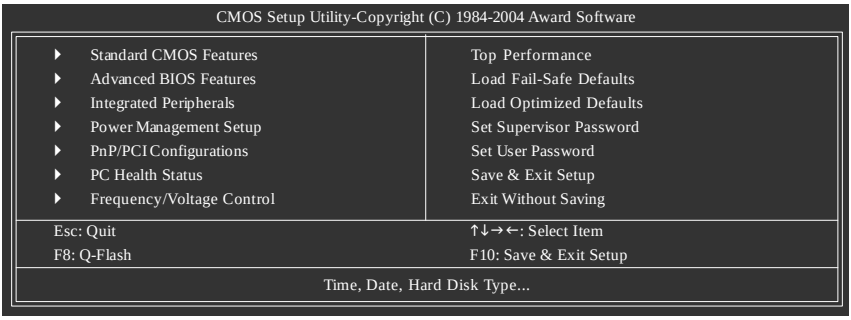
The on-line description of the highlighted setup function is displayed at the bottom of the screen.

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>.

The Main Menu (For example: BIOS Ver. : E2)

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.



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

- **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 includes information about the system autodetected temperature, voltage, fan, speed.
- **Frequency/Voltage Control**
  This setup page is to control CPU clock and frequency ratio.
- **Top Performance**
  If you wish to maximize the performance of your system, enable **Top Performance**.
- **Load Fail-Safe Defaults**
  Fail-Safe Defaults indicate the value of the system parameters with which the system would be in safe configuration.
- **Load Optimized Defaults**
  Optimized Defaults indicate the value of the system parameters with 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.

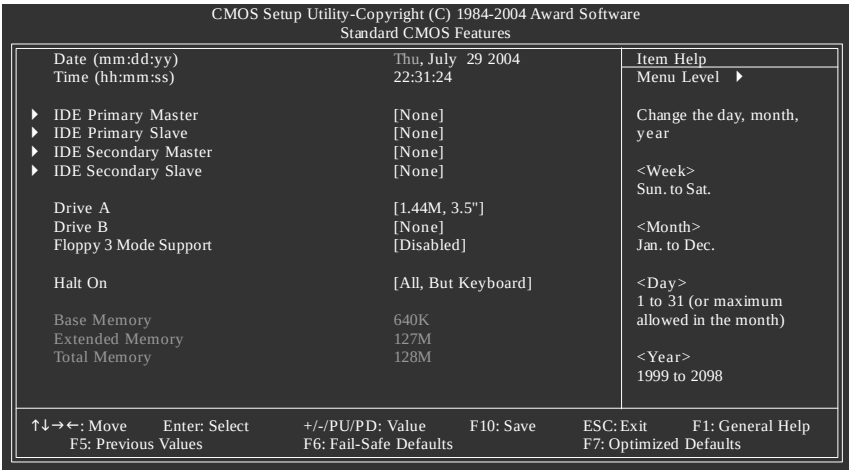
- **Save & Exit Setup**

  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



☞ **Date**

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

- Week — The week, from Sun to Sat, determined by the BIOS and is displayed 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 based on the 24-hour military-time clock. For example, 1 p.m. is 13:00:00.

☞ **IDE Primary Master, Slave /IDE Secondary Master, Slave**

- IDE HDD Auto-Detection — Press "Enter" to select this option for automatic device detection.
- IDE Primary/Secondary Master(Slave) setup — You can use one of the three methods below:
  - 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)
- 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. (Default value)
- ⏩ 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 and 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

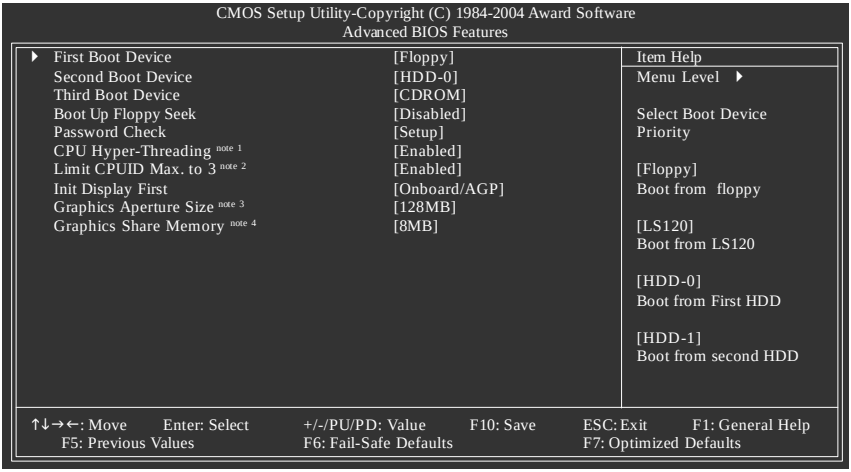
The BIOS determines how much extended memory is present during the POST.

This is the amount of memory located above 1 MB in the CPU's memory address map.

⏩ Total Memory

This item displays the memory size that used.

2-2 Advanced BIOS Features



NOTE

Note1: This option is available only when the processor you install supports Intel® Hyper-Threading Technology.

Note2: This option is available only when you install an Intel® Prescott processor (with 533MHz FSB).

Note3/Note4 : This option is available only when you use the onboard VGA function.

☞ **First / Second / Third Boot Device**

⏩ Floppy	Select your boot device priority by Floppy.
⏩ LS120	Select your boot device priority by LS120.
⏩ HDD-0~3	Select your boot device priority by Hard Disk.
⏩ SCSI	Select your boot device priority by SCSI.
⏩ CDROM	Select your boot device priority by CDROM.
⏩ ZIP	Select your boot device priority by ZIP.
⏩ USB-FDD	Select your boot device priority by USB-FDD.
⏩ USB-ZIP	Select your boot device priority by USB-ZIP.
⏩ USB-CDROM	Select your boot device priority by USB-CDROM.
⏩ USB-HDD	Select your boot device priority by USB-HDD.
⏩ LAN	Select your boot device priority by LAN.
⏩ Disabled	Select your boot device priority by Disabled.

☞ **Boot Up Floppy Seek**

During POST, BIOS will determine the floppy disk drive installed is 40 or 80 tracks. 360K type is 40 tracks 720K, 1.2M and 1.44M are all 80 tracks.

- ⏩ Disabled — BIOS will not search for the type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360K. (Default value)
- ⏩ Enabled — BIOS searches for floppy disk drive to determine if it is 40 or 80 tracks. Note that BIOS can not tell from 720K, 1.2M or 1.44M drive type as they are all 80 tracks.

☞ **Password Check**

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

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

☞ **CPU Hyper-Threading**

This option appears only when the processor you install supports Intel® Hyper-Threading Technology.

- ⏩ Enabled — Enable CPU Hyper-Threading feature. Please note that this feature is only working for operating system with multiprocessors mode supported. (Default value)
- ⏩ Disabled — Disable CPU Hyper-Threading.

☞ **Limit CPUID Max. to 3**

This option is available only when you install an Intel® Prescott processor (with 533MHz FSB).

- ⏩ Enabled — Limit CPUID Maximum value to 3 when using older OS like NT4. (Defaults value)
- ⏩ Disabled — Disable CPUID Limit for Windows XP.

☞ **Init Display First**

Select the first initiation of the monitor display from onboard/AGP or PCI VGA card.

- ⏩ PCI — Set Init Display First to PCI VGA card.
- ⏩ Onboard/AGP — Set Init Display First to onboard/AGP VGA card.(Default value)

☞ **Graphics Aperture Size**

This option is available only when you use the onboard VGA function.

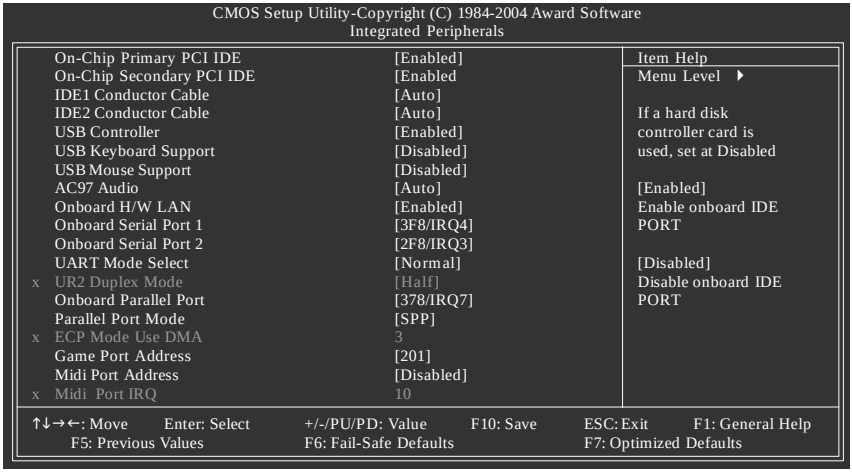
- ⏩ 128MB — Set Graphics Aperture Size to 128MB. (Default value)
- ⏩ Disabled — Disable this function.

☞ **Graphics Share Memory**

This option is available only when you use the onboard VGA function.

- ⏩ 8MB — Set Graphics Share Memory to 8MB. (Default value)
- ⏩ 1MB — Set Graphics Share Memory to 1MB.

2-3 Integrated Peripherals



☞ **On-Chip Primary PCI IDE**

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

☞ **On-Chip Secondary PCI IDE**

- ⏩ Enabled — Enable onboard 2nd channel IDE port. (Default value)
- ⏩ Disabled — Disable onboard 2nd channel IDE port.

☞ **IDE1 Conductor Cable**

- ⏩ Auto — BIOS autodetects IDE1 conductor cable .(Default Value)
- ⏩ ATA66/100 — Set IDE1 Conductor Cable to ATA66/100/133 (Please make sure your IDE device and cable are compatible with ATA66/100).
- ⏩ ATA33 — Set IDE1 Conductor Cable to ATA33. (Please make sure your IDE device and cable are compatible with ATA33)

☞ **IDE2 Conductor Cable**

- ⏩ Auto — BIOS autodetects IDE2 conductor cable. (Default Value)
- ⏩ ATA66/100 — Set IDE2 Conductor Cable to ATA66/100/133. (Please make sure your IDE device and cable are compatible with ATA66/100)
- ⏩ ATA33 — Set IDE2 Conductor Cable to ATA33. (Please make sure your IDE device and cable are compatible with ATA33)

☞ **USB Controller**

- ⏩ Enabled — Enable USB Controller. (Default value)
- ⏩ Disabled — Disable USB 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)

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 Serial Port 1

- Auto — BIOS will automatically setup the Serial 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 Serial 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.

UART Mode Select

This item allows you to determine which Infra Red(IR) function of Onboard I/O chip.

- Normal — Use as standard serial port. (Default value)
- IrDA — Use as IR and set to IrDA Mode.
- ASKIR — Use as IR and set to ASKIR Mode.

UR2 Duplex Mode

This feature allows you to seclect IR mode.

This function will available when "UART Mode Select" isn't set at Normal.

- Half — IR Function Duplex Half. (Default value)
- Full — IR Function Duplex Full.

Onboard Parallel Port

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

☞ **Parallel Port Mode**

- ⏩ SPP Use Parallel port as Standard Parallel Port. (Default value)
- ⏩ EPP Use Parallel port as Enhanced Parallel Port.
- ⏩ ECP Use Parallel port as Extended Capabilities Port.
- ⏩ ECP+EPP Use Parallel port as ECP & EPP mode.

☞ **ECP Mode Use DMA**

This option is available only when Parallel Port Mode is set to ECP or ECP+EPP.

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

☞ **Game Port Address**

- ⏩ Disabled Disable this function
- ⏩ 201 Enable this function and set gameport address to 201. (Default value)
- ⏩ 209 Enable this function and set gameport address to 209.

☞ **Midi Port Address**

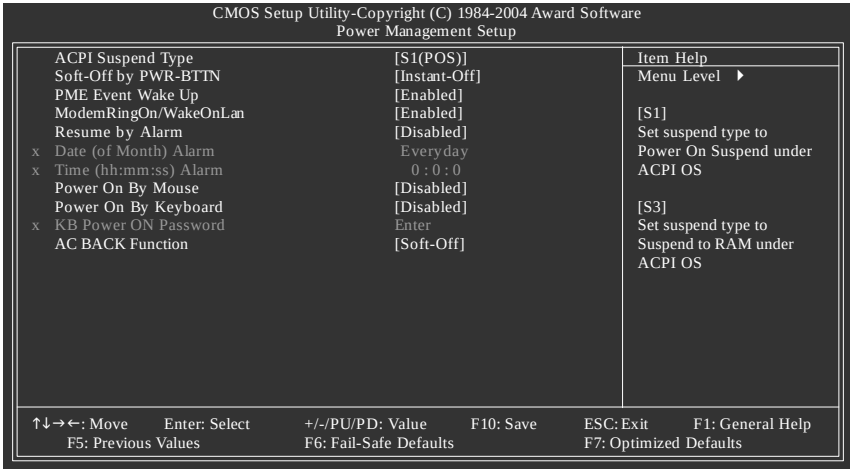
- ⏩ Disabled Disable this function (Default value)
- ⏩ 330 Enable this function and set midiport address to 330.
- ⏩ 300 Enable this function and set midiport address to 300.

☞ **Midi Port IRQ**

This option is available when the Midi Port Address is not set to "Disabled."

- ⏩ 5 Set midiport IRQ to 5.
- ⏩ 10 Set midiport IRQ to 10. (Default value)

2-4 Power Management Setup



☞ **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)

☞ **ModemRingOn/WakeOnLan**

- ⏩ Disabled Disable ModemRingOn/WakeOnLan function. (Default value)
- ⏩ Enabled Enable ModemRingOn/WakeOnLan function.

☞ **Resume by Alarm**

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

- ⏩ Disabled Disable this function. (Default value)
- ⏩ Enabled Enable alarm function to turn on system.

If Resume by Alarm is Enabled:

- ⏩ Date (of Month) Alarm : Everyday, 1~31
- ⏩ Time (hh: mm: ss) Alarm : (0~23) : (0~59) : (0~59)

☞ **Power On By Mouse**

- ⏩ Disabled Disable this function. (Default value)
- ⏩ Double Click Double-click 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**

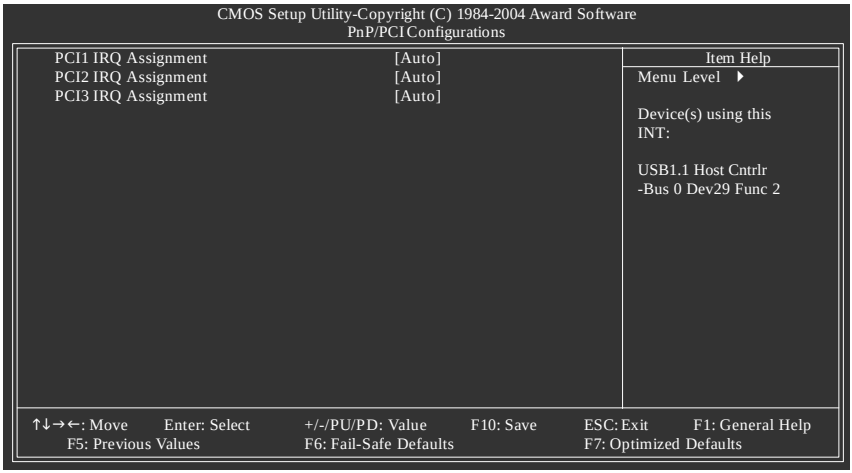
When "Power On by Keyboard" is set at Password, you can set the password here.

- ⏩ 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



☞ **PCI1 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.

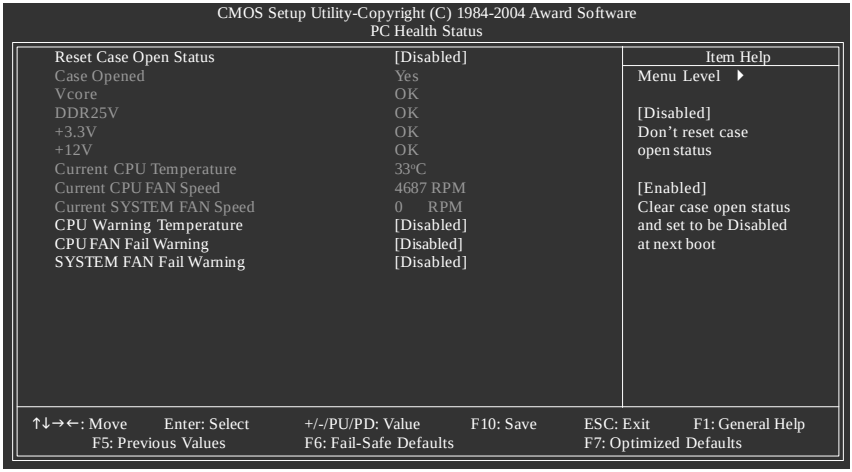
☞ **PCI2 IRQ Assignment**

⏩ 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.

☞ **PCI3 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



☞ **Reset Case Open Status**

- ⏩ Disabled — Don't reset case open status. (Default value)
- ⏩ Eabled — 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, enable **Reset Case Open Status** and save CMOS, your computer will restart.

☞ **Current Voltage(V) Vcore / DDR25V / +3.3V / +12V**

- ⏩ Detect system's voltage status automatically.

☞ **Current CPU Temperature**

- ⏩ Detect CPU temperature automatically.

☞ **Current CPU/SYSTEM FAN Speed (RPM)**

- ⏩ Detect CPU/SYSTEM Fan speed status automatically.

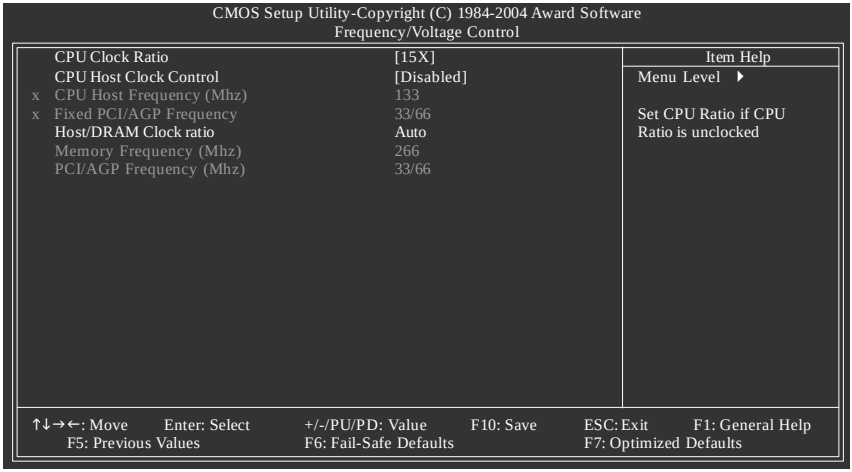
☞ **CPU Warning Temperature**

- ⏩ 60ºC / 140ºF — Monitor CPU temperature at 60ºC / 140ºF.
- ⏩ 70ºC / 158ºF — Monitor CPU temperature at 70ºC / 158ºF.
- ⏩ 80ºC / 176ºF — Monitor CPU temperature at 80ºC / 176ºF.
- ⏩ 90ºC / 194ºF — Monitor CPU temperature at 90ºC / 194ºF.
- ⏩ Disabled — Disable this function. (Default value)

☞ **CPU/SYSTEM FAN Fail Warning**

- ⏩ Disabled — Disable fan warning function . (Default value)
- ⏩ Enabled — Enable fan warning function.

2-7 Frequency/Voltage Control



CAUTION

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

☞ CPU Clock Ratio

This setup option will be automatically assigned by CPU detection.
The option will display "Locked" and read only if the CPU ratio is not changeable.

☞ CPU Host Clock Control

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

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

☞ CPU Host Frequency (Mhz)

This item will be available when "CPU Host Clock Control" is set to Enabled.

⏩ 100MHz ~ 355MHz Set CPU Host Clock from 100MHz to 355MHz.

Inappropriate using it may cause your system corrupted. For power End-User use only!

☞ Fixed PCI/AGP Frequency

You can choose those modes to adjust PCI/AGP frequency. (Select PCI/AGP frequency asynchronous with CPU frequency).

☞ **Host/DRAM Clock ratio**

For FSB (Front Side Bus) frequency=400MHz,

- ⏩ 2.0 Memory Frequency = Host clock X 2.0.
- ⏩ 2.66 Memory Frequency = Host clock X 2.66.
- ⏩ Auto Set Memory frequency by DRAM SPD data. (Default value)

For FSB (Front Side Bus) frequency=533MHz,

- ⏩ 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)

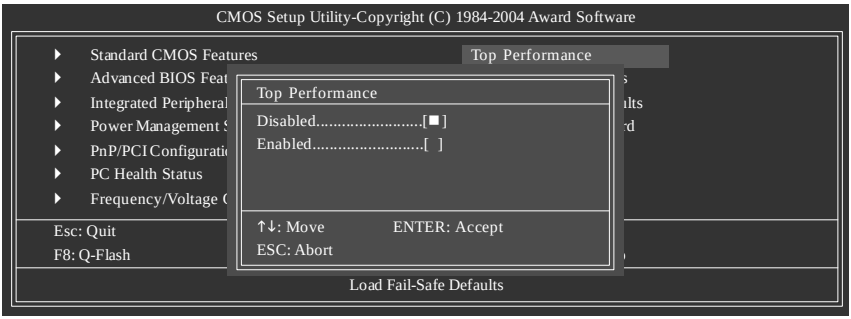
☞ **Memory Frequency (Mhz)**

The values depend on CPU Host Frequency.

☞ **PCI/AGP Frequency (Mhz)**

The values depend on Fixed PCI/AGP Frequency.

2-8 Top Performance

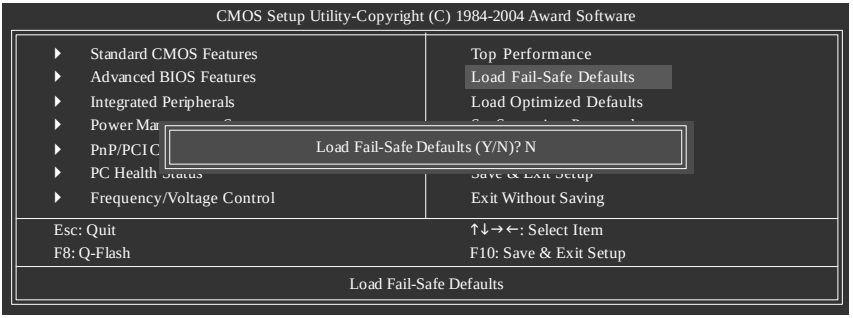


If you wish to maximize the performance of your system, enable "Top Performance."

- ⏩ Disabled Disable this function. (Default Value)
- ⏩ Enabled Enable Top Performance function.

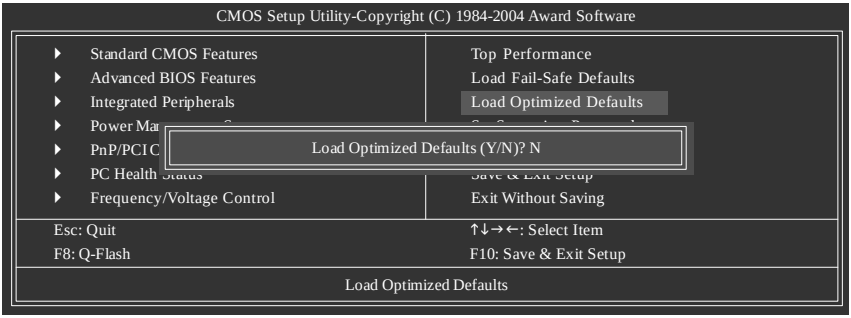
"Top Performance" will increase H/W working speed. Different system configuration (both H/W component and OS) will effect the result. For example, the same H/W configuration might not run properly with Windows XP, but works smoothly with Windows NT. Therefore, if your system is not perform enough, the reliability or stability problem will appear sometimes, and we will recommend you disabling the option to avoid the problem as mentioned above.

2-9 Load Fail-Safe Defaults



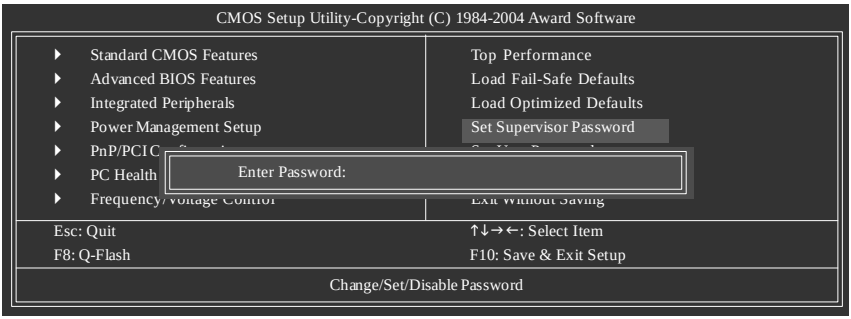
Fail-Safe defaults contain the most appropriate values of the system parameters that allow minimum system performance.

2-10 Load Optimized Defaults



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

2-11 Set Supervisor/User 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.

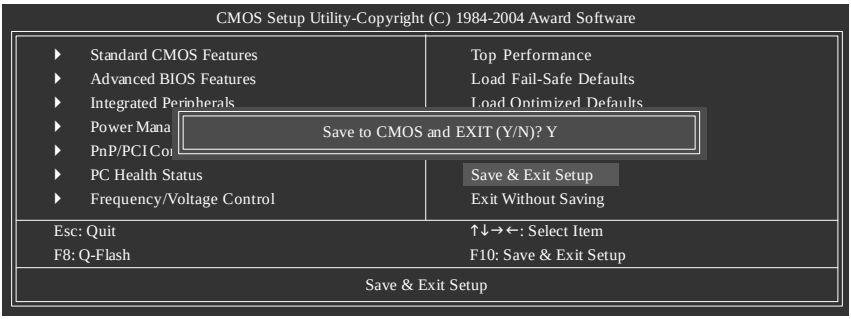
The BIOS Setup program allows you to specify two separate passwords:

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.

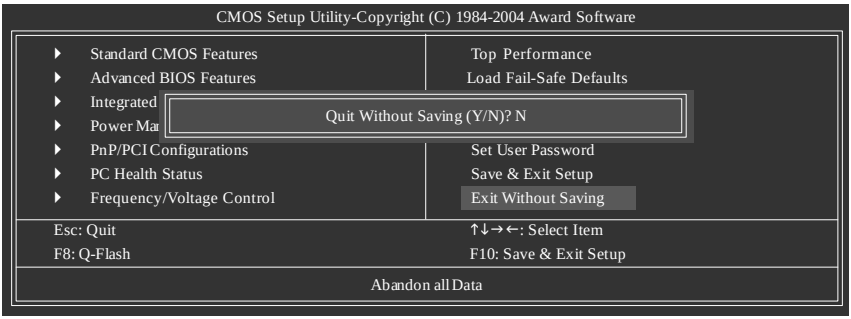
If you select "Setup" at "Password Check" in Advance BIOS Features Menu, you will be prompted only when you try to enter Setup.

2-12 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.

2-13 Exit Without Saving



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

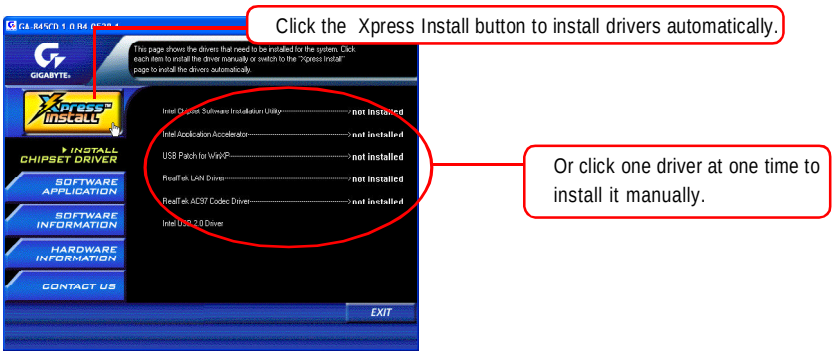
Chapter 3 Drivers Installation

NOTE

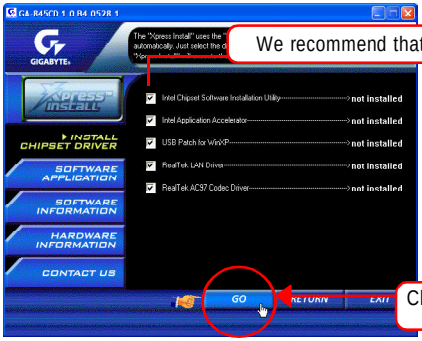
Pictures below are shown in Windows XP.
(1) Please make sure to install the latest service pack for Windows after OS installation and before installing motherboard drivers.
(2) Insert the driver CD that came with your motherboard into your CD-ROM drive, the driver CD will auto start and installation screen will appear. If not, please double click the CD-ROM device icon in **My computer** or execute the Setup.exe in the root directory of the driver CD.

3-1 Install Chipset Drivers

This page shows the drivers that need to be installed for the system. Click each item to install the driver manually or click the Xpress Install button to install the drivers automatically.



The Xpress Install uses the"Click and Go" technology to install the drivers automatically. Just select the drivers you want then click the "GO" button. The Xpress Install will execute the installation for you by itself.



NOTE

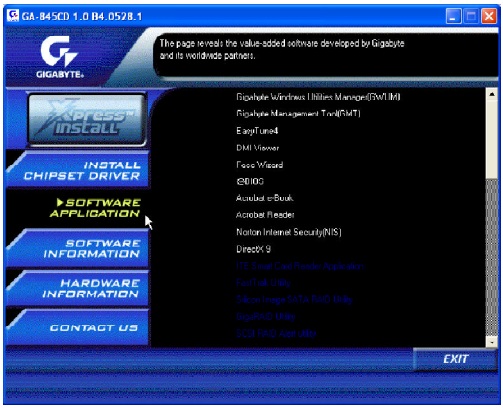
Some device drivers will restart your system automatically. After restarting your system the "Xpress Install" will continue to install other drivers.
System will reboot automatically after installing the drivers, afterward you can install others applications.

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).

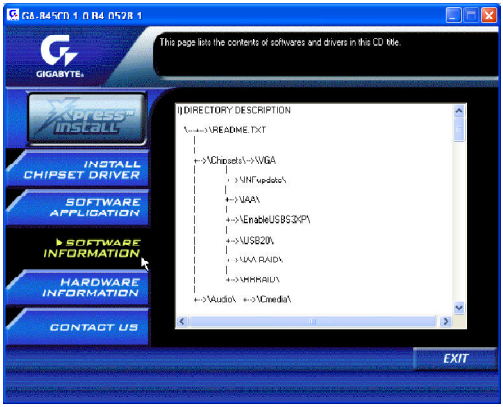
3-2 Software Applications

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.



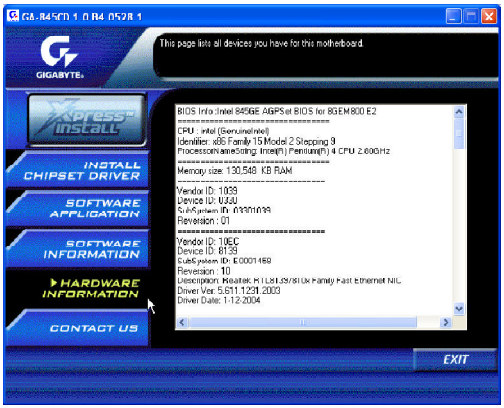
3-3 Driver CD Information

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



3-4 Hardware Information

This page lists all devices you have for this motherboard.



3-5 Contact Us

Please see the last page for details.

Chapter 4 Appendix

4-1 Unique Software Utility

(Not all models support these unique software utilities, please check your motherboard features.)

4-1-1 Xpress Recovery Introduction

What is Xpress Recovery ?

Xpress Recovery is a utility used to back up and restore an OS partition. If the hard drive is not working properly, then users can restore the drive to its original state.

CAUTION

1. Supports FAT16, FAT32, and NTFS formats
2. Must be connected to the IDE1 Master
3. Allows installation of only one OS
4. Must be used with an IDE hard disk supporting HPA
5. The first partition must be set as the boot partition. When the boot partition is backed up, please do not alter its size.
6. Xpress Recovery is recommended when you use Ghost to return boot manager to NTFS format.

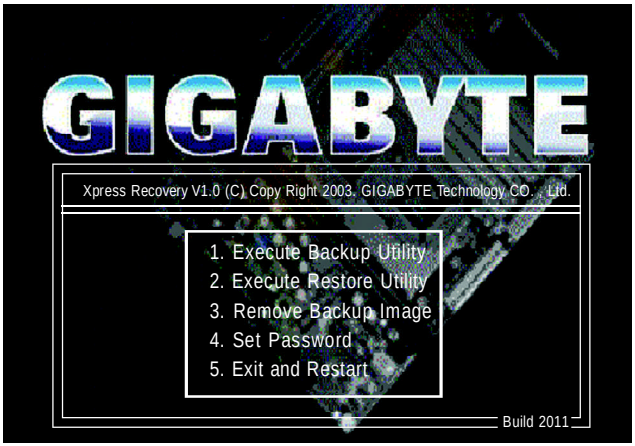
How to use the Xpress Recovery

1. Boot from CD-ROM (BMP Mode)

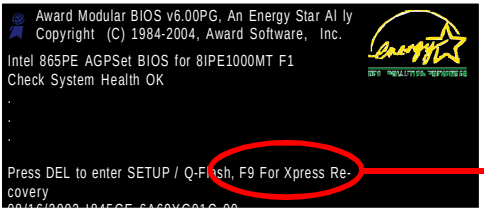
   Enter the BIOS menu, select "Advanced BIOS Feature" and set to boot from CD-ROM. Insert the provided driver CD into your CD drive, then save and exit the BIOS menu. Once the computer has restarted, the phrase "Boot from CD:" will appear at the bottom left-hand corner of the screen. When "Boot from CD:" appears, press any key to enter Xpress Recovery.

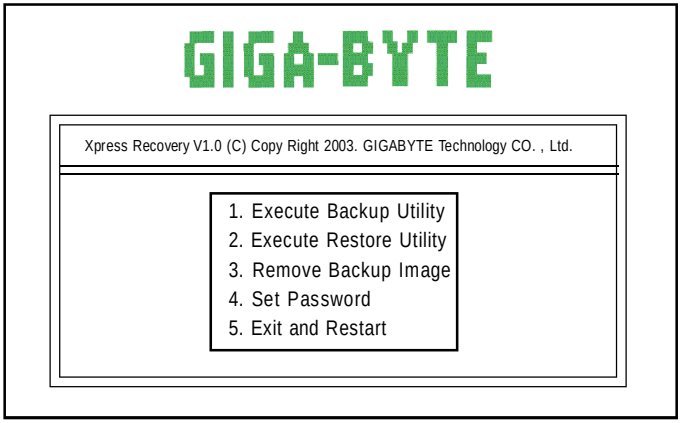
   Once you have completed this step, subsequent access to Xpress Recovery can also function by pressing the F9 key during computer power on.

Boot from CD:



2. Press F9 during powering on the computer. (Text Mode)
   Press F9 during powering on the computer .





NOTE

1. If you have already entered Xpress Recovery by booting from the CD-ROM, you can enter Xpress Recovery in the future by pressing the F9 key.
2. System storage capacity as well as drive reading/writing speed will affect backup speed.
3. It is recommended that Xpress Recovery be immediately installed after OS and all required driver and software installations are complete.

1. Execute Backup Utility:

Press B to Backup your System or Esc to Exit

The backup utility will automatically scan your system and back up data as a backup image in your hard drive.

Not all systems support access to Xpress Recovery by pressing the F9 key during computer power on. If this is the case, please use the boot from CD-ROM method to enter Xpress Recovery.

2. Execute Restore Utility:

This program will recover your system to factory default.

Press R to restore your system back to factory default or press Esc to exit

Restores backup image to original state.

3. Remove Backup Image:

Remove backup image. Are you sure? (Y/N)

Remove the backup image.

4. Set Password:

Please input a 4-16 character long password (a-z or 0-9) or press Esc to exit

You can set a password to enter Xpress Recovery to protect your hard disk data. Once this is done, password input will be required to enter Xpress Recovery during the next as well as subsequent system restarts. If you wish to remove the need for password entry, please select "Set Password" and under "New Password/Confirm Password", make sure there is no entry and then press "Enter" to remove password requirement.

5. Exit and Restart:

Exit and restart your computer.

4-1-2 BIOS Flash 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**.

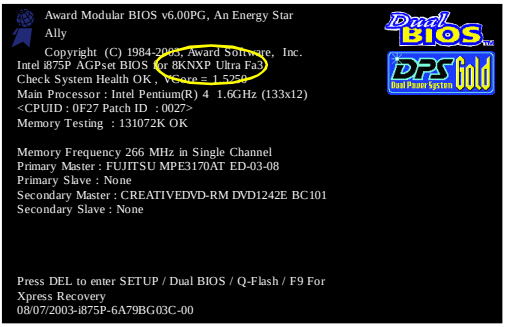
Part One:

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.

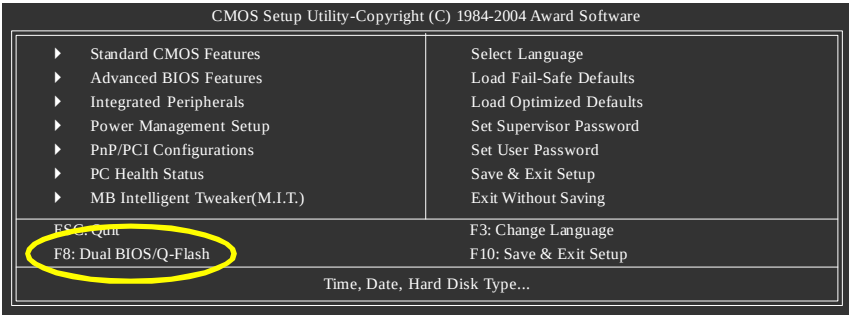
In the following sections, we take GA-8KNXP Ultra as the example to guide you how to flash BIOS from an older version to the latest version. For example, from Fa3 to Fba.

The BIOS file is Fa3 before updating



Entering the Q-Flash™ utility:

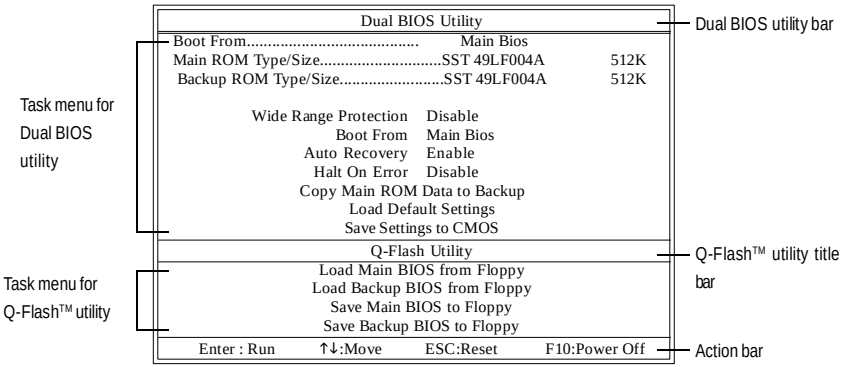
Step1: To use Q-Flash utility, you must press **Del** in the boot screen to enter BIOS menu.



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

Exploring the Q-Flash™ / Dual BIOS utility screen

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



Task menu for Dual BIOS utility:

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

Task menu for Q-Flash utility:

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

Action bar:

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

Using the Q-Flash™ utility:

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

Steps:

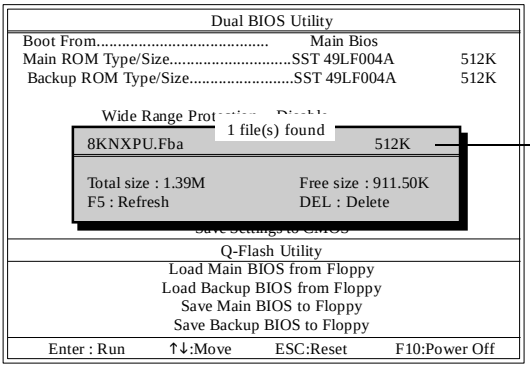
1. Press arrow buttons on your keyboard to move the light bar to "Load Main BIOS from Floppy" item in the Q-Flash menu and press Enter button.
   Later, you will see a box pop up showing the BIOS files you previously downloaded to the floppy disk.

   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**.

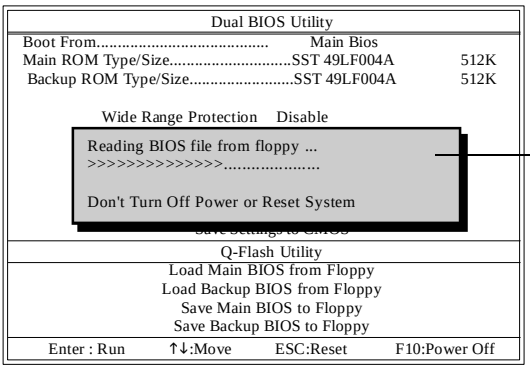
In this example, we only download one BIOS file to the floppy disk so only one BIOS file, 8KNXPU.Fba, is listed.

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



BIOS file in the floppy disk.

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



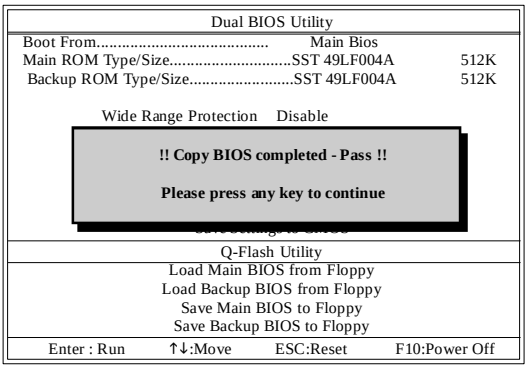
CAUTION Do not trun off power or reset your system at this stage!!

After BIOS file is read, you'll see a 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.

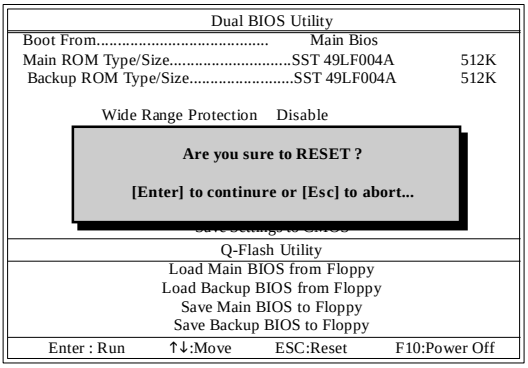
CAUTION Please do not take out the floppy disk when it begins flashing BIOS.

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



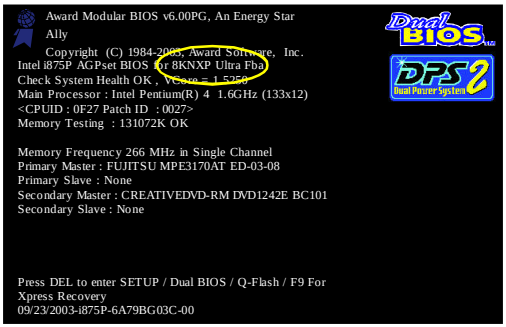
NOTE You can repeat Step 1 to 4 to flash the backup BIOS, too.

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

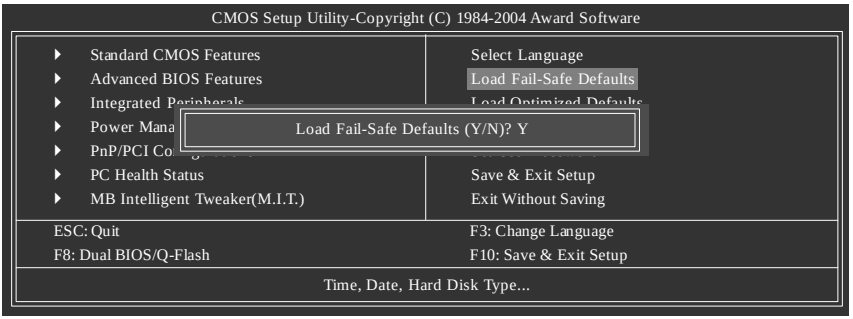


After system reboots, you may find the BIOS version on your boot screen becomes the one you flashed.

The BIOS file becomes Fab after updating.

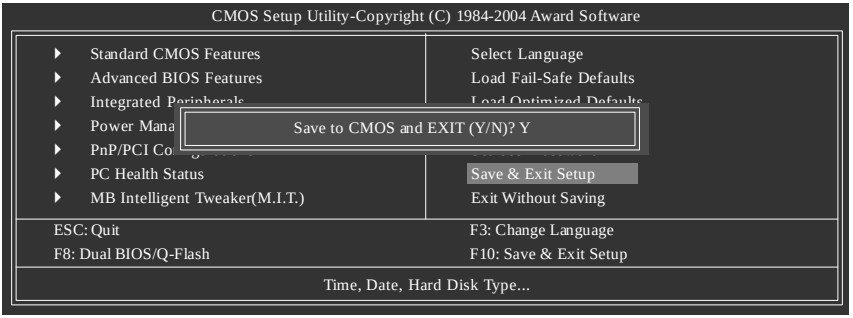


6. Press **Del** to enter BIOS menu after system reboots. When you are in BIOS menu, move to **Load Fail-Safe Defaults** item and press **Enter** to load BIOS Fail-Safe Defaults. Normally the system redetects all devices after BIOS has been upgraded. Therefore, we highly recommend reloading the BIOS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



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.

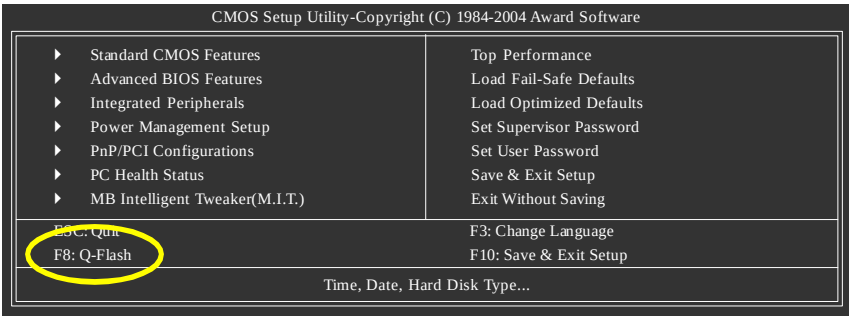


Press **Y** on your keyboard to save and exit.

Part Two:

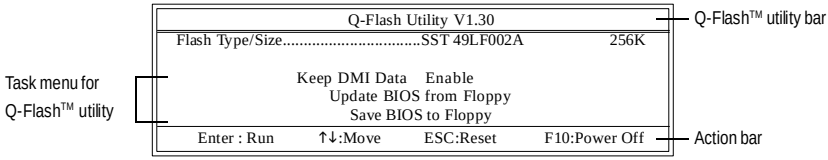
Updating BIOS with Q-Flash™ Utility on Single-BIOS Motherboards.

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



Exploring the Q-Flash™ utility screen

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



Task menu for Q-Flash utility:

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

Action bar:

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

Using the Q-Flash™ utility:

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

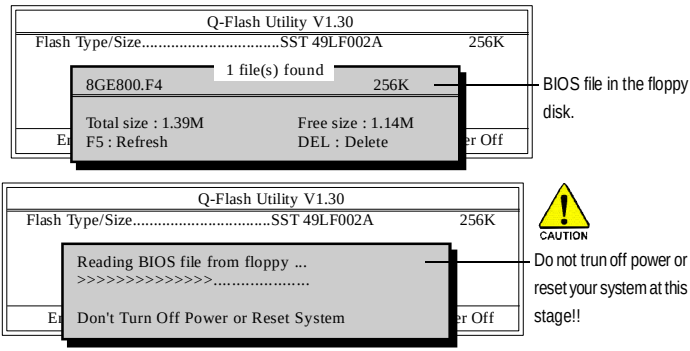
Steps:

1. Press arrow buttons on your keyboard to move the light bar to "Update BIOS from Floppy" item in the Q-Flash menu and press Enter button.
   Later, you will see a box pop up showing the BIOS files you previously downloaded to the floppy disk.

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.

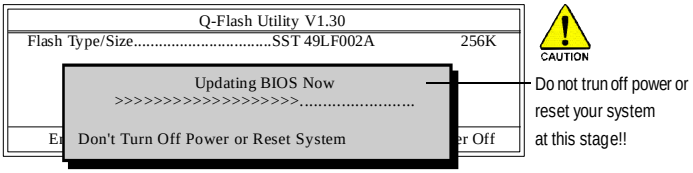
CAUTION Please confirm again you have the correct BIOS file for your motherboard.



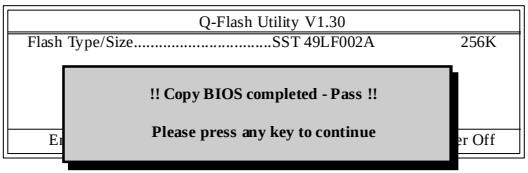
After BIOS file is read, you'll see a dialog box asking you "Are you sure to update BIOS?"

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

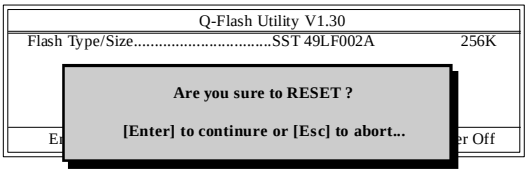
3. Press Y button on your keyboard after you are sure to update BIOS.
   Then it will begin to update BIOS. The progress of updating BIOS will be shown at the same time.



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

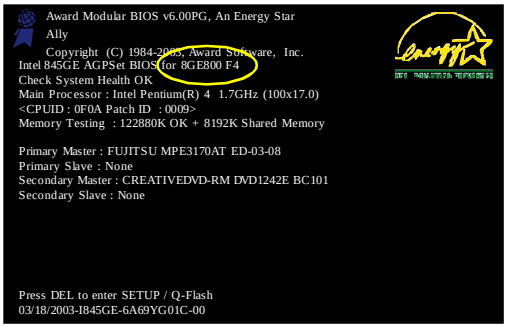


5. Press Esc and then Y button to exit the Q-Flash utility. The computer will restart automatically after you exit Q-Flash.



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

The BIOS file becomes F4 after updating



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

Congratulation!! You have updated BIOS successfully!!

Method 2 : @BIOS™ Utility

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

Fig 1. Installing the @BIOS utility

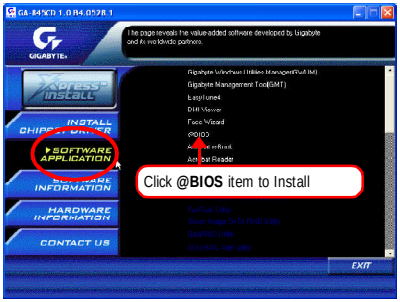


Fig 2. Installation complete and run @BIOS

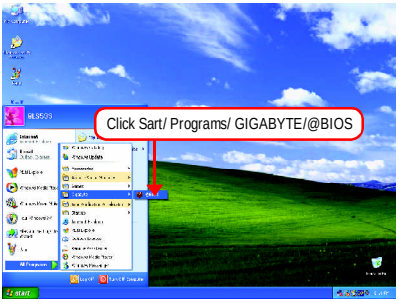


Fig 3. The @BIOS utility

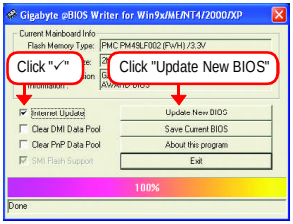
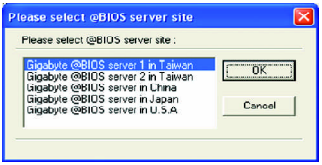


Fig 4. Select the desired @BIOS server



1. Methods and steps:

I. Update BIOS through the Internet

a. Select the **Internet Update** checkbox
b. Click **Update New BIOS**
c. Select an @BIOS™ sever from which you want to download BIOS
d. Select the exact model name of your motherboard
e. System will automatically download and update the BIOS.

II. Update BIOS NOT through the Internet:

a. Do not select the **Internet Update** checkbox
b. Click **Update New BIOS**
c. Please select "All Files" in dialog box while opening the downloaded BIOS file.
d. Please search for BIOS unzip file, downloading from the Internet or any other methods (such as: 8I915G Pro.F1).
e. Complete update process following the on-screen instructions.

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.

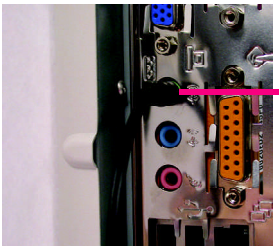
4-1-3 2 / 4 / 6 Channel Audio Function Introduction

The following setup is for Windows 98SE/2000/ME/XP. Please follow the steps below to enable the function!

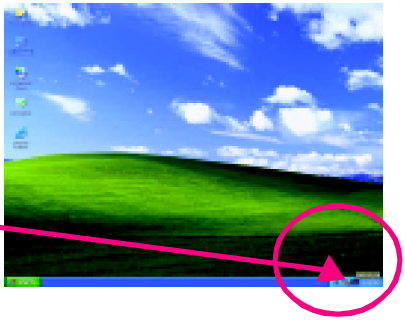
2 Channel Audio Setup:

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

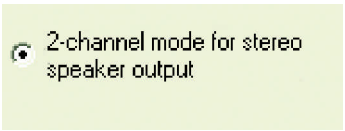
STEP 1:
Connect the stereo speakers or earphone to "Line Out".

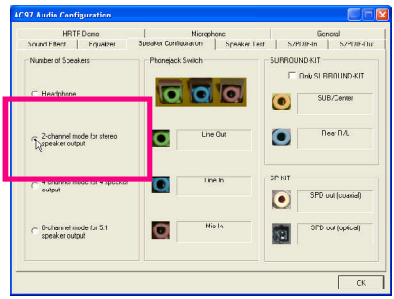


STEP 2 :
Following installation of the audio driver, you find a Sound Effect icon on the lower right hand taskbar. Click the icon to select the function.



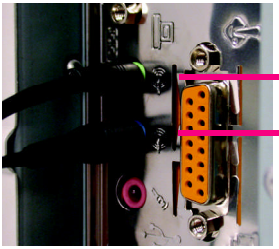
STEP 3:
Select "Speaker Configuration", and choose the "2-channel mode for stereo speaker output".



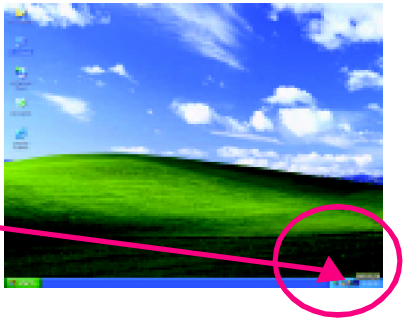


4 Channel Analog Audio Output Mode

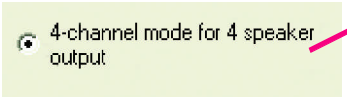
STEP 1 :
Connect the front channels to "Line Out",
the rear channels to "Line In".

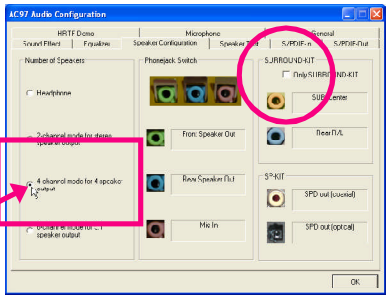


STEP 2 :
Following installation of the audio driver, you find a Sound Effect icon on the lower right hand taskbar. Click the icon to select the function.

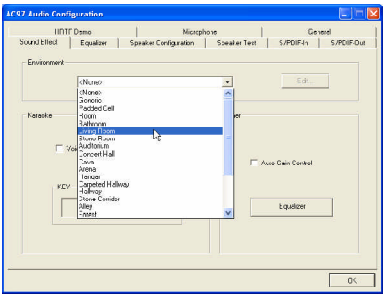


STEP 3 :
Select "Speaker Configuration", and choose the "4-channel for 4 speaker output".
Disable "Only SURROUND-KIT", and press "OK".



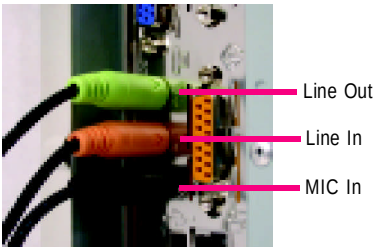


When the "Environment" setting is "None", the sound would be performed as stereo mode (2-channel output). Please select other settings for 4-channel output.

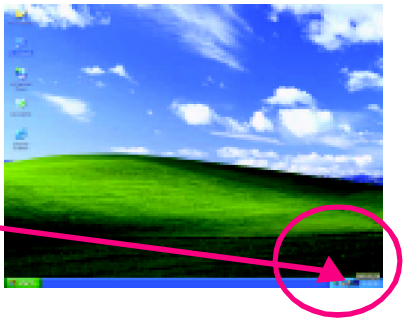


Basic 6 Channel Analog Audio Output Mode

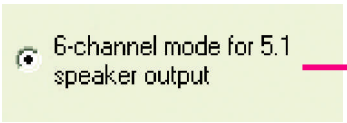
Use the back audio panel to connect the audio output without any additional module.
STEP 1 :
Connect the front channels to "Line Out",the rear channels to "Line In", and the Center/Subwoofer channels to "MIC In".

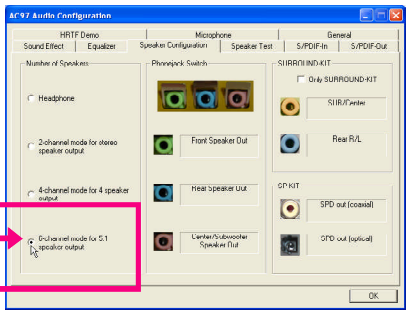


STEP 2 :
Following installation of the audio driver, you find a Sound Effect icon on the lower right hand taskbar. Click the icon to select the function.



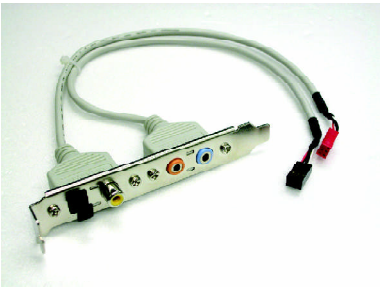
STEP 3 :
Select "Speaker Configuration", and choose the "6-channel mode for 5.1 speaker output".
Disable "Only SURROUND-KIT" and press "OK".





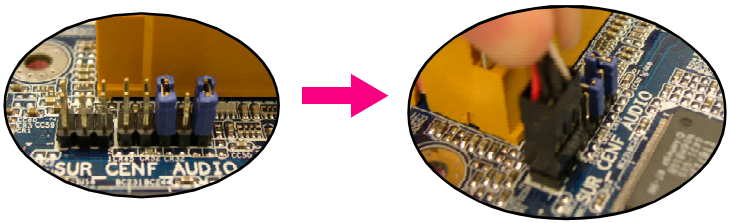
Advanced 6 Channel Analog Audio Output Mode (using Audio Combo Kit,Optional Device):
(Audio Combo Kit provides SPDIF output port : optical & coaxis and SURROUND-KIT : Rear R/L & CEN /Subwoofer)

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.

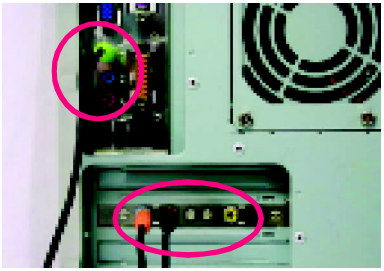


STEP 1 :
Insert the "SURROUND-KIT" in the back of the case, and fix it with the screw.

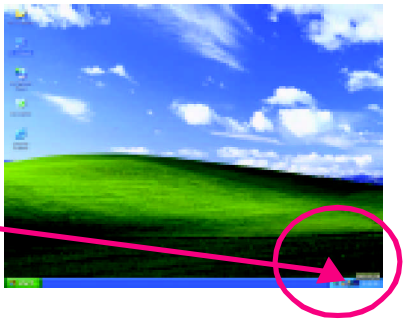
STEP 2 :
Connect the "SURROUND-KIT" to the SUR_CEN connector on the M/B.



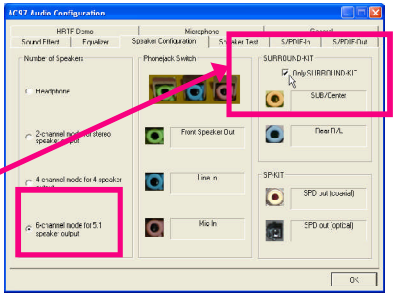
STEP 3 :
Connect the front channels to back audio panel's "Line Out", the rear channels to SURROUND-KIT's REAR R/L, and the Center/Subwoofer channels to SURROUND-KIT's SUB CENTER.



STEP 4 :
Following installation of the audio driver, you find a Sound Effect icon on the lower right hand taskbar. Click the icon to select the function.

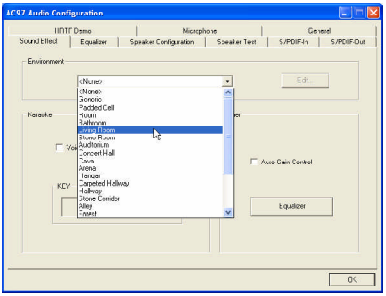


STEP 5 :
Select "Speaker Configuration", and choose the "6-channel for 5.1 speaker output".
Enable "Only SURROUND-KIT" and press "OK".



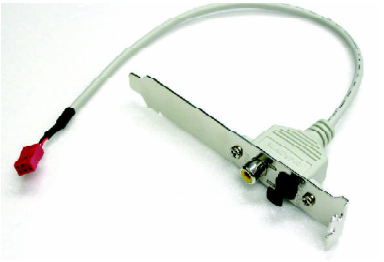
Basic & Advanced 6 Channel Analog Audio Output Mode Notes:

When the "Environment" setting is "None", the sound would be performed as stereo mode(2 channels output). Please select the other settings for 6 channels output.



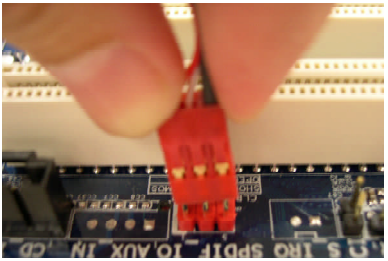
SPDIF Output Device (Optional Device)

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.

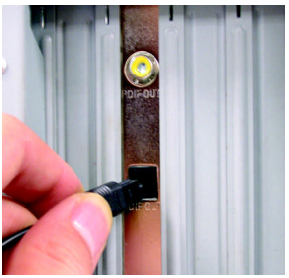


1. Connect the SPDIF output device to the rear bracket of PC, and fix it with screw.

2. Connect SPDIF device to the SPDIF_IO connec -tor on the motherboard.



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 http://tw.giga-byte.com/faq/faq.htm

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: Why cannot I use all functions in EasyTune 4?
Answer: The availability of the listed functions in EasyTune 4 depends on the MB chipset. If the chipset doesn't support certain functions in EasyTune 4, these functions will be locked automatically and you will not be able to use them.

Question 4: Why do I fail to install RAID and ATA drivers under Win 2000 and XP on boards that support RAID function after I connect the boot HDD to IDE3 or IDE4 ?
Answer: First of all, you need to save some files in the CD-ROM to a floppy disk before installing drivers. You also need to go through some rather different steps in the installation process. Therefore, we suggest that you refer to the installation steps in the RAID manual at our website.
(Please download it at http://tw.giga-byte.com/support/user_pdf/raid_manual.pdf)

Question 5: 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.
7. Save changes and reboot the system.

Question 6: Why does system seem unstable after updating BIOS?
Answer: Please remember to load Fail-Safe Defaults (Or Load BIOS Defaults) after flashing BIOS. However, if the system instability still remains, please clear CMOS to solve the problem.

Question 7: 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 8: How do I disable onboard VGA card in order to add an external VGA card?
Answer: Gigabyte motherboards will auto-detect the external VGA card after it is plugged in, so you don't need to change any setting manually to disable the onboard VGA.

Question 9: Why cannot I use the IDE 2?
Answer: Please refer to the user manual and check whether you have connected any cable that is not provided with the motherboard package to the USB Over Current pin in the Front USB Panel. If the cable is your own cable, please remove it from this pin and do not connect any of your own cables to it.

Question 10: 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

Question 11:For the M/B which have RAID function, how to set in the BIOS in order to bootup from IDE3, 4 by either RAID or ATA mode?
Answer:Please set in the BIOS as follow:

1. Advanced BIOS features-->(SATA)/RAID/SCSI boot order: "SATA"
2. Advanced BIOS features--> First boot device: "SCSI"
3. Integrated Peripherals--> Onboard H/W ATA/RAID: "enable"

Then it depends on the RAID mode that you need to set "RAID" to RAID mode or "ATA" to normal ATA mode in the item named RAID controller function.

Question 12:How to set in the BIOS to bootup from the IDE/ SCSI/ RAID card ?
Answer:Please set in the BIOS as follow:

1. Advanced BIOS features-->(SATA)/RAID/SCSI boot order: "SCSI"
2. Advanced BIOS features--> First boot device: "SCSI"

Then it depends on the mode(RAID or ATA) that you need to set in RAID/ SCSI BIOS.

Contact Us

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TEL: +44-1908-362700
FAX: +44-1908-362709
Tech. Support :
http://uk.giga-byte.com/TechSupport/ServiceCenter.htm
Non-Tech. Support(Sales/Marketing) :
http://ggts.gigabyte.com.tw/nontech.asp
WEB address : http://uk.giga-byte.com

- **The Netherlands**

GIGA-BYTE TECHNOLOGY B.V.
TEL: +31 40 290 2088
NL Tech.Support:G0900-GIGABYTE (0900-44422983)
BE Tech.Support:G0900-84034
FAX: +31 40 290 2089
Tech. Support :
http://nz.giga-byte.com/TechSupport/ServiceCenter.htm
Non-Tech. Support(Sales/Marketing) :
http://ggts.gigabyte.com.tw/nontech.asp
WEB address : http://www.giga-byte.nl

English

- **China**

NINGBO G.B.T. TECH. TRADING CO., LTD.
Tech. Support :
http://cn.giga-byte.com/TechSupport/ServiceCenter.htm
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- **Australia**

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

- **France**

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

- **Russia**

Moscow Representative Office Of Giga-Byte Technology Co., Ltd.
Tech. Support :
http://tw.giga-byte.com/TechSupport/ServiceCenter.htm
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WEB address : http://www.gigabyte.ru

- **Poland**

Representative Office Of Giga-Byte Technology Co., Ltd. POLAND
Tech. Support :
http://tw.giga-byte.com/TechSupport/ServiceCenter.htm
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