When you installing AGP card, please make sure the following notice is fully understood and practiced. If your AGP card has "AGP 4X/8X (1.5V) notch"(show below), please make sure your AGP card is AGP 4X/8X (1.5V).

Caution: AGP 2X card is not supported by Intel® 845(GE/PE) / 845(E/G) / 850(E) / E7205 / 865(G/PE/P) / 875P. You might experience system unable to boot up normally. Please insert an AGP 4X/8X card.

Example 1: Diamond Vipper V770 golden finger is compatible with 2X/4X mode AGP slot. It can be switched between AGP 2X(3.3V) or 4X/8X(1.5V) mode by adjusting the jumper. The factory default for this card is 2X(3.3V). The GA-8IPE1000MK (or any AGP 4X/8X only) motherboards might not function properly, if you install this card without switching the jumper to 4X/8X (1.5) mode in it.

Example 2: Some ATi Rage 128 Pro graphics cards made by "Power Color", the graphics card manufacturer & some SiS 305 cards, their golden finger is compatible with 2X(3.3V)/4X(1.5V) mode AGP slot, but they support 2X(3.3V) only. The GA-8IPE1000MK (or any AGP 4X/8X only) motherboards might not function properly, If you install this card in it.

Note : Although Gigabyte's AG32S(G) graphics card is based on ATi Rage 128 Pro chip, the design of AG32S(G) is compliance with AGP 4X(1.5V) specification. Therefore, AG32S(G) will work fine with Intel® 845(GE/PE) / 845(E/G) / 850(E) / E7205 / 865(G/PE/P) / 875P based motherboards.

- **The author assumes no responsibility for any errors or omissions that may appear in this document nor does the author make a commitment to update the information contained herein.**
- **Third-party brands and names are the property of their respective owners.**
- **Please do not remove any labels on motherboard, this may void the warranty of this motherboard.**
- **Due to rapid change in technology, some of the specifications might be out of date before publication of this booklet.**

WARNING: *Never run the processor without the heatsink properly and firmly attached. PERMANENT DAMAGE WILL RESULT!*

Mise en garde : *Ne faites jamais tourner le processeur sans que le dissipateur de chaleur soit fix correctement et fermement. UN DOMMAGE PERMANENT EN RÉSULTERA !*

Achtung: *Der Prozessor darf nur in Betrieb genommen werden, wenn der W rmeableiter ordnungsgem ß und fest angebracht ist. DIES HAT EINEN PERMANENTEN SCHADEN ZUR FOLGE!*

Advertencia: *Nunca haga funcionar el procesador sin el disipador de calor instalado correcta y firmemente. ¡SE PRODUCIRÁ UN DAÑO PERMANENTE!*

Aviso: *Nunca execute o processador sem o dissipador de calor estar adequado e firmemente conectado. O RESULTADO SERÁ UM DANO PERMANENTE!*

警告：　将散热板牢固地安装到处理器上之前，不要运行处理器。过热将永远损坏处理器!

警告:　將散熱器牢固地安裝到處理器上之前，不要運行處理器 。過熱將永遠損壞處理器!

경고:　*히트싱크를 제대로 또 단단히 부착시키지 않은 채 프로세서를 구동시키지 마십시오. 영구적 고장이 발생합니다!*

警告:　*永久的な損傷を防ぐため、ヒートシンクを正しくしっかりと取り付けるまでは、プロセッサを動作させないようにしてください。*

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-8IPE1000MK (2.0)

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

☐ **EN 55011**	Limits and methods of measurement of radio disturbance characteristics of industrial, scientific and medical (ISM) high frequency equipment	☒ **EN 61000-3-2**	Disturbances in supply systems caused
		☒ **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** (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 : Sep. 2, 2005 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-8IPE1000MK(2.0)

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: Sep. 2, 2005

GA-8IPE1000MK (rev. 2.0)

P4 Titan Series Motherboard

USER'S MANUAL

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

Pentium® 4 Processor Motherboard

Rev. 2002

12ME-IPE1KMK-2002R

English

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Warning

Computer motherboards and expansion cards contain very delicate Integrated Circuit (IC) chips. To protect them against damage from static electricity, you should follow some precautions whenever you work on your computer.

1. Unplug your computer when working on the inside.
2. Use a grounded wrist strap before handling computer components. If you do not have one, touch both of your hands to a safely grounded object or to a metal object, such as the power supply case.
3. Hold components by the edges and try not touch the IC chips, leads or connectors, or other components.
4. Place components on a grounded antistatic pad or on the bag that came with the components whenever the components are separated from the system.
5. Ensure that the ATX power supply is switched off before you plug in or remove the ATX power connector on the motherboard.

Installing the motherboard to the chassis...

If the motherboard has mounting holes, but they don't line up with the holes on the base and there are no slots to attach the spacers, do not become alarmed you can still attach the spacers to the mounting holes. Just cut the bottom portion of the spacers (the spacer may be a little hard to cut off, so be careful of your hands). In this way you can still attach the motherboard to the base without worrying about short circuits. Sometimes you may need to use the plastic springs to isolate the screw from the motherboard PCB surface, because the circuit wire may be near by the hole. Be careful, don't let the screw contact any printed circuit write or parts on the PCB that are near the fixing hole, otherwise it may damage the board or cause board malfunctioning.

Chapter 1 Introduction

Features Summary

Form Factor	• 24.3cm x 24.3cm Micro ATX size form factor, 4 layers PCB
CPU	• Socket 478 for Intel® Micro FC-PGA2 Pentium® 4 processor • Support Intel® Pentium® 4 (Northwood, Prescott) processor • Support Intel® Pentium® 4 Processor with HT Technology * • Intel® Pentium® 4 800/533/400MHz FSB • 2nd cache depends on CPU
Chipset	• Intel® Chipset 865PE HOST/AGP/Controller • Intel® ICH5 I/O Controller Hub
Memory	• 4 184-pin DDR DIMM sockets • Supports Dual Channel DDR400/DDR333/DDR266 DIMM • Supports 128MB/256MB/512MB/1GB unbuffered DRAM • Supports up to 4GB DRAM (Max)(Note 1) • Supports only DDR DIMM
I/O Control	• ITE8712F
Slots	• 1 AGP slot 4X/8X (1.5V) device support • 3 PCI slot supports 33MHz & PCI 2.3 compliant
On-Board IDE	• 2 IDE controllers provides IDE HDD/CD-ROM (IDE1, IDE2) with PIO, Bus Master (Ultra DMA33/ATA66/ATA100) operation modes • Can connect up to 4 IDE devices
Serial ATA	• 2 Serial ATA connectors in 150 MB/s operation mode • Controlled by ICH5
On-Board Peripherals	• 1 Floppy port supports 2 FDD with 360K, 720K,1.2M, 1.44M and 2.88M bytes • 1 Parallel port supports Normal/EPP/ECP mode • 2 Serial ports (COMA & COMB) • 8 USB 2.0/1.1 ports (4 x Rear, 4 x Front by cable) • 1 IrDA connector for IR/CIR • 1 Front Audio connector

to be continued.....

CAUTION

Due to chipset (Intel 865PE) architecture limitation, DDR 400 memory module is only supported when using FSB 800 Pentium 4 processor. A FSB 533 Pentium 4 processor will support DDR333 and DDR266 memory module. A FSB 400 Pentium 4 processor will only support DDR 266 memory module.

(Note 1) Due to standard PC architecture, a certain amount of memory is reserved for system usage and therefore the actual memory size is less than the stated amount. For example, 4 GB of memory size will instead be shown as 3.xxGB memory during system startup.

Hardware Monitor	• CPU/System fan revolution detect • CPU temperature detect • CPU warning temperature • System voltage detect • CPU/System fan fail warning • CPU Smart Fan control
On-Board LAN	• Builit in Intel® 82562 Chipset Data transfer rate 10/100 supported • 1 RJ45 port
On-Board Sound	• Realtek ALC655 codec • Line Out / 2 front speaker • Line In / 2 rear speaker (by s/w switch) • Mic In / center & subwoofer (by s/w switch) • CD In / AUX In / Game port
PS/2 Connector	• PS/2 Keyboard interface and PS/2 Mouse interace
BIOS	• Licensed Award BIOS
Additional Features	• PS/2 Keyboard power on by password • PS/2 Mouse power on • STR (Suspend-To-RAM) • AC Recovery • Poly fuse for keyboard over-current protection • USB KB/Mouse wake up from S3 • Supports @BIOS • Supports EasyTune (Note 2) • Supports clear password function

NOTE

"*" HT functionality requirement content :

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

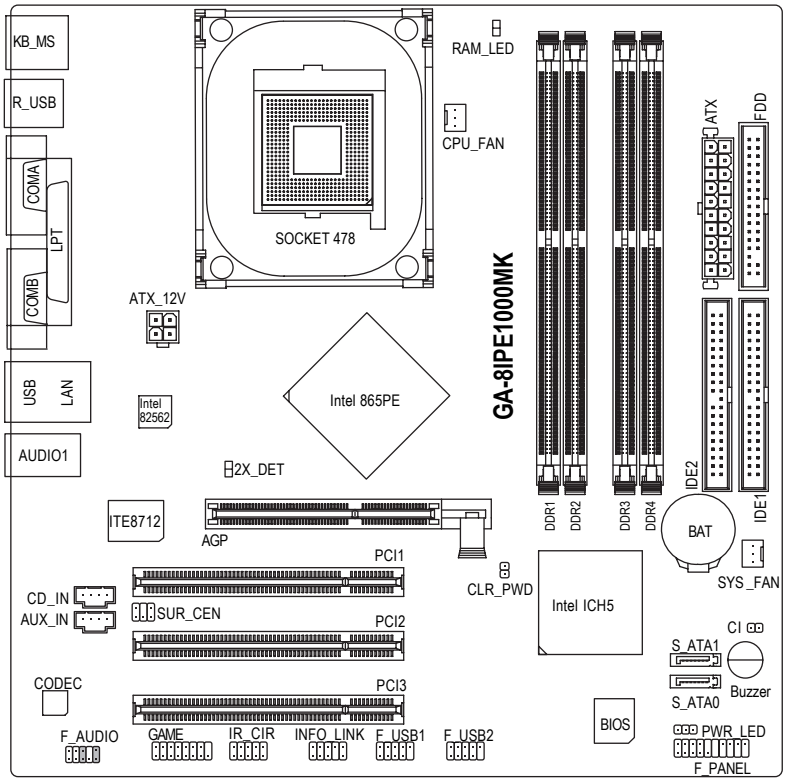
- CPU: An Intel® Pentium 4 Processor with HT Technology
- Chipset: An Intel® Chipset that supports HT Technology
- BIOS: A BIOS that supports HT Technology and has it enabled
- OS: An operation system that has optimizations for HT Technology

CAUTION

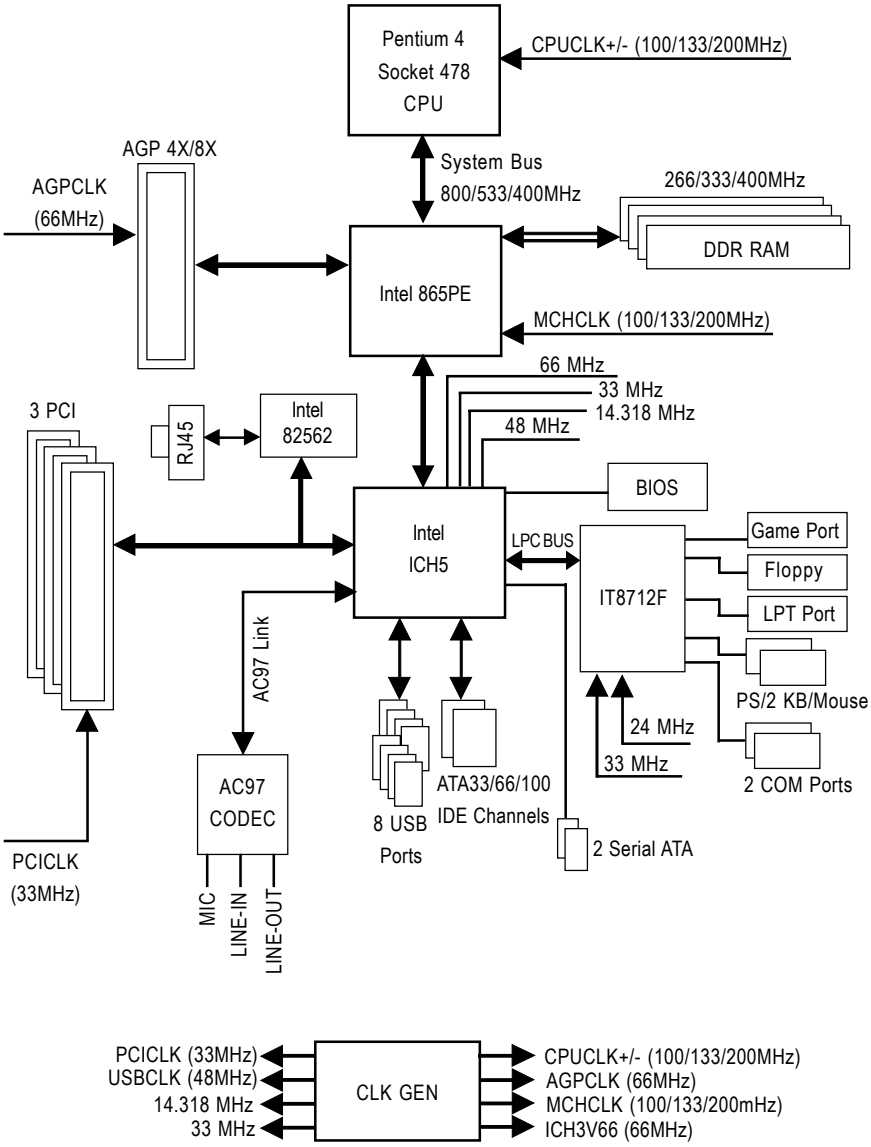
Please set the CPU host frequency in accordance with your processor's specifications.
We don't recommend you to set the system bus frequency over the CPU's specification because these specific bus frequencies are not the standard specifications for CPU, chipset and most of the peripherals. Whether your system can run under these specific bus frequencies properly will depend on your hardware configurations, including CPU, Chipsets, SDRAM, Cards…etc.

(Note 2) EasyTune functions may vary depending on different motherboards.

GA-8IPE1000MK (rev. 2.0) Motherboard Layout



Block Diagram



Chapter 2 Hardware Installation Process

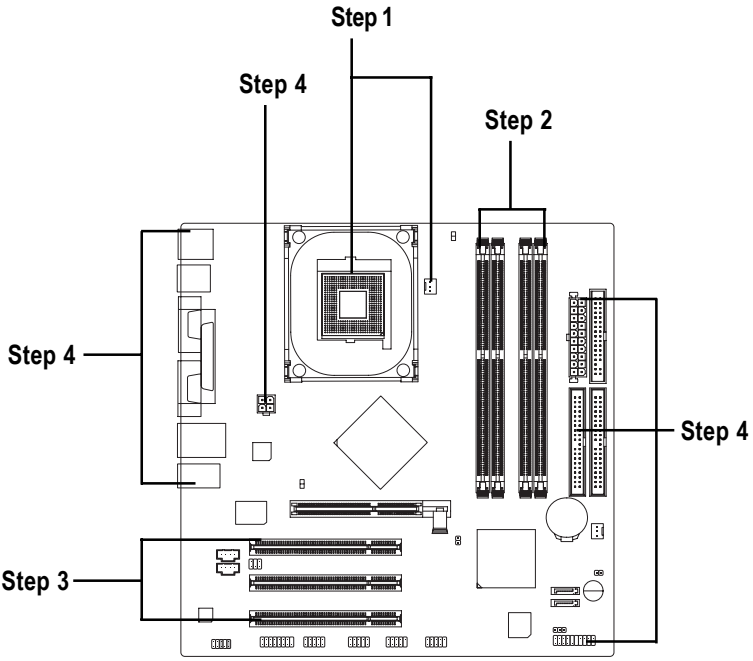
To set up your computer, you must complete the following steps:

Step 1- Install the Central Processing Unit (CPU)

Step 2- Install memory modules

Step 3- Install expansion cards

Step 4- Connect ribbon cables, cabinet wires, and power supply



Congratulations! You have accomplished the hardware installation!

Turn on the power supply or connect the power cable to the power outlet. Continue with the BIOS/software installation.

Step 1: Install the Central Processing Unit (CPU)

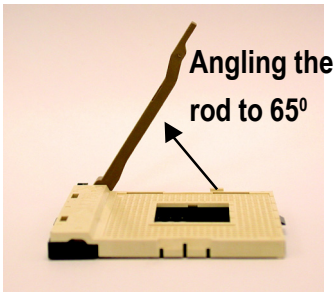
CAUTION

Before installing the processor, adhere to the following warning:

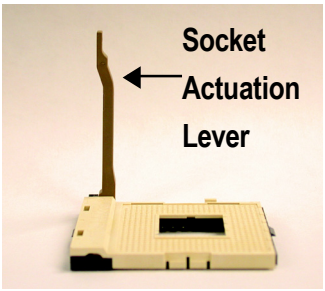
1. Please make sure the CPU type is supported by the motherboard.

2. If you do not match the CPU socket Pin 1 and CPU cut edge well, it will cause improper installation. Please change the insert orientation.

Step 1-1: CPU Installation

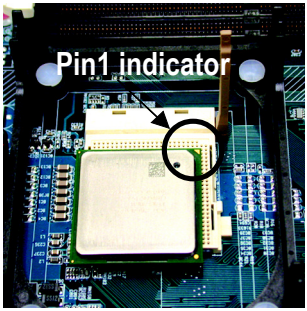


1. Angling the rod to 65-degree maybe feel a kind of tight , and then continue pull the rod to 90-degree when a noise "cough" made.



2. Pull the rod to the 90-degree directly.

3. CPU Top View



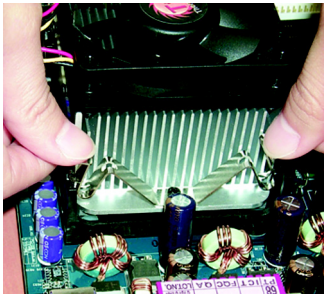
4. Locate Pin 1 in the socket and look for a (golden) cut edge on the CPU upper corner. Then insert the CPU into the socket.

Step 1-2: CPU Cooling Fan Installation

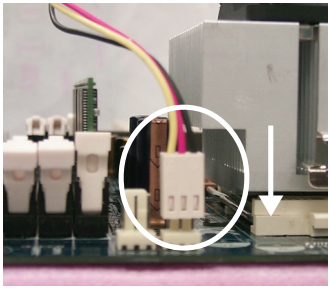
CAUTION

Before installing the CPU cooling fan, adhere to the following warning:

1. **Please use Intel approved cooling fan.**
2. **We recommend you to apply the thermal tape to provide better heat conduction between your CPU and cooling fan.**
   (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 instead of thermal paste, or remove the cooling fan with extreme caution.)
3. **Make sure the CPU fan power cable is plugged in to the CPU fan connector, this completes the installation.**
   Please refer to CPU cooling fan user's manual for more detail installation procedure.



1. Fasten the cooling fan supporting-base onto the CPU socket on the motherboard.



2. Make sure the CPU fan is plugged to the CPU fan connector, than install complete.

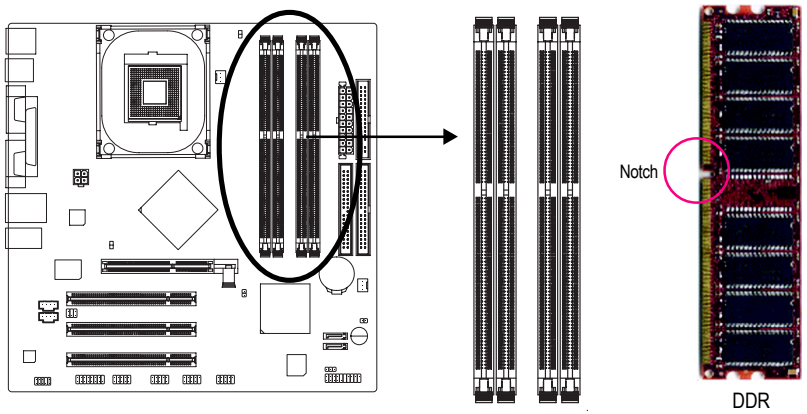
Step 2: Install Memory Modules

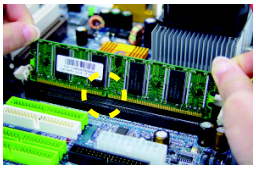
CAUTION

Before installing the memory modules, adhere to the following warning:

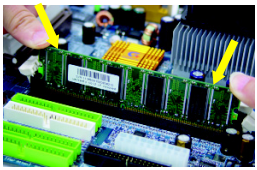
1. **When RAM_LED is ON, do not install / remove DIMM from socket.**
2. **Please note that the DIMM module can only fit in one direction due to the one notch. Wrong orientation will cause improper installation. Please change the insert orientation.**

The motherboard has 4 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.





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



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

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

DDR Introduction

Established on the existing SDRAM infrastructure, DDR (Double Data Rate) memory is a high performance and cost-effective solution that allows easy adoption for memory vendors, OEMs, and system integrators.

DDR memory is a great evolutionary solution for the PC industry that builds on the existing SDRAM architecture, yet make the awesome advances in solving the system performance bottleneck by doubling the memory bandwidth. Nowadays, with the highest bandwidth of 3.2GB/s of DDR400 memory and complete line of DDR400/333/266/200 memory solutions, DDR memory is the best choice for building high performance and low latency DRAM subsystem that are suitable for servers, workstations, and full range of desktop PCs.

Dual Channel Memory Configuration

The GA-8IPE1000MK supports the Dual Channel Technology. After operating the Dual Channel Technology, the bandwidth of Memory Bus will add double.

GA-8IPE1000MK includes four DIMM slots, and each Channel has 2 DIMMs as following:

- Channel A : DIMM 1, 2
- Channel B : DIMM 3, 4

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

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

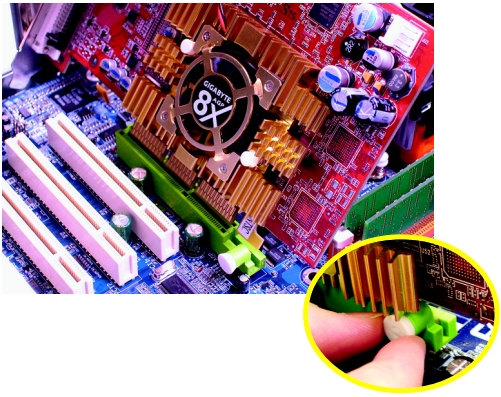
We'll strongly recommend our user to slot two DDR memory modules into the DIMMs with the same color in order for Dual Channel Technology to work.

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

	DDR1	DDR2	DDR3	DDR4
2 memory modules	DS/SS	X	DS/SS	X
	X	DS/SS	X	DS/SS
4 memory modules	DS/SS	DS/SS	DS/SS	DS/SS

Step 3: Install expansion cards

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



CAUTION

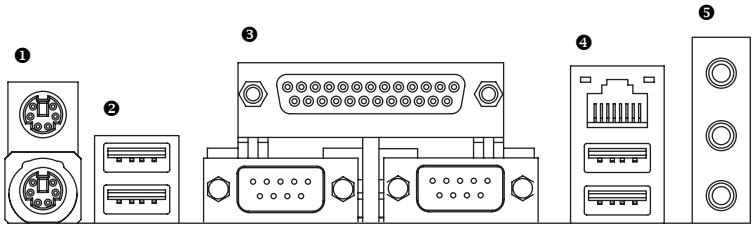
Please carefully pull out the small white-drawable bar at the end of the AGP slot when you try to install/uninstall the VGA card. Please align the VGA card to the onboard AGP slot and press firmly down on the slot. Make sure your VGA card is locked by the small white-drawable bar.

CAUTION

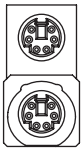
When an AGP 2X (3.3V) card is installed the 2X_DET will light up, indicating a non-supported graphics card is inserted. Informing users that system might not boot up normally due to AGP 2X (3.3V) is not supported by the chipset.

Step 4: Connect ribbon cables, cabinet wires and power supply

Step 4-1: I/O Back Panel Introduction



❶ PS/2 Keyboard and PS/2 Mouse Connector

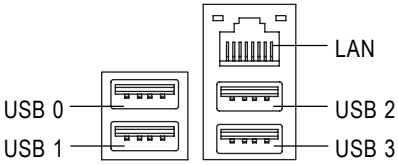


PS/2 Mouse Connector
(6 pin Female)

PS/2 Keyboard Connector
(6 pin Female)

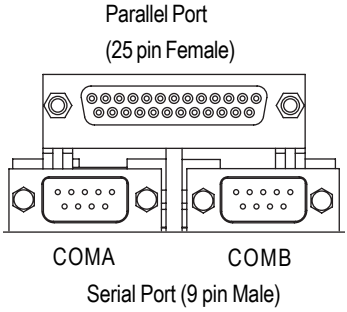
- This connector supports standard PS/2 keyboard and PS/2 mouse.

❷/❹ USB/LAN Connector



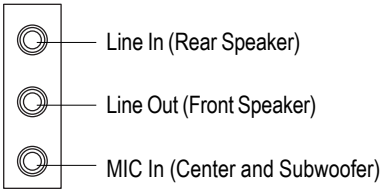
- Before you connect your device(s) into USB connector(s), please make sure your device(s) such as USB keyboard,mouse, scanner, zip, speaker...etc. Have a standard USB interface. Also make sure your OS supports USB controller. If your OS does not support USB controller, please contact OS vendor for possible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

❸ Parallel Port and Serial Ports (COMA/COMB)



➢ This connector supports 2 standard COM ports and 1 Parallel port. Device like printer can be connected to Parallel port ; mouse and modem etc can be connected to Serial ports.

❺ Audio Connectors



➢ After install onboard audio driver, you may connect speaker to Line Out jack, microphone to MIC In jack. Device like CD-ROM,walkman etc. can be connected to Line-In jack.

Please note:

You are able to use 2-/4-/6-channel audio feature by S/W selection.

If you want to enable 6-channel function, you have 2 choose for hardware connection.

Method1:

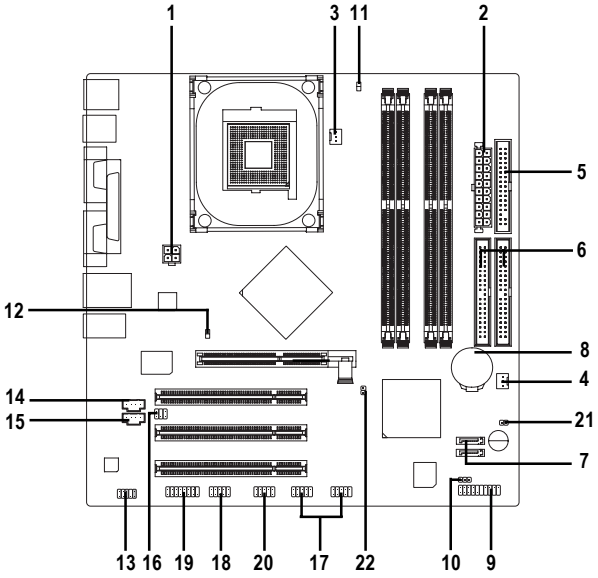
Connect "Front Speaker" to "Line Out"
Connect "Rear Speaker" to "Line In"
Connect "Center and Subwoofer" to "MIC Out ".

Method2:

You can refer to page 28, and contact your nearest dealer for optional SUR_CEN cable.

If you want the detail information for 2-/4-/6-channel audio setup installation, please refer to page 67.

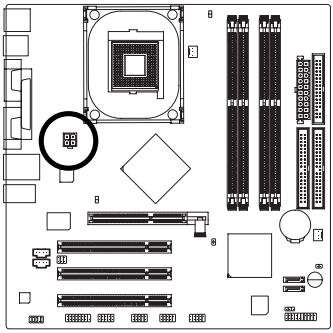
Step 4-2: Connectors Introduction

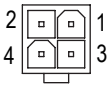


1) ATX_12V	12) 2X_DET
2) ATX	13) F_AUDIO
3) CPU_FAN	14) CD_IN
4) SYS_FAN	15) AUX_IN
5) FDD	16) SUR_CEN
6) IDE1 / IDE2	17) F_USB1 / F_USB2
7) SATA0 / SATA1	18) IR_CIR
8) BAT	19) GAME
9) F_PANEL	20) INFO_LINK
10) PWR_LED	21) CI
11) RAM_LED	22) CLR_PWD

1) ATX_12V (+12V Power Connector)

This connector (ATX_12V) supplies the CPU operation voltage (Vcore).
If this "ATX_12V connector" is not connected, system cannot boot.

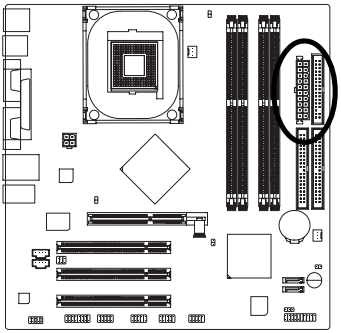


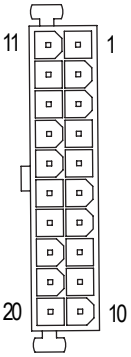


Pin No.	Definition
1	GND
2	GND
3	+12V
4	+12V

2) ATX (ATX Power)

AC power cord should only be connected to your power supply unit after ATX power cable and other related devices are firmly connected to the mainboard.

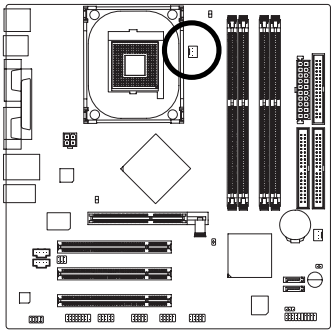




Pin No.	Definition
1	3.3V
2	3.3V
3	GND
4	VCC
5	GND
6	VCC
7	GND
8	Power Good
9	5V SB (stand by +5V)
10	+12V
11	3.3V
12	-12V
13	GND
14	PS_ON(soft on/off)
15	GND
16	GND
17	GND
18	-5V
19	VCC
20	VCC

3) CPU_FAN (CPU Fan Connector)

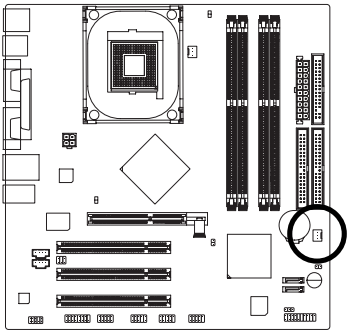
Please note, a proper installation of the CPU cooler is essential to prevent the CPU from running under abnormal condition or damaged by overheating. The CPU fan connector supports Max. current up to 600 mA.



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

4) SYS_FAN (System Fan Connector)

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

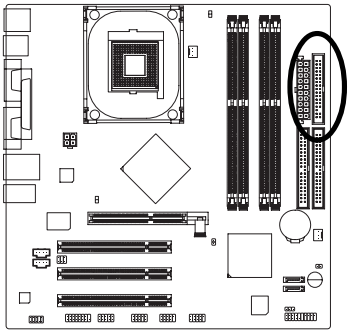


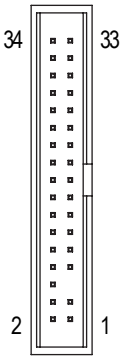
Pin No.	Definition
1	GND
2	+12V
3	Sense

5) FDD (Floppy Connector)

Please connect the floppy drive ribbon cables to FDD. It supports 360K, 1.2M, 720K, 1.44M and 2.88M bytes floppy disk types.

The red stripe of the ribbon cable must be the same side with the Pin1.



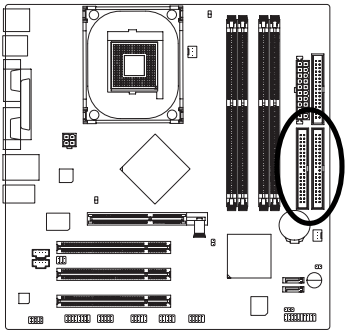


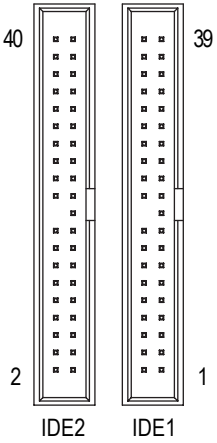
6) IDE1 / IDE2 (IDE1 / IDE2 Connector)

Important Notice:

Please connect first hard disk to IDE1 and connect CD-ROM to IDE2.

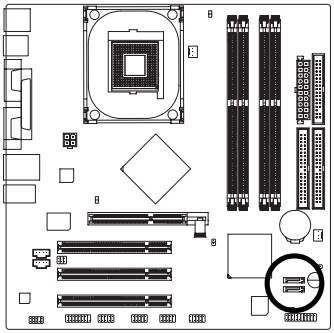
The red stripe of the ribbon cable must be the same side with the Pin1.

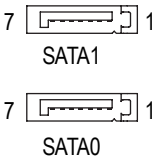




7) SATA0 / SATA1 (Serial ATA Connector)

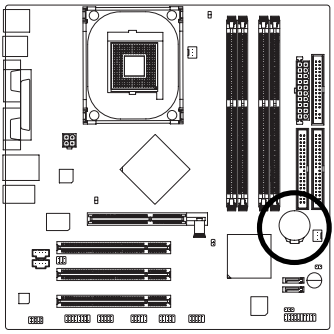
You can connect the Serial ATA device to this connector, it provides you high speed transfer rates (150MB/sec).

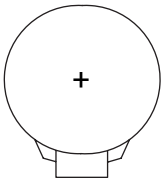




Pin No.	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

8) BAT (BATTERY)





CAUTION

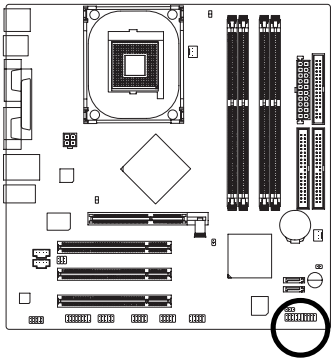
- Danger of explosion if battery is incorrectly replaced.
- Replace only with the same or equivalent type recommended by the manufacturer.
- Dispose of used batteries according to the manufacturer's instructions.

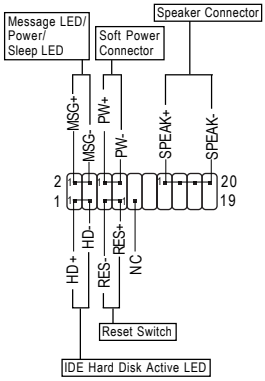
If you want to erase CMOS...

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

9) F_PANEL (2 x 10 pins Connector)

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

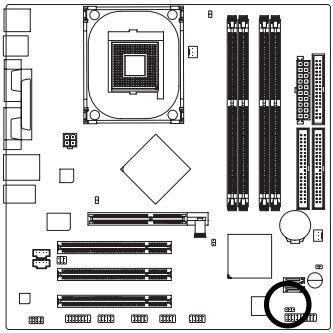




HD (IDE Hard Disk Active LED) (Blue)	Pin 1: LED anode(+) Pin 2: LED cathode(-)
SPK (Speaker Connector) (Amber)	Pin 1: VCC(+) Pin 2- Pin 3: NC Pin 4: Data(-)
RES (Reset Switch) (Green)	Open: Normal Operation Close: Reset Hardware System
PW (Soft Power Connector) (Red)	Open: Normal Operation Close: Power On/Off
MSG(Message LED/ Power/ Sleep LED) (Yellow)	Pin 1: LED anode(+) Pin 2: LED cathode(-)
NC (Purple)	N C

10) PWR_LED

PWR_LED is connect with the system power indicator to indicate whether the system is on/off. It will blink when the system enters suspend mode. If you use dual color LED, power LED will turn to another color.

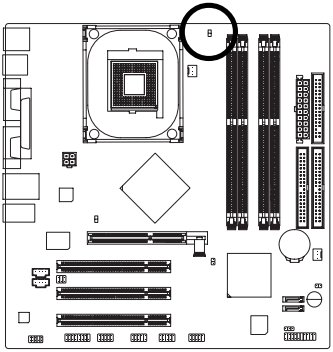


1

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

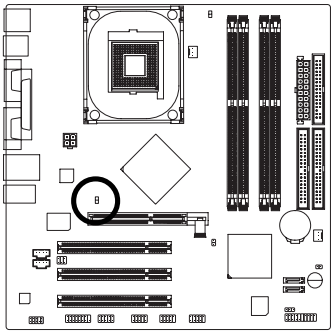
11) RAM_LED

Do not remove memory modules while RAM_LED is on. It might cause short or other unexpected damages due to the stand by voltage. Remove memory modules only when AC power cord is disconnected.



12) 2X_DET

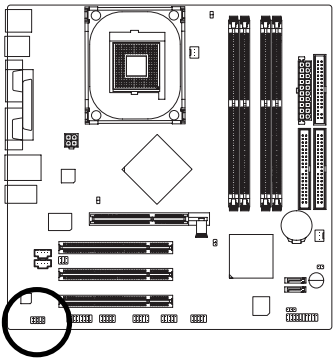
When an AGP 2X (3.3V) card is installed the 2X_DET will light up, indicating a non-supported graphics card is inserted. Informing users that system might not boot up normally due to AGP 2X (3.3V) is not supported by the chipset.

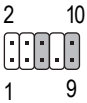


13) F_AUDIO (Front Audio Connector)

If you want to use Front Audio connector, you must remove 5-6, 9-10 Jumper.

In order to utilize the front audio header, your chassis must have front audio connector. Also please make sure the pin assigment on the cable is the same as the pin assigment on the MB header. To find out if the chassis you are buying support front audio connector, please contact your dealer. Please note, you can have the alternative of using front audio connector or of using rear audio connector to play sound.

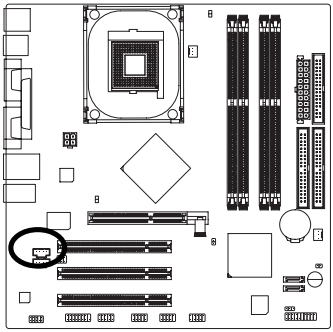


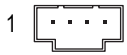


Pin No.	Definition
1	MIC
2	GND
3	REF
4	Power
5	Front Audio (R)
6	Rear Audio (R)
7	Reserved
8	No Pin
9	Front Audio (L)
10	Rear Audio (L)

14) CD_IN (CD In Connector)

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

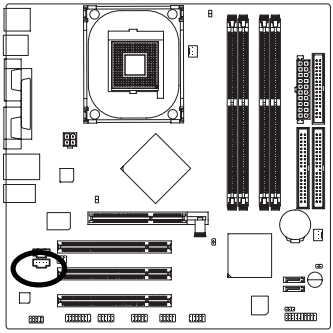


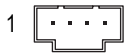


Pin No.	Definition
1	CD-L
2	GND
3	GND
4	CD-R

15) AUX_IN (AUX In Connector)

Connect other device (such as PCI TV Tunner audio out) to the connector.

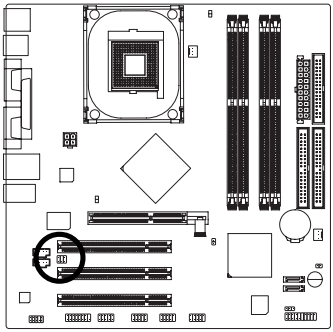


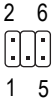


Pin No.	Definition
1	AUX-L
2	GND
3	GND
4	AUX-R

16) SUR_CEN (Surround Center Connector)

Please contact your nearest dealer for optional SUR_CEN cable.

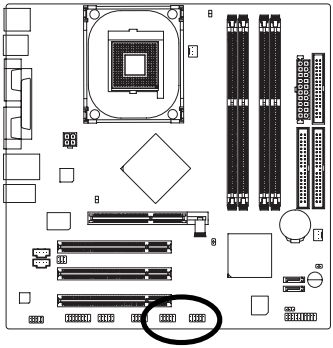


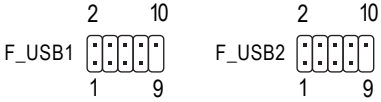


Pin No.	Definition
1	SUR OUTL
2	SUR OUTR
3	GND
4	No Pin
5	CENTER_OUT
6	BASS_OUT

17) F_USB1 / F_USB2 (Front USB Connector, Yellow)

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

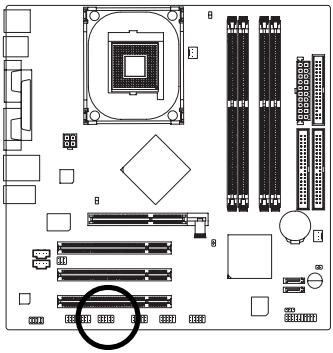


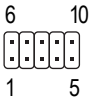


Pin No.	Definition
1	Power
2	Power
3	USB Dx-
4	USB Dy-
5	USB Dx+
6	USB Dy+
7	GND
8	GND
9	No Pin
10	NC

18) IR_CIR

Make sure the pin 1 on the IR device is aling with pin one the connector. To enable the IR/CIR function on the board, you are required to purchase an option IR/CIR module. For detail information please contact your autherized Gigabyte distributor. To use IR function only, please connect IR module to Pin1 to Pin5.

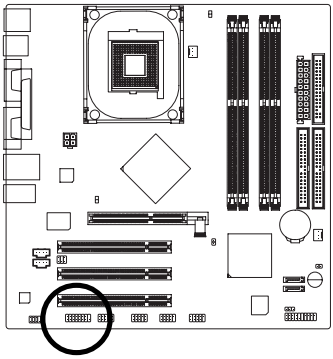




Pin No.	Definition
1	VCC
2	NC
3	IRRX
4	GND
5	IRTX
6	NC
7	CIRRX
8	+5VSB
9	CIRTX
10	NC

19) GAME (Game Connector)

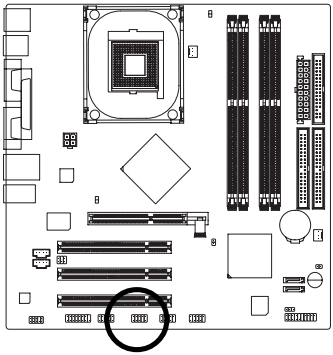
This connector supports joystick, MIDI keyboard and other relate audio devices.

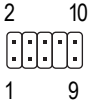


Pin No.	Definition
1	VCC
2	GRX1_R
3	GND
4	GPSA2
5	VCC
6	GPX2_R
7	GPY2_R
8	MSI_R
9	GPSA1
10	GND
11	GPY1_R
12	VCC
13	GPSB1
14	MSO_R
15	GPSB2
16	No Pin

20) INFO_LINK

This connector allows you to connect some external devices to provide you extra function.

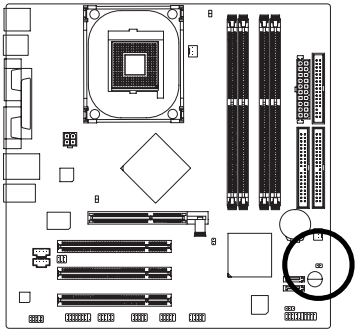




Pin No.	Definition
1	SMBCLK
2	VCC
3	SMBDATA
4	GPIO
5	GND
6	GND
7	No Pin
8	NC
9	+12V
10	+12V

21) CI (CASE OPEN)

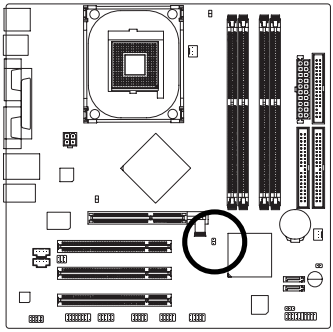
This 2-pin connector allows your system to enable or disable the "Case Open" item in BIOS, if the system case begin remove.



Pin No.	Definition
1	Signal
2	GND

22) CLR_PWD

When Jumper is set to "open" and system is restarted, the password that is set will be cleared. On the contrary when Jumper is set to "close", the current status remains.



Open: Clear Password

Close: Normal

Chapter 3 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 fail-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.

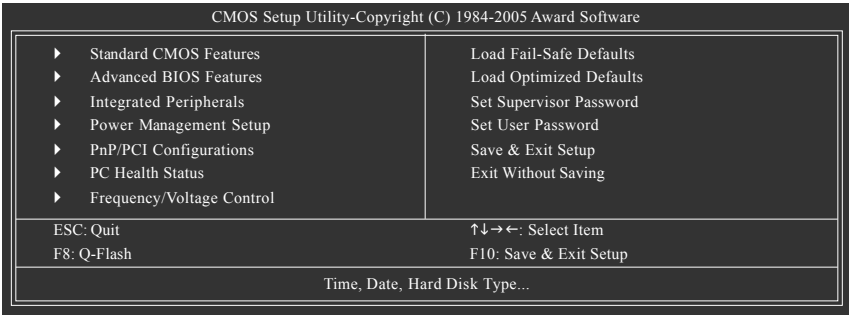
Status Page Setup Menu / Option Page Setup Menu

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>.

NOTE The BIOS Setup menus described in this chapter are for reference only and may differ from the exact settings for your motherboard.

The Main Menu (For example: BIOS Ver. : G2)

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 search the advanced option hidden.

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

- **Standard CMOS Features**

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

- **Advanced BIOS Features**

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

- **Integrated Peripherals**

  This setup page includes all onboard peripherals.

- **Power Management Setup**

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

- **PnP/PCI Configurations**

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

- **PC Health Status**

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

- **Frequency/Voltage Control**

  This setup page is control CPU's clock and frequency ratio.

- **Load Fail-Safe Defaults**

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

- **Load Optimized Defaults**

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

- **Set Supervisor password**

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

- **Set User password**

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

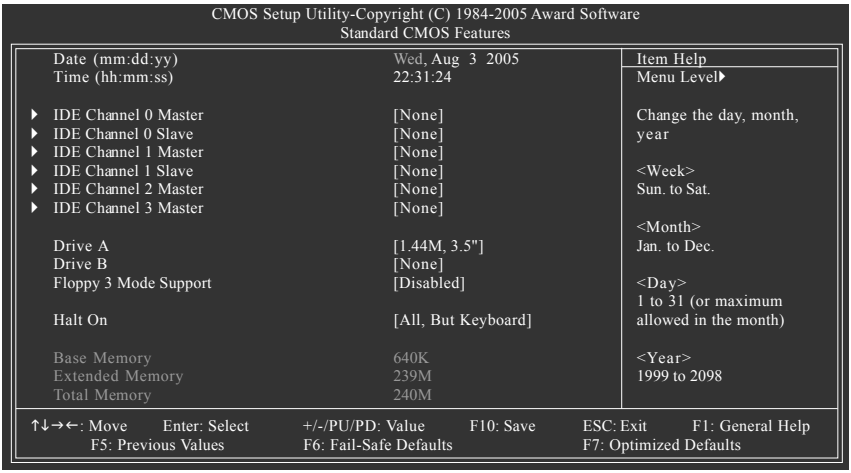
- **Save & Exit Setup**

  Save CMOS value settings to CMOS and exit setup.

- **Exit Without Saving**

  Abandon all CMOS value changes and exit setup.

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 display only
- ⏩ Month — The month, Jan. Through Dec.
- ⏩ Day — The day, from 1 to 31 (or the maximum allowed in the month)
- ⏩ Year — The year, from 1999 through 2098

☞ Time

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

☞ IDE Channel 0 Master, Slave / IDE Channel 1 Master, Slave

- ⏩ IDE HDD Auto-Detection Press "Enter" to select this option for automatic device detection.
- ⏩ IDE Channel 0/1 Master/Slave IDE Device Setup. You can use one of three methods:

  Auto — Allows BIOS to automatically detect IDE devices during POST. (Default value)

  None — Select this if no IDE devices are used and the system will skip the automatic detection step and allow for faster system start up.

  Manual — User can manually input the correct settings.

- ⏩ Access Mode — Use this to set the access mode for the hard drive. The four options are: CHS/LBA/Large/Auto(default:Auto)

☞ IDE Channel 2/3 Master

⏩ IDE HDD Auto-Detection Press "Enter" to select this option for automatic device detection.

⏩ Extended IDE Drive SATA IDE devices setup. You can use one of two methods:

Auto	Allows BIOS to automatically detect IDE devices during POST. (Default value)
None	Select this if no IDE devices are used and the system will skip the automatic detection step and allow for faster system start up.

⏩ Access Mode Use this to set the access mode for the hard drive. The two options are: Large/Auto(default:Auto)

⏩ Capacity Capacity of currectly installed hard drive.

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

⏩ Cylinder Number of cylinders

⏩ Head Number of heads

⏩ Precomp Write precomp

⏩ Landing Zone Landing zone

⏩ Sector Number of sectors

☞ Drive A / Drive B

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

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

☞ Floppy 3 Mode Support (for Japan Area)

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

☞ Halt on

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

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

☞ Memory

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

Base Memory

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

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

Extended Memory

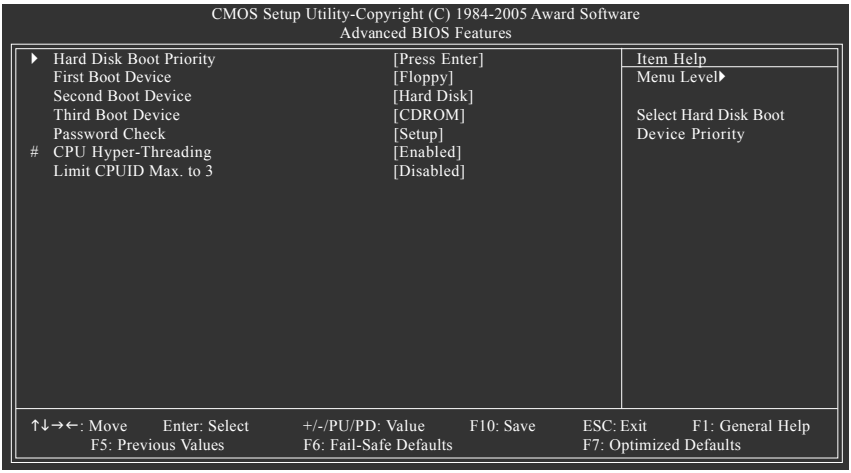
The BIOS determines how much extended memory is present during the POST.

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

Total Memory

This item displays the memory size that used.

Advanced BIOS Features



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

☞ Hard Disk Boot Priority

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

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

☞ First / Second / Third Boot Device

⏩ Floppy	Select your boot device priority by Floppy.
⏩ LS120	Select your boot device priority by LS120.
⏩ Hard Disk	Select your boot device priority by Hard Disk.
⏩ CDROM	Select your boot device priority by CDROM.
⏩ ZIP	Select your boot device priority by ZIP.
⏩ USB-FDD	Select your boot device priority by USB-FDD.
⏩ USB-ZIP	Select your boot device priority by USB-ZIP.
⏩ USB-CDROM	Select your boot device priority by USB-CDROM.
⏩ USB-HDD	Select your boot device priority by USB-HDD.
⏩ LAN	Select your boot device priority by LAN.
⏩ Disabled	Disable this function.

☞ Password Check

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

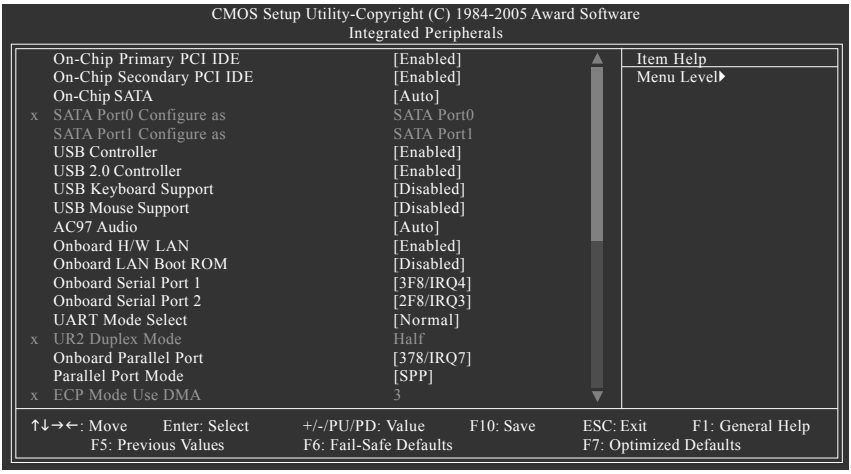
☞ CPU Hyper-Threading

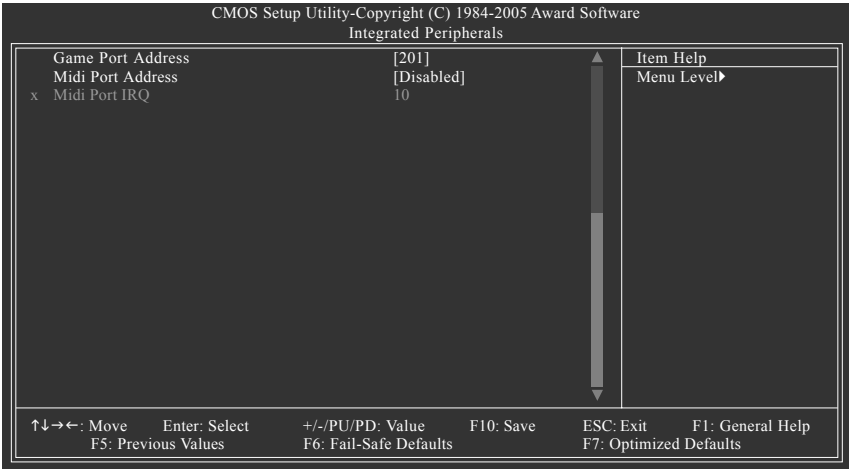
⏩ Enabled	Enables CPU Hyper Threading Feature. Please note that this feature is only working for operating system with multi processors mode supported. (Default value)
⏩ Disabled	Disables CPU Hyper Threading.

☞ Limit CPUID Max. to 3

⏩ Enabled	Limit CPUID Maximum value to 3 when use older OS like NT4.
⏩ Disabled	Disables CPUID Limit for windows XP. (Default value)

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.

☞ On-chip SATA

- ⏩ Disabled — Disable SATA controller.
- ⏩ Auto — When there is no device to be plugged in IDE1 or IDE2, SATA controller will remap to IDE controller. (Default Value)
- ⏩ Manual — Set SATA Mode manually.

☞ SATA Port0 Configure as

This item will available when "On-chip SATA" set at "Manual".

- ⏩ IDE Pri. Master — Remap SATA Port 0 to IDE Pri. Master.
- ⏩ IDE Pri. Slave — Remap SATA Port 0 to IDE Pri. Slave.
- ⏩ IDE Sec. Master — Remap SATA Port 0 to IDE Sec. Master.
- ⏩ IDE Sec. Slave — Remap SATA Port 0 to IDE Sec. Slave.
- ⏩ SATA Port0 — SATA controller set to SATA port0. As this mode, it support by WinXP or later OS only. (Default value)
- ⏩ SATA Port1 — SATA controller set to SATA port1. As this mode, it support by WinXP or later OS only.

☞ SATA Port1 Configure as

- ⏩ The values depend on SATA Port0.

☞ USB Controller

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

☞ USB 2.0 Controller

Disable this function if you are not using onboard USB 2.0 feature.

- ⏩ Enabled — Enable USB 2.0 Controller. (Default value)
- ⏩ Disabled — Disable USB 2.0 Controller.

☞ USB Keyboard Support

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

☞ USB Mouse Support

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

☞ AC97 Audio

⏩ Auto	Auto detect AC'97 audio function. (Default Value)
⏩ Disabled	Disable AC'97 audio function.

☞ Onboard H/W LAN

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

☞ Onboard LAN Boot ROM

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

⏩ Enabled	Enable this function.
⏩ Disabled	Disable this function. (Default value)

☞ Onboard Serial Port 1

⏩ Auto	BIOS will automatically setup the port 1 address.
⏩ 3F8/IRQ4	Enable onboard Serial port 1 and address is 3F8/IRQ4. (Default value)
⏩ 2F8/IRQ3	Enable onboard Serial port 1 and address is 2F8/IRQ3.
⏩ 3E8/IRQ4	Enable onboard Serial port 1 and address is 3E8/IRQ4.
⏩ 2E8/IRQ3	Enable onboard Serial port 1 and address is 2E8/IRQ3.
⏩ Disabled	Disable onboard Serial port 1.

☞ Onboard Serial Port 2

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

☞ UART Mode Select

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

- ⏩ Normal — Set onboard I/O chip UART to Normal Mode. (Default Value)
- ⏩ IrDA — Set onboard I/O chip UART to IrDA Mode.
- ⏩ ASKIR — Set onboard I/O chip UART to ASKIR Mode.
- ⏩ SCR — Set onboard I/O chip UART to SCR Interface.

☞ UR2 Duplex Mode

This feature allows you to seclect IR mode.

This function will available when "UART Mode Select" doesn't set at Normal/SCR.

- ⏩ Half — IR Function Duplex Half. (Default Value)
- ⏩ Full — IR Function Duplex Full.

☞ Onboard Parallel port

This feature allows you to select from a given set of parameters if the parallel port uses the onboard I/O controller.

- ⏩ 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

This feature allows you to connect with an advanced printer via the port mode it supports.

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

☞ ECP Mode Use DMA

This feature allows you to select Direct Memory Access(DMA) channel if the ECP mode selected.

This function will available when "Parallel Port Mode" set at 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

⏩ 201	Set Game Port Address to 201. (Default Value)
⏩ 209	Set Game Port Address to 209.
⏩ Disabled	Disable this function.

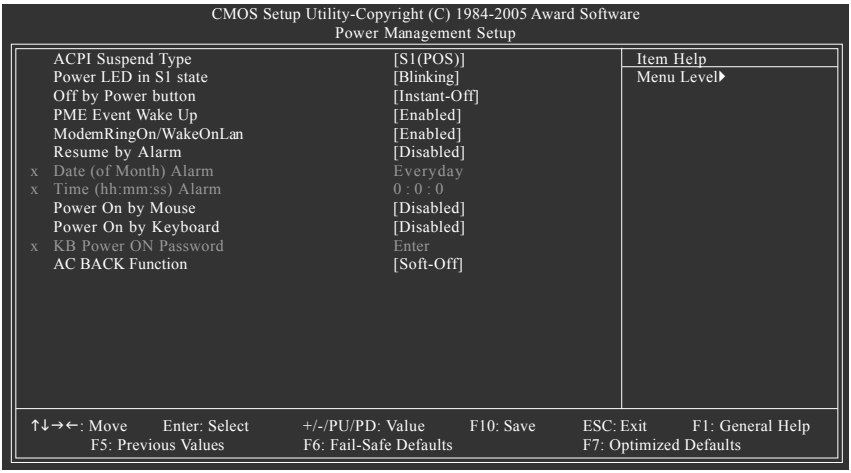
☞ Midi Port Address

⏩ 300	Set Midi Port Address to 300.
⏩ 330	Set Midi Port Address to 330.
⏩ Disabled	Disable this function. (Default Value)

☞ Midi Port IRQ

⏩ 5	Set Midi Port IRQ to 5.
⏩ 10	Set Midi Port IRQ to 10. (Default Value)

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).

☞ Power LED in S1 state

- ⏩ Blinking In standby mode(S1), power LED will blink. (Default Value)
- ⏩ Dual/OFF In standby mode(S1):

  a. If use single color LED, power LED will turn off.

  b. If use dual color LED, power LED will turn to another color.

☞ Off by Power button

- ⏩ 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

An incoming call via modem can awake the system from any suspend state or an input signal comes from the other client server on the LAN can awake the system from any suspend state.

⏩ Disabled — Disable Modem Ring on/wake on Lan function.

⏩ Enabled — Enable Modem Ring on/wake on Lan. (Default Value)

☞ Resume by Alarm

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

⏩ Disabled — Disable this function. (Default Value)

⏩ Enabled — Enable alarm function to POWER ON system.

If RTC Alarm Lead To Power On is Enabled.

Date (of Month) Alarm : Everyday, 1~31

Time (hh: mm: ss) Alarm : (0~23) : (0~59) : (0~59)

☞ Power On By Mouse

⏩ Disabled — Disable this function. (Default value)

⏩ Mouse Click — Double click on PS/2 mouse left button to power on the system.

☞ Power On By Keyboard

This feature allows you to set the method for powering-on the system.

The option "Password" allows you to set up to 5 alphanumeric characters to power-on the system.

The option "Keyboard 98" allows you to use the standard keyboard 98 to power on the system.

⏩ Password — Enter from 1 to 5 characters to set the Keyboard Power On Password.

⏩ Disabled — Disabled this function. (Default value)

⏩ Keyboard 98 — If your keyboard have "POWER Key" button, you can press the key to power on the system.

☞ KB Power ON Password

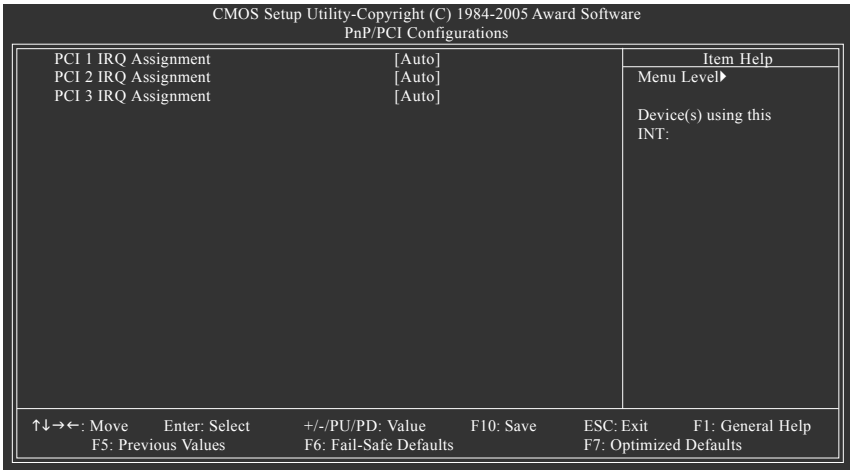
When "Power On by Keyboard" set at Password, you can set the password here.

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

☞ AC BACK Function

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

PnP/PCI Configurations



☞ PCI 1 IRQ Assignment

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

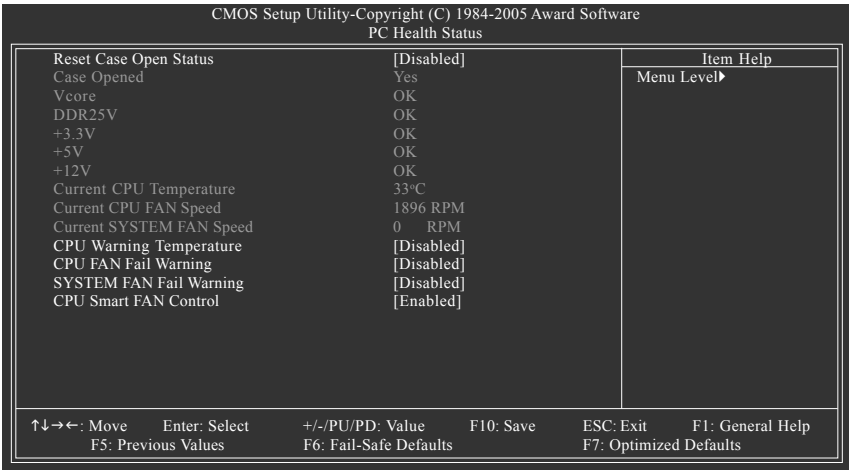
☞ PCI 2 IRQ Assignment

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

☞ PCI 3 IRQ Assignment

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

PC Health Status



☞ Reset Case Open Status

⏩ Disabled Don't reset case open status. (Default value)

⏩ Enabled Clear case open status at next boot.

☞ Case Opened

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

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

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

☞ Current Voltage (V) Vcore / DDR25V / +3.3V / +5V / +12V

⏩ Detect system's voltage status automatically.

☞ Current CPU Temperature

⏩ Detect CPU Temp. automatically.

☞ Current CPU/SYSTEM FAN Speed (RPM)

⏩ Detect CPU/SYSTEM Fan speed status automatically.

☞ CPU Warning Temperature

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

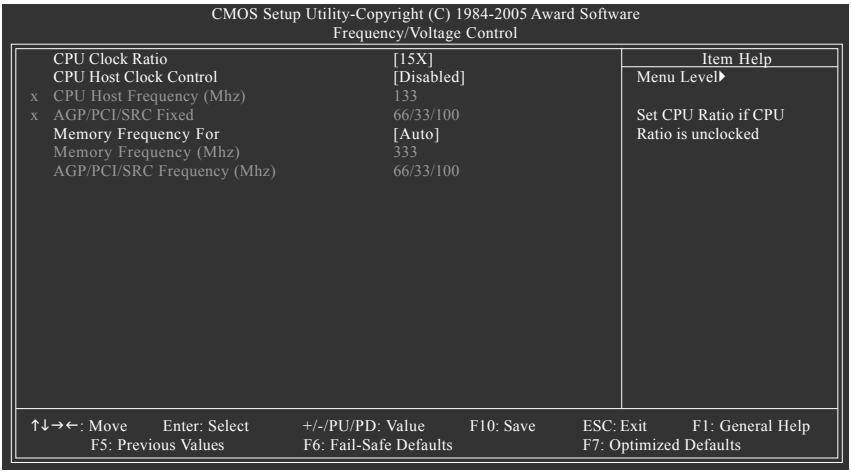
☞ CPU/SYSTEM FAN Fail Warning

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

☞ CPU Smart FAN Control

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

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 automatically assign by CPU detection.

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

☞ CPU Host Clock Control

⏩ 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.

If you use a 400Mhz FSB processor, please set CPU Host Frequency to 100Mhz.
If you use a 533Mhz FSB processor, please set CPU Host Frequency to 133Mhz.
If you use an 800Mhz FSB processor, please set CPU Host Frequency to 200Mhz.

☞ AGP/PCI/SRC Fixed

⏩ Adjust AGP/PCI/SRC clock asynchronous with CPU.

☞ Memory Frequency For

Wrong frequency may make system can't boot, clear CMOS to overcome wrong frequency issue.

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)

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

⏩ 2.0 Memory Frequency = Host clock X 2.0.

⏩ 1.6 Memory Frequency = Host clock X 1.6.

⏩ 1.33 Memory Frequency = Host clock X 1.33.

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

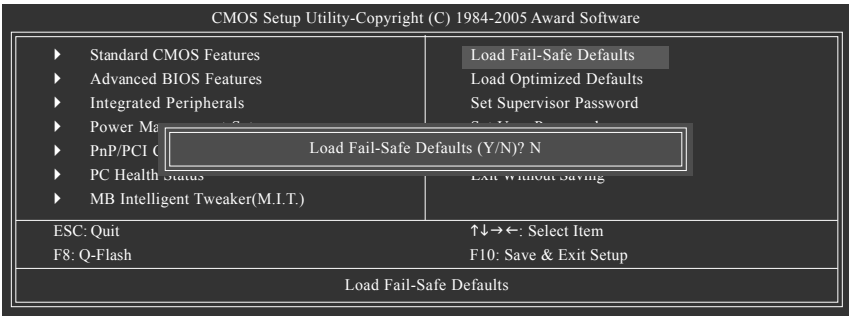
☞ Memory Frequency (Mhz)

⏩ The values depend on **CPU Host Frequency(Mhz)** and **Memory Frequency For**.

☞ AGP/PCI/SRC Frequency (Mhz)

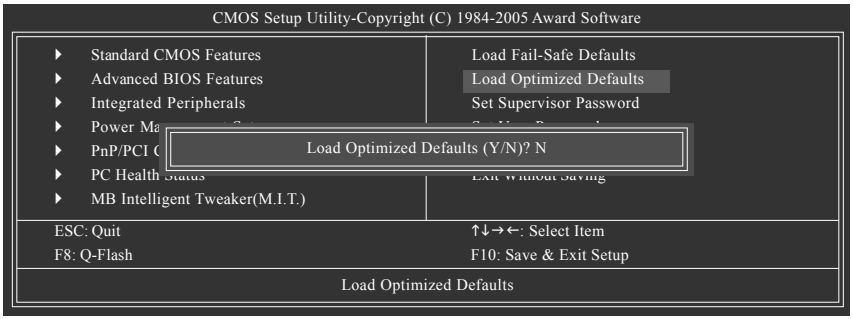
⏩ The values depend on **AGP/PCI/SRC Fixed** item.

Load Fail-Safe Defaults



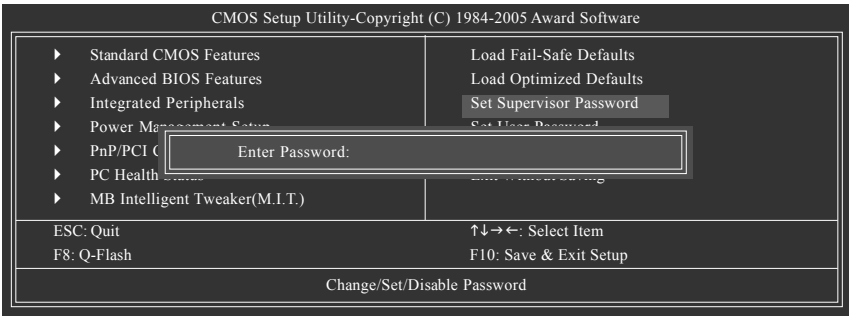
Fail-Safe defaults contain the most appropriate values of the system parameters that allow minimum system performance.

Load Optimized Defaults



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

Set Supervisor/User Password



When you select this function, the following message will appear at the center of the screen to assist you in creating a password.Type the password, up to eight characters, and press <Enter>. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

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

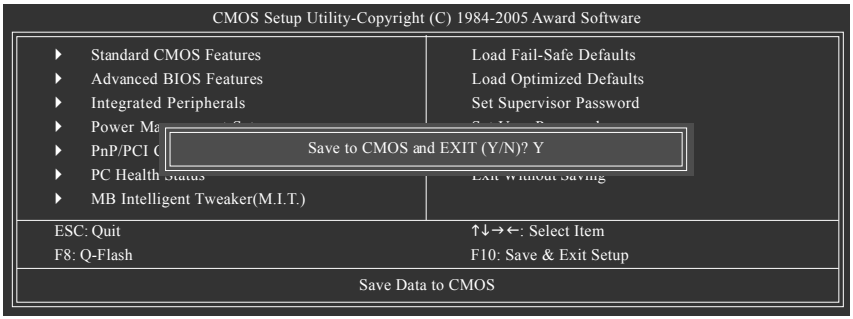
The BIOS Setup program allows you to specify two separate passwords:

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

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

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

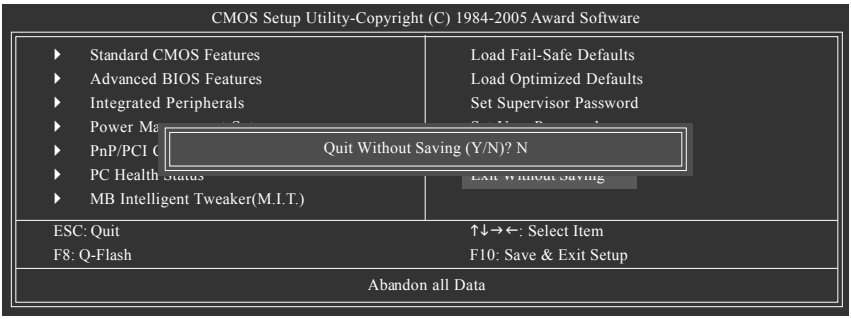
Save & Exit Setup



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

Type "N" will return to Setup Utility.

Exit Without Saving



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

Type "N" will return to Setup Utility.

Chapter 4 Technical Reference

@BIOS™ Introduction

Gigabyte announces @BIOS™
Windows BIOS live update utility

Have you ever updated BIOS by yourself? Or like many other people, you just know what BIOS is, but always hesitate to update it? Because you think updating newest BIOS is unnecessary and actually you don't know how to update it.

Maybe not like others, you are very experienced in BIOS updating and spend quite a lot of time to do it. But of course you don't like to do it too much. First, download different BIOS from website and then switch the operating system to DOS mode. Secondly, use different flash utility to update BIOS. The above process is not a interesting job. Besides, always be carefully to store the BIOS source code correctly in your disks as if you update the wrong BIOS, it will be a nightmare.

Certainly, you wonder why motherboard vendors could not just do something right to save your time and effort and save you from the lousy BIOS updating work? Here it comes! Now Gigabyte announces @BIOS—the first Windows BIOS live update utility. This is a smart BIOS update software. It could help you to download the BIOS from internetand update it. Not like the other BIOS update software, it's a Windows utility. With the help of "@BIOS", BIOS updating is no more than a click.

Besides, no matter which mainboard you are using, if it's a Gigabyte's product*, @BIOS help you to maintain the BIOS. This utility could detect your correct mainboard model and help you to choose the BIOS accordingly. It then downloads the BIOS from the nearest Gigabyte ftp site automatically. There are several different choices; you could use "Internet Update" to download and update your BIOS directly. Or you may want to keep a backup for your current BIOS, just choose "Save Current BIOS" to save it first. You make a wise choice to use Gigabyte, and @BIOS update your BIOS smartly. You are now worry free from updating wrong BIOS, and capable to maintain and manage your BIOS easily. Again, Gigabyte's innovative product erects a milestone in mainboard industries.

For such a wonderful software, how much it costs? Impossible! It's free! Now, if you buy a Gigabyte's motherboard, you could find this amazing software in the attached driver CD. But please remember, connected to internet at first, then you could have a internet BIOS update from your Gigabyte @BIOS.

EasyTune™ 5 Introduction

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

User Interface Overview

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

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

Flash BIOS Method Introduction

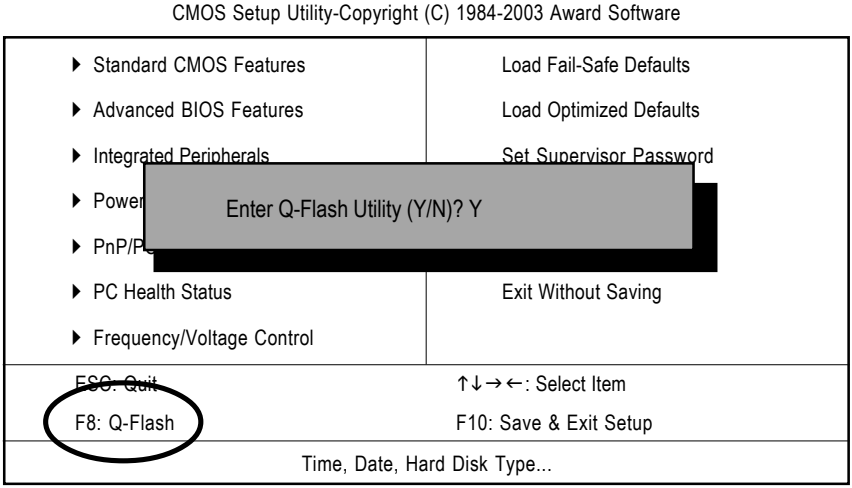
Method 1 : Q-Flash

A. What is Q-Flash Utility?

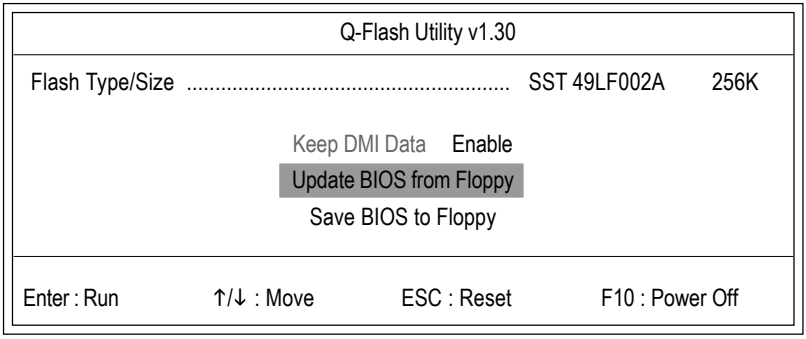
Q-Flash utility is a pre-O.S. BIOS flash utility enables users to update its BIOS within BIOS mode, no more fooling around any OS.

B. How to use Q-Flash?

a. After power on the computer, pressing <Del> immediately during POST (Power On Self Test) it will allow you to enter AWARD BIOS CMOS SETUP, then press <F8> to enter Q-Flash utility.

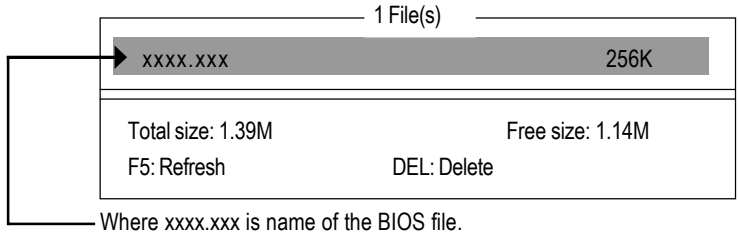


b. Q-Flash Utility

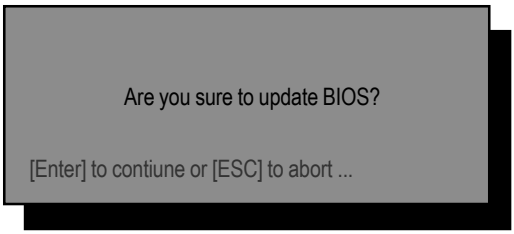


Load BIOS From Floppy

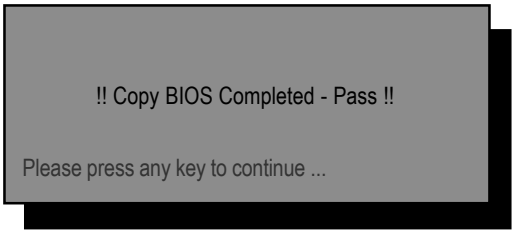
✎In the A:drive, insert the "BIOS" diskette, then Press Enter to Run.



✎ Press Enter to Run.



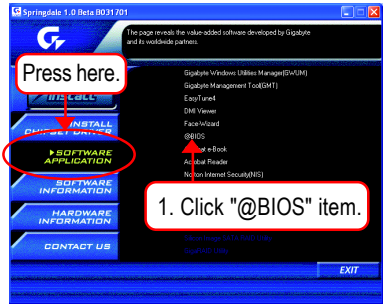
✎ Press Enter to Run.



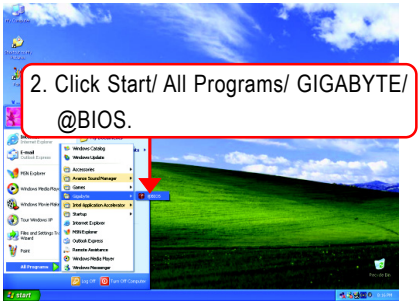
Congratulation! You have completed the flashed and now can restart system.

Method 2 : @BIOS Utility

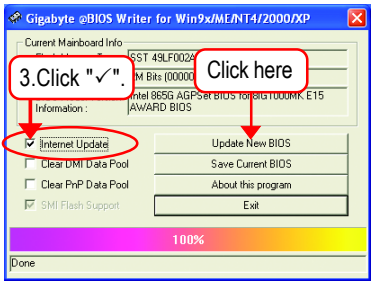
If you don't have DOS boot disk, we recommend that you used Gigabyte @BIOS™ program to flash BIOS.



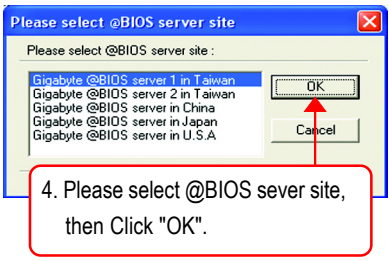
(1)



(2)



(3)



(4)

Methods and steps:

I. Update BIOS through Internet

a. Click "Internet Update" icon
b. Click "Update New BIOS" icon
c. Select @BIOS™ sever
d. Select the exact model name on your motherboard.
e. System will automatically download and update the BIOS.

II. Update BIOS NOT through Internet:

a. Do not click "Internet Update" icon
b. Click "Update New BIOS"
c. Please select "All Files" in dialog box while opening the old file.
d. Please search for BIOS unzip file, downloading from internet or any other methods (such as: IPE1000MK.G2).
e. Complete update process following the instruction.

III. Save BIOS

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

IV. Check out supported motherboard and Flash ROM:

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

Note:

a. 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.
b. 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.
c. 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.
d. Please note that any interruption during updating will cause system unbooted

2- / 4- / 6-Channel Audio Function Introuction

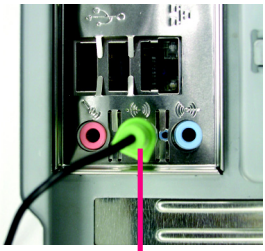
The installation of Windows 98SE/2K/ME/XP is very simple. Please follow next step to install the function!

Stereo Speakers Connection and Settings:

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

STEP 1:

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

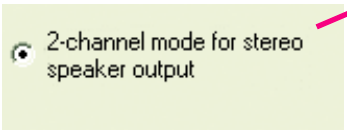


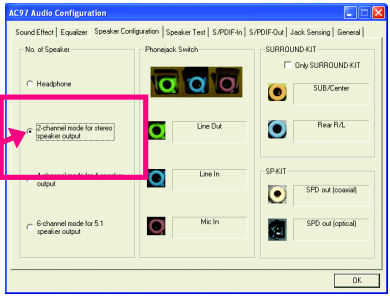
STEP 2 :

After installation of the audio driver, you'll find an  icon on the taskbar's status area. Click the audio icon "Sound Effect" from the windows tray at the bottom of the screen.

STEP 3:

Select "Speaker Configuration", and choose the "2 channels for stereo speakers out put".

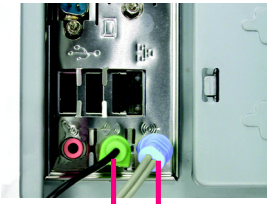




4 Channel Analog Audio Output Mode

STEP 1 :

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



STEP 2 :

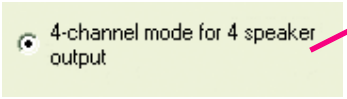
After installation of the audio driver, you'll find an icon on the taskbar's status area. Click the audio icon "Sound Effect" from the windows tray at the bottom of the screen.

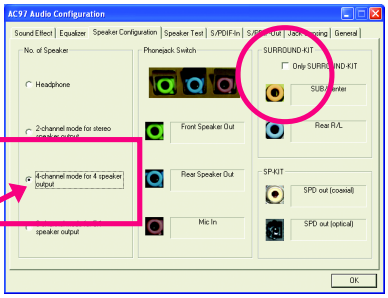
STEP 3 :

Select "Speaker Configuration", and choose the "4 channels for 4 speakers out put".

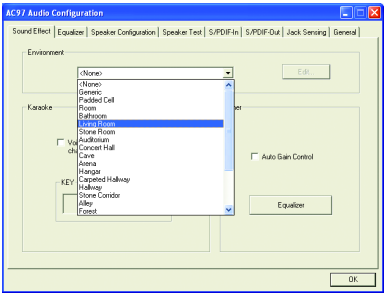
Disable "Only SURROUND-KIT",

and press "OK".





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

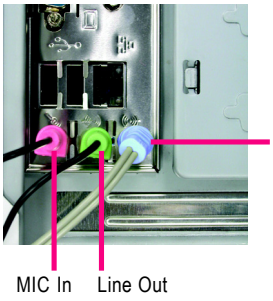


Basic 6 Channel Analog Audio Output Mode

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".



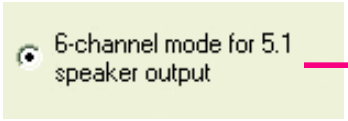
STEP 2 :

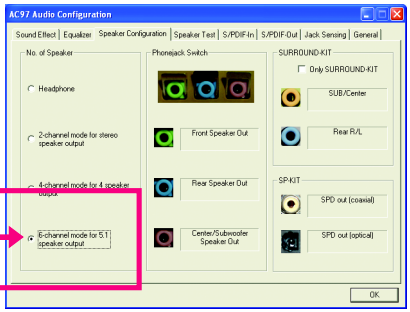
After installation of the audio driver, you'll find an icon on the taskbar's status area. Click the audio icon "Sound Effect" from the windows tray at the bottom of the screen.

STEP 3 :

Select "Speaker Configuration", and choose the "6 channels for 5.1 speakers out put".

Disable "Only SURROUND-KIT" and pess "OK".

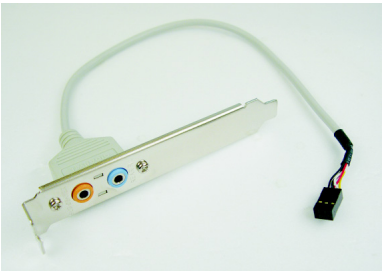




Advanced 6 Channel Analog Audio Output Mode (using SURROUND-KIT, Optional Device):

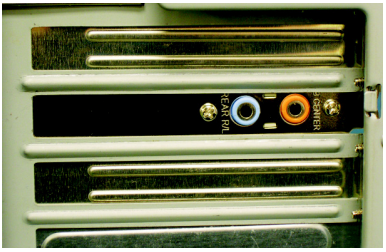
(SURROUND-KIT provides Rear R/L and Center/subwoofer)

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.



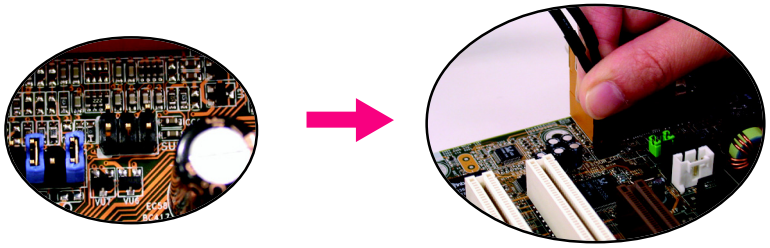
STEP 1 :

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



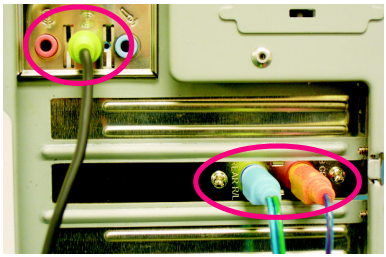
STEP 2 :

Connect the "SURROUND-KIT" to SUR_CEN on the motherboard.



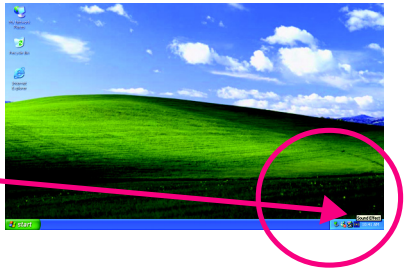
STEP 3 :

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 :

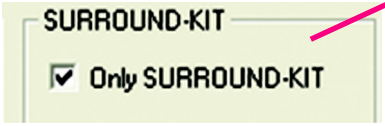
Click the audio icon "Sound Effect" from the windows tray at the bottom of the screen.

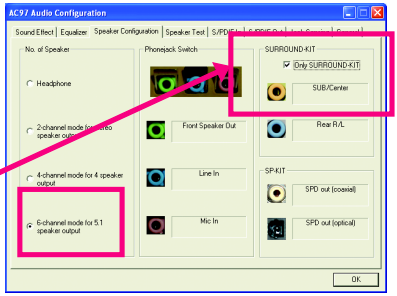


STEP 5 :

Select "Speaker Configuration", and choose the "6 channels for 5.1 speakers out put".

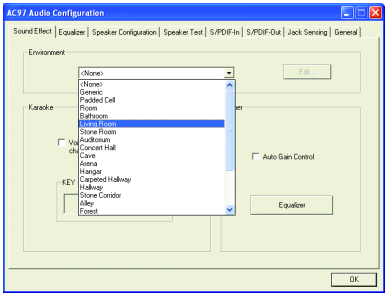
Enable "Only SURROUND-KIT" and press "OK".





Basic & Advanced 6 Channel Analog Audio Output Mode Notes:

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



Xpress Recovery2 Introduction

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

System requirements:

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

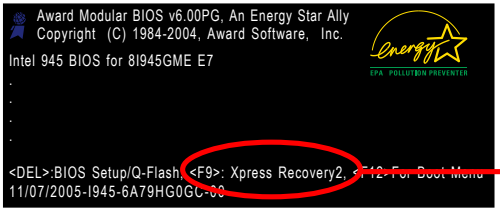
How to use the Xpress Recovery2

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

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

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

Boot from CD/DVD:



<F9> Xpress Recovery2

NOTE

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

The Main Screen of Xpress Recovery2

1. RESTORE:

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

2. BACKUP:

Back up data from hard disk.

3. REMOVE:

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

4. REBOOT:

Exit the main screen and restart the system.

Limitations:

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

Hard disks detection sequence is as follows:

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

Precautions:

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

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

Chapter 5 Appendix

Install Drivers

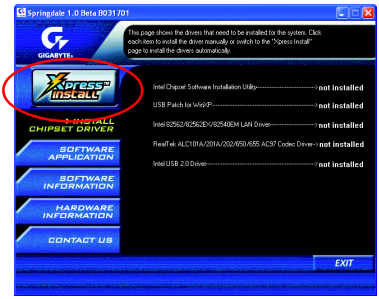
NOTE

Pictures below are shown in Windows XP

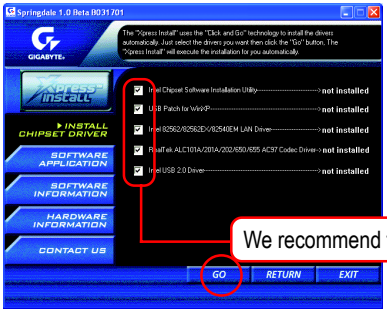
Insert the driver CD-title that came with your motherboard into your CD-ROM drive, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

INSTALL CHIPSET DRIVER

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

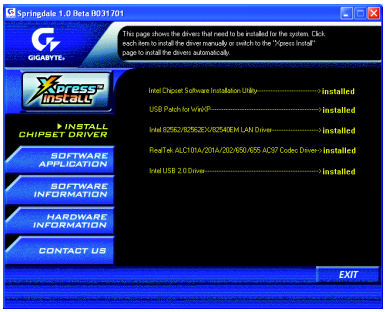


The "Xpress Install" uses the"Click and Forget" technology to install the drivers automatically. Just select the drivers you want then click the "GO" button. The Xpress Install will finish the installation for you automatically.



NOTE

Massage: Some device drivers will restart your system automatically. After restarting your system the "Xpress Install" will continue to install other drivers.



NOTE

Driver installation finished !

You have to reboot system !

Item Description

- Intel Chipset Software Installation Utility

  Tell the operating system how the chipset components will be configured.
- USB Patch for WinXP

  This patch driver can help you to resolve the USB device wake up S3 hang up issue in XP.
- Intel 82562 LAN Driver

  For Intel® 10/100 Ethernet connections
- RealTek ALC655 AC97 Codec Driver

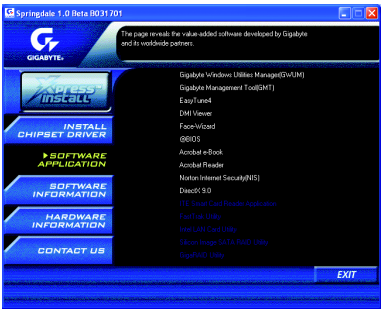
  For Intel® ICH4 AC97 audio
- Intel USB 2.0 Driver

  It is recommended that you use the Microsoft Windows update for the most updated driver for XP/2K

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).

SOFTWARE APPLICATION

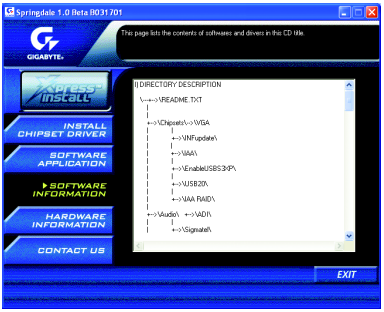
This page reveals the value-added software developed by Gigabyte and its worldwide partners.



- Gigabyte Windows Utilities Manager (GWUM)
  This utility can integrate the Gigabyte's applications in the system tray
- Gigabyte Management Tool (GMT)
  A useful tool which can manage the computer via the network
- EasyTune
  Powerful utility that integrates the overclocking and hardware monitoring functions
- DMI Viewer
  Windows based utility which is used to browse the DMI/SMBIOS information of the system
- Face-Wizard
  New utility for adding BIOS logo
- @BIOS
  Gigabyte windows flash BIOS utility
- Acrobat e-Book
  Useful utility from Adobe
- Acrobat Reader
  Popular utility from Adobe for reading .PDF file format documents
- Norton Internet Security (NIS)
  Integrated utility which includes anti-virus, ads, etc.
- DirectX 9.0
  Install Microsoft DirectX 9 to enable 3D hardware acceleration that support for operating system to achieve better 3D performence.

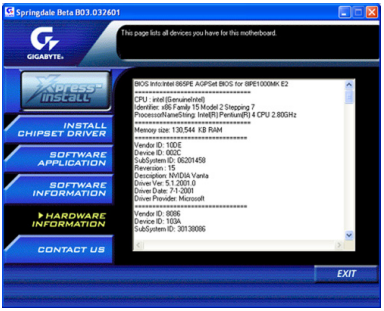
SOFTWARE INFORMATION

This page list the contects of softwares and drivers in this CD title.



HARDWARE INFORMATION

This page lists all device you have for this motherboard.



CONTACT US

Please see the last page for details.

FAQ

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

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

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

Question 3: How do I clear CMOS?
Answer: If your board has a Clear CMOS jumper, please refer to the Clear CMOS steps in the manual. If your board doesn't have such jumper, you can take off the on-board battery to leak voltage to clear CMOS. Please refer to the steps below:

Steps:

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

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

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

→AMI BIOS Beep Codes

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

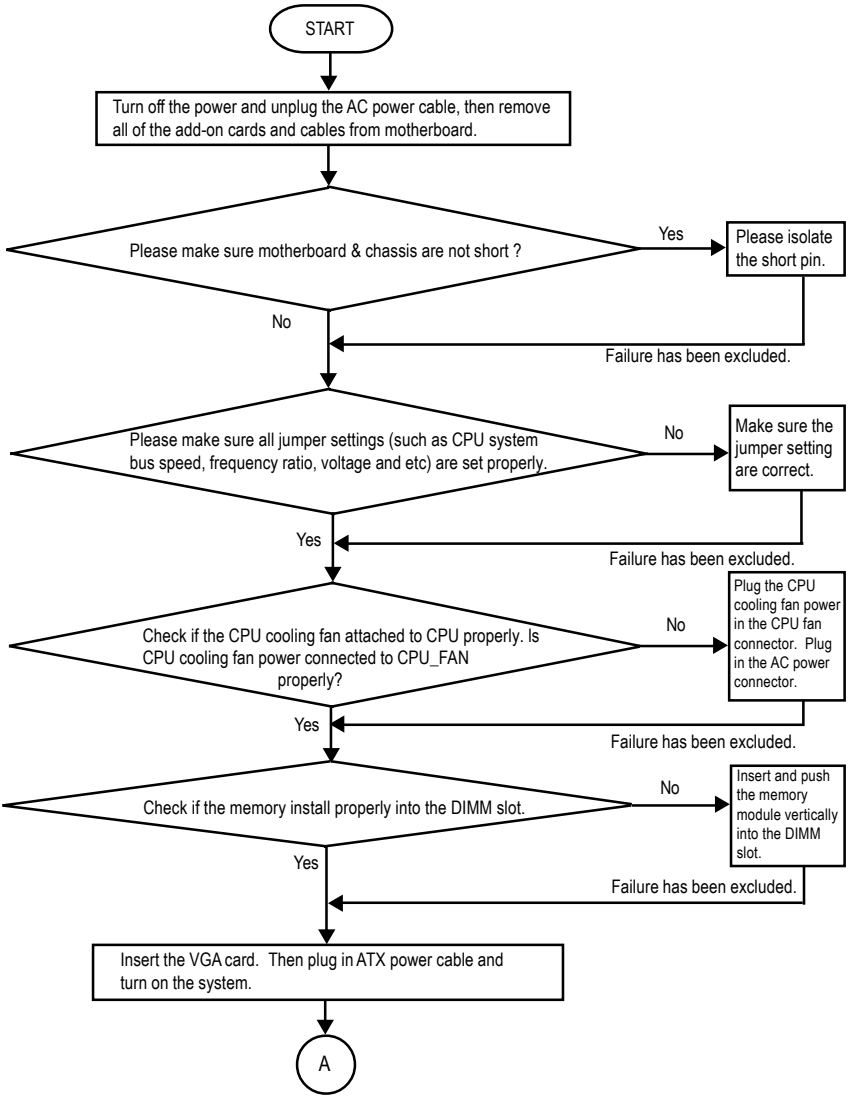
1 beep Refresh failure
2 beeps Parity error
3 beeps Base 64K memory failure
4 beeps Timer not operational
5 beeps Processor error
6 beeps 8042 - gate A20 failure
7 beeps Processor exception interrupt error
8 beeps Display memory read/write failure
9 beeps ROM checksum error
10 beeps CMOS shutdown register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

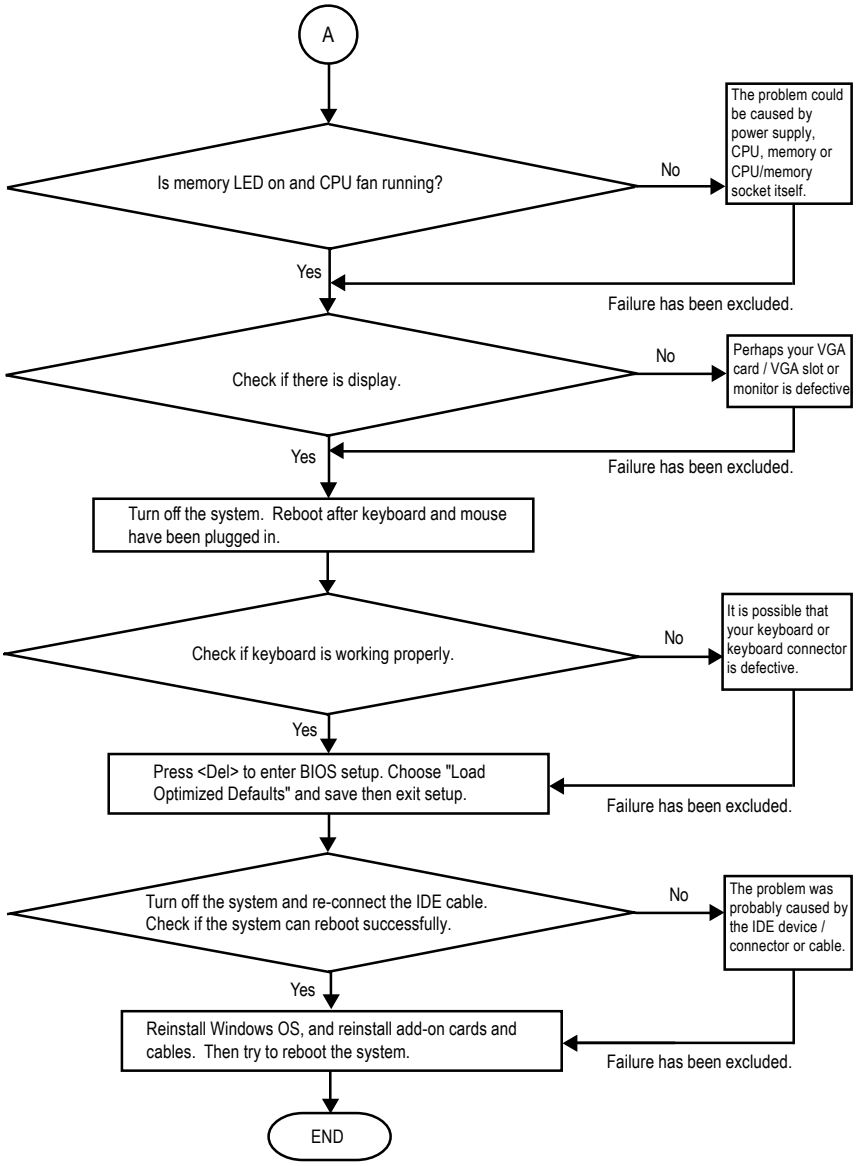
→ AWARD BIOS Beep Codes

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

Troubleshooting

If you encounter any trouble during boot up, please follow the troubleshooting procedures.





If the above procedure unable to solve your problem, please contact with your local retailer or national distributor for help. Or, you could submit your question to the service mail via Gigabyte website technical support zone (http://www.gigabyte.com.tw). The appropriate response will be provided ASAP.

Technical Support/RMA Sheet

Customer/Country:	Company:	Phone No.:
Contact Person:	E-mail Add. :	

Model name/Lot Number:	PCB revision:
BIOS version:	O.S./A.S.:

Hardware Configuration	Mfs.	Model name	Size:	Driver/Utility:
CPU				
Memory Brand				
Video Card				
Audio Card				
HDD				
CD-ROM / DVD-ROM				
Modem				
Network				
AMR / CNR				
Keyboard				
Mouse				
Power supply				
Other Device				

Problem Description:

Acronyms

Acronyms	Meaning
ACPI	Advanced Configuration and Power Interface
APM	Advanced Power Management
AGP	Accelerated Graphics Port
AMR	Audio Modem Riser
ACR	Advanced Communications Riser
BIOS	Basic Input / Output System
CPU	Central Processing Unit
CMOS	Complementary Metal Oxide Semiconductor
CRIMM	Continuity RIMM
CNR	Communication and Networking Riser
DMA	Direct Memory Access
DMI	Desktop Management Interface
DIMM	Dual Inline Memory Module
DRM	Dual Retention Mechanism
DRAM	Dynamic Random Access Memory
DDR	Double Data Rate
ECP	Extended Capabilities Port
ESCD	Extended System Configuration Data
ECC	Error Checking and Correcting
EMC	Electromagnetic Compatibility
EPP	Enhanced Parallel Port
ESD	Electrostatic Discharge
FDD	Floppy Disk Device
FSB	Front Side Bus
HDD	Hard Disk Device
IDE	Integrated Dual Channel Enhanced
IRQ	Interrupt Request

to be continued.....

Acronyms	Meaning
IOAPIC	Input Output Advanced Programmable Input Controller
ISA	Industry Standard Architecture
LAN	Local Area Network
I/O	Input / Output
LBA	Logical Block Addressing
LED	Light Emitting Diode
MHz	Megahertz
MIDI	Musical Instrument Digital Interface
MTH	Memory Translator Hub
MPT	Memory Protocol Translator
NIC	Network Interface Card
OS	Operating System
OEM	Original Equipment Manufacturer
PAC	PCI A.G.P. Controller
POST	Power-On Self Test
PCI	Peripheral Component Interconnect
RIMM	Rambus in-line Memory Module
SCI	Special Circumstance Instructions
SECC	Single Edge Contact Cartridge
SRAM	Static Random Access Memory

Contact Us

- **Taiwan (Headquarters)**

GIGA-BYTE TECHNOLOGY CO., LTD.
Address: No.6, Bau Chiang Road, Hsin-Tien, Taipei 231, Taiwan
TEL: +886-2-8912-4888
FAX: +886-2-8912-4003
Tech. Support :
http://tw.giga-byte.com/TechSupport/ServiceCenter.htm
Non-Tech. Support(Sales/Marketing) :
http://ggts.gigabyte.com.tw/nontech.asp
WEB address (English): http://www.gigabyte.com.tw
WEB address (Chinese): http://chinese.giga-byte.com

- **U.S.A.**

G.B.T. INC.
TEL: +1-626-854-9338
FAX: +1-626-854-9339
Tech. Support :
http://tw.giga-byte.com/TechSupport/ServiceCenter.htm
Non-Tech. Support(Sales/Marketing) :
http://ggts.gigabyte.com.tw/nontech.asp
WEB address : http://www.giga-byte.com

- **Germany**

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

- **Japan**

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

- **Singapore**

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

- **U.K.**

G.B.T. TECH. CO., LTD.
Tech. Support :
http://tw.giga-byte.com/TechSupport/ServiceCenter.htm
Non-Tech. Support(Sales/Marketing) :
http://ggts.gigabyte.com.tw/nontech.asp
WEB address : http://uk.giga-byte.com

- **The Netherlands**

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

- **China**

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Tech. Support :
http://tw.giga-byte.com/TechSupport/ServiceCenter.htm
Non-Tech. Support(Sales/Marketing) :
http://ggts.gigabyte.com.tw/nontech.asp
WEB address : http://www.gigabyte.com.cn

Shanghai
TEL: +86-021-63410999
FAX: +86-021-63410100

Beijing
TEL: +86-10-62102838
FAX: +86-10-62102848

Wuhan
TEL: +86-27-87851061
FAX: +86-27-87851330

GuangZhou
TEL: +86-20-87586074
FAX: +86-20-85517843

Chengdu
TEL: +86-28-85236930
FAX: +86-28-85256822

Xian
TEL: +86-29-85531943
FAX: +86-29-85539821

Shenyang
TEL: +86-24-23960918
FAX: +86-24-23960918-809

- **Australia**

GIGABYTE TECHNOLOGY PTY. LTD.
Tech. Support :
http://tw.giga-byte.com/TechSupport/ServiceCenter.htm
Non-Tech. Support(Sales/Marketing) :
http://ggts.gigabyte.com.tw/nontech.asp
WEB address : http://www.giga-byte.com.au

- **France**

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

- **Russia**

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

- **Poland**

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

- **Serbia & Montenegro**

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

- **Czech Republic**

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Tech. Support :
http://tw.giga-byte.com/TechSupport/ServiceCenter.htm
Non-Tech. Support(Sales/Marketing) :
http://ggts.gigabyte.com.tw/nontech.asp
WEB address: http://www.gigabyte.cz

- **Romania**

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