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

AGP 2X notch   AGP 4X notch

Caution: AGP 2X(3.3V) card is not supported by Intel® 845 (E/G)/ Intel® 850(E) . You might experience system unable to boot up normally. Please insert an AGP 4X(1.5V) 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(1.5V) mode by adjusting the jumper. The factory default for this card is 2X(3.3V). The GA-8IE800 (or any AGP 4X only) motherboards might not function properly, if you install this card without switching the jumper to 4X(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/4X mode AGP slot, but they support 2X(3.3V) only.The GA-8IE800 (or any AGP 4X 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(E/G) / 850(E) 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 theirrespective owners.
- Please do not remove any labels on motherboard, thismay 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- Due to rapid change in technology, some of the specifications might be out of date before publication of this booklet.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 Wärmeableiter 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 Träding GMbH
Ausschlager Weg 41, 1F, 20537 Hamburg, Germany

declare that the product

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

Mother Board

GA-8IE800

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* ☒ EN 60555-2	Disturbances in supply systems cause by household appliances and similar electrical equipment "Harmonics"
☐ EN 55013	Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment	☐ EN 61000-3-3* ☒ EN 60555-3	Disturbances in supply systems cause by household appliances and similar electrical equipment "Voltage fluctuations"
☐ EN 55014	Limits and methods of measurement of radio disturbance characteristics of household electrical appliances, portable tools and similar electrical apparatus	☒ EN 50081-1	Generic emission standard Part 1: Residual commercial and light industry
		☒ EN 50082-1	Generic immunity standard Part 1: Residual commercial and light industry
☐ EN 55015	Limits and methods of measurement of radio disturbance characteristics of fluorescent lamps and luminaries	☐ EN 55081-2	Generic emission standard Part 2: Industrial environment
☐ EN 55020	Immunity from radio interference of broadcast receivers and associated equipment	☐ EN 55082-2	Generic emission standard Part 2: Industrial environment
☒ EN 55022	Limits and methods of measurement of radio disturbance characteristics of information technology equipment	☐ ENV 55104	Immunity requirements for household appliances tools and similar apparatus
☐ DIN VDE 0855 ☐ part 10 ☐ part 12	Cabled distribution systems; Equipment for receiving and/or **distribution** from sound and television signals	☐ EN50091-2	EMC requirements for uninterruptible power systems (UPS)

☒ **CE marking**

CE (EC conformity marking)

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

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

Manufacturer/Importer

Date : Jan. 17, 2003

Signature: *Timmy Huang*

Name : Timmy Huang

DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2.1077(a)

Responsible PartName: **G.B.T. INC. (U.S.A.)**

Address: **17358 Railroad Street**

City of Industry, CA 91748

Phone/FaxNo: (818) 854-9338/ (818) 854-9339

hereby declares that the product

Product Name: Motherboard

Model Number:GA-8IE800

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: <u>ERIC LU</u>

Signature: *Eric Lu*

Date: <u>Jan. 17 ,2003</u>

GA-8IE800

P4 Titan Motherboard

USER'S MANUAL

Table of Content

Item Checklist

☑ The GA-8IE800 motherboard
☑ IDE cable x 2/ Floppy cable x 1
☑ CD for motherboard driver & utility (IUCD)
☑ GA-8IE800 user's manual
☐ I/O Shield
☑ Quick PC Installation Guide
☐ RAID Manual

☑ 2 Port USB Cable x 1
☐ 4 Port USB Cable x 1
☐ SPDIF KIT x 1(SPD-KIT)
☐ IEEE 1394 Cable x1
☐ Center/Subwoofer Cable x1
    (SURROUND-KIT)
☑ Motherboard Settings Label

⚠ 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 ower 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	• 29.3cm x 20.0cm ATX size form factor, 4 layers PCB.
CPU	• Socket 478 for Intel® Micro FC-PGA2 Pentium® 4 processor
	• Intel Pentium®4 533MHz/400MHz FSB
	• Support Intel ® Pentium ® 4 (Northwood, 0.13μm) processor
	• Support Intel ® Pentium ® 4 Processor with HT Technology*
	• 2nd cache depend on CPU
Chipset	• Chipset 845E HOST/AGP/Controller
	• ICH4 I/O Controller Hub
Memory	• 3 184-pin DDR DIMM sockets
	• Supports PC2100 DDR or PC1600 DDR DIMM
	• Supports up to 2GB DRAM (Max)
	• Supports only 2.5V DDR DIMM
I/O Control	• IT8712
Slots	• 1 AGP slot 4X (1.5V only) device support
	• 5 PCI slot supports 33MHz & PCI 2.2 compliant
On-Board IDE	• 2 IDE controllers on the Intel ICH4 PCI chipset provides IDE HDD/CD-ROM (IDE1, IDE2) with PIO, Bus Master (Ultra DMA33/ATA66/ATA100) operation modes.
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)
	• 6 x USB 2.0/1.1 (2 x Rear,4 xFront by cable)
	• 1 Front Audio connector
On-Board Sound	• Realtek ALC650 CODEC
	• Line Out / 2 front speaker
	• Line In / 2 rear speaker(by s/w switch)
	• Mic In / center& subwoofer(by s/w switch)
	• SPDIF out /SPDIF In
	• CD In / AUX In / Game port

to be continued......

On-Board USB 2.0	• Built in ICH4 Chipset
PS/2 Connector	• PS/2 Keyboard interface and PS/2 Mouse interace
BIOS	• Licensed AWARD BIOS, 2M bit
	• Supports Q-Flash
Hardware Monitor	• CPU/System Fan Revolution detect
	• CPU/System Fan Fail Warning
	• CPU Overheat Warning
	• System Voltage Detect
Additional Features	• PS/2 Keyboard power on by password
	• PS/2 Mouse power on
	• External Modem wake up
	• STR(Suspend-To-RAM)
	• AC Recovery
	• Poly fuse for keyboard over-current protection
	• USB KB/Mouse wake up from S3
	• Supports @BIOS
	• Supports EasyTune 4
Overclocking	• Over Clock (CPU/DDR/AGP/PCI) by BIOS
	• Over Voltage (CPU/DDR/AGP) by BIOS

"*" HT functionality requirement content :
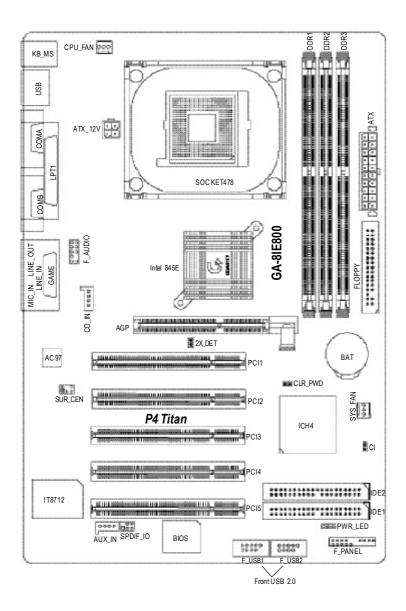
Enabling the functionality of Hyper-Threading Technology for your computer system requires all of the following platform components:

- 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

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.

GA-8IE800 Motherboard Layout

CPU_FAN

KB_MS

USB

ATX_12V

COMA

LPT1

COMB

SOCKET478

DDR1 DDR2 DDR3

ATX

FLOPPY

MIC_IN LINE_OUT
LINE_IN

F_AUDIO

GAME

Intel 845E

GA-8IE800

CD_IN

AGP

2X_DET

AC 97

PCI1

BAT

SUR_CEN

CLR_PWD

PCI2

SYS_FAN

P4 Titan

ICH4

CI

PCI3

PCI4

IDE2

IT8712

PCI5

IDE1

AUX_IN SPDIF_IO

BIOS

PWR_LED

F_PANEL

F_USB1   F_USB2

Front USB 2.0
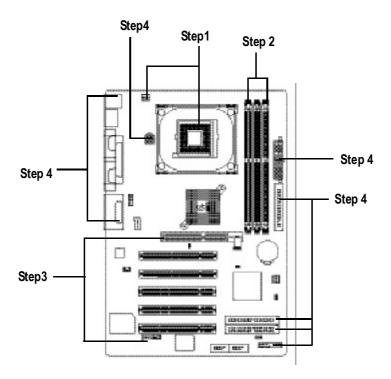
Chapter 2 Hardware Installation Process

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

Step 5- Setup BIOS software

Step 6- Install supporting software tools
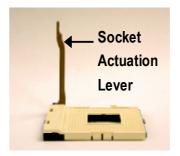
Step 1: Install the Central Processing Unit (CPU)
Step 1-1: CPU Installation

Angling the rod to 65⁰

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.

Socket Actuation Lever

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

Pin1 indicator

3. CPU Top View

Pin1 indicator
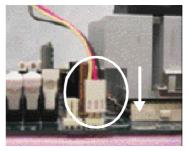
4. Locate Pin 1 in the socket and look for a (golden) cut edge on the CPU upper corner. Then insert the CPU into the socket.

- ☛ **Please make sure the CPU type is supported by the motherboard.**
- ☛ **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 1-2 : CPU Heat Sink Installation

1. Fasten the heatsink supporting-base onto the CPU socket on the mainboard.

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

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

Step 2: Install memory modules

The motherboard has 3 dual inline memory module (DIMM) sockets, but it can only support a maximum of 4 banks of DDR memory. DDR sockets 1 uses 2 banks, DDR sockets 2&3 share the remaining 2 banks. Please refer to the following tables for possible memory configurations supported. 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.

Support Unbuffered DDR DIMM Sizes type:

64 Mbit (2Mx8x4 banks)	64 Mbit (1Mx16x4 banks)	128 Mbit(4Mx8x4 banks)
128 Mbit(2Mx16x4 banks)	256 Mbit(8Mx8x4 banks)	256 Mbit(4Mx16x4 banks)
512 Mbit(16Mx8x4 banks)	512 Mbit(8Mx16x4 banks)	
Total System Memory (Max2GB)		

Install memory in any combination table:

DDR1	DDR2	DDR3
S	S	S
D	S	S
D	D	X
D	X	D
S	D	X
S	X	D

DDR

D:Double Sided DIMM S:Single Sided DIMM
X:Not Use

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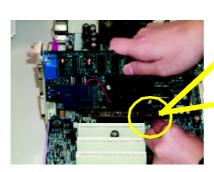
⚠ ☛ **When DIMM LED is ON, do not install/remove DIMM from socket.**
　 ☛ **Please note that the DIMM module can only fit in one direction due to the one notches. Wrong orientation will cause improper installation. Please change the insert orientation.**

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, necessary 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.

AGP Card

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

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.
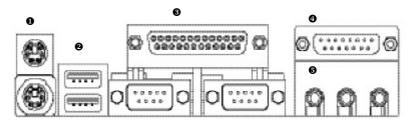
DDR Introduction

Established on the existing SDRAM industry 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.
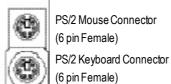
DDR memory is a sensible evolutionary solution for the PC industry that builds on the existing SDRAM infrastructure, yet makes awesome advances in solving the system performance bottle-neck by doubling the memory bandwidth. DDR SDRAM will offer a superior solution and migration path from existing SDRAM designs due to its availability, pricing and overall market support. PC2100 DDR memory (DDR266) doubles the data rate through reading and writing at both the rising and falling edge of the clock, achieving data bandwidth 2X greater than PC133 when running with the same DRAM clock frequency. With peak bandwidth of 2.664GB per second, DDR memory enables system OEMs to build high performance and low latency DRAM subsystems that are suitable for servers, workstations, high-end PC's and value desktop SMA systems. With a core voltage of only 2.5 Volts compared to conventional SDRAM's 3.3 volts, DDR memory is a compelling solution for small form factor desktops and notebook applications.

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

Step 4-1 : I/O Back Panel Introduction
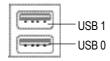
❶ PS/2 Keyboard and PS/2 Mouse Connector

PS/2 Mouse Connector
(6 pin Female)

PS/2 Keyboard Connector
(6 pin Female)
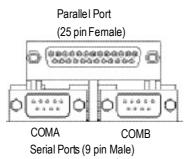
➢ This connector supports standard PS/2 keyboard and PS/2 mouse.

❷ USB Connector

USB 1
USB 0
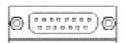
➢ Before you connect your device(s) into USB connector(s), please make sure your device(s) such as USB keyboard, mouse, scanner, zip, speaker..etc. Have a standard USB interface. Also make sure your OS supports USB controller. If your OS does not support USB controller, please contact OS vendor for possible patch or driver upgrade. For more information please contact your OS or device(s) vendors.

❸ Parallel Port ,VGA port and Serial Ports (COMA)

Parallel Port
(25 pin Female)

COMA   COMB
Serial Ports (9 pin Male)

> 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.
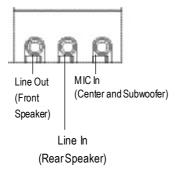
❹ Game /MIDI Ports

Joystick/ MIDI (15 pin Female)

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

❺ Audio Connectors

Line Out
(Front
Speaker)

MIC In
(Center and Subwoofer)

Line In
(Rear Speaker)

> After install onboard audio driver, you may connect speaker to Line Out jack, micro phone 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 Subwooferr" to "MIC Out ".
> **Method2:**
> You can refer to page 21, and contact your nearest dealer for optional SUR_CEN cable.
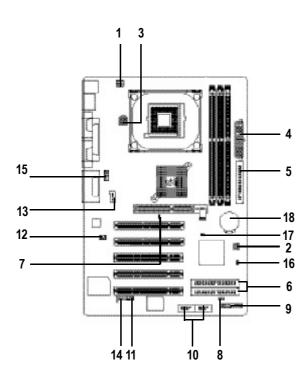
If you want the detail information for 2-/4-/6-channel audio setup installation, please refer to "2-/4-/6-Channel Audio Function Introduction"
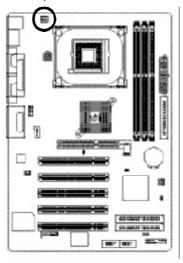
Step 4-2 :Connectors & Jumper Setting Introduction

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

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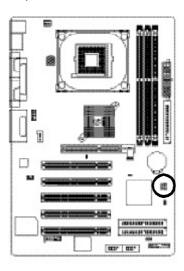
Pin No.	Definition
1	GND
2	+12V
3	Sense

2) SYS_FAN (System FAN Connector)

This connector allows you to link with the cooling fan on the system case to lower the system temperature.
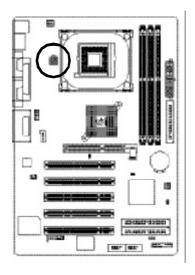
Pin No.	Definition
1	GND
2	+12V
3	Sense

3) 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.
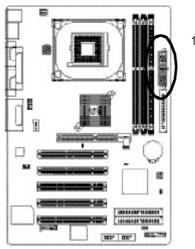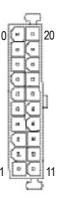
PinNo.	Definition
1	GND
2	GND
3	+12V
4	+12V

4) ATX_POWER (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.
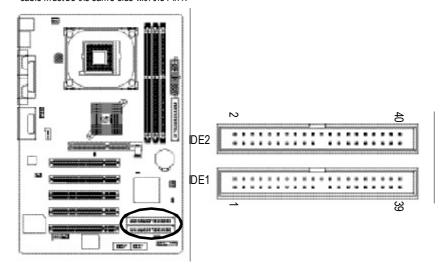
Pin No.	Definition
1	3.3V
2	3.3V
3	GND
4	VCC
5	GND
6	VCC
7	GND
8	PowerGood
9	5V SB(stand by +5V)
10	+12V
11	3.3V
12	-12V
13	GND
14	PS_ON(softOn/Off)
15	GND
16	GND
17	GND
18	-5V
19	VCC
20	VCC
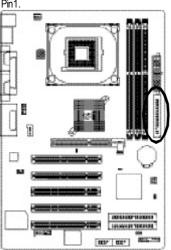
5) IDE1/ IDE2(IDE1/IDE2 Connector)
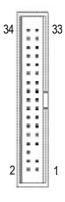
Please connect first harddisk to IDE1 and connect CDROM to IDE2. The red stripe of the ribbon cable must be the same side with the Pin1.

6) FDD (Floppy Connector)
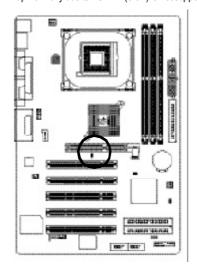
Please connect the floppy drive ribbon cables to FDD. It supports 360K,720K,1.2M,1.44M and 2.88Mbytes floppy disk types. The red stripe of the ribbon cable must be the same side with the Pin1.
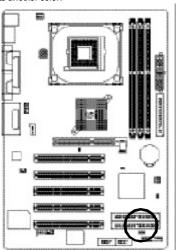
7)2X_DET

When an AGP 2X (3.3V) card is installed the 2X_DET will light up, indicating a nonsupported 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.

8) 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.
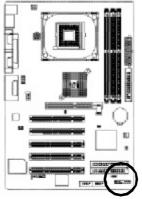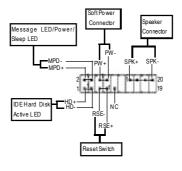
PinNo.	Definition
1	MPD+
2	MPD-
3	MPD-

9) F_PANEL (2x10 pins connector)

Please connect the power LED, PC peaker, reset switch and power switch etc of your chassis frontpanel to the F_PANEL connector according to the pin assignment above.
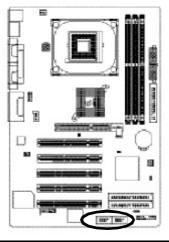
HD (IDE Hard Disk Active LED)	Pin 1: LED anode(+)
(Blue)	Pin 2: LED cathode(-)
SPK (Speaker Connector)	Pin 1: VCC(+)
(Amber)	Pin 2- Pin 3: NC
	Pin 4: Data(-)
RES (Reset Switch)	Open: Normal Operation
(Green)	Close: Reset Hardware System
PW (Soft Power Connector)	Open: Normal Operation
(Red)	Close: Power On/Off
MSG(Message LED/Power/	Pin 1: LED anode(+)
Sleep LED)(Yellow)	Pin 2: LED cathode(-)
NC(Purple)	NC

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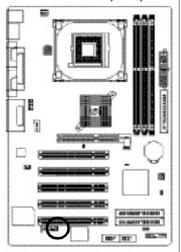
Pin No.	Definition
1	Power
2	Power
3	USB DX-
4	USB Dy-
5	USB DX+
6	USB Dy+
7	GND
8	GND
9	No Pin
10	NC

11) SPDIF_IO (SPDIF In/Out)

The SPDIF output is capable of providing digital audio to external speakers or compressed AC3 data to an external Dolby Digital Decoder. Use this feature only when your stereo system has digital input function.

Use SPDIF IN feature only when your device has digital output function.

2 6

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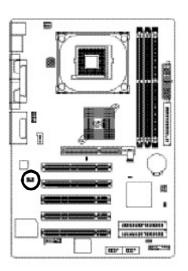
Pin No.	Definition
1	VCC
2	No Pin
3	SPDIF
4	SPDIFI
5	GND
6	GND

12) SUR_CEN

Please contact your nearest dealer for optional SUR_CEN cable.

2 6

1 5
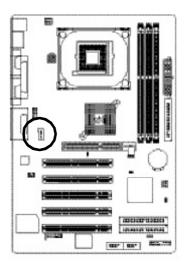
Pin No.	Definition
1	SUROUT L
2	SUROUT R
3	GND
4	No Pin
5	CENTER_OUT
6	BASS_OUT

13) CD_IN (CD IN,Blank)

Connect CD-ROM or DVD-ROM audio out to the connector.
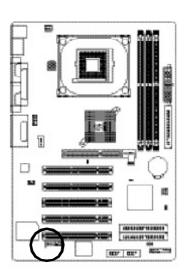
PinNo.	Definition
1	CD-L
2	GND
3	GND
4	CD_R

14) AUX_IN (AUX In Connector)

Connect other device(such as PCI TV Tunner audio out)to the connector.
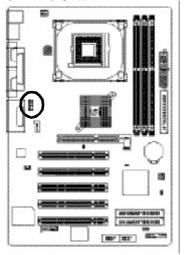
PinNo.	Definition
1	AUX-L
2	GND
3	GND
4	AUX_R

15) F_AUDIO (F_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.

1 2
10 9
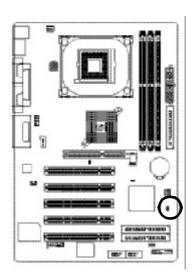
PinNo.	Definition
1	MIC
2	GND
3	REF
4	POWER
5	FrontAudio(R)
6	RearAudio(R)
7	Reserved
8	NoPin
9	FrontAudio(L)
10	RearAudio(L)

16) 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.

1
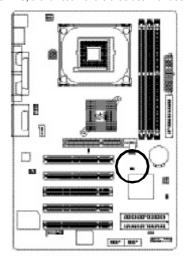
PinNo.	Definition
1	Signal
2	GND

17) CLR_PWD
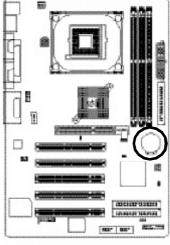
When Jumper is set to "open" and system is restarted, the password that is set will be cleared.

On the contrary when Jumper is set to "close", the current status remains.
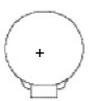
☞ PS, the function offers a solution for users who forget the password.

1 open: Clear password

1 close: Normal

18) BATTERY (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.Remove the battery, wait for 30 second.

3.Re-install the battery.

4.Plug the power cord and turn ON the computer.

Chapter 3 BIOS Setup

BIOS Setup is an overview of the BIOS Setup Program. The program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM so that it retains the Setup information when the power is turned off.

ENTERING SETUP

After power on the computer, pressing **<Del>** immediately during POST (Power On Self Test) it will allow you to enter standard BIOS CMOS SETUP.

If you require more advanced BIOS settings, please go to "advanced BIOS" setting menu.To enter Advanced BIOS setting menu, press "Ctrl+F1" key on the BIOS screen.

CONTROL KEYS

<↑>	Move to previous item
<↓>	Move to next item
<←>	Move to the item in the left hand
<→>	Move to the item in the right hand
<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
<+/PgUp>	Increase the numeric value or make changes
<-/PgDn>	Decrease the numeric value or make changes
<F1>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<F2>	Item help
<F3>	Reserved
<F4>	Reserved
<F5>	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
<F6>	Load the default CMOS value from BIOS default table, only for Option Page Setup Menu
<F7>	Load the Setup Defaults
<F8>	Q-Flash
<F9>	Reserved
<F10>	Save all the CMOS changes, only for Main Menu

GETTING HELP

Main Menu

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

Status Page Setup Menu / Option Page Setup Menu

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

The Main Menu (For example: BIOS Ver. : E4)

Once you enter Award BIOS CMOS Setup Utility, the Main Menu (Figure 1) will appear on the screen. The Main Menu allows you to select from eight setup functions and two exit choices. Use arrow keys to select among the items and press <Enter> to accept or enter the sub-menu.

CMOS Setup Utility-Copyright(C) 1984-2003 Award Software

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

Figure 1: Main Menu

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

● **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.

- **Top Performance**

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

- **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 better 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

CMOS Setup Utility-Copyright(C) 1984-2003 Award Software

Standard CMOS Features

		Item Help
Date (mm:dd:yy)	Thu, Feb 21 2002	
Time(hh:mm:ss)	22:31:24	Menu Level ▶
▶IDE Primary Master	[Press Enter None]	Change the day, month,
▶IDE Primary Slave	[Press Enter None]	year
▶IDE Secondary Master	[Press Enter None]	<Week>
▶IDE Secondary Slave	[Press Enter None]	Sun. to Sat.
Drive A	[1.44M, 3.5"]	<Month>
Drive B	[None]	Jan. to Dec.
Floppy 3 Mode Support	[Disabled]	<Day>
		1 to 31(or maximun allowed
Halt On	[All, ButKeyboard]	in the month.
Base Memory	640K	<year>
Extended Memory	130048K	1999 to 2098
Total Memory	131072K	
↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Figure 2: 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 Primary Master, Slave / Secondary Master, Slave**

The category identifies the types of hard disk from drive C to F that has been installed in the computer. There are two types: auto type, and manual type. Manual type is user-definable; Auto type which will automatically detect HDD type.

Note that the specifications of your drive must match with the drive table. The hard disk will not work properly if you enter improper information for this category.

If you select User Type, related information will be asked to enter to the following items. Enter the information directly from the keyboard and press <Enter>. Such information should be provided in the documentation form your hard disk vendor or the system manufacturer.

▶ Capacity:	The hard disk size. The unit is Mega Bytes.
▶ Access Mode:	The options are: Auto / Large / LBA / Normal.
▶ Cylinder:	The cylinder number of hard disk.
▶ Head	The read / Write head number of hard disk.
▶ Precomp	The cyliner number at which the disk driver changes the write current.
▶ Landing Zone	The cylinder number that the disk driver heads(read/write) are seated when the disk drive is parked.
▶ SECTORS	The sector number of each track define on the hard disk.

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

☞ **Drive A / Drive B**

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

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

☞ **Floppy 3 Mode Support (for Japan Area)**

▶ Disabled	Normal Floppy Drive. (Default value)
▶ Drive A	Enabled 3 mode function of Drive A.
▶ Drive B	Enabled 3 mode function of Drive B.
▶ Both	Drive A & B are 3 mode Floppy Drives.

☞ **Halt on**

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

▸▸ NO Errors   The system boot will not stop for any error that may be detected
                   and you will be prompted.

▸▸ All Errors   Whenever the BIOS detects a non-fatal error the system will be stopped.

▸▸ All, But Keyboar The system boot will not stop for a keyboard error; it will stop for
                   all other errors. (Default value)

▸▸ All, But Diskette The system boot will not stop for a disk error; it will stop for all
                   other errors.

▸▸ All, But Disk/Key The system boot will not stop for a keyboard or disk error; it will
                   stop for all other errors.

Memory

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

Base Memory

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

The value of the base memory is typically 512 K for systems with 512 K 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 1 MB in the CPU's memory
address map.

Advanced BIOS Features

CMOS Setup Utility-Copyright(C) 1984-2003 Award Software

Advanced BIOS Features

First Boot Device	[Floppy]	Item Help
Second Boot Device	[HDD-0]	Menu Level
Third Boot Device	[CDROM]	
Boot Up Floppy Seek	[Disabled]	
Password Check	[Setup]	
#CPU Hyper-Threading	[Enabled]*	
DRAM Data Integrity Mode	Non-ECC	
Init Display First	[AGP]	

↑↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help

F5:Previous Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

Figure 3: Advanced BIOS Features

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

☞ **First / Second / Third Boot device**

This feature allows you to select the boot device priority.

▸ Floppy	Select your boot device priority by Floppy.
▸ LS120	Select your boot device priority by LS120.
▸ HDD-0~3	Select your boot device priority by HDD-0~3.
▸ SCSI	Select your boot device priority by SCSI.
▸ CDROM	Select your boot device priority by CDROM.
▸ LAN	Select your boot device priority by LAN.
▸ USB-CDROM	Select your boot device priority by USB-CDROM.
▸ USB-ZIP	Select your boot device priority by USB-ZIP.
▸ USB-FDD	Select your boot device priority by USB-FDD.
▸ USB-HDD	Select your boot device priority by USB-HDD.
▸ ZIP	Select your boot device priority by ZIP.
▸ Disabled	Disabled this function.

☞ Boot Up Floppy Seek

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

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

☞ Password Check

- ▸ System   The system can not boot and can not access to Setup page will be denied
                 if the correct password is not entered at the prompt.
- ▸ Setup   The system will boot, but access to Setup will be denied if the correct
                 password is not entered at the prompt. (Default value)

☞ 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.

☞ DRAM Data Integrity Mode

This feature allows you to set the DRAM data Integrity Mode

- ▸ Non-ECC   Set the DRAM data Integrity Mode is Non-ECC (Default)
- ▸ ECC   Set the DRAM data Integrity Mode is ECC.

☞ Init Display First

This feature allows you to select the first initation of the monitor display from which card, when you install an AGP VGA card and a PCI VGA card on board.

- ▸ PCI   Set Init Display First to PCI Slot.
- ▸ AGP   Set Init Display First to AGP. (Default value)

Integrated Peripherals

CMOS Setup Utility-Copyright(C) 1984-2003 Award Software

Integrated Peripherals

On-Chip Primary PCI IDE	[Enabled]	Item Help
On-Chip Secondary PCI IDE	[Enabled]	Menu Level
IDE1 Conductor Cable	[Auto]	
IDE2 Conductor Cable	[Auto]	
USB Controller	[Enabled]	
USB Keyboard Support	[Disabled]	
USB Mouse Support	[Disabled]	
AC97 Audio	[Auto]	
Onboard Serial Port 1	[3F8/IRQ4]	
Onboard Serial Port 2	[2F8/IRQ3]	
Onboard Parallel Port	[378/IRQ7]	
Parallel Port Mode	[SPP]	
※ECP Mode Use DMA	3	
Game Port Address	[201]	
Mdi Port Address	[330]	
Midi Port IRQ	[10]	
↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Figure 4: Integrated Peripherals

☞ **On-Chip Primary PCI IDE**

When enabled, allows you to use the onboard primary PCI IDE. If a hard disk controller card is used, set at Disabled.

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

➠ Disabled   Disable onboard 1st channel IDE port.

☞ **On-Chip Secondary PCI IDE**

When enabled, allows you to use the onboard secondary PCI IDE. If a hard disk controller card is used, set at Disabled.

➠ Enabled   Enable onboard 2nd channel IDE port. (Default value)

➠ Disabled   Disable onboard 2nd channel IDE port.

☞ **IDE1 Conductor Cable**

➠ Auto   Will be automatically detected by BIOS (Default Value)

➠ ATA66/100   Set IDE1 Conductor Cable to ATA66/100 (Please make sure your IDE device and cable is compatible with ATA66/100)

➠ ATA33   Set IDE1 Conductor Cable to ATA33 (Please make sure your IDE device and cable is compatible with ATA33)

☞ **IDE2 Conductor Cable**

➠ Auto   Will be automatically detected by BIOS (Default Value)

➠ ATA66/100   Set IDE2 Conductor Cable to ATA66/100 (Please make sure your IDE device and cable is compatible with ATA66/100)

➠ ATA33   Set IDE2 Conductor Cable to ATA33 (Please make sure your IDE device and cable is compatible with ATA33).

☞ **USB Controller**

Disable this option if you are not using the onboard USB feature.

➠ Enabled   Enabled USB Controller. (Default value)

➠ Disabled   Disabled USB Controller.

☞ USB Keyboard Support

When a USB keyboard is installed, please set at Enabled.

➠ Enabled   Enabled USB Keyboard Support.

➠ Disabled   Disabled USB Keyboard Support. (Default value)

☞ USB Mouse Support

➠ Enabled   Enabled USB Mouse Support.

➠ Disabled   Disabled USB Mouse Support. (Default value)

☞ AC97 Audio

➠ Auto   Enabled onboard AC97 Audio function.(Default value)

➠ Disable   Disabled onboard sound function.

☞ Onboard Serial Port 1

➠ Auto   BIOS will automatically setup the port 1 address.

➠ 3F8/IRQ4   Enable onboard Serial port 1 and address is 3F8. (Default value)

➠ 2F8/IRQ3   Enable onboard Serial port 1 and address is 2F8.

➠ 3E8/IRQ4   Enable onboard Serial port 1 and address is 3E8.

➠ 2E8/IRQ3   Enable onboard Serial port 1 and address is 2E8.

➠ 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.

➠ 2F8/IRQ3   Enable onboard Serial port 2 and address is 2F8. (Default Value)

➠ 3E8/IRQ4   Enable onboard Serial port 2 and address is 3E8.

➠ 2E8/IRQ3   Enable onboard Serial port 2 and address is 2E8.

➠ Disabled   Disable onboard Serial port 2.

☞ 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.

>> 378/IRQ7   Enable On Board LPT port and address is 378.(Default Value)

>> 278/IRQ5   Enable On Board LPT port and address is 278.

>> 3BC/IRQ7   Enable On Board LPT port and address is 3BC.

>> Disabled   Disable onboard LPT port.

☞ Parallel Port Mode

This feature allows you to connect with an advanced print 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

>> 3   Set ECP mode use DMA 3. (Default value)

>> 1   Set ECP mode use DMA 1.

☞ Game Port Address

>> Disabled   Disabled this function.

>> 201   Enable Game port and address is 201. (Default Value)

>> 209   Enable Game port and address is 209.

☞ Midi Port Address

>> Disabled   Disabled this function.

>> 300   Enable Midi port and address is 300.

>> 330   Enable Midi port and address is 330.(Default Value)

☞ Midi Port IRQ

>> 5   Midi Port use IRQ 5.

>> 10   Midi Port use IRQ10. (Default Value)

Power Management Setup

CMOS Setup Utility-Copyright(C) 1984-2003 Award Software

Power Management Setup

		Item Help
ACPI Suspend Type	[S1(POS)]	
Power LED in S1 State	[Blinking]	Menu Level
Soft-Off by PWR-BTTN	[Instant-off]	
PME Event Wake Up	[Enabled]	
Modem RingOn	[Enabled]	
Resume by Alarm	[Disabled]	
※ Date(of Month) Alarm	Everyday	
※Time(hh:mm:ss)Alarm	0 : 0 : 0	
Power On By Mouse	[Disabled]	
Power On By Keyboard	[Disabled]	
※KB Power On Password	Enter	
AC Back Function	[Soft-Off]	

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

Figure 5: 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.

☞ **Soft-off by PWR-BTTN**

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

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

        than 4 sec.

☞ **PME Event Wake up**

✦ When set at Enabled, any PCI-PM event awakes the system from a PCI-PM controlled

state.

✦ This feature requires an ATX power supply that provides at least 1A on the +5VSB

lead.

▶ Disabled   Disabled PME Event Wake up function.

▶ Enabled   Enabled PME Event Wake up function. (Default Value)

☞ **Modem Ring On**

✦ An incoming call via modem awakes the system from its soft-off mode.

▶ Disabled   Disabled Modem Ring On function.

▶ Enabled   Enabled Modem Ring On function. (Default Value)

☞ **Resume by Alarm**

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

▶ Disabled   Disable this function. (Default Value)

▶ Enabled   Enable alarm function to POWER ON system.

If RTC Alarm Lead To Power On is Enabled.

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

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

☞ **Power On By Mouse**

 ▸▸ Disabled   Disabled this function. (Default value)

 ▸▸ Mouse Click Set mouse double click to power on 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 your system.

☞ **KB Power ON Password**

 ▸▸ Enter   Input password (from 1 to 5 characters) and press Enter to set the Key
       board Power On Password..

☞ **AC Back Function**

 ▸▸ Memory   System power on depends on the status before AC lost.

 ▸▸ Soft-Off   Always in Off state when AC back. (Default value)

 ▸▸ Full-On   Always power on the system when AC back.

PnP/PCI Configurations

CMOS Setup Utility-Copyright(C) 1984-2003 Award Software

PnP/PCI Configurations

PCI1/PCI5 IRQ Assignment	[Auto]	Item Help
PCI2 IRQ Assignment	[Auto]	Menu Level
PCI3 IRQ Assignment	[Auto]	
PCI4 IRQ Assignment	[Auto]	
↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Figure 6: PnP/PCI Configurations

☞ **PCI1/PCI5 IRQ Assignment**

    ▶Auto   Auto assign IRQ to PCI 1/ PCI 5. (Default value)

    ▶3,4,5,7,9.,10,11,12,15   Set 3,4,5,7,9,10,11,12,15 to PCI1/ PCI5.

☞ **PCI2 IRQ Assignment**

    ▶Auto   Auto assign IRQ to PCI 2. (Default value)

    ▶3,4,5,7,9.,10,11,12,15   Set 3,4,5,7,9,10,11,12,15 to PCI2.

☞ **PCI3 IRQ Assignment**

    ▶Auto   Auto assign IRQ to PCI 3. (Default value)

    ▶3,4,5,7,9.,10,11,12,15   Set 3,4,5,7,9,10,11,12,15 to PCI3.

☞ **PCI4 IRQ Assignment**

    ▶Auto   Auto assign IRQ to PCI 4. (Default value)

    ▶3,4,5,7,9.,10,11,12,15   Set 3,4,5,7,9,10,11,12,15 to PCI4.

PC Health Status

CMOS Setup Utility-Copyright (C) 1984-2003 Award Software

PC Health Status

Reset Case Open Status	[Disabled]	Item Help
Case Opened	No	Menu Level
VCORE	1.488V	
Vcc18	1.776V	
+3.3V	3.296V	
+5V	5.053V	
+12V	11.840V	
Current CPU Temperature	23°C	
Current CPU FAN Speed	4440 RPM	
Current SYSTEM FAN Speed	0 RPM	
CPU Warning Temperature	Disabled	
CPU FAN Fail Warning	Disabled	
SYSTEM FAN Fail Warning	Disabled	
↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Figure7: PC Health Status

☞ **Reset Case Open Status**

☞ **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.

Disabled : Don't reset case open status.;Enabled : Clear case open status at next boot.

☞ **Current Voltage (V) VCORE / Vcc18 /+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 Temp. at 60°C / 140°F.
▶ 70°C / 158°F	Monitor CPU Temp. at 70°C / 158°F.
▶ 80°C / 176°F	Monitor CPU Temp. at 80°C / 176°F.
▶ 90°C / 194°F	Monitor CPU Temp. at 90°C / 194°F.
▶ Disabled	Disable this function.(Default value)

☞ **CPU FAN Fail Warning**

▶ Disabled	Fan Warning Function Disable. (Default value)
▶ Enabled	Fan Warning Function Enable.

☞ **SYSTEM FAN Fail Warning**

▶ Disabled	Fan Warning Function Disable. (Default value)
▶ Enabled	Fan Warning Function Enable.

Frequency/Voltage Control

CMOS Setup Utility-Copyright(C) 1984-2003 Award Software

Frequency/Voltage Control

		Item Help
CPU Clock Ratio	[15X]	
CPU Host Clock Control	[Disabled]	Menu Level
※CPU Host Frequency(MHz)	100	
※Fixed PCI/AGP Frequency	33/66	
Host/DRAM Clock ratio	[Auto]	
Memory Frequency(MHz)	266	
PCI/AGP Frequency(MHz)	33/66	
CPU Voltage Control	[Normal]	
DIMM OverVoltage Control	[Normal]	
AGP OverVoltage Control	[Normal]	

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

Figure 8: Frequency/Voltage Control

※Those items will be available when "CPU Host Clock Control" is set to Enabled.

☞ **CPU Clock Ratio**

> **This setup option will automatically assign by CPU detection.**
> **For Willamette CPU:**
> 8X~23X default: 14X
> **For C-Stepping P4:**
> 8X,10X~24X default: 15X
> **For Northwood CPU:**
> 12X~24X default: 16X

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

☞ **CPU Host Clock Control**

> Note: If system hangs up before enter CMOS setup utility, wait for 20 sec for times out reboot. When time out occur, system will reset and run at CPU default Host clock at next boot.

> ▸Disable   Disable CPU Host Clock Control.(Default value)
> ▸Enable   Enable CPU Host Clock Control.

☞ **CPU Host Frequency (MHz)**

> ▸100MHz~ 355MHzSet CPU Host Clock from 100MHz to 355MHz.

☞ **Fixed PCI/AGP Frequency**

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

☞ **Host/DRAM Clock Ratio**

or 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=667MHz,

▸▸ 2.0   Memory Frequency = Host clock X 2.0.

▸▸ 1.5   Memory Frequency = Host clock X 1.5.

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

☞ **Memory Frequency(Mhz)**

▸▸ The values depend on CPU Host Frequency(Mhz) .

☞ **PCI/AGP Frequency(Mhz)**

▸▸ Setup PCI/AGP frequency by adjusting **CPU Host Frequency** or **Fixed PCI/AGP Frequency** item.

☞ **CPU OverVoltage Control**

Increase CPU voltage may get stable for Over_Clock. But it may damage to CPU when enable this feature.

▸▸ Normal   Supply voltage as CPU required. (Default value)

▸▸ +5% / +7.5% / +10%   Increase voltage range as user selected.

☞ **AGP OverVoltage Control**

Increase AGP voltage may get stable for Over_Clock. But it may damage to AGP Card when enable this feature.

▸▸ Normal   Supply voltage as AGP Card required. (Default value)

▸▸ +0.1V~+.03V   Set AGP voltage from 1.6V~1.8V.

☞ **DIMM OverVoltage Control**

Increase DRAM voltage may get stable for Over_Clock. But it may damage to DRAM module when enable this feature.

▸▸ Normal   Supply voltage as DRAM module required. (Default value)

▸▸ +0.1V~+.03V   Set DIMM voltage from 2.6V~2.8V.

Top Performance

CMOS Setup Utility-Copyright(C) 1984-2003 Award Software

▶Standard CMOS Features	Top Performance
▶Advanced BIOS Features	Load Fail-Safe Defaults
▶Integrated	
▶Power Mar	Disabled.................. [■]
▶PnP/PCI C	Enabled...................[ ]
▶PC Health	
▶Frequency	↑↓: Move ENTER: Accept
ESC:Quit	ESC: Abort
F8:Q-Flash	
	Top Performance
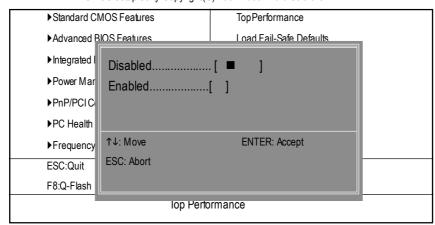
Figure 9: Top Performance

Top Performance

If you wish to maximize the performance of your system, set "Top Performance" as "Enabled".

▸Disabled   Disable this function. (Default Value)

▸Enabled   Enable Top Performance function.

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

Load Fail-Safe Defaults

▶ Standard CMOS Features	Top Performance
▶ Advanced BIOS Features	Load Fail-Safe Defaults
▶ Integrated Peripherals	Load Optimized Defaults
▶ Power Management Setup	Set Supervisor Password
▶ PnP/PC	
▶ PC Heal	Load Fail-Safe Defaults? (Y/N)?N
▶ Frequency/Voltage Control	Exit Without Saving
ESC:Quit	↑↓→←:Select Item m
F8:Q-Flash	F10:Save & Exit Setup
Load Fail-Safe Defaults	

Figure 10: Load Fail-Safe Defaults

☞ **Load Fail-Safe Defaults**

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

Load Optimized Defaults

CMOS Setup Utility-Copyright(C) 1984-2003 Award Software

▶Standard CMOS Features	Top Performance
▶Advanced BIOS Features	Load Fail-Safe Defaults
▶Integrated Peripherals	Load Optimized Defaults
▶Power Management Setup	Set Supervisor Password
▶PnP/PCI Configurations	Set User Password
▶PC Health Status	Save & Exit Setup
▶Frequency/Voltage Control	Exit Without Saving

ESC:Quit

Load Optimized Defaults? (Y/N)?N

F8:Q-Flash   F10:Save & Exit Setup

Load Optimized Defaults

Figure 11: Load Optimized Defaults

☞ **Load Optimized Defaults**

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

Set Supervisor/User Password

CMOS Setup Utility-Copyright (C) 1984-2003 Award Software

▶Standard CMOS Features	Top Performance
▶Advanced BIOS Features	Load Fail-Safe Defaults
▶Integrated Peripherals	Load Optimized Defaults
▶Power Management Setup	Set Supervisor Password
▶PnP/PCI	Enter Password:
▶PC Health Status	Save & Exit Setup
▶Frequency/Voltage Control	Exit Without Saving
ESC:Quit	↑↓→←:Select Item m
F8:Q-Flash	F10:Save & Exit Setup
Change/Set/Disable Password	
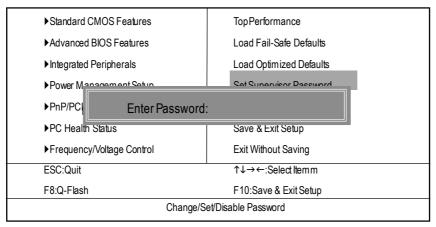
Figure 12: Password Setting

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: a SUPERVISOR PASS-WORD 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 "Security Option" 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 "Security Option" in Advance BIOS Features Menu, you will be prompted only when you try to enter Setup.

Save & Exit Setup

CMOS Setup Utility-Copyright(C) 1984-2003 Award Software

▶Standard CMOS Features	Top Performance
▶Advanced BIOS Features	Load Fail-Safe Defaults
▶Integrated Peripherals	Load Optimized Defaults
▶Power Management Setup	Set Supervisor Password
▶PnP/PCI Configurations	Set User Password
▶PC Health Status	Save & Exit Setup
▶Frequency/Voltage Control	Exit Without Saving
ESC:Quit	Save to CMOS and EXIT (Y/N)? Y
F8:Q-Fla	
Save Data to CMOS	

Figure 13: 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

CMOS Setup Utility-Copyright(C) 1984-2002 Award Software

▶Standard CMOS Features	Top Performance
▶Advanced BIOS Features	Load Fail-Safe Defaults
▶Integrated Peripherals	Load Optimized Defaults
▶Power Management Setup	Set Supervisor Password
▶PnP/PCI Co	
▶PC Health S	Quit Without Saving (Y/N)? N
▶Frequency/Voltage Control	Exit Without Saving
ESC:Quit	↑↓→←:Select Item m
F8:Q-Flash	F10:Save & Exit Setup
Abandon all Data	

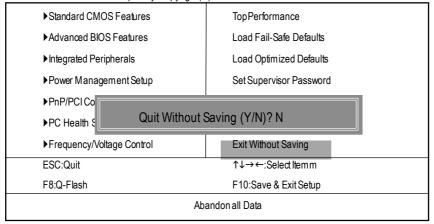Figure 14: Exit Without Saving

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

Type "N" will return to Setup Utility.

Chapter 4 Technical Reference

Block Diagram

       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 internet and 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.

Easy Tune™ 4 Introduction

Gigabyte announces *EasyTune™ 4*

Windows based Overclocking utility

EasyTune 4 carries on the heritage so as to pave the way for future generations.

Overclock" might be one of the most common issues in computer field. But have many users ever tried it? The answer is probably "no". Because "Overclock" is thought to be very difficult and includes a lot of technical know-how, sometimes "Overclock" is even considered as special skills found only in some enthusiasts. But as to the experts in "Overclock", what's the truth? They may spend quite a lot of time and money to study, try and use many different hardware or BIOS tools to do "Overclock". And even with these technologies, they still learn that it's quite a risk because the safety and stability of an "Overclock" system is unknown. Now everything is different because of a Windows based overclocking utility "EasyTune 4" --announced by Gigabyte. This windows based utility has totally changed the gaming rule of "Overclock". This is the first windows based overclocking utility is suitable for both normal and power users. Users can choose either "Easy Mode" or "Advanced Mode" for overclocking at their convenience. For users who choose "Easy Mode", they just need to click "Auto Optimize" to have autoed and immediate CPU overclocking. This software will then overdrive CPU speed automatically with the result being shown in the control panel. If users prefer "Overclock" by them, there is also another choice. Click "Advanced Mode" to enjoy "sport drive" class Overclocking user interface. "Advanced Mode", allows users to change the system bus / AGP / Memory working frequency in small increments to get ultimate system performance. It operates in coordination with Gigabyte motherboards. Besides, it is different from other traditional over-clocking methods, EasyTune 4 doesn't require users to change neither BIOS nor hardware switch/ jumper setting; on the other hand, they can do "Overclock" at easy step . Therefore, this is a safer way for "Overclock" as nothing is changed on software or hardware. If user runs EasyTune 4 over system's limitation, the biggest lost is only to restart the computer again and the side effect is then well controlled. Moreover, if one well-performed system speed has been tested in EasyTune 4, user can "Save" this setting and "Load" it in next time. Obviously, Gigabyte EasyTune 4 has already turned the "Overclock" technology toward to a newer generation. This wonderful software is now free bundled in Gigabyte motherboard attached in driver CD. Users may make a test drive of "EasyTune 4" to find out more amazing features by themselves.

*Some Gigabyte products are not fully supported by EasyTune 4. Please find the products supported list
in the web site.

*Any "Overclocking action" is at user's risk, Gigabyte Technology will not be responsible for any damage or instability to your processor, motherboard, or any other components.

BIOS Flash Procedure

Method 1:

We use GA-7VTX motherboard and Flash841 BIOS flash utility as example.

Please flash the BIOS according to the following procedures if you are now under the DOS mode.

Flash BIOS Procedure:

STEP 1:
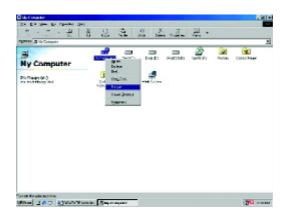
(1) Please make sure your system has installed the extraction utility such as winzip or pkunzip.

   Firstly you have to install the extraction utility such as winzip or pkunzip for unzip the files. Both of these utilities are available on many shareware download pages like http://www..cnet.com

STEP 2: Make a DOS boot diskette. (See example: Windows 98 O.S.)
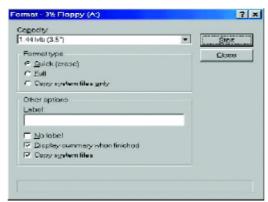
Beware: Windows ME/2000 are not allowed to make a DOS boot diskette.

(1) With an available floppy disk in the floppy drive. Please leave the diskette "UN-write protected" type. Double click the "My Computer" icon from Desktop, then click "3.5 diskette (A)" and right click to select "Format (M)"
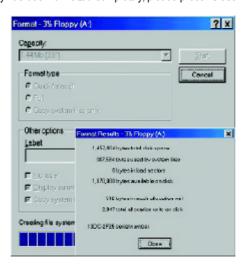
(2) Select the "Quick (erase)" for Format Type, and pick both "Display summary when finished" and "Copy system files", after that press "Start". That will format the floppy and transfer the needed system files to it.

Beware: This procedure will erase all the prior data on that floppy, so please proceed accordingly.

(3) After the floppy has been formatted completely, please press "Close".

STEP 3: Download BIOS and BIOS utility program.

(1) Please go to Gigabyte website http://www.gigabyte.com.tw/index.html, and click "Support".

(2) From Support zone, click the "Motherboards BIOS & Drivers".
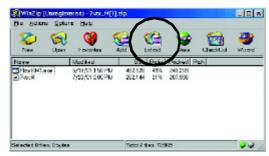
(3) We use GA-7VTX motherboard as example. Please select GA-7VTX by Model or Chipset optional menu to obtain BIOS flash files.

(4) Select an appropriate BIOS version (For example: F4), and click to download the file. It will pop up a file download screen, then select the "Open this file from its current location" and press "OK".

(5) At this time the screen shows the following picture, please click "Extract" button to unzip the files.

(6) Please extract the download files into the clean bootable floppy disk A mentioned in STEP 2, and press "Extract".
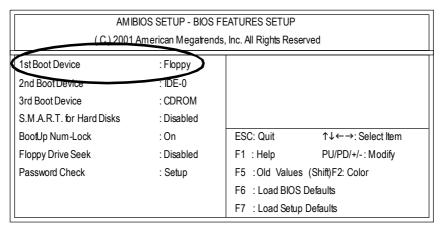
STEP 4: Make sure the system will boot from the floppy disk.

(1) Insert the floppy disk (contains bootable program and unzip file) into the floppy drive A. Then, restart the system. The system will boot from the floppy disk. Please press <DEL> key to enter BIOS setup main menu when system is boot up.


```
American    Release:09/16/99
Megatrends  AMIBIOS (C) 1999 American Megatrend

7VTX F1
Check System Health OK
AMD-Athlon(tm)Processor-900 MHz
Checking NVRAM...
262144KB




Wait...
Press F1 to enter Dual BIOS Utility. Press ESC to quit
Press any key to contiune




( C ) American Megatrends Inc.,
63-0001-001199-00101111-071595-VIA_K7-GA7VTX1-F
```

(2) Once you enter the BIOS setup utility, the main menu will appear on the screen. Use the arrows to highlight the item "BIOS FEATURES SETUP".

```
AMIBIOS SIMPLE SETUP UTILITY - VERSION 1.24b
(C) 1999 American Megatrends, Inc. All Rights Reserved

STANDARD CMOS SETUP              INTEGRATED PERIPHERALS

BIOS FEATURES SETUP              HARDWARE MONITOR & MISC SETUP

CHIPSET FEATURES SETUP           SUPERVISOR PASSWORD

POWER MANAGEMENT SETUP           USER PASSWORD

PNP / PCI CONFIGURATION          IDE HDD AUTO DETECTION

LOAD BIOS DEFAULTS               SAVE & EXIT SETUP

LOAD SETUP DEFAULTS              EXIT WITHOUT SAVING

ESC: Quit        ↑↓←→   : Select Item    (Shift)F2 : Change Color    F5: Old Values

F6: Load BIOS Defaults       F7: Load Setup Defaults      F10:Save & Exit


                    Time, Date , Hard Disk Type…
```

Technical Reference

(3) Press "Enter" to enter "BIOS FEATURES SETUP" menu. Use the arrows to highlight the item
"1st Boot Device", and then use the "Page Up" or "Page Down" keys to select "Floppy".

```
AMIBIOS SETUP - BIOS FEATURES SETUP
(C.) 2001 American Megatrends, Inc. All Rights Reserved

1st Boot Device          : Floppy
2nd Boot Device          : IDE-0
3rd Boot Device          : CDROM
S.M.A.R.T. for Hard Disks : Disabled
BootUp Num-Lock          : On              ESC: Quit        ↑↓←→: Select Item
Floppy Drive Seek        : Disabled        F1  : Help        PU/PD/+/- : Modify
Password Check           : Setup           F5  : Old Values  (Shift)F2: Color
                                           F6  : Load BIOS Defaults
                                           F7  : Load Setup Defaults
```

(4) Press "ESC" to go back to previous screen. Use the arrows to highlight the item "SAVE &
EXIT SETUP" then press "Enter". System will ask "SAVE to CMOS and EXIT (Y/N)?" Press
"Y" and "Enter" keys to confirm. Now the system will reboot automatically, the new BIOS
setting will be taken effect next boot-up.

```
AMIBIOS SIMPLE SETUP UTILITY - VERSION 1.24b
(C) 2001 American Megatrends, Inc. All Rights Reserved

STANDARD CMOS SETUP              INTEGRATED PERIPHERALS
BIOS FEATURES SETUP              HARDWARE MONITOR & MISC SETUP
CHIPSET FEATURES SETUP           SUPERVISOR PASSWORD
POWER MANAGEMENT SETUP           USER PASSWORD
PNP / PCI CONFIG          Save to CMOS and EXIT (Y/N)? Y
LOAD BIOS DEFAULTS               SAVE & EXIT SETUP
LOAD SETUP DEFAULTS              EXIT WITHOUT SAVING

ESC: Quit        ↑↓←→  : Select Item   (Shift)F2 : Change Color   F5: Old Values
F6: Load BIOS Defaults     F7: Load Setup Defaults     F10:Save & Exit

                   Save Data to CMOS & Exit SETUP
```

STEP 5: BIOS flashing.

(1) After the system boot from floppy disk, type "A:\> dir/w" and press "Enter" to check the entire files in floppy A. Then type the "BIOS flash utility" and "BIOS file" after A:\>. In this case you have to type "A:\> Flash841 7VTX.F4" and then press "Enter".
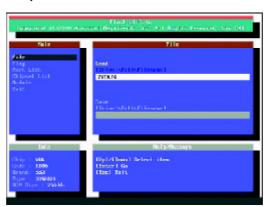
```
Starting Windows 98…

Microsoft(R) Windows98
    © Copyright Microsoft Corp 1981-1999

A:\> dir/w
    Volume in drive A has no label
Volume Serial Number is 16EB-353D
Directory of A:\
COMMAND.COM    7VTX.F4    FLASH841.EXE
        3 file(s)      838,954  bytes
        0 dir(s)       324,608  bytes free

A:\> Flash841 7VTX.F4
```
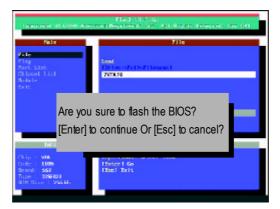
(2) Now screen appears the following Flash Utility main menu. Press "Enter", the highlighted item will locate on the model name of the right-upper screen. Right after that, press "Enter" to start BIOS Flash Utility.
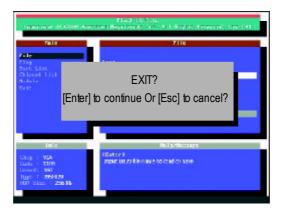
(3) It will pop up a screen and asks "Are you sure to flash the BIOS?" Press [Enter] to continue theprocedure, or press [ESC] to quit.

Beware: Please do not turn off the system while you are upgrading BIOS. It will render your BIOS corrupted and system totally inoperative.

(4) The BIOS flash completed. Please press [ESC] to exit Flash Utility.
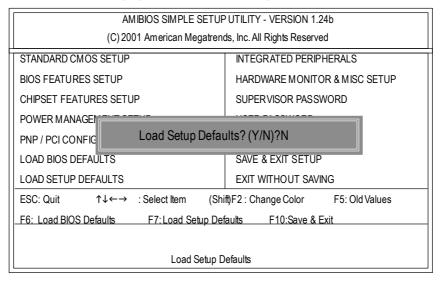
STEP 6: Load BIOS defaults.

Normally the system redetects all devices after BIOS has been upgraded. Therefore, we highly recommend reloading the BIOS defaults after BIOS has been upgraded. This important step resets everything after the flash.
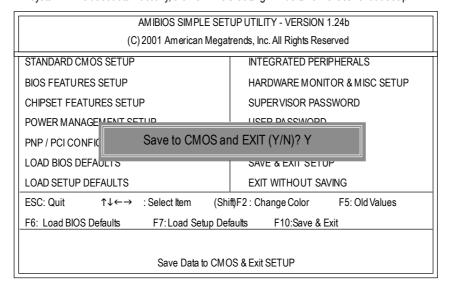
(1) Take out the floppy diskette from floppy drive, and then restart the system. The boot up screen will indicate your motherboard model and current BIOS version.

```
American     Release:09/16/99
Megatrends  AMIBIOS (C) 1999 American Megatrend

7VTX F4
Check System Health OK
AMD-Athlon(tm)Processor-900 MHz
Checking NVRAM...
262144KB




Wait...
Press F1 to enter Dual BIOS Utility. Press ESC to quit
Press any key to contiune



( C ) American Megatrends Inc.,
63-0001-001199-00101111-071595-VIA_K7-GA7VTX1-F
```

(2) Don't forget to press <DEL> key to enter BIOS setup again when system is boot up. Use the arrows to highlight the item "LOAD SETUP DEFAULTS" then press "Enter". System will ask "Load Setup Defaults (Y/N)?" Press "Y" and "Enter" keys to confirm.

AMIBIOS SIMPLE SETUP UTILITY - VERSION 1.24b	
(C) 2001 American Megatrends, Inc. All Rights Reserved	
STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	HARDWARE MONITOR & MISC SETUP
CHIPSET FEATURES SETUP	SUPERVISOR PASSWORD
POWER MANAGEMENT SETUP	USER PASSWORD
PNP / PCI CONFIG	Load Setup Defaults? (Y/N)?N
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
ESC: Quit ↑↓←→ : Select Item (Shift)F2 : Change Color F5: Old Values	
F6: Load BIOS Defaults F7: Load Setup Defaults F10:Save & Exit	
Load Setup Defaults	

(3) Use the arrows to highlight the item "SAVE & EXIT SETUP" and press "Enter". System will ask "SAVE to CMOS and EXIT (Y/N)?" Press "Y" and "Enter" keys to confirm. Now the system will reboot automatically, the new BIOS setting will be taken effect next boot-up.

AMIBIOS SIMPLE SETUP UTILITY - VERSION 1.24b	
(C) 2001 American Megatrends, Inc. All Rights Reserved	
STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	HARDWARE MONITOR & MISC SETUP
CHIPSET FEATURES SETUP	SUPERVISOR PASSWORD
POWER MANAGEMENT SETUP	USER PASSWORD
PNP / PCI CONFIG	Save to CMOS and EXIT (Y/N)? Y
LOAD BIOS DEFAULTS	SAVE & EXIT SETUP
LOAD SETUP DEFAULTS	EXIT WITHOUT SAVING
ESC: Quit ↑↓←→ : Select Item (Shift)F2 : Change Color F5: Old Values	
F6: Load BIOS Defaults F7: Load Setup Defaults F10:Save & Exit	
Save Data to CMOS & Exit SETUP	

(4) Congratulate you have accomplished the BIOS flash procedure.

Method 2:

Q-Flash Introduction
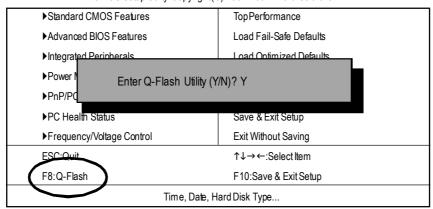
A. What is Q-Flash Utility?

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.

CMOS Setup Utility-Copyright (C) 1984-2002 Award Software

▶Standard CMOS Features	Top Performance
▶Advanced BIOS Features	Load Fail-Safe Defaults
▶Integrated Peripherals	Load Optimized Defaults
▶Power M	Enter Q-Flash Utility (Y/N)? Y
▶PnP/PC	
▶PC Health Status	Save & Exit Setup
▶Frequency/Voltage Control	Exit Without Saving
ESC:Quit	↑↓→←:Select Item
F8:Q-Flash	F10:Save & Exit Setup
Time, Date, Hard Disk Type...	
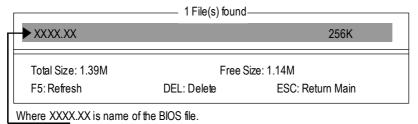
b. Q-Flash Utility

Q-Flash Utility V3.05		
Flash Type/Size : SST 39SF020 / 256K		
Keep DMI Data : Yes		
	Load BIOS from Floppy	
	Save BIOS to Floppy	
	Space Bar:Change Value	
Enter: Run	ESC: Reset	↑/↓: Select Item

Load BIOS From Floppy

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

```
─────────────── 1 File(s) found ───────────────

▶ XXXX.XX                                    256K


  Total Size: 1.39M              Free Size: 1.14M
  F5: Refresh          DEL: Delete          ESC: Return Main
```

Where XXXX.XX is name of the BIOS file.

✎Press Enter to Run.

```
          Are you sure to update BIOS?
          [Enter] to contiune Or [ESC] ot abort...
```

✎Press Enter to Run.

```
          !! COPY BIOS Completed -Pass !!
          Please press any key to continue
```

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

😊 Method 3:

BIOS Flash Procedure

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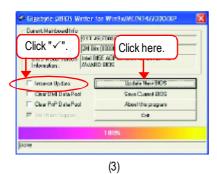
If you don't have DOS boot disk, we recommend that you used Gigabyte @BIOS™ Program to flash BIOS.

Follow the setup that showing on the scween to install the Utility.

Press here.

1.Click "@BIOS (B02102201).

(1)

2.Click"Start"-"Programs"- "GIGABYTE"-"@BIOS"

(2)

Click "✔".   Click here.

(3)

3. Please select @BIOS sever site, then Click "OK".

(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: 8IE800.F1).

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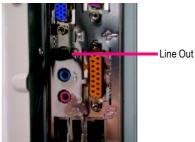
The installation of windows 98SE/2K/ME/XP is very simple. Please follow next step to install the function!

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.
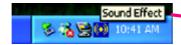
STEP 1:

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

Line Out

STEP 2 :

After installation of the audio driver, you'll find an [icon] 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".
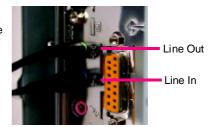
2 channels mode for stereo speakers output

Technical Reference

4 Channel Analog Audio Output Mode

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

Line Out

Line In

STEP 2 :

After 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.

Sound Effect

10:41 AM

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

4 channels mode for 4
speakers output

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.
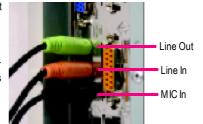
Basic 6 Channel Analog Audio Output Mode

Use the back audio panel to connect the audio output without any additional module.

STEP 1 :
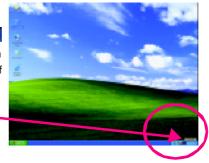
Connect the front channels to "Line Out",the rear channels to "Line In", and the Center/Subwoofer channels to "MIC In ".

Line Out

Line In

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.

Sound Effect

10:41 AM

STEP 3 :
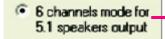
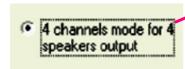Select "Speaker Configuration", and choose the "6 channels for 5.1 speakers out put".

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

6 channels mode for 5.1 speakers output

Technical Reference

Advanced 6 Channel Analog Audio Output Mode (using Audio Combo Kit,Optional Device):

(Audio Combo Kit provides SPDIF output port : optical & coaxis and SURROUND-KIT : Rear R/L & CEN / Subwoofer)

SURROUND-KIT access analog output to rear channels and Center/Subwoofer channels. It is the best solution if you need 6 channel output, Line In and MIC at the same time. "SURROUND-KIT" is included in the GIGABYTE unique "Audio Combo Kit" as picture.

STEP 1 :

Insert the "Audio Combo Kit" in the back of the case , and fix it with the screw.

STEP 2 :

Connect the "SURROUND-KIT" to SUR_CEN on the M/B.

STEP 3 :

Connect the front channels to back audio panel's

"Line Out", the rear channels to SURROUND-KIT's REAR R/L, and the Center/Subwoofer channels to SURROUND-KIT's SUB CENTER.

STEP 4 :

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 output".

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.


Technical Reference

**SPDIF Output Device (Optional Device)**

A "SPDIF output" device is available on the
motherboard. Cable with rear bracket is provided
and could link to the "SPDIF output" connector
(As picture.) For the further linkage to decoder,
rear bracket provides coaxial cable and Fiber con-
necting port.

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

2. Connect SPDIF wire to the motherboard.

3. Connect co-axial or optical output to the SPDIF
   decoder.

Chapter 5 Appendix

Install Drivers

Picture below are shown in Windows XP (IUCD ver 2.22)
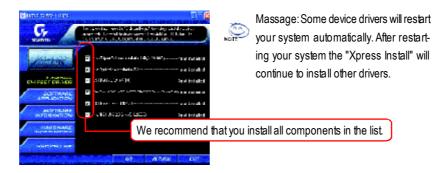
Insert the driver CD-title that came with your motherboard into your CD-ROM drive, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

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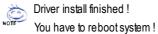
This page shows the drivers that need to be installed for the system. Click each item to install the driver manually or switch to the [Xpress Install] to install the drivers automatically.

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.

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

We recommend that you install all components in the list.

Driver install finished !
You have to reboot system !

Item Description

- Intel Chipset Software Installation Utility

  Tell the operating system how the chipset components will be configured

- Intel Application Accelerator

  Designed to improve performance of the storage sub-system and overall system performance

- USB Path for WinXP

  This patch driver can help you to resolve the USB device wake up S3 hang up issue in XP

- RealTek ALC101A/201A/202/650 AC97 Codec Driver

  For Intel(R) ICH/ICH2/ICH4 AC97 audio

- USB Driver Patch

  This patch driver can help you to resolve some USB device issue on XP

- Intel/NEC USB 2.0 Driver

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

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

- EastTune4

  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, ad control, etc

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

FAQ

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

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

Question 1: I cannot see some options that were included in previous BIOS after updating BIOS. Why?

Answer: Some advanced options are hidden in new BIOS version. Please press Ctrl and F1 keys after entering BIOS menu and you will be able to see these options.

Questions 2: Why is the light of my keyboard/optical mouse still on after computer shuts down?

Answer: In some boards, a small amount of electricity is kept on standby after computer shuts down and that¡¦s why the light is still on.

Question 3: Why cannot I use all functions in EasyTune?4?

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

Question 4: Why do I fail to install RAID and ATA drivers under Win 2000 and XP on boards that support RAID function after I connect the boot HDD to IDE3 or IDE4 ?

Answer: First of all, you need to save some files in the CD-ROM to a floppy disk before installing drivers. You also need to go through some rather different steps in the installation process. Therefore, we suggest that you refer to the installation steps in the RAID manual at our website.

(Please download it at http://tw.giga-byte.com/support/user_pdf/raid_manual.pdf)

Question 5: How do I clear CMOS?

Answer: If your board has a Clear CMOS jumper, please refer to the Clear CMOS steps in the manual. If your board doesn¡¦t have such jumper, you can take off the on-board battery to leak voltage to clear CMOS. Please refer to the steps below:

Steps:

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

Question 6: Why does system seem unstable after updating BIOS?

Answer: Please remember to load Fail-Safe Defaults (Or Load BIOS Defaults) after flashing BIOS. However, if the system instability still remains, please clear CMOS to solve the problem.

Question 7: Why do I still get a weak sound after turning up the speaker to the maximum volume?

Answer: Please make sure the speaker you are using is equipped with an internal amplifier. If not, please change another speaker with power/amplifier and try again later.

Question 8: How do I disable onboard VGA card in order to add an external VGA card?

Answer: Gigabyte motherboards will auto-detect the external VGA card after it is plugged in, so you don¡¦t need to change any setting manually to disable the onboard VGA.

Question 9: Why cannot I use the IDE 2?

Please refer to the user manual and check whether you have connected any cable that is not provided with the motherboard package to the USB Over Current pin in the Front USB Panel. If the cable is your own cable, please remove it from this pin and do not connect any of your own cables to it.

Question 10: Sometimes I hear different continuous beeps from computer after system boots up. What do these beeps usually stand for?

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

→AMI BIOS Beep Codes

*Computer gives 1 short beep when system boots successfully.

*Except for beep code 8, these codes are always fatal.

    1 beep Refresh failure

    2 beeps Parity error

    3 beeps Base 64K memory failure

    4 beeps Timer not operational

    5 beeps Processor error

    6 beeps 8042 - gate A20 failure

    7 beeps Processor exception interrupt error

    8 beeps Display memory read/write failure

    9 beeps ROM checksum error

    10 beeps CMOS shutdown register read/write error

    11 beeps Cache memory bad

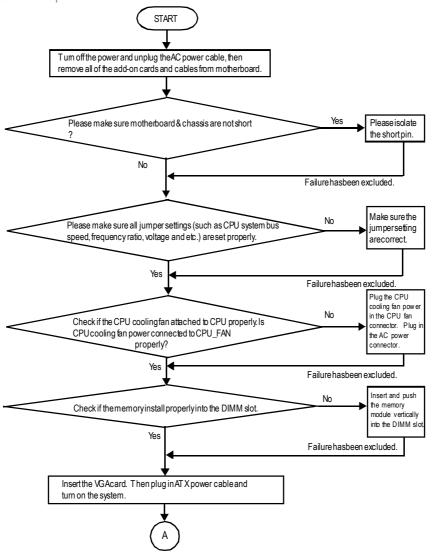→ AWARD BIOS Beep Codes
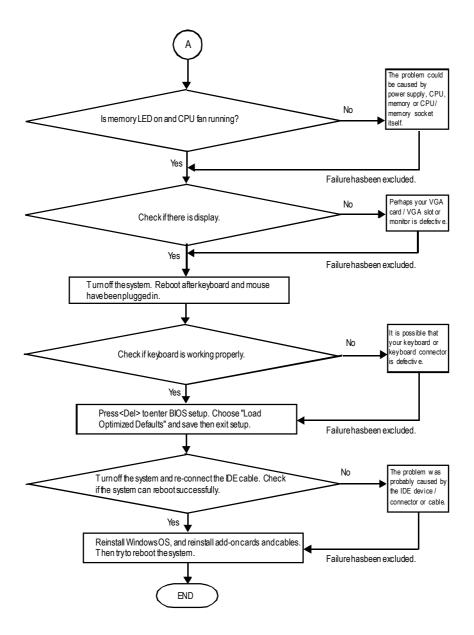
    1 short: System boots successfully

    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.

```
                              ( START )
                                  │
                                  ▼
        ┌─────────────────────────────────────────────────┐
        │ Turn off the power and unplug the AC power cable, │
        │ then remove all of the add-on cards and cables    │
        │ from motherboard.                                 │
        └─────────────────────────────────────────────────┘
                                  │
                                  ▼
                                             Yes      ┌──────────────┐
        ◇ Please make sure motherboard & chassis ───────→│ Please isolate│
          are not short ?                                │ the short pin.│
                │ No                                      └──────────────┘
                │                                               │
                │        Failure has been excluded.             │
                │◄──────────────────────────────────────────────┘
                ▼
                                                  No   ┌──────────────┐
        ◇ Please make sure all jumper settings           │ Make sure the │
          (such as CPU system bus speed, frequency ──────→│ jumper setting│
          ratio, voltage and etc.) are set properly.      │ are correct.  │
                │ Yes                                      └──────────────┘
                │        Failure has been excluded.              │
                │◄───────────────────────────────────────────────┘
                ▼
                                                  No   ┌──────────────┐
                                                       │ Plug the CPU  │
        ◇ Check if the CPU cooling fan attached to       │ cooling fan   │
          CPU properly. Is CPU cooling fan power ────────→│ power in the  │
          connected to CPU_FAN properly?                  │ CPU fan       │
                                                          │ connector.    │
                                                          │ Plug in the   │
                                                          │ AC power      │
                                                          │ connector.    │
                │ Yes                                      └──────────────┘
                │        Failure has been excluded.              │
                │◄───────────────────────────────────────────────┘
                ▼
                                                  No   ┌──────────────┐
        ◇ Check if the memory install properly            │ Insert and    │
          into the DIMM slot. ────────────────────────────→│ push the      │
                                                          │ memory module │
                                                          │ vertically    │
                                                          │ into the      │
                                                          │ DIMM slot.    │
                │ Yes                                      └──────────────┘
                │        Failure has been excluded.              │
                │◄───────────────────────────────────────────────┘
                ▼
        ┌─────────────────────────────────────────────────┐
        │ Insert the VGA card. Then plug in ATX power cable │
        │ and turn on the system.                           │
        └─────────────────────────────────────────────────┘
                                  │
                                  ▼
                                ( A )
```

A

Is memory LED on and CPU fan running? → No → The problem could be caused by power supply, CPU, memory or CPU/ memory socket itself.

Yes ← Failure has been excluded.

Check if there is display. → No → Perhaps your VGA card / VGA slot or monitor is defective.

Yes ← Failure has been excluded.

Turn off the system. Reboot after keyboard and mouse have been plugged in.

Check if keyboard is working properly. → No → It is possible that your keyboard or keyboard connector is defective.

Yes ← Failure has been excluded.

Press <Del> to enter BIOS setup. Choose "Load Optimized Defaults" and save then exit setup.

Turn off the system and re-connect the IDE cable. Check if the system can reboot successfully. → No → The problem was probably caused by the IDE device / connector or cable.

Yes ← Failure has been excluded.

Reinstall Windows OS, and reinstall add-on cards and cables. Then try to reboot the system.

END

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.

Appendix

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.	Modelname	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

Memo

Memo

Memo

CONTACT US

Contact us via the information in this page all over the world.

- Taiwan

Gigabyte Technology Co., Ltd.

Address: No.6, Bau Chiang Road, Hsin-Tien, Taipei Hsien, Taiwan, R.O.C.

TEL: 886 (2) 8912-4888 (50 lines)

FAX: 886 (2) 8912-4004

Technical issue:

http://tw.giga-byte.com/support/service_main.htm

Non-Technical issue:

smsupport@gigabyte.com.tw

Web Address: http://www.gigabyte.com.tw

- USA

G.B.T. INC.

Address: 17358 Railroad St, City of Industry, CA 91748.

Tel: 1 (626) 854-9338

Fax: 1 (626) 854-9339

E-mail: sales@giga-byte.com
          support@giga-byte.com

Web Address: www.giga-byte.com

- Germany

G.B.T. Technology Trading GmbH

Tel: 49-40-2533040

Fax: 49-40-25492343 (Sales)

Tel: 49-01803-428468 (Tech.)

Fax: 49-01803-428329 (Tech.)

E-mail:support@gigabyte.de

Web Address:www.gigabyte.de

- JAPAN/Nippon Giga-Byte Corporation

Fax: 81-3-5791-5439

Web Address:www.gigabyte.co.jp

- U.K

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

Tel: 44-1908-362700

Fax: 44-1908-362709

E-mail:support@gbt-tech.co.uk

Web Address: www.gbt-tech.co.uk

- The Netherlands

Giga-Byte Technology B.V.

Address: Postbus 1385, 5602 BJ, Eindhoven, The Netherlands

Tel: +31 40 290 2088

Fax: +31 40 290 2089

E-mail:info@giga-byte.nl

Web Address: http://www.giga-byte.nl

- China

Shanghai Office

Tel: 86-21-64737410

Fax: 86-21-64453227

Web Address: www.gigabyte.com.cn

GuangZhou Office

Tel: 86-20-87586273

Fax: 86-20-87544306

Web Address: www.gigabyte.com.cn

Beijing Office

Tel:86-10-82856054
     86-10-82856064
     86-10-82856094

Fax: 86-10-82856575

Web Address: www.gigabyte.com.cn

E-mail:bjsupport@gigabyte.com.cn

Chengdu Office

Tel: 86-28-85236930

Fax: 86-28-85256822

Web Address: www.gigabyte.com.cn