

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



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



Example 1: Diamond Vipper V770 golden finger is compatible with 2X/4X mode AGP slot. It can be switched between AGP 2X(3.3V) or 4X(1.5V) mode by adjusting the jumper. The factory default for this card is 2X(3.3V). The GA-8I865PE-L (or any AGP 4X/8X only) motherboards might not function properly, if you install this card without switching the jumper to 4X(1.5V) mode in it.

Example 2: Some ATi Rage 128 Pro graphics cards made by "Power Color", the graphics card manufacturer & some SiS 305 cards, their golden finger is compatible with 2X(3.3V)/4X(1.5V) mode AGP slot, but they support 2X (3.3V) only. The GA-8I865PE-L (or any AGP 4X/8X only) motherboards might not function properly, If you install this card in it.

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



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- Due to rapid change in technology, some of the specifications might be out of date before publication of this booklet.



WARNING: Never run the processor without the heatsink properly and firmly attached.

PERMANENT DAMAGE WILL RESULT!

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

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

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

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

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

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

경고: 히트싱크를 제대로 또 단단히 부착시키지 않은 제 프로세시를 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-8I865PE

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,	☑ EN 50081-1 ☑ EN 50082-1	Generic emission standard Part 1: Residual commercial and light industry
	portable tools and similar electrical apparatus	△ EN 30002-1	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		(EC conformity n	narking)
	The manufacturer also declares the with the actual required safety stand	conformity of above mentioned	product
□ 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 requirements for uninterruptible power systems (UPS)
	<u> </u>	Manufacturer/Importer	
	(Stamp)	Date: November 28, 2003	Signature: Finmy Huang Name: Timmy Huang

# **DECLARATION OF CONFORMITY**

Per FCC Part 2 Section 2.1077(a)



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

Address: 17358 Railroad Street

City of Industry, CA 91748

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

hereby declares that the product

Product Name: Motherboard Model Number: GA-8I865PE

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: November 28, 2003

# GA-8I865PE-L P4 Titan Series Motherboard

# **USER'S MANUAL**

Pentium®4 Processor Motherboard Rev. 1002 12ME-8B65PEL-1002

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# Warning



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

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

#### Installing the motherboard to the chassis...

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

# **Chapter 1 Introduction**

# **Features Summary**

Form Factor	<ul> <li>30.5cm x 23.0cm ATX size form factor, 4 layers PCB.</li> </ul>
CPU	Socket 478 for Intel® Micro FC-PGA2 Pentium® 4 processor
	<ul> <li>Support Intel® Pentium® 4 (Northwood, Prescott) processor</li> </ul>
	<ul> <li>Support Intel® Pentium® 4 Processor with HT Technology</li> </ul>
	<ul> <li>Intel Pentium®4 400/533/800MHz FSB</li> </ul>
	<ul> <li>2nd cache depends on CPU</li> </ul>
Chipset	Chipset Intel 865PE HOST/AGP/Controller
	<ul> <li>ICH5 I/O Controller Hub</li> </ul>
Memory	4 184-pin DDR DIMM sockets
	<ul> <li>Supports Dual channel DDR400/DDR333/DDR266 DIMM</li> </ul>
	<ul> <li>Supports 128MB/256MB/512MB/1GB unbuffered DRAM</li> </ul>
	<ul> <li>Supports up to 4GB DRAM (Max) (Note 1)</li> </ul>
I/O Control	<ul> <li>■ ITE8712</li> </ul>
Slots	1 AGP slot supports 8X/4X mode
	<ul> <li>5 PCI slot supports 33MHz &amp; PCI 2.3 compliant</li> </ul>
On-Board IDE	2 IDE bus master (UDMA33/ATA66/ATA100) IDE ports
	for up to 4 ATAPI devices
	<ul> <li>Supports PIO mode 3,4 (UDMA 33/ATA66/ATA100) IDE</li> </ul>
	& ATAPI CD-ROM
Serial ATA	Controlled by ICH5
	- 2 Serial ATA connectors (SATA0/SATA1) in 150 MB/s
	operation mode

to be continued.....



Due to chipset (Intel 875P/865G/865PE) architecture limitation, a FSB 800 Pentium 4 processor will support DDR400/DDR333/DDR266 memory module. A FSB 533 Pentium 4 processor will support DDR333 and DDR266 memory module. A FSB 400 Pentium 4 processor will only support DDR 266 memory module.

(Note 1) Due to standard PC architecture, a certain amount of memory is reserved for system usage and therefore the actual memory size is less than the stated amount.

For example, 4 GB of memory size will instead be shown as 3.xxGB memory during system startup.

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
	<ul> <li>2 Serial ports (COMA&amp;COMB)</li> </ul>
	8 USB 2.0/1.1 ports (4 x Rear, 4 xFront by cable)
	1 Front Audio Connector
	1 IrDA connector for IR/CIR
Hardware Monitor	CPU/System Fan Revolution detect
	CPU/System Fan Fail Warning
	CPU Overheat Warning
	System Voltage Detect
On-Board Sound	Realtek ALC658 UAJ CODEC
	<ul> <li>SupportJack-Sensing</li> </ul>
	<ul> <li>Line Out/2 front speaker</li> </ul>
	<ul> <li>Line In / 2 rear speaker(by s/w switch)</li> </ul>
	<ul> <li>Mic In / center&amp; subwoofer(by s/w switch)</li> </ul>
	SPDIF Out/SPDIF In
	CD_ln/AUX_lN/Game Connector
On-Board LAN	Build in Kinnereth-R Chipset (10/100 Mbit)
	• 1 RJ45 port
PS/2 Connector	PS/2 Keyboard interface and PS/2 Mouse interface
BIOS	Licensed AWARD BIOS
	Supports Q-Flash

to be continued.....

Additional Features	PS/2 Keyboard power on by password
	PS/2 Mouse power on
	<ul> <li>STR(Suspend-To-RAM)</li> </ul>
	AC Recovery
	<ul> <li>USB KB/Mouse wake up from S3</li> </ul>
	Supports EasyTune 4
	Supports @BIOS
Overclocking	Over Voltage (DDR/AGP/CPU) by BIOS
	<ul> <li>Over Clock (DDR/AGP/CPU/PCI) by BIOS</li> </ul>



#### HT functionality requirement content:

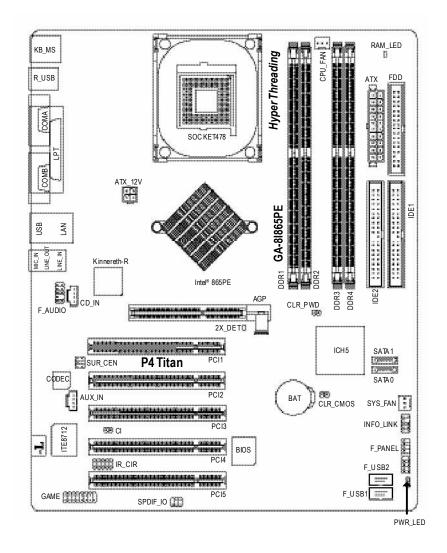
Enabling the functionality of Hyper-Threading Technology for your computer system requires all of the following platform components:

- 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

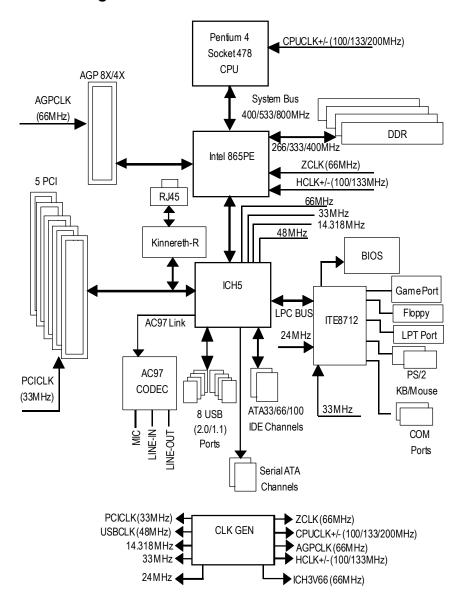


Please set the CPU host frequency in accordance with your processor's specifications. We don't recommend you to set the system bus frequency over the CPU's specification because these specific bus frequencies are not the standard specifications for CPU, chipset and most of the peripherals. Whether your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

# **GA-81865PE-L Motherboard Layout**



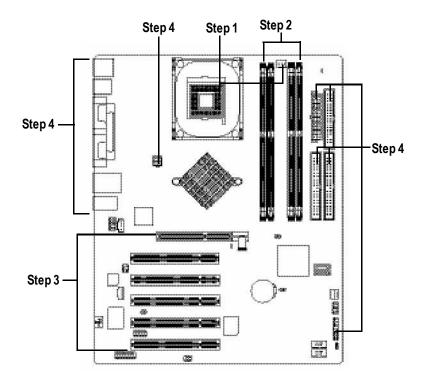
# **Block Diagram**




# **Chapter 2 Hardware Installation Process**

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

- Step 1- Install the Central Processing Unit (CPU)
- Step 2- Install memory modules
- Step 3- Install expansion cards
- Step 4- Connect ribbon cables, cabinet wires, and power supply



Congratulations you have accomplished the hardware installation! Turn on the power supply or connect the power cable to the power outlet. Continue with the BIOS/software installation.

Note: If the NorthBridge on the motherboard has a fan sink, then the motherboard contains a NB FAN connector.

# Step 1: Install the Central Processing Unit (CPU)

Before installing the processor, adhere to the following warning:



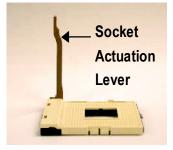
If you do not match the CPU socket Pin 1 and CPU cut edge well, it will cause improper installation. Please change the insert orientation.

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

# Step 1-1: CPU Installation



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



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



3. CPU Top View



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

# Step 1-2: CPU Cooling Fan Installation



Before installing the CPU Cooling Fan, adhere to the following warning:

- 1. Please use Intel approved cooling fan.
- 2. We recommend you to apply the thermal tape to provide better heat conduction between your CPU and cooling fan.

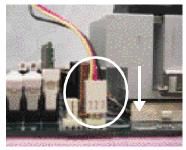
(The CPU cooling fan might stick to the CPU due to the hardening of the thermal paste. During this condition if you try to remove the cooling fan, you might pull the processor out of the CPU socket alone with the cooling fan, and might damage the processor. To avoid this from happening, we suggest you to either use thermal tape instead of thermal paste, or remove the cooling fan with extreme caution.)

3. Make sure the CPU fan power cable is plugged in to the CPU fan connector, this completes the installation.

Please refer to CPU cooling fan user's manual for more detail installation procedure.



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



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

# Step 2: Install memory modules

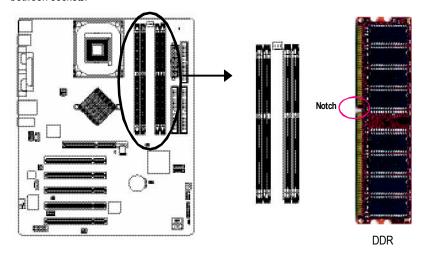


#### Before installing the processor and heatsink, adhere to the following warning:

When RAM\_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.

The motherboard has 4 dual inline memory module (DIMM) sockets. The BIOS will automatically detects memory type and size. To install the memory module, just push it vertically into the DIMM socket. The DIMM module can only fit in one direction due to the notch. Memory size can vary between sockets.



GA-8l865PE-L supports the Dual Channel Technology. After operating the Dual Channel Technology, the bandwidth of Memory Bus will add double up to 6.4GB/s.

GA-8l865PE-L includes 4 DIMM sockets, and each Channel has two DIMM sockets as following:

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

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

 Only one DDR memory module is installed: The Dual Channel Technology can't operate when only one DDR memory module is installed.

- Two DDR memory modules are installed (the same memory size and type): The Dual
  Channel Technology will operate when two memory modules are inserted individually into
  Channel A and B. If you install two memory modules in the same channel, the Dual Channel
  Technology will not operate.
- Three DDR memory modules are installed: Please note that The Dual Channel
  Technology will not operate when three DDR memory modules are installed; part of
  them will not be detected.
- 4. Four DDR memory modules are installed: Ifyou install four memory modules at the same time, the Dual Channel Technology will operate only when those modules have the same memory size and type.

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

The following tables include all memory-installed combination types: (Please note that those types not in the tables will not boot up.)

#### Figure 1: Dual Channel Technology (DS: Double Side, SS: Single Side)

	DIMM 1	DIMM 2	DIMM 3	DIMM 4
2 memory modules	DS/SS	Х	DS/SS	Х
	Х	DS/SS	X	DS/SS
4 memory modules	DS/SS	DS/SS	DS/SS	DS/SS

#### • Figure 2: Don't operate Dual Channel Technology (DS: Double Side, SS: Single Side)

	DIMM 1	DIMM 2	DIMM 3	DIMM 4
1 memory module	DS/SS	Χ	X	Χ
	Х	DS/SS	Х	Х
	Χ	Х	DS/SS	Χ
	Х	Х	Х	DS/SS
2 memory modules	DS/SS	DS/SS	Х	Х
	Х	X	DS/SS	DS/SS
3 memory modules	DS/SS	DS/SS	DS/SS	Х
	DS/SS	DS/SS	Х	DS/SS
	DS/SS	Х	DS/SS	DS/SS
	Х	DS/SS	DS/SS	DS/SS

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



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



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



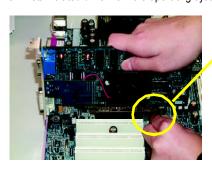
#### DDR Introduction

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

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

# Step 3: Install expansion cards

- 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



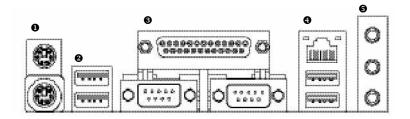
Please carefully pull out the small white- drawable bar at the end of the AGP slot when you try to install. Uninstall the AGP card. Please align the AGP card to the onboard AGP slot and press firmly down on the slot .Make sure your AGP card is locked by the small white-drawable bar.



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.

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

# Step 4-1: I/O Back Panel Introduction



#### • PS/2 Keyboard and PS/2 Mouse Connector



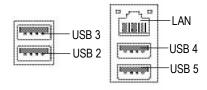
PS/2 Mouse Connector (6 pin Female)



PS/2 Keyboard Connector (6 pin Female)

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

#### 2/4 USB/LANConnector

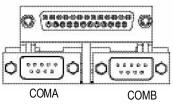


- LAN is fast Ethernet with 10/100 Mbps speed.
- ➢ Before you connect your device(s) into USB connector(s), please make sure your device(s) such as USB keyboard,mouse, scanner, zip, speaker..etc. Have a standard USB interface. Also make sure your OS supports USB controller.
  If your OS does not support USB controller,

please contact OS vendor for possible patch or driver upgrade. For more information please contact your OS or device(s) vendors.

#### **3** Parallel Port and Serial Ports (COMA/COMB)

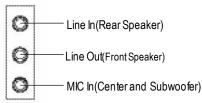
Parallel Port (25 pin Female)



Serial Port (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.

### Audio Connectors



After install onboard audio driver, you may connect speaker to Line Outjack, micro phone to MIC In jack.
Device like CD ROM, walkman etc.can be

Device like CD-ROM , walkman etc can be connected to Line-In jack.  $\label{eq:line-Injack} % \begin{subarray}{ll} \end{subarray} % \begin{subarr$ 

Please note:

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

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

#### Method1:

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

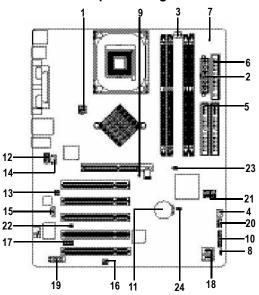
#### Method2:

You can refer to page 27, and contact your nearest dealer for optional SUR\_CEN cable.



If you want the detail information for 2-/4-/6-channel audio setup installation, please refer to page 80.

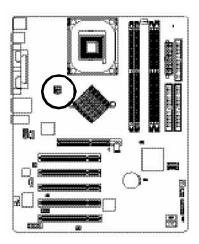
**Step 4-2: Connectors & Jumper Setting Introduction** 



1) ATX_12V	14) CD_IN
2) ATX	15) AUX_IN
3) CPU_FAN	16) SPDIF_IO
4) SYS_FAN	17) IR_CIR
5) IDE1/IDE2	18) F_USB1/F_USB2
6) FDD	19) GAME
7) RAM_LED	20) INFO_LINK
8) PWR_LED	21) SATA0/SATA1
9) 2X_DET	22) CI
10) F_PANEL	23) CLR_PWD
11) BAT	24) CLR_CMOS
12) F_AUDIO	
13) SUR_CEN	

# 1) ATX\_12V (+12V Power Connector)

This connector (ATX  $\_$ 12V) supplies the CPU operation voltage (Vcore). If this "ATX $\_$ 12V connector" is not connected, system cannot boot.

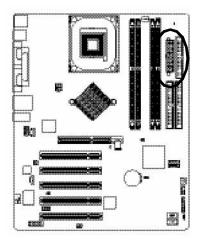


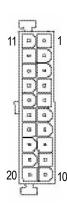


Pin No.	Definition
1	GND
2	GND
3	+12V
4	+12V

# 2) ATX (ATX Power)

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

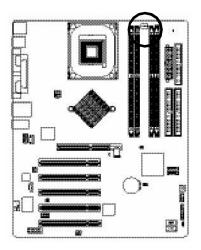




Pin No.	Definition
1	3.3V
2	3.3V
3	GND
4	VCC
5	GND
6	VCC
7	GND
8	Power Good
9	5V SB(stand by +5V)
10	+12V
11	3.3V
12	-12V
13	GND
14	PS_ON(softOn/Off)
15	GND
16	GND
17	GND
18	-5V
19	VCC
20	VCC

# 3) CPU\_FAN (CPU FAN Connector)

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

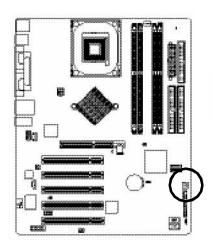




Pin No.	Definition
1	GND
2	+12V
3	Sense

# 4) SYS\_FAN (System FAN Connector)

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

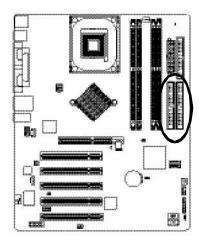


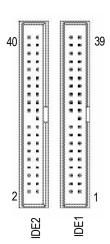


PinNo.	Definition
1	GND
2	+12V
3	Sense

# 5) IDE1/IDE2(IDE1/IDE2 Connector)

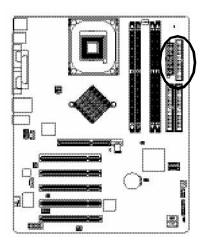
Please connect first harddisk to IDE1 and connect CDROM to IDE2. The red stripe of the ribbon cable must be the same side with the Pin1.

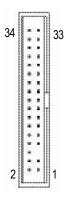




# 6) FDD (Floppy Connector)

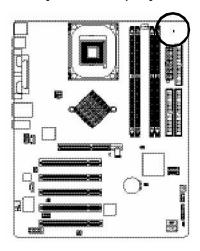
Please connect the floppy drive ribbon cables to FDD. It supports 360K, 720K, 1.2M, 1.44M and 2.88Mbytes floppy disk types. The red stripe of the ribbon cable must be the same side with the Pin1.





# 7) RAM\_LED

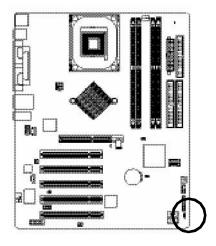
Do not remove memory modules while RAM LED is on. It might cause short or other unexpected damages due to the stand by voltage. Remove memory modules only when AC Power cord is disconnected.





## 8) PWR\_LED

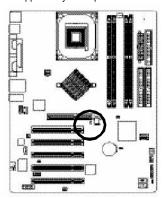
PWR\_LED is connect with the system power indicator to indicate whether the system is on/off. It will blink when the system enters suspend mode. If you use dual color LED, power LED will turn to another color.



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

# 9) 2X\_DET

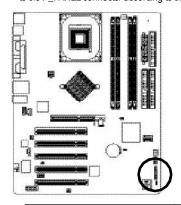
When an AGP 2X(3.3V) card is installed the  $2X_DET$  will light up, indicating a nonsupported graphics card is inserted. Informing users that system might not boot up normally due to AGP 2X(3.3V) is not supported by the chipset.

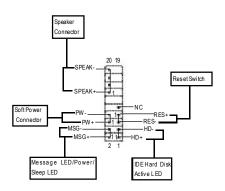




#### 10) F\_PANEL (2x10 pins connector)

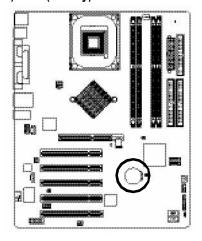
Please connect the power LED, PC peaker, resets witch and power switch etc of your chassis front panel to the F\_PANEL connector according to the pin assignment above.

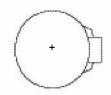




HD (IDEHard DiskActive LED)	Pin 1: LED anode(+)
(Blue)	Pin2: LED cathode(-)
SPEAK (Speaker Connector)	Pin 1: VCC(+)
(Amber)	Pin 2- Pin 3: NC
	Pin 4: Data(-)
RES (Reset Switch)	Open:Normal Operation
(Green)	Close: Reset Hardware System
PW (Soft Power Connector)	Open:Normal Operation
(Red)	Close:Power On/Off
MSG(Message LED/Power/	Pin 1: LED anode(+)
Sleep LED)(Yellow)	Pin 2: LED cathode(-)
NC(Purple)	NC

## 11) BAT (Battery)





#### **CAUTION**

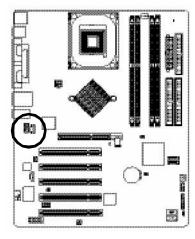
- Danger of explosion if battery is incorrectly replaced.
- Replace only with the same or equivalent type recommended by the manufacturer.
- Dispose of used batteries according to the manufacturer's instructions.

If you want to erase CM OS...

- 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.

## 12) F\_AUDIO (F\_AUDIO Connector)

If you want to use FrontAudio 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 assignment on the cable is the same as the pin assignment on the MB header. To find out if the chassis you are buying support front audio connector, please contact your dealer. Please note, you can have the alternative of using front audio connector or of using rear audio connector to play sound.

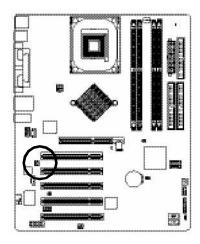




Pin No.	Definition			
1	MIC			
2	GND			
3	REF			
4	POWER			
5	FrontAudio(R)			
6	RearAudio(R)			
7	Reserved			
8	NoPin			
9	FrontAudio(L)			
10	RearAudio(L)			

# 13) SUR\_CEN

Please contact your nearest dealer for optional SUR\_CEN cable.

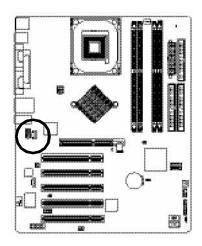




Pin No.	Definition
1	SUROUTL
2	SUROUTR
3	GND
4	NoPin
5	CENTER_OUT
6	BASS OUT

# 14) CD\_IN (CD IN, Black)

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

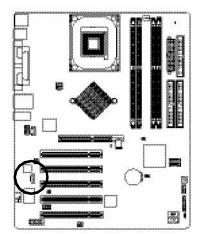




Pin No.	Definition
1	CD-L
2	GND
3	GND
4	CD R

# 15) AUX\_IN (AUX In Connector)

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





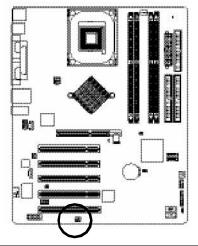
PinNo.	Definition
1	AUX-L
2	GND
3	GND
4	AUX_R

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

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

Be careful with the polarity of the SPDIF\_IO connector. Check the pin assignment carefully while you

connect the SPDIF\_IO cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional SPDIF\_IO cable, please contact your local dealer.



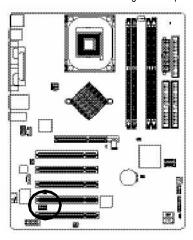


Pin No.	Definition
1	VCC
2	NoPin
3	SPDIF
4	SPDIFI
5	GND
6	GND

# 17) IR\_CIR

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

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

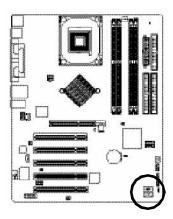




PinNo.	Definition
1	VCC
2	NC
3	IRRX
4	GND
5	IRTX
6	NC
7	CIRRX
8	VCC
9	CIRTX
10	NC

# 18) F USB1 / F USB2(Front USB Connector, Yellow)

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

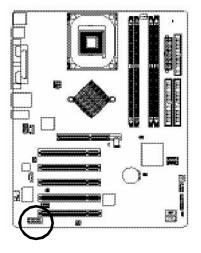




Pin No.	Definition
1	Power
2	Power
3	USB0 DX-/USB6 DX-
4	USB1 Dy-/USB7 Dy-
5	USB0 DX+/USB6 DX+
6	USB1 Dy+/USB7 Dy+
7	GND
8	GND
9	NoPin
10	NC

# 19) GAME (GAME Connector)

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

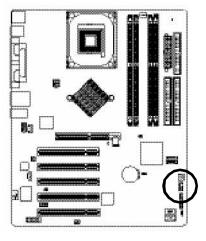


2						16	,
			18	•		П	ĺ
Ŀ	Ŀ	•		⊌		U	l
1						15	5

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

# 20) INFO\_LINK

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

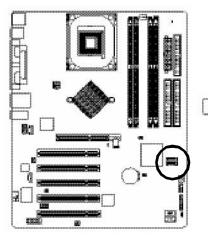


10	1	9
- 1		ľ
	*	
	(8)	
2		11

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

# 21) SATA0/SATA1 (Serial ATA Connector)

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





Pin No.

2

4

5

6

Definition GND TXP

TXN

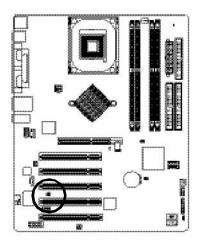
GND

RXN

RXP GND

# 22) CI (CASE OPEN)

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

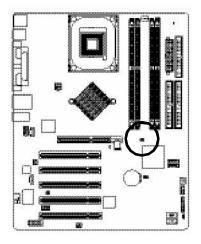




Pin No.	Definition
1	Signal
2	GND

# 23) CLR\_PWD

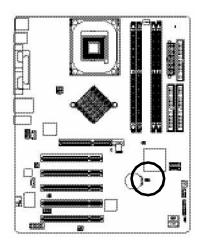
When Jumper is set to "open" and system is restarted, the password that is set will be cleared. On the contrary when Jumper is set to "close", the current status remains.



- 1 open: Clear password
- 1 else: Normal

# 24) CLR\_CMOS (Clear CMOS)

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



- 1 •• Open: Normal
- 1 Close: Clear CMOS

-		

# 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

Powering ON the computer and pressing < Del> immediately will allow you to enter 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
Enter	Select item
<esc></esc>	Main Menu - Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu - Exit current page and return to Main Menu
<+/PgUp>	Increase the numeric value or make changes
<-/PgDn>	Decrease the numeric value or make changes
<f1></f1>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<f2></f2>	Item Help
<f3></f3>	Reserved
<f4></f4>	Reserved
<f5></f5>	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
<f6></f6>	Load the file-safe default CMOS value from BIOS default table
<f7></f7>	Load the Optimized Defaults
<f8></f8>	Q-Flash function
<f9></f9>	System Information
<f10></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.: E2)

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-Copy right (C) 1984-2003 Award Software

► Standard CMOS Features  ► Adv anced BIOS Features	Load Fail-Safe Defaults  Load Optimized Defaults	
	'	
► Integrated Peripherals	Set Supervisor Password	
▶Power Management Setup	Set User Password	
▶PnP/PCI Configurations	Save & Exit Setup	
▶PC Health Status	Ex it Without Saving	
▶Frequency/Voltage Control		
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.

#### Load Fail-Safe Defaults

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

### Load Optimized Defaults

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

### • Set Supervis or pass word

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-Copy right (C) 1984-2003 Award Software

### Standard CMOS Features

Date (mm:dd:yy)	Tue, Aug 13 2002	Item Help
Time (hh:mm:ss)	22:31:24	Menu Level ▶
		Change the day, month,
▶IDE Channel 0 Master	[None]	y ear
▶IDE Channel 0 Slave	[None]	
▶IDE Channel 1 Master	[None]	<week></week>
▶IDE Channel 1 Slave	[None]	Sun. to Sat.
Driv e A	[1.44M, 3.5 in.]	<month></month>
Driv e B	[None]	Jan. to Dec.
Floppy 3 Mode Support	[Disabled]	
		<day></day>
Halt On	[All, But Key board]	1 to 31 (or maximum
		allowed in the month)
Base Memory	640K	
Extended Memory	130048K	<year></year>
Total Memory	131072K	1999 to 2098
↑↓→←: Move Enter:Select	+/-/PU/PD:Value F10:Save ESC:I	Exit F1:General Help
F5:Previous Values	F6:Fail-Safe Defaults	7: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 Channel 0 Master, Slave / IDE Channel 1 Master, Slave

The category identifies the types of hard disk from driveC 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 key board and press <Enter>. Such information should be provided in the documentation form your hard disk vendor or the system manufacturer.

▶ CYLS.	Number of cylinders
▶ HEADS	Number of heads
▶ PRECOMP	Write precomp
<b>▶</b> LANDZONE	Landing zone
→ SECTORS	Number of sectors

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

### Drive A / Drive B

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

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

### Floppy 3 Mode Support (for Japan Area)

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

#### · Halt on

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

NO Errors
The system boot will not stop for any error that may be detected

and you will be prompted.

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

▶ All, But Key board The system boot will not stop for a key board 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 key board or disk error; it will

stop for all other errors.

### Memory

The category is display-only which is determined by POST (PowerOn 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-Copy right (C) 1984-2003 Award Software

#### Advanced BIOS Features

▶	Hard Disk Boot Priority	]	Press Enter]	Item Help
	First Boot Device	]	Floppy]	Menu Level ▶
	Second Boot Device	]	Hard Disk]	
	Third Boot Device	]	CDROM]	
	Password Check	]	[Setup]	
#	CPU Hyper-Threading	]	Enabled]	
	↑↓→←: Move Enter:Select	+/-/PU/PD:Value F	10:Save ESC:Ex	kit F1:General Help
	F5:Previous Value	es F6:Fail-Sa	afe Defaults F	7:Optimized Defaults

Figure 3: Advanced BIOS Features

### · HardDisk Boot Priority

▶ Press Enter Select Hard Disk Boot Device priority.

#### First / Second / Third Boot Device

This feature allows you to select the boot device priority.

▶ Floppy
 ▶ LS120
 ▶ Belect your boot device priority by LS120.
 ▶ Hard Disk
 ▶ CDROM
 ▶ Select your boot device priority by Hard Disk.
 ▶ CDROM
 ▶ CDROM
 ▶ Select your boot device priority by CDROM.
 ▶ ZIP
 ▶ USB-FDD
 ▶ Select your boot device priority by USB-FDD.
 ▶ USB-ZIP
 ▶ USB-ZIP
 Select your boot device priority by USB-ZIP.

<sup>&</sup>quot; # " System will detect automatically and show up when you install the Intel® Pentium® 4 processor with HT Technology.

▶ USB-CDROM Select your boot device priority by USB-CDROM.
 ▶ USB-HDD Select your boot device priority by USB-HDD.
 ▶ LAN Select your boot device priority by LAN.
 ▶ Disabled Select your boot device priority by Disabled.

### Password Check

▶ System The system will not boot and will not access to Setup page if the correct

password is not entered at the prompt.

▶ Setup The system will boot but will not access to Setup page 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.

## **Integrated Peripherals**

CMOS Setup Utility-Copy right (C) 1984-2003 Award Software

Integrated Peripherals

On-Chip Primary PCI IDE	[Enabled]	Item Help
On-Chip Secondary PCI IDE	[Enabled]	Menu Level ▶
On-Chip SATA	[Auto]	If a hard disk
x SATA Port0 Configure as	[SATA Port0]	controller card is
SATA Port1 Configure as	SATA Port1	used, set at Disabled
USB Controller	[Enabled]	
USB 2.0 Controller	[Enabled]	[Enabled]
USB Key board Support	[Disabled]	Enable on-chip IDE
USB Mouse Support	[Disabled]	PORT
AC97 Audio	[Auto]	
Onboard H/W LAN	[Enabled]	[Disabled]
Onboard Serial Port 1	[3F8/IRQ4]	Disable on-chip IDE
Onboard Serial Port 2	[2F8/IRQ3]	PORT
UART Mode Select	[Normal]	
x UR2 Duplex Mode	Half	
Onboard Parallel Port	[378/IRQ7]	
Parallel Port Mode	[SPP]	
x ECP Mode Use DMA	3	
Game Port Address	[201]	
Midi Port Address	[330]	
Midi Port IRQ	[10]	
CIR Port Address	[Disabled]	
x CIR Port IRQ	11	
↑↓→←: Move Enter:Select +/-/PU/PD:Value		·
F5:Previous Values F6:Fail	-Safe Defaults F	7:Optimized Defaults

Figure 4: Integrated Peripherals

### On-Chip Primary PCI IDE

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

→ Disabled Disable onboard 1st channel IDE port.

### On-Chip Secondary PCI IDE

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

▶ Disabled Disable onboard 2nd channel IDE port.

### On-chip SATA

Disable SATA controller.

→ Auto When no device is plugged in IDE1 or IDE2, SATA controller will remap to IDE

controller. (Default Value)

→ Manual Set SATA Mode manually.

### SATA Port0 Configure as

DE Pri. Master
 Remap SATA Port 0 to IDE Pri. Master.
 Remap SATA Port 0 to IDE Pri. Slave.
 DE Sec. Master
 Remap SATA Port 0 to IDE Sec. Master.
 DE Sec. Slave
 Remap SATA Port 0 to IDE Sec. Slave.

SATA Port0 SATA controller set to SATA port0. As this mode, it support by WinXP or

later OS only. (Default value)

SATA Port1 SATA controller set to SATA port1. As this mode, it support by Win XP or

later OS only.

### SATA Port1 Configure as

The values depend on SATA Port0.

#### USB Controller

▶ Enabled Enable USB Controller. (Default value)

Disabled Disable USB Controller.

#### USB 2.0 Controller

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

▶ Enabled Enable USB 2.0 Controller. (Default v alue)

▶ Disable USB 2.0 Controller.

### USB Keyboard Support

▶ Enabled Enable USB Key board Support.

▶ Disabled Disable USB Key board Support. (Default value)

### USB Mouse Support

▶ Enabled Enable USB Mouse Support.

▶ Disabled Disable USB Mouse Support. (Default value)

#### AC97 Audio

→ Auto Enable onboard AC'97 audio function. (Default Value)

▶ Disabled Disable this function.

#### Onboard H/W LAN

➡ Enabled Enable Onboard H/W LAN function. (Default value)

▶ Disabled Disable this function.

#### Onboard 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.

#### UART Mode Select

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

▶ ASKIR Set onboard I/O chip UART to ASKIR Mode.
 ▶ IrDA Set onboard I/O chip UART to IrDA Mode.

▶ Normal Set onboard I/O chip UART to Normal Mode. (Default Value)

### UR2 Dupl ex Mode

→ Half IR Function Duplex Half. (Default Value)

Full IR Function Duplex Full.

### Onboard Parallel port

→ 378/IRQ7 Enable onboard LPT port and address is 378/IRQ7. (Default Value)

▶ 278/IRQ5 Enable onboard LPT port and address is 278/IRQ5.

▶ Disabled Disable onboard LPT port.

⇒ 3BC/IRQ7 Enable onboard LPT port and address is 3BC/IRQ7.

#### □ Parallel Port Mode

SPP Using Parallel port as Standard Parallel Port. (Default Value)

▶ EPP Using Parallel port as Enhanced Parallel Port.
 ▶ ECP Using Parallel port as Extended Capabilities Port.

▶ ECP+EPP Using Parallel port as ECP & EPP mode.

#### ECP Mode Use DMA

→ 3 Set ECP Mode Use DMA to 3. (Default Value)

→ 1 Set ECP Mode Use DMA to 1.

#### © Game Port Address

⇒ 201 Set Game Port Address to 201. (Default Value)

➤ 209 Set Game Port Address to 209.

▶ Disabled Disable this function.

#### Midi Port Address

→ 300 Set Midi Port Address to 300.

→ 330 Set Midi Port Address to 330.(Default Value)

▶ Disabled Disable this function.

### ™Midi Port IRQ

⇒ 5 Set Midi Port IRQ to 5.

→ 10 Set Midi Port IRQ to 10. (Default Value)

### CIR Port Address

⇒ 310 Set CIR Port Address to 310.⇒ 320 Set CIR Port Address to 320.

▶ Disabled Disable this function. (Default Value)

### CIR Port IRQ

⇒ 5 Set CIR Port IRQ to 5.

→ 11 Set CIR Port IRQ to 11. (Default Value)

### **Power Management Setup**

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### Power Management Setup

ACPI Suspend Type	[S1(POS)]	Item Help
Power LED in S1 State	[Blinking]	Menu Level ▶
Off by Power button	[Instant-Off]	[S1]
PME Event Wake Up	[Enabled]	Set suspend type to
ModemRingOn/WakeOnLan	[Enabled]	Power On Suspend under
Resume by Alarm	[Disabled]	ACPI OS
x Date (of Month) Alarm	Ev ery day	
x Time (hh:mm:ss)	0 0 0	[S3]
Power On By Mouse	[Disabled]	Set suspend type to
Power On By Keyboard	[Disabled]	Suspend to RAM under
x KB Power ON Password	Enter	ACPI OS
AC BACK Function	[Soft-Off]	
↑↓→←: Mov e Enter:Select +/-/PU/PD:Value	F10:Save ESC:Ex	it F1:General Help
F5:Previous Values F6:Fa	il-Safe Defaults F	7:Optimized Defaults

Figure 5: Power Management Setup

### ACPI Suspend Type

→ S1(POS) Set ACPI suspend type to S1. (Default Value)

S3(STR) Set ACPI suspend type to S3.

#### ○ Power LED in S1 state

▶ Blinking In standby mode(S1), power LED will blink. (Default Value)

Dual/OFF In standby mode(S1):

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

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

### **Off by Power button**

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

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

than 4 sec.

### PME Event Wake Up

▶ Disabled Disable this function.

➡ Enabled Enable PME Event Wake up. (Default Value)

### ModemRingOn/WakeOnLAN

→ Disabled Disable Modern Ring on/wake on Lan function.

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

### Resume by Alarm

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

▶ Disabled Disable this function. (Default Value)

▶ Enabled Enable alarm function to POWER ON system.

If RTC Alarm Lead To Power On is Enabled.

Date (of Month) Alarm: Every day, 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 Double click on PS/2 mouse left button to power on system.

### Power On By Keyboard

▶ Password Enter from 1 to 5 characters to set the Key board Power On Password.

▶ Disabled Disabled this function. (Default value)

▶ Key board 98 If your key board 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

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### PnP/PCI Configurations

PCI 1/PCI 5 IRQ Assignment	[Auto] Item Help
PCI 2 IRQ Assignment	[Auto] Menu Lev el ▶
PCI 3 IRQ Assignment	[Auto]
PCI 4 IRQ Assignment	[Auto]
↑↓→←: Mov e Enter:Select +/-/PU/PD:Val	lue F10:Save ESC:Exit F1:General Help
F5:Previous Values F6:	Fail-Safe Defaults F7:Optimized Defaults

Figure 6: PnP/PCI Configurations

### PCI 1/PCI 5 IRQ Assignment

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

### PCI 2 IRQ Assignment

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

### PCI 3 IRQ Assignment

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

### PCI 4 IRQ Assignment

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

### **PC Health Status**

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#### PC Health Status

Reset Case Open Status	[Disabled]	Item Help
Case Opened	No	Menu Level ▶
Vcore	OK	[Disabled]
DDR25V	OK	Don't reset case
+3.3V	OK	open status
+5V	OK	
+12V	OK	[Enabled]
Current CPU Temperature	40°C	Clear case open
Current CPU FAN Speed	6490 RPM	status at next boot
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:Exi	t F1:General Help
F5:Previous Values F6:Fail-Safe Defaults	F7:Optimized Defau	Its

Figure 7: 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.

### \*\* Current Voltage (V) Vcore / DDR25V / +3.3V / +5V / +12V

Detect system's voltage status automatically.

### Current CPU Temperature

▶ Detect CPU Temp. automatically.

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

▶ Detect CPU/SYSTEM Fan speed status automatically.

### CPU Warning Temperature

Monitor CPU Temp. at 60°C / 140°F.
 Monitor CPU Temp. at 70°C / 158°F.
 Monitor CPU Temp. at 70°C / 158°F.
 Monitor CPU Temp. at 80°C / 176°F.
 Monitor CPU Temp. at 80°C / 176°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

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Frequency/Voltage Control

CPU Clock Ratio	[15X]	Item Help
CPU Host Clock Control	[Disabled]	Menu Level ▶
*CPU Host Frequency (Mhz)	100	
*AGP/PCI/SRC Fixed	66/33/100	
Memory Frequency For	[Auto]	
Memory Frequency (Mhz)	266	
AGP/PCI/SRC Frequency (Mhz)	66/33/100	
DIMM OverVoltage Control	[Normal]	
AGP OverVoltage Control	[Normal]	
CPU Voltage Control	[Normal]	
Normal CPU Vcore	1.4750V	
↑↓→←: Move Enter:Select +	-/-/PU/PD:Value F10:Save ESC:E	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 option will not be shown or not be available if you are using a CPU with the locked ratio.

→ 15X~21X
It depends on CPU Clock Ratio.

This setup option will automatically assign by CPU detection.

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.

→ Disabled Disable CPU Host Clock Control.(Default value)

▶ Enabled Enable CPU Host Clock Control.

### CPU Host Frequency

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

Incorrect using it may cause your system broken. For power End-User use only!

#### AGP/PCI/S RC Fixed

Serial ATA device is very sensitive to SRC clock. SRC over clock may make Serial ATA device function can't work properly.

Adjust AGP/PCI/SRC clock asychrohous with CPU.

### Memory Frequency For

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

→ 2.66 Memory Frequency = Host clock X 2.66.

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

for FSB(Front Side Bus) frequency=533MHz.

→ 2.0 Memory Frequency = Host clock X 2.0.

→ 2.5 Memory Frequency = Host clock X 2.5.

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

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

→ 2.0 Memory Frequency = Host clock X 2.0.

→ 1.6 Memory Frequency = Host clock X 1.5.

→ 1.33 Memory Frequency = Host clock X 1.33.

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

### Memory Frequency(Mhz)

The values depend on CPU Host Frequency (Mhz) .

### AGP/PCI/SRC Frequency(Mhz)

>> The values depend on Fixed AGP/PCI/SRC Frequency.

### DIMM OverVoltage Control

▶ Normal	Set DIMM OverVoltage	Control to No	rmal. (Default value)

→ +0.1V Set DIMM OverVoltage Control to +0.1V.
 → +0.2V Set DIMM OverVoltage Control to +0.2V.
 → +0.3V Set DIMM OverVoltage Control to +0.3V.

### AGP OverVoltage Control

Normal	Set AGP OverV	oltage Control to	Normal.	(Default v alue	)
--------	---------------	-------------------	---------	-----------------	---

→ +0.1V Set AGP OverVoltage Control to +0.1V.
 → +0.2V Set AGP OverVoltage Control to +0.2V.
 → +0.3V Set AGP OverVoltage Control to +0.3V.

### CPU Voltage Control

▶ Supports adjustable CPU Vcore from 0.8375V to 1.7600V.

(Default value: Normal)

#### Normal CPU Vcore

▶ Display your CPU Vcore Voltage.

### **Load Fail-Safe Defaults**

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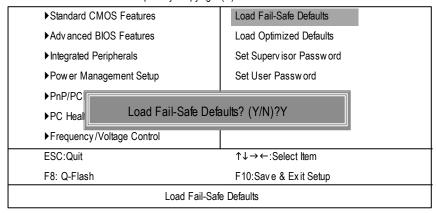


Figure 9: Load Fail-Safe Defaults

#### Load Fail-Safe Defaults

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

### **Load Optimized Defaults**

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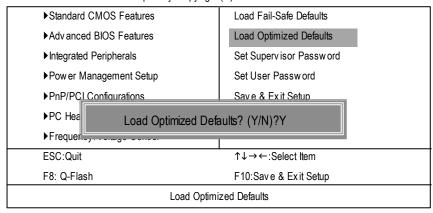


Figure 10: Load Optimized Defaults

### **Load Optimized Defaults**

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

### Set Supervisor/User Password

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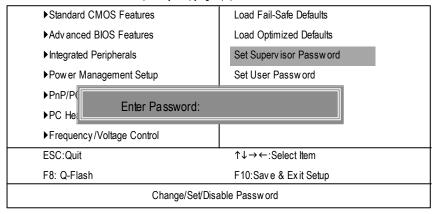


Figure 11: Password Setting

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:

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

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

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

### **Save & Exit Setup**

CMOS Setup Utility -Copy right (C) 1984-2003 Award Software

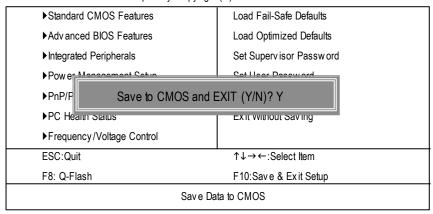


Figure 12: Save & Exit Setup

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

### **Exit Without Saving**

CMOS Setup Utility-Copy right (C) 1984-2003 Award Software

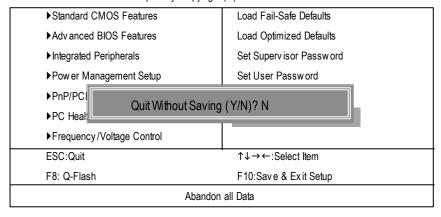


Figure 13: Exit Without Saving

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


## Chapter 4 Technical Reference

### @ BIOS™ Introduction

# Gigabyte announces @ BIOS Windows BIOS live update utility



Have you ever updated BIOS by yourself? Or like many other people, you just know what BIOS is, but always he sitate 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, its 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 producterects 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<sup>™</sup> 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" mightbe 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 hard-

ware 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 justneed 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'trequire 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 biggestlost 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" itin 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 by your processor, motherboard, or any other components.

### Flash BIOS Method Introduction

Method 1 · Q-Flash



Flash BIOS Method Introduction

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



Please note that because updating BIOS has potential risk, please do it with caution!! We are sorry that Gigabyte Technology Co., Ltd is not responsible for damages of system CAUTION because of incorrect manipulation of updating BIOS to avoid any claims from end-users.

### **Before You Begin:**

Before you start updating BIOS with the Q-Flash™ utility, please follow the steps below first.

- 1. Download the latestBIOS for your motherboard from Gigabyte's website.
- 2. Extract the BIOS file downloaded and save the BIOS file (the one with model name.Fxx. For example, 7VRXP.F12) to a floppy disk.
- 3. Reboot your PC and press **Del** to enter BIOS menu.

The BIOS upgrading guides below are separated into two parts.

If your motherboard has dual BIOS, please refer to Part One.

If your motherboard has single BIOS, please refer to Part Two.

### Part One:

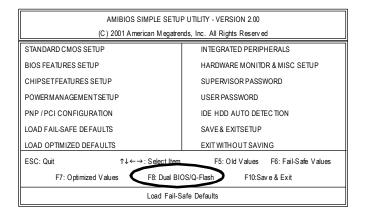
### Updating BIOS with Q-Flash™ Utility on Dual BIOS Motherboards.

Some of Gigabyte motherboards are equipped with dual BIOS. In the BIOS menu of the motherboards supporting Q-Flash™ and Dual BIOS, the Q-Flash™ utility and Dual BIOS utility are combined in the same screen. This section only deals with how to use Q-Flash™ utility. In the following sections, we take GA-7VRXP as the example to guide you how to flash BIOS from an older version to the latest version. For example, from F10 to F12.

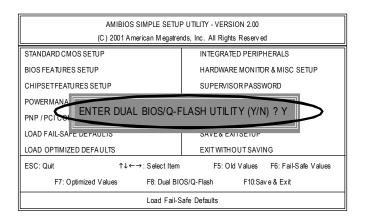


### Entering the Q-Flash™ utility:

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

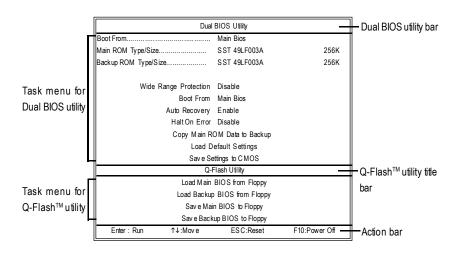


Step 2: Press **F8** button on your keyboard and then **Y** button to enter the Q-Flash™ utility.



### Exploring the Q-Flash™/Dual BIOS utility screen

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



### Task menu for Dual BIOS utility:

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

### Task menu for Q-Flash™ utility:

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

#### Action bar:

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

### Using the Q-Flash™ utility:

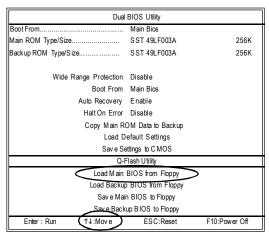
This section tells you how to update BIOS using the Q-Flash™ utility. As described in the "Before you begin" section above, you must prepare a floppy disk having the BIOS file for your motherboard and insert it to your computer. If you have already put the floppy disk into your system and have entered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

### Steps:

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



If you want to save the current BIOS for backup purpose, you can begin Step 1 with "Save Main BIOS to Floppy" item.



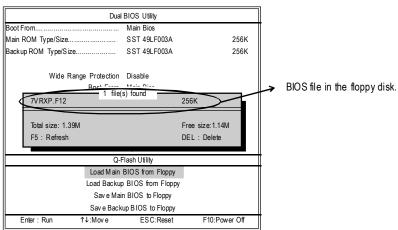
Later, you will see a box pop up showing the BIOS files you previously downloaded to the floppy disk.

2. Move to the BIOS file you want to flash and press Enter.

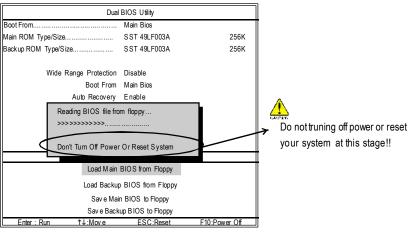
In this example, we only download one BIOS file to the floppy disk so only one BIOS file, 7VRXP.F12, is listed.



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



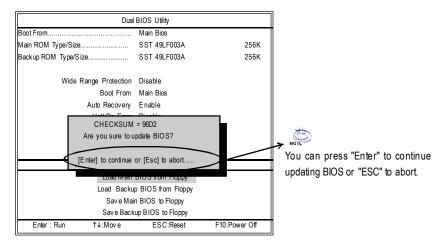
After pressing **Enter**, you'll then see the progress of reading the BIOS file from the floppy disk.



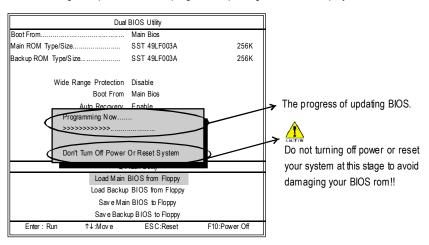
GALTON

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

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



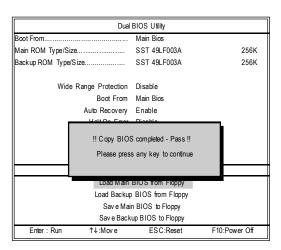
Press Y button on your keyboard after you are sure to update BIOS.
 Then it will begin to update BIOS. The progress of updating BIOS will be displayed.





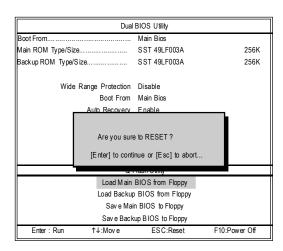
Please do not take out the floppy disk when it begins flashing BIOS.

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



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

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

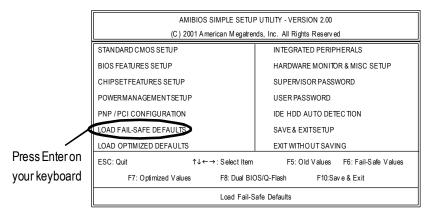


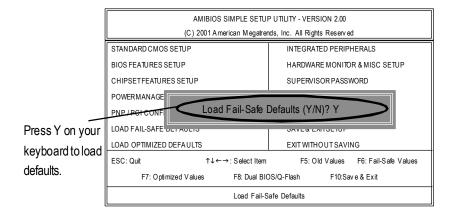
After system reboots, you may find the BIOS version on your bootscreen becomes the one you flashed.



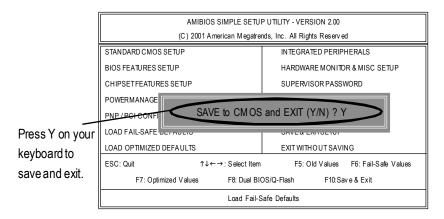
The following is an AMI BIOS menu screen. However, you can also find similar option in AWARD BIOS menu.

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





7. Select **Save & Exit Setup** item to save the settings to CMOS and exit the BIOS menu. System will reboot after you exit the BIOS menu. The procedure is completed.



## Part Two:

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

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

## Entering the Q-Flash™ utility:

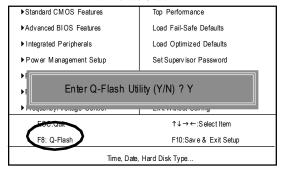
Step1: To use the Q-Flash™utility, you must press **Del** in the bootscreen to enter BIOS menu.

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		
▶ Pow er 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	↑↓→←:S elect Item		
F8: Q-Flash	F10:Sav e & Exit Setup		
Time, Date, Hard Disk Type			

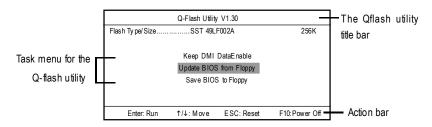
2. Press F8 on your keyboard and then Y button to enter the Q-Flash™ utility.

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



## Exploring the Q-Flash™ utility screen

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



**Task menu for the Q-Flash**<sup>™</sup> **utility:** Contains the names of three tasks. Blocking a task and pressing **Enter** key on your keyboard to enable execution of the task.

**Action bar:** Contains the names offour actions needed to operate the Q-Flash™ utility. Pressing the buttons mentioned on your keyboard to perform these actions.

## Using the Q-Flash™ utility:

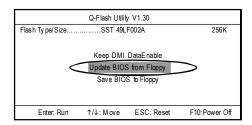
This section tells you how to update BIOS using the Q-Flash™ utility. As described in the "Before you begin" section above, you must prepare a floppy disk having the BIOS file for your motherboard and insertit to your computer. If you have already put the floppy disk into your system and have enter the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

## Steps:

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



If you want to save the current BIOS for backup purpose, you can begin Step 1 with Save Main BIOS to Floppy item.

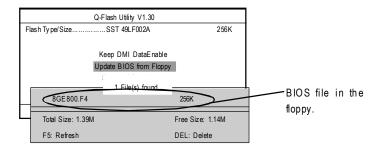


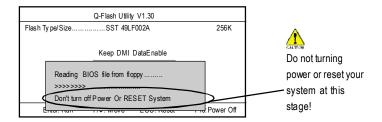
Later, you will see a box showing the BIOS files you downloaded to the floppy disk. In this example, we only download one BIOS for this board, 8GE800.F4 so only one BIOS file is listed.

2. Highlight the BIOS file you want to fash and press **Enter** button on your keyboard to enable reading from the BIOS file from the floppy.

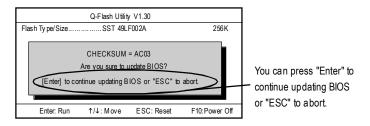


Please confirm again you have the correct BIOS file for your motherboard.



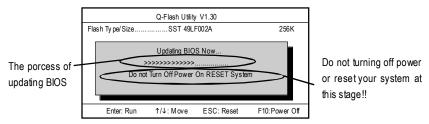


After BIOS file is read, you'll see a confirmation dialog box asking you "Are you sure to update BIOS?"

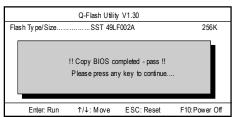


3. Press Y button if you make sure to update BIOS.

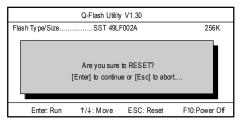
Then it will begin to update BIOS. The progress of updating will be shown at the same time.



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



5. Press Esc and then Enter to exit the Q-Flash™ utility. System will restart.



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

# Congratulation!! You have updated BIOS successfully!!

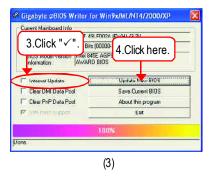
# Method 2: @ BIOS Utility

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





(1)





(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. Selectthe 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 anyother methods (such as: 81865PE-L.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.

## V. 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 Introduction

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:

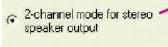
After installation of the audio driver, you'll find an icon on the taskbar's status area. Click the audio icon "Sound Effect" from the windows tray at the bottom of the screen.





#### STEP 3:

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





# 4 Channel Analog Audio Output Mode

#### STEP 1:

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



#### STFP 2:

After installation of the audio driver, you'll find an

icon on the taskbar's status area. Click the audio icon "Sound Effect" from the windows tray at the bottom of the screen.





#### STEP 3:

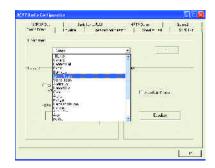
Select "Speaker Configuration", and choose the "4 channel for 4 speakers out put".

Disable "Only SURROUND-KIT", and press "OK".

4-channel mode for 4 speaker 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.



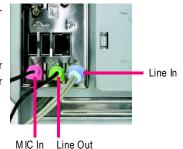


# **Basic 6 Channel Analog Audio Output Mode**

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".



#### STFP 2:

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

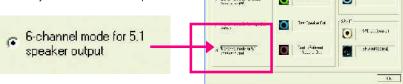




### STEP 3:

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

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



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

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

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



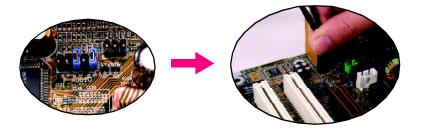
### STEP1:

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



#### STEP 2:

Connect the "SURROUND-KIT" to SUR\_CEN on the M/B



#### STEP 3:

Connect the front channels to back audio panel's

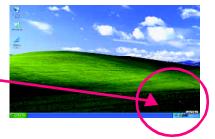
"Line Out", the rear channels to SURROUND-KIT's REAR R/L, and the Center/Subwoofer channels to SURROUND-KIT's SUB CENTER



#### 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 channel for 5.1 speakers out put".

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





# Basic & Advanced 6 Channel Analog Audio Output ModeNotes:

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.



# **SPDIF Output Device (Optional Device)**

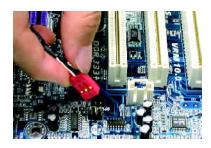
A "SPDIF output" device is available on the motherboard. Cable with rear bracket is provided and could link to the "SPDIF output" connector (As picture.) For the further linkage to decoder, rear bracket provides coaxial cable and Fiber connecting port.



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



2. Connect SPDIF device to the motherboard.



3. Connect SPDIF to the SPDIF decoder.



# **Jack-Sensing Introduction**



Jack-Sensing provides audio connectors error-detection function.



Install Microsoft DirectX8.1 or later version before to enable Jack-Sensing support for Windows 98/98SE/2000/ME.

Jack-Sensing includes 2 parts: AUTO and MANUAL. Following is an example for 2 channels (Windows XP):

#### Introduction of audio connectors

You may connect CDROM, Walkman or others audio input devices to Line In jack, speakers, earphone or others output devices to Line Out jack, and microphone to MIC In jack.



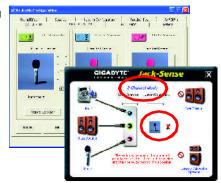
## Auto-detecting:

Please connect the devices to the right jacks as above. A window will appear as right picture if you setup the devices properly.

Please note that 3D audio function will only appear when 3D audio inputs.



If you set wrong with the connectors, the warning message will come out as right picture.



# Manual setting:

If the device picture shows different from what you set, please press "Manual Selection" to set.



# **UAJ** Introduction

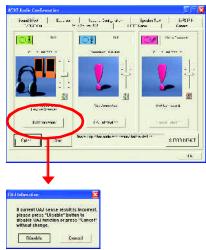
UAJ (Universal Audio Jack) has a very smart feature: It will switch signal automatically when user plugs his audio device to the wrong jack (Line-in/Line-out).

That means users do not need to worry the Audio device should be plug in Line-in or Line-out jack, the device will work perfectly after UAJ is activated.



Install Microsoft DirectX8.1 or later version before to enable UAJ support for Windows 98/98SE/ 2000/MF

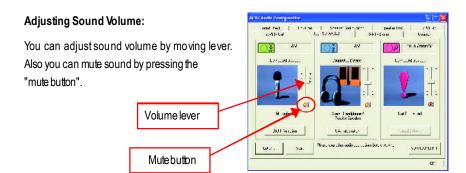
**PS.** If UAJ couldn't work as expected, please disable this function by pressing button "UAJ information". And then Jack-Sense function will awake and auto-detect if the Audio device is plugged to the right; ack (Line-in or Line-out).



# Reviving UAJ:

You can click "UAJ AUTO" to revive UAJ function.





If there is only Line-in device plugged, UAJ will remind you there is no any Line-out device plugged in



#### Note:

If you want to use AUX IN function, you must disable UAJ function from the Speaker Configuration item in the AC97 Audio Configuation menu. After that, you'll have to use the Line-In volume lever in the "Volume Control" menu to adjust the volume because AUX IN and Line-In functions are controlled by the same audio signals.

# **Xpress Recovery Introduction**

## What is Xpress Recovery?

Xpress Recovery utility is an utility for backing up and restoring O.S. partition. If the hard drive cannot work properly, you can restore it to the original state.



- It supports FAT16, FAT32, NTFS format.
- 2. It must be connected to IDE1 Master.
- 3. It's only allows you to install one O.S.
- 4. It must be used with IDE hard disk supporting HPA.
- 5. The first partition must be set as the boot partition. When the boot partition is backed up, please do not change the its size.
- 6. It is not recommend to use Xpress Recovery if you had ever used Ghost to return boot management to NTFS format.



- 1. System data and hard disk's reading/writing speed will affect backing up speed.
- 2. We recommend that you install Xpress Recovery immediately after installing O.S , drivers and applications.

## How to use the Xpress Recovery

There are two ways to enter the Xpress Recovery utility. (see the below)

1. Text Mode: press F9 during powering on the computer.

Press F9 during powering on the computer.



F9 For Xpress Recovery

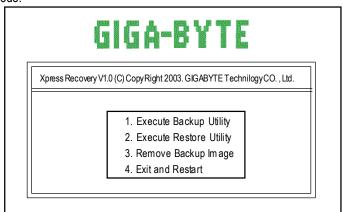
2. BMP Mode: boot from CD-ROM

Please go to "Advanced BIOS" setting menu and set boot from CD-ROM, then save and exit the BIOS menu. Later, please insertMB driver CD into your drive when "Boot from CD:" appears at the bottom of the screen, press any key to enter Xpress Recovery.



You can highlight the item by using the arrows keys on your keyboard and enter key to enter the menu.

#### Text Mode:



## BMP Mode:



If you ever entered Xpress Recovery by booting from CD-ROM, you'll still be directed to BMP mode by pressing F9 in the bootup screen.

## 1. Execute Backup Utility:

Press B to Backup your System or Esc to Exit

The Backup utility will scan the system automatically and backup it. The backed up data will be saved as an hidden image.

## 2. Execute Restore Utility:

✓ This program will recover your system to factory default.

Press R to recover your system.

Press Esc to exit

Restore the backup image to the original state.

## 3. Remove Backup Image:

Are you sure to remove backup image? (Y/N)

Remove the backup image.

#### 4.Exit and Restart:

Exitand restart your computer.

# **Chapter 5 Appendix**

# **Install Drivers**



# Pictures below are shown in Windows XP (CD ver. 2.41)

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 to install the drivers automatically.



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

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 will execute the installation for you by itself.





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.
- USB Patch for WinXP

  This patch driver can help you to resolve the USB device wake up S3 hang up issue in XP.
- Intel 82562/82562EX/82540EM LAN Driver
  For Intel(R) PRO/10/1000/Wireless Ethernet connections.
- RealTek AC97 Codec Driver
  For Intel(R) ICH/ICH2/ICH4/ICH5/ICH5R AC97 audio.
- Intel USB 2.0 Driver
  It is recommended that you use the Microsoft Windows update for the most updated driver for XP/2K



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

#### SOFTWARE APPLICATION

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



Gigabyte Windows Utilities Manager(GWUM)
 This utility can integrate the Gigabyte's applications in the system tray.

Gigabyte Management Tool(GMT)
 A useful tool which can manage the computer via the network.

■ EasyTune4

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-WizardNew 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

■ DirectX 9

Install Microsoft DirectX 9 to enable 3D hardware acceleration that support for operating system to achieve better 3D performence.

## **SOFTWARE INFORMATION**

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



# HARDWARE INFORMATION

This page lists all device you have for this motherboard.



# **CONTACT US**

Please see the last page for details.



# **FAQ**

Below is a collection of general asked questions. To check general asked questions based on a specific motherboard model, please log on to 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<sup>™</sup> 4?

**Answer:** The availability of the listed functions in EasyTune<sup>™</sup> 4 depends on the MB chipset. If the chipset doesn't support certain functions in EasyTune<sup>™</sup> 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?

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

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

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

#### →AMI BIOS Beep Codes

\*Computer gives 1 short beep when system boots successfully.

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

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

## → 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

Question 11: How to set in the BIOS in order to bootup from SATA HDDs by either RAID or ATA mode?

Answer: Please set in the BIOS as follow:

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

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

**Question 12:**For the M/B which have RAID function, how to set in the BIOS in order to bootup from IDE3, 4 by either RAID or ATA mode?

Answer: Please set in the BIOS as follow:

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

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

**Question 13:**How to set in the BIOS to bootup from the IDE/ SCSI/ RAID card? **Answer:**Please set in the BIOS as follow:

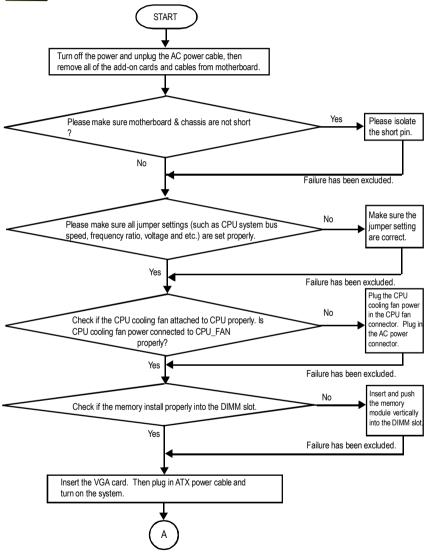
- 1. Advanced BIOS features-->(SATA)/RAID/SCSI boot order: "SCSI"
- 2. Advanced BIOS features--> First boot device: "SCSI"

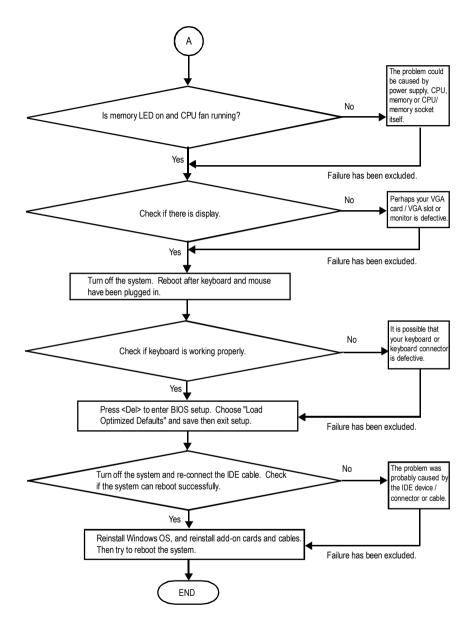
Then it depends on the mode(RAID or ATA) that you need to set in RAID/ SCSI BIOS.

# **Troubleshooting**



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





If the above procedure unable to solve your problem, please contact with your local retailer or national distributor for help. Or, you could submit your question to the service mail via Gigabyte website technical support zone

(http://www.gigabyte.com.tw). The appropriate response will be provided ASAP.

# **Technical Support/RMA Sheet**

Customer/Cour	ntry:	Company:		Phone No.:	
Contact Persor	1:	E-mail Add. :		1	
Model name/Lo	t Number:			PCB revision:	
BIOS version:		O.S./A.S.:			
Hardware	Mfs.	Model name	Size:	Driver/Utility:	
Configuration					
CPU					
Memory					
Brand					
Video Card					
Audio Card					
HDD					
CD-ROM/					
DVD-ROM					
Modem					
Network					
AMR / CNR					
Keyboard					
Mouse					
Power supply					
Other Device					
Problem Descri	iption:		<u> </u>	•	
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# **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.....

Meaning
Input Output Advanced Programmable Input Controller
Industry Standard Architecture
Local Area Network
Input / Output
Logical Block Addressing
Light Emitting Diode
Megahertz
Musical Instrument Digital Interface
Memory Translator Hub
Memory Protocol Translator
Network Interface Card
Operating System
Original Equipment Manufacturer
PCI A.G.P. Controller
Power-On Self Test
Peripheral Component Interconnect
Rambus in-line Memory Module
Special Circumstance Instructions
Single Edge Contact Cartridge
Static Random Access Memory

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#### **CONTACT US**

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

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We have been constantly striving hard to provide you with faster and more efficient mail replying service.

If you have any inquiry please classify it into the following topics.

The respective department will attend to the inquiry as soon as possible. Thank you for your cooperation!

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