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 SiS® 655FX. 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-8S655FX Ultra/GA-8S655FX (-L) (or any AGP 4X only) motherboards might not function properly, if you install this card without switching the jumper to 4X(1.5) mode in it.

Example 2: Some ATi Rage 128 Pro graphics cards made by "Power Color", the graphics card manufacturer & some SiS 305 cards, their golden finger is compatible with 2X(3.3V)/4X(1.5V) mode AGP slot, but they support 2X(3.3V) only. The GA-8S655FX Ultra/GA-8S655FX (-L) (or any AGP 4X only) motherboards might not function properly, If you install this card in it.

Note : Although Gigabyte's AG32S(G) graphics card is based on ATi Rage 128 Pro chip, the design of AG32S(G) is compliance with AGP 4X(1.5V) specification. Therefore, AG32S (G)will work fine with SiS® 655FX based motherboards.

Before you install PCI cards, please remove the Dual BIOS label from PCI slots if there is one.

- **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- **Due to rapid change in technology, some of the specifications might be out of date before publication of this booklet.**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 β und fest angebracht ist. DIES HAT EINEN PERMANENTEN SCHADEN ZUR FOLGE!

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

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

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

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

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

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

Declaration of Conformity

We, Manufacturer/Importer

(full address)

G.B.T. Technology 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-8S655FX Ultra/GA-8S655FX(-L)

is in conformity with

(reference to the specification under which conformity is declared)

in accordance with 89/336 EEC-EMC Directive

☐ EN 55011	Limits and methods of measurement of radio disturbance characteristics of industrial,scientific and medical (ISM high frequency equipment	☐ EN 61000-3-2* ☒ EN 60555-2	Disturbances in supply systems cause by household appliances and similar electrical equipment "Harmonics"
☐ EN 55013	Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment	☐ EN 61000-3-3* ☒ EN 60555-3	Disturbances in supply systems cause by household appliances and similar electrical equipment "Voltage fluctuations"
☐ EN 55014	Limits and methods of measurement of radio disturbance characteristics of household electrical appliances, portable tools and similar electrical apparatus	☒ EN 50081-1 ☒ EN 50082-1	Generic emission standard Part 1: Residual commercial and light industry 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**

$C\epsilon$ (EC conformity marking)
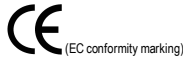
The manufacturer also declares the conformity of above mentioned product
with the actual required safety standards in accordance with LVD 73/23 EEC

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

Manufacturer/Importer

(Stamp)

Date : August 28, 2003

Signature: *Timmy 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-8S655FX Ultra**

/GA-8S655FX(-L)

Conforms to the following specifications:

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

Supplementary Information:

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

Representative Person's Name: <u>ERIC LU</u>

Signature: *Eric Lu*

Date: <u>August 28, 2003</u>

GA-8S655FX Ultra/GA-8S655FX(-L)
P4 Titan Series Motherboard

USER'S MANUAL

Table of Content

① For GA-8S655FX Ultra only.

Item Checklist

- ☑ The GA-8S655FX Ultra or GA-8S655FX-L
  or GA-8S655FX motherboard
- ☑ IDE cable x 1(②③)/x 3(①), Floppy cable x 1
- ☑ CD for motherboard driver & utility
- ☑ GA-8S655FX Ultra/GA-8S655FX(-L) user's manual
- ☑ I/O Shield
- ☑ Quick PC Installation Guide
- ☑ GigaRAID Manual (①)
- ☐ GC-SATA Card (Optional)
  (Manual; SATA cable x1; Power cable x 1)

- ☑ 2 Port USB Cable x 1(②③)
- ☐ 4 Port USB Cable x 1
- ☐ SPDIF-KIT x 1 (SPDIF Out KIT)
- ☑ IEEE1394 + USB Cable x 1 (①)
- ☑ Audio Combo Kit x 1
  (SURROUND-Kit + SPDIF Out KIT) (①)
- ☑ Motherboard Settings Label
- ☐ SATA RAID Manual
- ☑ SATA cable x 2
- ☑ Serial ATA Power Cable x 1

CAUTION

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

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

Installing the motherboard to the chassis…

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

① For GA-8S655FX Ultra only. ② For GA-8S655FX-L only. ③ For GA-8S655FX only.

Chapter 1 Introduction

Features Summary

Form Factor	• 30.5cm x 24.4cm ATX size form factor, 4 layers PCB.
CPU	• Socket 478 for Intel® Micro FC-PGA2 Pentium® 4 processor
	• Support Intel® Pentium® 4 (Northwood, Prescott) processor
	• Support Intel® Pentium® 4 Processor with HT Technology
	• Intel Pentium®4 800/533/400 MHz FSB
	• 2nd cache depends on CPU
Chipset	• SiS 655FX Host/Memory controller
	• SiS 964 MuTIOL Media I/O
Memory	• 4 184-pin DDR DIMM sockets
	• Supports Dual channel DDR400/DDR333/DDR266 DIMM
	• Supports 128MB/256MB/512MB/1GB unbuffered DRAM
	• Supports up to 4GB DRAM (Max) (Note 1)
I/O Control	• IT8705
Slots	• 1 AGP slot supports 8X/4X mode
	• 5 PCI slot supports 33MHz & PCI 2.3 compliant
On-Board IDE	• 2 IDE controllers provides IDE HDD/CD-ROM (IDE1, IDE2) with PIO, Bus Master (Ultra DMA33/ATA66/ATA100/ATA133) operation modes
	• IDE3 (①) and IDE4 (①) compatible with RAID, Ultra ATA133/100, IDE
On-Board Peripherals	• 1 Floppy port supports 2 FDD with 360K, 720K,1.2M, 1.44M and 2.88M bytes.
	• 1 Parallel port supports Normal/EPP/ECP mode
	• 2 Serial ports (COMA&COMB)
	• 8 USB 2.0/1.1 ports (4 x Rear, 4 xFront by cable)
	• 3 IEEE1394 ports (by cable)
	• 1 Front Audio Connector
	• 1 IrDA connector for IR
Hardware Monitor	• CPU/System Fan Revolution detect
	• CPU temperature detect
	• System Voltage detect

to be continued......

⚠ CAUTION

(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.

① For GA-8S655FX Ultra only.

On-Board Sound	• Realtek ALC658 UAJ CODEC
	• Line Out / 2 front speaker
	• Line In / 2 rear speaker(by s/w switch)
	• Mic In / center & subwoofer(by s/w switch)
	• SPDIF Out /SPDIF In
	• CD_In / AUX_IN / Game Port
On-Board LAN (①②)	• Build in RTL8110S (①) Chipset
	• Build in RTL8100C (②) Chipset
	• 1 RJ45 port(①②)
On-Board IDE RAID (①)	• Onboard GigaRAID IT8212F chipset
	• Supports data striping (RAID 0) or mirroring (RAID 1) or striping+mirroring (RAID 0 + RAID 1)
	• Support JBOD function
	• Supports concurrent dual ATA133 IDE controller operation
	• Support ATAPI mode for HDD
	• Supports IDE bus master operation
	• Support ATA133/RAID mode switch by BIOS
	• Displays status and error checking messages during boot-up
	• Mirroring supports automatic background rebuilds
	• Features LBA and Extended Interrupt 13 drive translation in controller onboard BIOS
On-Board SATA RAID	• Onboard SiS 964
	• 2 Serial ATA connectors in 150 MB/s operation mode
	• Supports Disk striping (RAID0) or DISK Mirroring (RAID1)
	• Support JBOD function
	• Supports UDMA up to 150 MB/sec
	• UDMA and PIO Modes
	• Up to 2 SATA Device
On-Board IEEE1394	• Built-in TI TSB43AB23
PS/2 Connector	• PS/2 Keyboard interface and PS/2 Mouse interface

① For GA-8S655FX Ultra only. ② For GA-8S655FX-L only.

BIOS	• Licensed AWARD BIOS
	• Supports Dual BIOS ⁽①⁾/Q-Flash
	• Supports Face Wizard ⁽①⁾
Additional Features	• PS/2 Keyboard power on by password
	• PS/2 Mouse power on
	• STR(Suspend-To-RAM)
	• AC Recovery
	• USB KB/Mouse wake up from S3
	• Supports EasyTune 4
	• Supports @BIOS
Overclocking	• Over Voltage (CPU/DRAM/AGP) by BIOS
	• Over Clock (CPU/DRAM/AGP) by BIOS

HT functionality requirement content :

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

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

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

① For GA-8S655FX Ultra only.

GA-8S655FX Ultra/GA-8S655FX(-L) Motherboard Layout
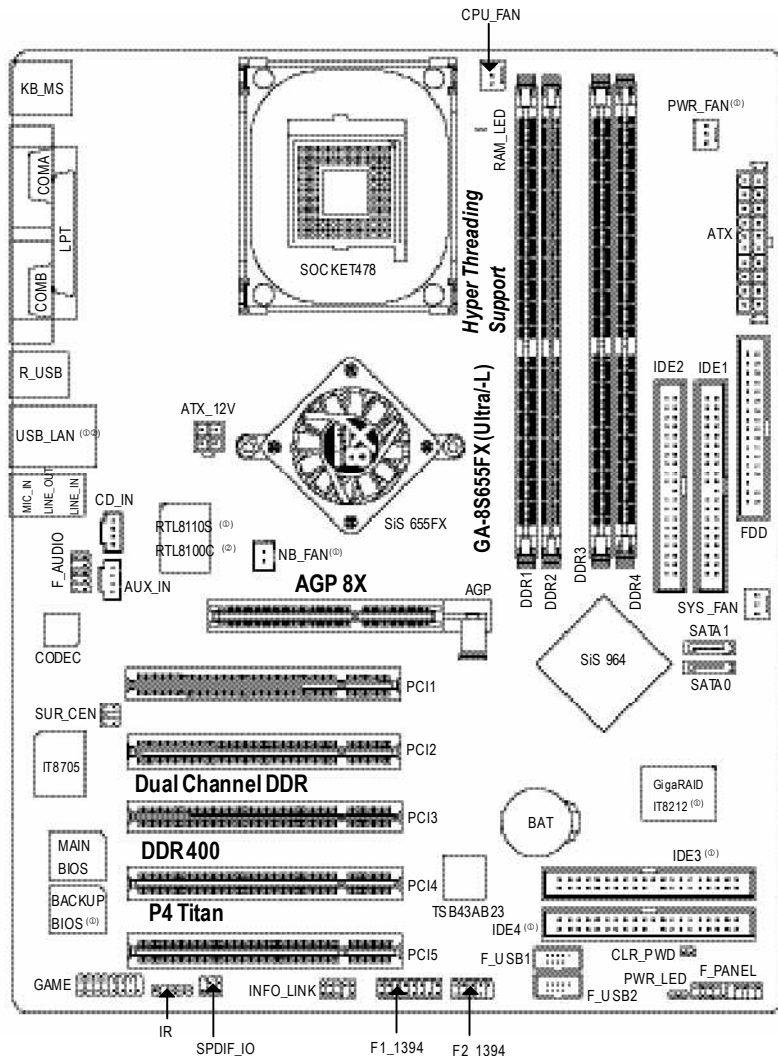
① For GA-8S655FX Ultra only. ② For GA-8S655FX-L only.

Block Diagram
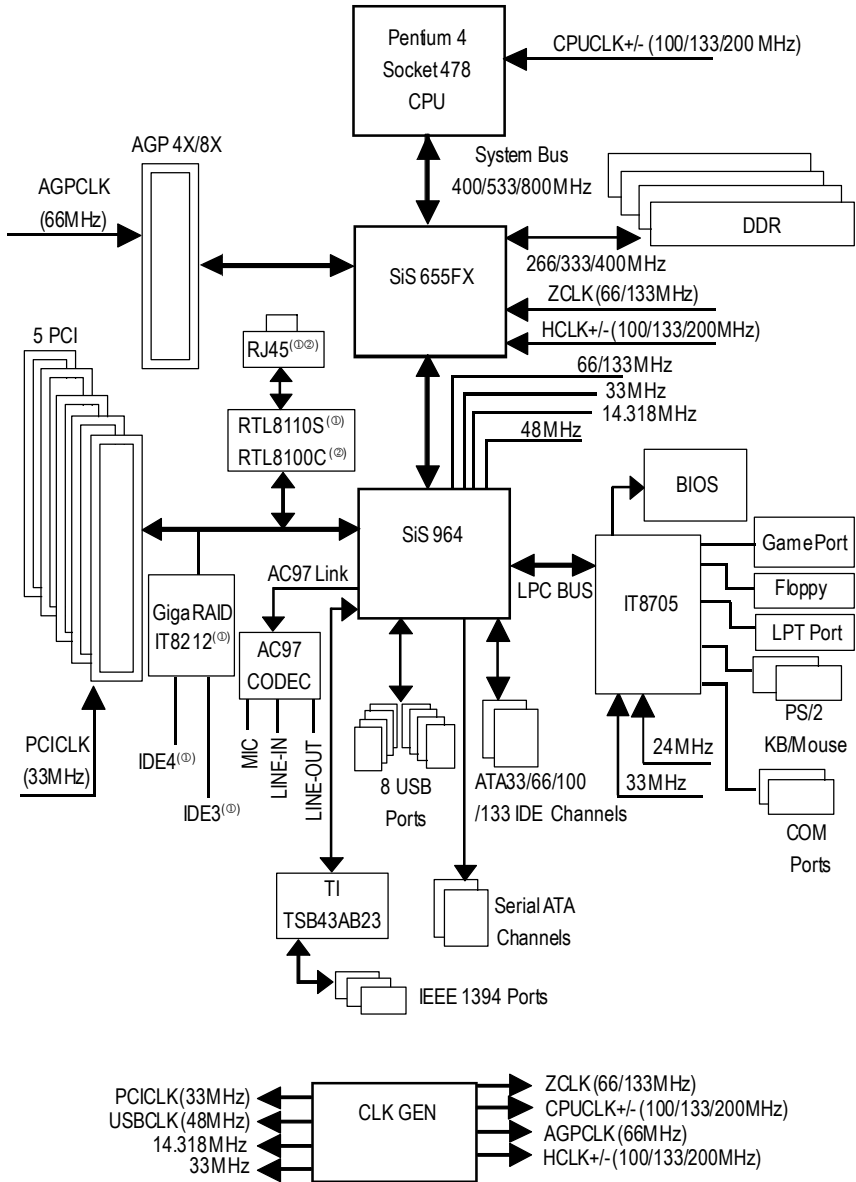
① For GA-8S655FX Ultra only. ② For GA-8S655FX-L only.

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Chapter 2 Hardware Installation Process

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

Step 1- Install the Central Processing Unit (CPU)

Step 2- Install memory modules

Step 3- Install expansion cards

Step 4- Connect ribbon cables, cabinet wires, and power supply
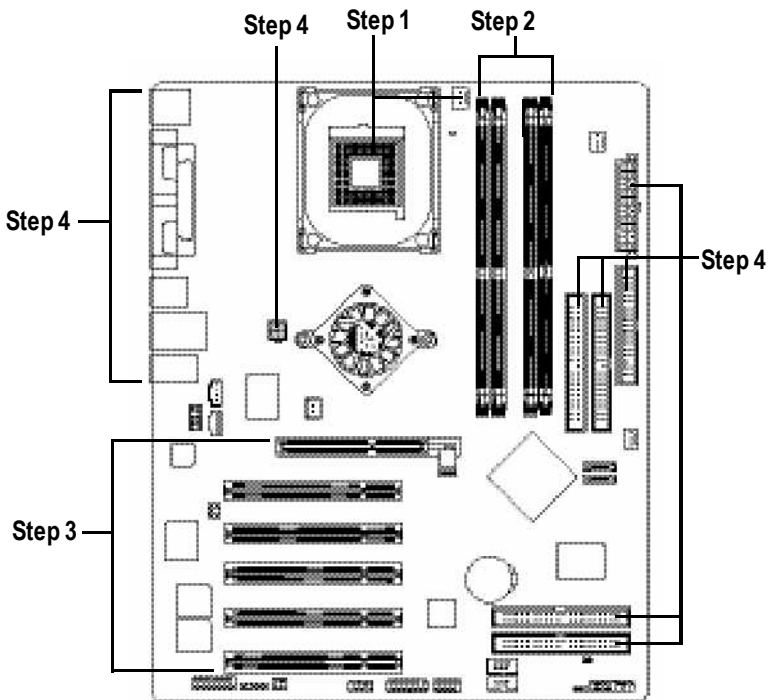
Congratulations you have accomplished the hardware installation!

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

Step 1: Install the Central Processing Unit (CPU)

Before installing the processor, adhere to the following warning:

⚠️ **CAUTION** **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

Angling the rod to 65⁰
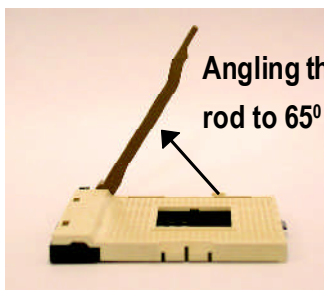
1. Angling the rod to 65-degree maybe feel a kind of tight , and then continue pull the rod to 90-degree when a noise "cough" made.

Socket Actuation Lever
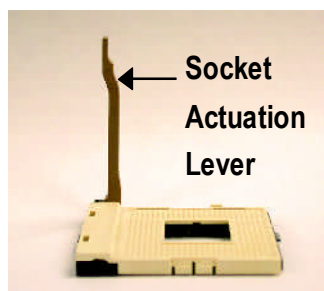
2. Pull the rod to the 90-degree directly.

Pin1 indicator

3. CPU Top View

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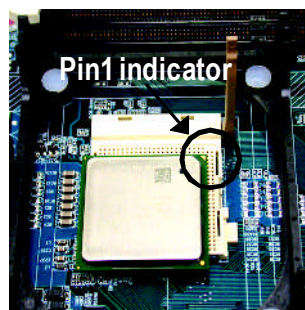
4. Locate Pin 1 in the socket and look for a (golden) cut edge on the CPU upper corner. Then insert the CPU into the socket.

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.
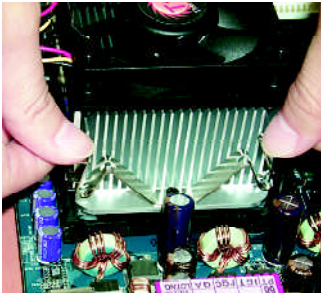
1. Fasten the cooling fan supporting-base onto the CPU socket on the mainboard.
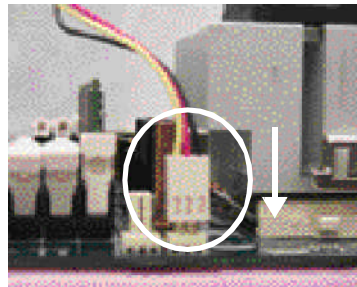
2. Make sure the CPU fan is plugged to the CPU fan connector, than install complete.

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.

Notch
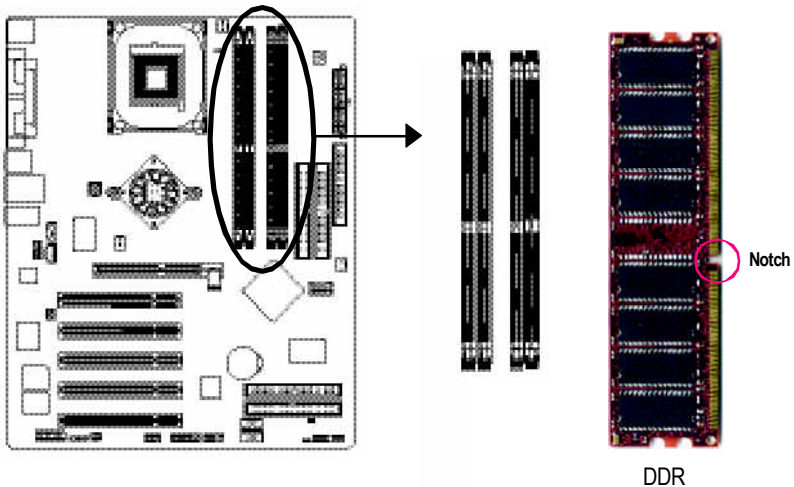
DDR

GA-8S655FX Ultra/GA-8S655FX(-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-8S655FX Ultra/GA-8S655FX(-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 SiS® chipset specifications.
1. One/three DDR memory module is installed: The Dual Channel Technology can't operate when only one or three DDR memory module is installed.

2. 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. Additionally, you can boot the system only when one of the memory modules is inserted into Channel A or Channel B. On the other hand, the memory module must be inserted into any sockets.

3. Four DDR memory modules are installed: If you 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 into two DDR memory modules into the DIMMs with the same color in order for Dual Channel Technology to work.

The following table is for Dual Channel Technology combination:

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

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

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

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

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

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

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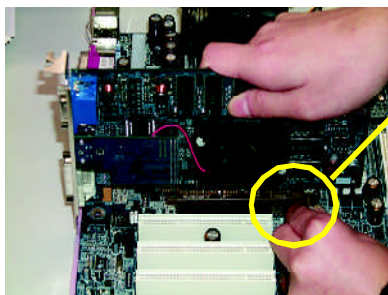
AGP Card

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

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

Step 4-1: I/O Back Panel Introduction
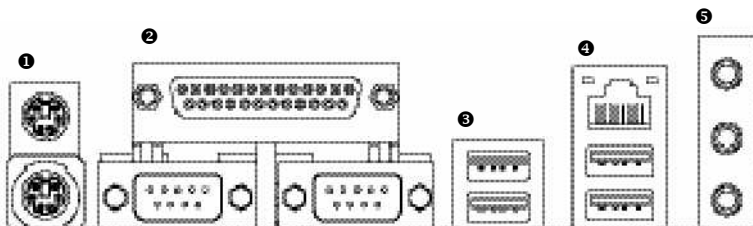
❶ PS/2 Keyboard and PS/2 Mouse Connector
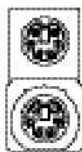
PS/2 Mouse Connector
(6 pin Female)

PS/2 Keyboard Connector
(6 pin Female)

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

❷ Parallel Port, Serial Port and VGA Port (LPT/COMA/VGA)

Parallel Port
(25 pin Female)
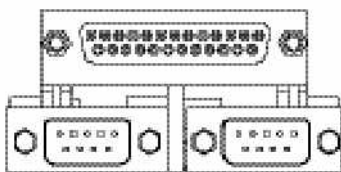
COMA   COMB

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.

❸/❹ USB / LAN Connector

USB 5
USB 4

LAN (①/②)
USB 7
USB 6
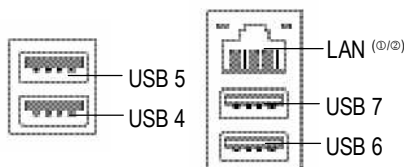
➢ Before you connect your device(s) into USB connector(s), please make sure your device(s) such as USB keyboard,mouse, scanner, zip, speaker..etc. Have a standard USB interface. Also make sure your OS supports USB controller.
If your OS does not support USB controller, please contact OS vendor for possible patch or driver upgrade. For more information please contact your OS or device(s) vendors.

❺ Audio Connectors

Line In(Rear Speaker)

Line Out(Front Speaker)

MIC In(Center and Subwoofer)
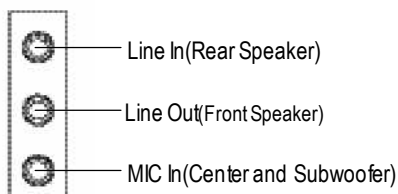
➢ After install onboard audio driver, you may connect speaker to Line Out jack, micro phone to MIC In jack.
Device like CD-ROM , walkman etc can be connected to Line-In jack.
Please note:
You are able to use 2-/4-/6- channel audio feature by S/W selection.
If you want to enable 6-channel function, you have 2 choose for hardware connection.
Method1:
Connect "Front Speaker" to "Line Out"
Connect "Rear Speaker" to "Line In"
Connect "Center and Subwoofer" to "MIC Out".
Method2:
You can refer to page 28, and contact your nearestdealer for optional SUR_CEN cable.

If you want the detail information for 2-/4-/6-channel audio setup installation, please refer to page 89.

① For GA-8S655FX Ultra only. ② For GA-8S655FX-L only.

Step 4-2: Connectors & Jumper Setting Introduction
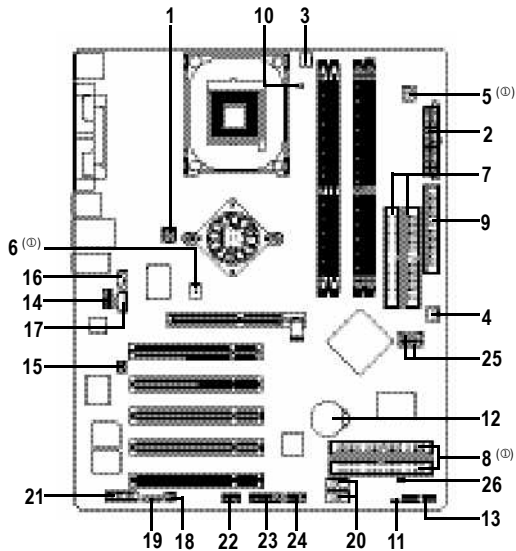
1) ATX_12V	15) SUR_CEN
2) ATX	16) CD_IN
3) CPU_FAN	17) AUX_IN
4) SYS_FAN	18) SPDIF_IO
5) PWR_FAN ⓪	19) IR
6) NB_FAN ⓪	20) F_USB1/F_USB2
7) IDE1/IDE2	21) GAME
8) IDE3/IDE4 ⓪	22) INFO_LINK
9) FDD	23) F1_1394
10) RAM_LED	24) F2_1394
11) PWR_LED	25) SATA0/SATA1
12) BAT	26) CLR_PWD
13) F_PANEL	
14) F_AUDIO	

① For GA-8S655FX Ultra only. ② For GA-8S655FX-L only.

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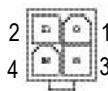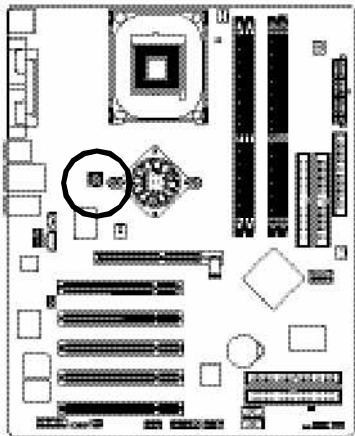
Pin No.	Definition
1	GND
2	GND
3	+12V
4	+12V

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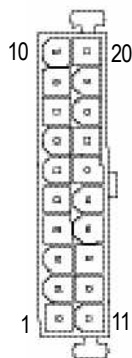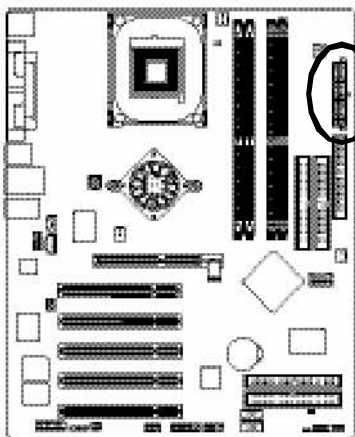
Pin No.	Definition
1	3.3V
2	3.3V
3	GND
4	VCC
5	GND
6	VCC
7	GND
8	PowerGood
9	5V SB(stand by +5V)
10	+12V
11	3.3V
12	-12V
13	GND
14	PS_ON(softOn/Off)
15	GND
16	GND
17	GND
18	-5V
19	VCC
20	VCC

3) CPU_FAN (CPU FAN Connector)

Please note, a proper installation of the CPU cooler is essential to prevent the CPU from running under abnormal condition or damaged by overheating. The CPU fan connector supports Max. current up to 600 mA.
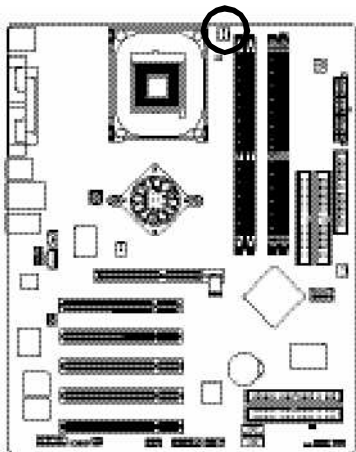
Pin No.	Definition
1	GND
2	+12V
3	Sense

4) SYS_FAN (System FAN Connector)

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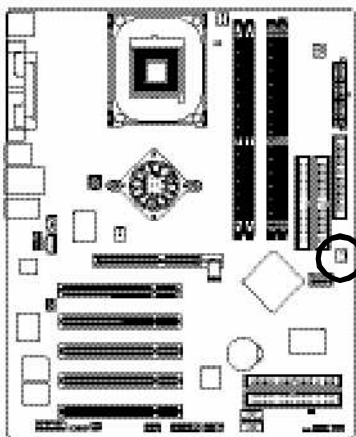
Pin No.	Definition
1	GND
2	+12V
3	Sense

5) PWR_FAN (Power Fan Connector) (①)

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

1
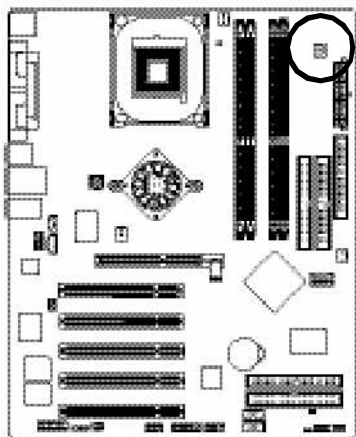
6) NB_FAN (①)

If you installed wrong direction, the Chip Fan will not work. Sometimes will damage the Chip Fan. (Usually black cable is GND)

Note: If the NorthBridge on the motherboard has a fan sink, then the motherboard contains a NB_FAN connector.
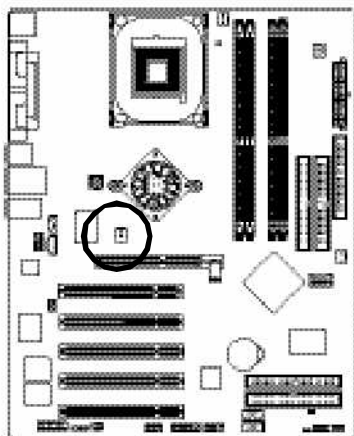
PinNo.	Definition
1	VCC
2	GND

1

① For GA-8S655FX Ultra only.

7) 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.
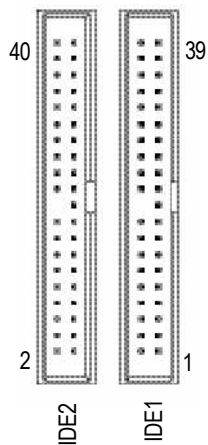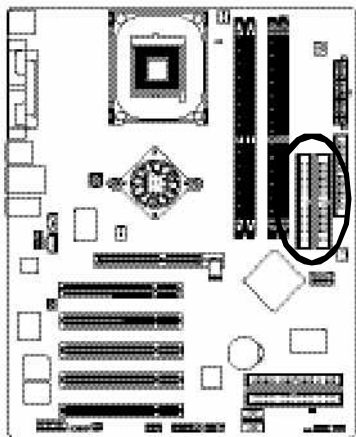
8) IDE3 / IDE4 (RAID/ATA133, Green Connector) (①)

Important Notice: The red stripe of the ribbon cable must be the same side with the Pin1. If you wish to use IDE3 and IDE4, please use it in unity with BIOS (either RAID or ATA133). Then, install the correct driver to have proper operation. For details, please refer to the GigaRAID manual.
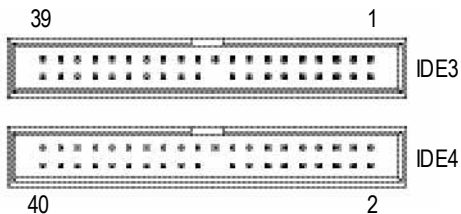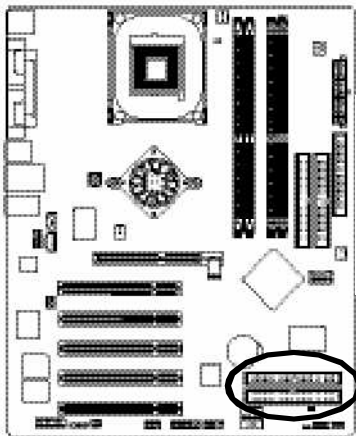
① For GA-8S655FX Ultra only.

9) 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.

34 ▪ ▪ 33

2 ▪ ▪ 1
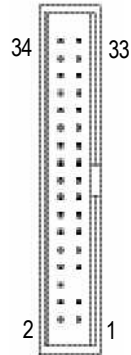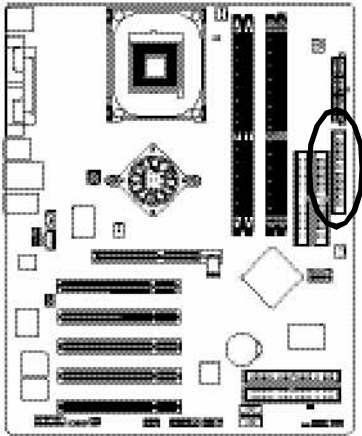
10) RAM_LED

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.

- ☐ +
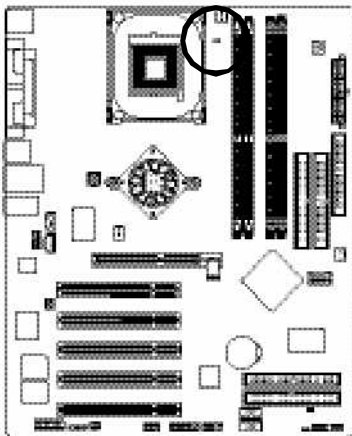
11) PWR_LED

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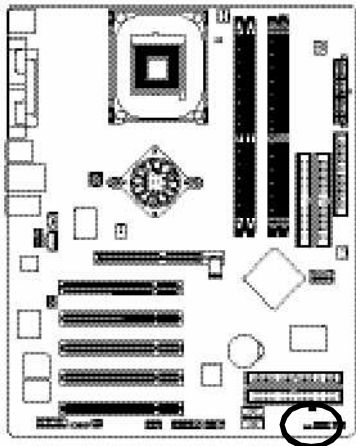
Pin No.	Definition
1	MPD+
2	MPD-
3	MPD-

1 □□□

12) BAT (Battery)
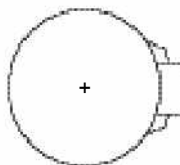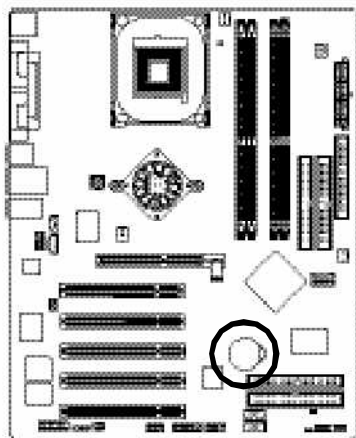
CAUTION

❖ Danger of explosion if battery is incorrectly replaced.

❖ Replace only with the same or equivalent type recommended by the manufacturer.

❖ Dispose of used batteries according to the manufacturer's instructions.

If you want to erase CMOS...
1. Turn OFF the computer and unplug the power cord.
2. Remove the battery, wait for 30 second.
3. Re-install the battery.
4. Plug the power cord and turn ON the computer.

13) F_PANEL (2x10 pins connector)

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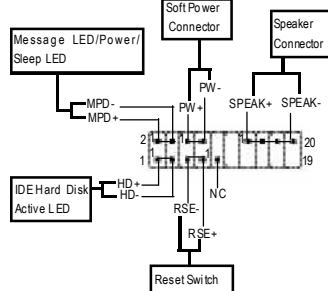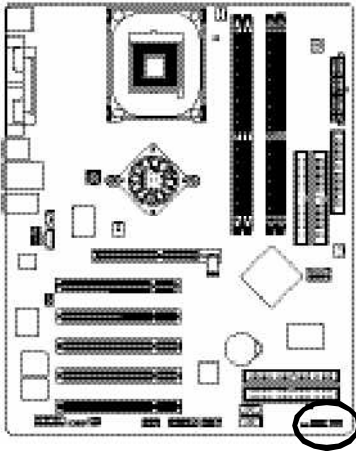
HD (IDE Hard Disk Active LED)	Pin 1: LED anode(+)
(Blue)	Pin 2: LED cathode(-)
SPEAK (Speaker Connector)	Pin 1: VCC(+)
(Amber)	Pin 2 - Pin 3: NC
	Pin 4: Data(-)
RES (Reset Switch)	Open: Normal Operation
(Green)	Close: Reset Hardware System
PW (Soft Power Connector)	Open: Normal Operation
(Red)	Close: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

14) F_AUDIO (F_AUDIO Connector)

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

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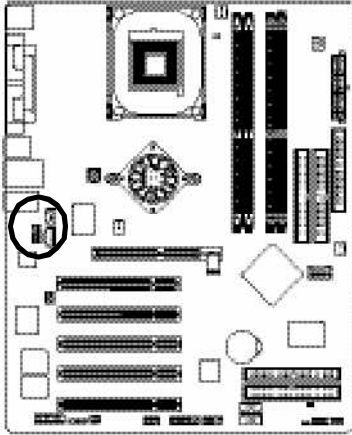
Pin No.	Definition
1	MIC
2	GND
3	REF
4	POWER
5	FrontAudio(R)
6	RearAudio(R)
7	Reserved
8	No Pin
9	FrontAudio(L)
10	RearAudio(L)

15) SUR_CEN

Please contact your nearest dealer for optional SUR_CEN cable.

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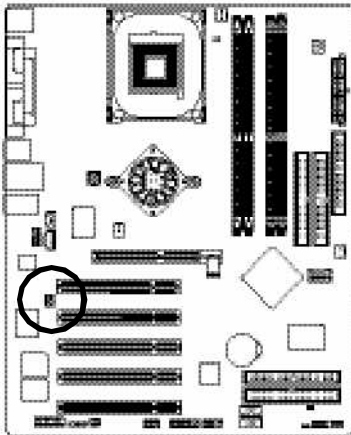
Pin No.	Definition
1	SUROUT L
2	SUROUT R
3	GND
4	No Pin
5	CENTER_OUT
6	BASS_OUT

16) CD_IN (CD IN, Black)

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

1
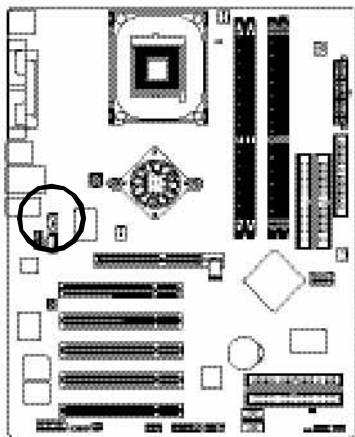
PinNo.	Definition
1	CD-L
2	GND
3	GND
4	CD_R

17) AUX_IN (AUX In Connector)

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

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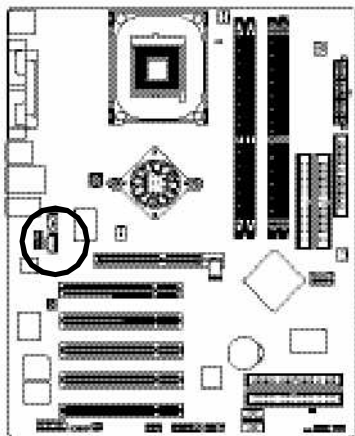
PinNo.	Definition
1	AUX-L
2	GND
3	GND
4	AUX_R

18) SPDIF_IO (SPDIF In/Out)

The SPDIF output is capable of providing digital audio to external speakers or compressed AC3 data to an external Dolby Digital Decoder. Use this feature only when your stereo system has digital input function. Use SPDIF IN feature only when your device has digital output function.
Be careful with the polarity of the SPDIF_IO connector. Check the pin assignment carefully while you connect the SPDIF_IO cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional SPDIF_IO cable, please contact your local dealer.
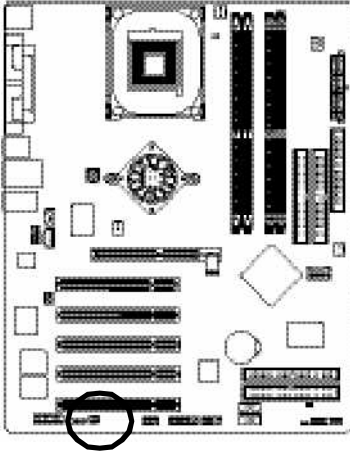
Pin No.	Definition
1	VCC
2	No Pin
3	SPDIF
4	SPDIFI
5	GND
6	GND

19) IR

Make sure the pin 1 on the IR device is aling with pin one the connector. To enable the IR function on the board, you are required to purchase an option IR module. Be careful with the polarity of the IR connector. For optional IR cable, please contact your local dealer.
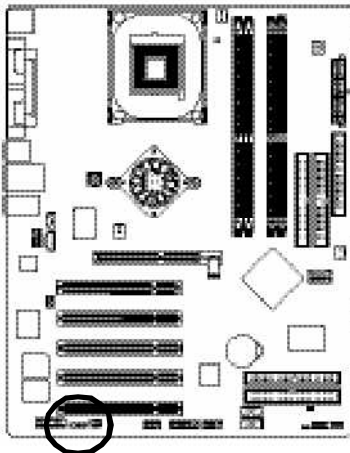
Pin No.	Definition
1	VCC
2	No Pin
3	IR Data Input
4	GND
5	IR Data Output

20) F_ USB1 / F_USB2(Front USB Connector, Yellow)

Be careful with the polarity of the front USB connector. Check the pin assignment while you connect the front USB cable. Please contact your nearest dealer for optional front USB cable. 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.
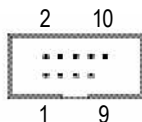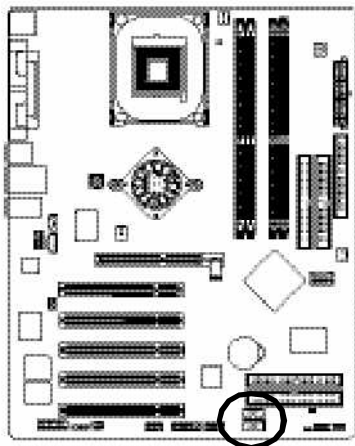
Pin No.	Definition
1	Power
2	Power
3	USB0 DX-/USB2 DX-
4	USB1 Dy-/USB3 Dy-
5	USB0 DX+/USB2 DX+
6	USB1 Dy+/USB3 Dy+
7	GND
8	GND
9	No Pin
10	NC

21) GAME (GAME Connector)

This connector supports joystick, MIDI keyboard and other relate audio devices.
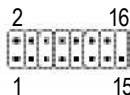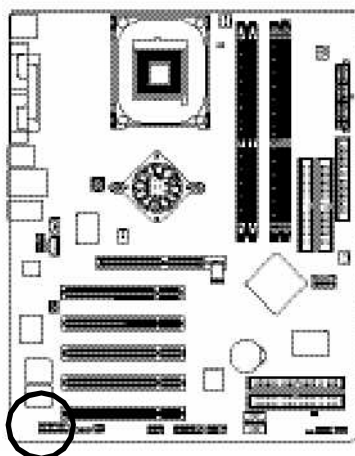
Pin No.	Definition
1	VCC
2	GRX1_R
3	GND
4	GPSA2
5	VCC
6	GPX2_R
7	GPY2_R
8	MSI_R
9	GPSA1
10	GND
11	GPY1_R
12	VCC
13	GPSB1
14	MSO_R
15	GPSB2
16	No Pin

22) INFO_LINK

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

2   10

1   9
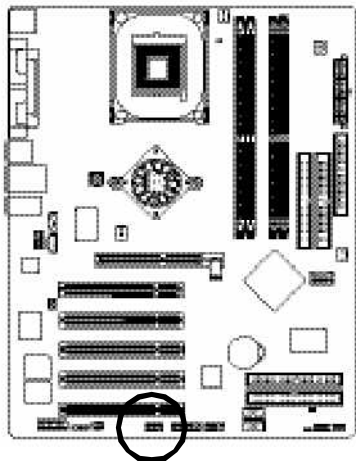
PinNo.	Definition
1	SMBCLK
2	VCC
3	SMBDATA
4	GPIO
5	GND
6	GND
7	NoPin
8	NC
9	+12V
10	+12V

23) F1_1394 (IEEE1394 Connector)

Please Note: Serial interface standard set by Institute of Electrical and Electronics Engineers, which has features like high speed, high bandwidth and hot plug.

Be careful with the polarity of the IEEE1394 connector. Check the pin assignment carefully while you connect the IEEE1394 cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional IEEE1394 cable, please contact your local dealer.

2   16

1   15
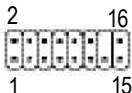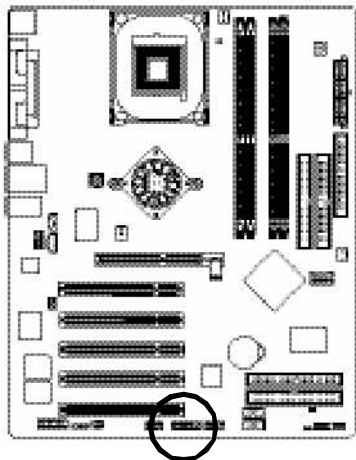
PinNo.	Definition
1	Power
2	Power
3	TPA0+
4	TPA0-
5	GND
6	GND
7	TPB0+
8	TPB0-
9	Power
10	Power
11	TPA1+
12	TPA1-
13	GND
14	NoPin
15	TPB1+
16	TPB1-

24) F2_1394 (IEEE 1394 Connector)

Please Note: Serial interface standard set by Institute of Electrical and Electronics Engineers, which has features like high speed, high bandwidth and hot plug.

Be careful with the polarity of the IEEE1394 connector. Check the pin assignment carefully while you connect the IEEE1394 cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional IEEE1394 cable, please contact your local dealer.


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2   10
┌─────┐
│     │
└─────┘
1    9
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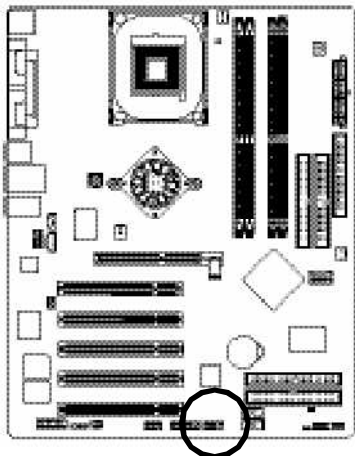
Pin No.	Definition
1	TPA2+
2	TPA2-
3	GND
4	GND
5	TPB2+
6	TPB2-
7	Power
8	Power
9	No Pin
10	GND

25) SATA0/SATA1 (Serial ATA Connector)

You can connect the Serial ATA device to this connector, it provides you high speed transfer rates (150MB/sec). If you wish to use RAID function, please use it in unity with BIOS and install the correct driver to have proper operation. For details, please refer to page 102.


```
7   1
┌─────┐
│     │
└─────┘
```
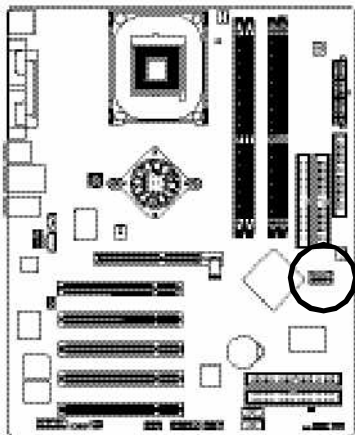
Pin No.	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

26) 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.
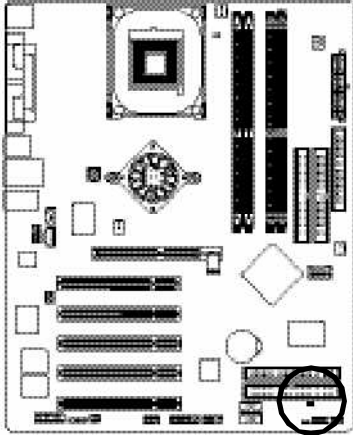
1 open: Clear password

1 close: Normal

English

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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>	Main Menu - Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu - Exit current page and return to Main Menu
<+/PgUp>	Increase the numeric value or make changes
<-/PgDn>	Decrease the numeric value or make changes
<F1>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<F2>	Item Help
<F3>	Reserved
<F4>	Reserved
<F5>	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
<F6>	Load the file-safe default CMOS value from BIOS default table
<F7>	Load the Optimized Defaults
<F8>	Dual BIOS (①)/Q-Flash function
<F9>	System Information
<F10>	Save all the CMOS changes, only for Main Menu

① For GA-8S655FX Ultra only.

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. : 8S655FX Ultra F1a)

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

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

▶Standard CMOS Features	Top Performance
▶Advanced BIOS Features	Load Fail-Safe Defaults
▶Integrated Peripherals	Load Optimized Defaults
▶Power Management Setup	Set Supervisor Password
▶PnP/PCI Configurations	Set User Password
▶PC Health Status	Save & Exit Setup
▶Frequency/Voltage Control	Exit Without Saving
ESC:Quit	↑↓→←:Select Item
F8: Dual BIOS ^(①)/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.

① For GA-8S655FX Ultra only.

● **Integrated Peripherals**

This setup page includes all onboard peripherals.

● **Power Management Setup**

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

● **PnP/PCI Configurations**

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

● **PC Health Status**

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

● **Frequency/Voltage Control**

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

● **Top Performance**

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

● **Load Fail-Safe Defaults**

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

● **Load Optimized Defaults**

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

● **Set Supervisor password**

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

● **Set User password**

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

● **Save & Exit Setup**

Save CMOS value settings to CMOS and exit setup.

● **Exit Without Saving**

Abandon all CMOS value changes and exit setup.

Standard CMOS Features

Standard CMOS Features

Date (mm:dd:yy)	Fri, May 3 2002	Item Help
Time (hh:mm:ss)	17:56:23	Menu Level ▶
		Change the day, month,
▶IDE Primary Master	None	year
▶IDE Primary Slave	None	
▶IDE Secondary Master	None	<Week>
▶IDE Secondary Slave	None	Sun. to Sat.
Drive A	1.44M, 3.5 in.	<Month>
Drive B	None	Jan. to Dec.
Floppy 3 Mode Support	Disabled	
		<Day>
Halt On	All, But Keyboard	1 to 31 (or maximum
		allowed in the month)
Base Memory	640K	
Extended Memory	130048K	<Year>
Total Memory	131072K	1999 to 2098
↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Figure 2: Standard CMOS Features

☞ **Date**

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

- ◈ Week   The week, from Sun to Sat, determined by the BIOS and is display only
- ◈ Month   The month, Jan. Through Dec.
- ◈ Day   The day, from 1 to 31 (or the maximum allowed in the month)
- ◈ Year   The year, from 1999 through 2098

✎ **Time**

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

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

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

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

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

➡ CYLS.	Number of cylinders
➡ HEADS	Number of heads
➡ PRECOMP	Write precomp
➡ 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
➡ 360K, 5.25 in.	5.25 inch PC-type standard drive; 360K byte capacity.
➡ 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
➡ 1.44M, 3.5 in.	3.5 inch double-sided drive; 1.44M byte capacity.
➡ 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	Drive B is 3 mode Floppy Drive.
➡ Both	Drive A & B are 3 mode Floppy Drives.

✑ **Halt on**

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

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

✑ **Memory**

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

Base Memory

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

The value of the base memory is typically 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

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Advanced BIOS Features

▶SCSI/RAID Cntlr Boot Order	[Press Enter]	Item Help
First Boot Device	[Floppy]	Menu Level ▶
Second Boot Device	[HDD-0]	Select boot sequence
Third Boot Device	[CDROM]	for onboard (or add-on
Boot Up Floppy Seek	[Disabled]	card) SCSI, RAID, etc
Password Check	[Setup]	
# CPU Hyper-Threading	[Enabled]	
Flexible AGP 8X	[Auto]	
Init Display First	[AGP]	

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

Figure 3: Advanced BIOS Features

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

↺ **SCSI/RAID Cntlr Boot Order**

☞ This feature allows you to select the boot order SiS RAID controller or RAID or ITE RAID controller.

➭ SiS RAID controller   Select your boot device priority by SiS RAID controller.

➭ ITE RAID controller   Select your boot device priority by ITE RAID controller. (①)

↺ **First / Second / Third Boot Device**

☞ This feature allows you to select the boot device priority.

➭ Floppy   Select your boot device priority by Floppy.

➭ LS120   Select your boot device priority by LS120.

➭ HDD-0~3   Select your boot device priority by HDD-0~3.

➭ SCSI   Select your boot device priority by SCSI.

➭ CDROM   Select your boot device priority by CDROM.

➭ ZIP   Select your boot device priority by ZIP.

① For GA-8S655FX Ultra only.

↪ USB-FDD	Select your boot device priority by USB-FDD.	
↪ USB-ZIP	Select your boot device priority by USB-ZIP.	
↪ USB-CDROM	Select your boot device priority by USB-CDROM.	
↪ USB-HDD	Select your boot device priority by USB-HDD.	
↪ LAN	Select your boot device priority by LAN.	
↪ Disabled	Select your boot device priority by Disabled.	

Boot Up Floppy Seek

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

↪ Enabled   BIOS searches for floppy disk drive to determine it is 40 or 80 tracks. Note that BIOS can not tell from 720 K, 1.2 M or 1.44 M drive type as they are all 80tracks.

↪ Disabled   BIOS will not search for the type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360 K. (Default value)

Password Check

↪ System   The system can not boot and can not access to Setup page will be denied if the correct password is not entered at the prompt.

↪ Setup   The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt. (Default value)

CPU Hyper-Threading

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

↪ Disabled   Disables CPU Hyper Threading.

Flexible AGP 8X

↪ Auto   Automatically set AGP transfer rate according to AGP compatibility and stability. (Default value)

↪ 4X   Set AGP transfer rate to 4X mode no matter what the AGP transfer rate the card is.

Init Display First

↪ AGP   Set Init Display First to AGP. (Default value)

↪ PCI   Set Init Display First to PCI.

Integrated Peripherals

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Integrated Peripherals

		Item Help
IDE1 Conductor Cable	[Auto]	
IDE2 Conductor Cable	[Auto]	Menu Level ▶
On-Chip Primary PCI IDE	[Enabled]	[Auto]
On-Chip Secondary PCI IDE	[Enabled]	Auto-detect IDE
AC97 Audio	[Enabled]	cable type
USB Controller	[Enabled]	
USB Legacy Support	[Disabled]	[ATA66/100/133]
Onboard 1394 Function	[Enabled]	Set Conductor cable
Onboard ATA/RAID device ⁽①⁾	[Enabled]	to ATA66/100/133(80-pins)
GigaRAID device ⁽①⁾	[RAID]	
Onboard LAN device ⁽①②⁾	[Enabled]	[ATA33]
SiS Serial ATA Controller	[Enabled]	Set Conductor cable
SiS Serial ATA Mode	[RAID]	to ATA33(40-pins)
Onboard Serial Port 1	[3F8/IRQ4]	
Onboard Serial Port 2	[2F8/IRQ3]	
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]	

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

Figure 4: Integrated Peripherals

① For GA-8S655FX Ultra only. ② For GA-8S655FX-L only.

◌ **IDE1 Conductor Cable**

▸ Auto	Will be automatically detected by BIOS. (Default Value)
▸ ATA66/100/133	Set IDE1 Conductor Cable to ATA66/100/133 (Please make sure your IDE device and cable is compatible with ATA66/100/133).
▸ ATA33	Set IDE1 Conductor Cable to ATA33 (Please make sure your IDE device and cable is compatible with ATA33).

◌ **IDE2 Conductor Cable**

▸ Auto	Will be automatically detected by BIOS. (Default Value)
▸ ATA66/100/133	Set IDE2 Conductor Cable to ATA66/100/133 (Please make sure your IDE device and cable is compatible with ATA66/100/133).
▸ ATA33	Set IDE2 Conductor Cable to ATA33 (Please make sure your IDE device and cable is compatible with ATA33).

◌ **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.

◌ **AC97 Audio**

▸ Enabled	Enable onboard AC'97 audio function. (Default value)
▸ Disabled	Disable this function.

◌ **USB Controller**

▸ Enabled	Enable USB Controller. (Default value)
▸ Disabled	Disable USB Controller.

◌ **USB Legacy Support**

When USB keyboard or mouse is installed, please set at Enabled.

▸ Enabled	Enable USB keyboard or mouse support.
▸ Disabled	Disable USB keyboard or mouse support. (Default value)

⌗ **Onboard 1394 Function**

    ➻ Enabled   Enable onboard IEEE 1394 function. (Default value)

    ➻ Disabled   Disable this function.

⌗ **Onboard ATA/RAID device** [①]

    ➻ Enabled   Enable onboard ATA/RAID device. (Default value)

    ➻ Disabled   Disable this function.

⌗ **GigaRAID Function** [①]

    ➻ RAID   Select onboard GigaRAID chip function as RAID. (Default value)

    ➻ ATA   Select onboard GigaRAID chip function as ATA.

⌗ **Onboard LAN device** [①②]

    ➻ Enabled   Enable onboard LAN function. (Default value)

    ➻ Disabled   Disable onboard LAN function.

⌗ **SiS Serial ATA Controller**

◐ Disable this option if you are not using the SiS Serial ATA feature.

    ➻ Enabled   Enable SiS Serial ATA support. (Default value)

    ➻ Disabled   Disable SiS Serial ATA .

⌗ **SiS Serial ATA Mode**

    ➻ RAID   Select SiS Serial ATA chip function as RAID. (Default value)

    ➻ IDE   Select SiS Serial ATA chip function as IDE.

⌗ **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.

① For GA-8S655FX Ultra only. ② For GA-8S655FX-L only.

☞ **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 Duplex 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)

Power Management Setup

Power Management Setup

		Item Help
ACPI Suspend Type	[S1(POS)]	
Soft-Off by PWR_BTTN	[Off]	Menu Level ▶
System After AC Back	[Off]	[S1]
IRQ [3-7, 9-15], NMI	[Enabled]	Set suspend type to
ModemRingOn	[Enabled]	Power On Suspend under
PME Event Wake Up	[Enabled]	ACPI OS
x USB Device Wake-up From S3	Enabled	
Power On by Keyboard	[Disabled]	[S3]
Power On by Mouse	[Disabled]	Set suspend type to
Resume by Alarm	[Disabled]	Suspend to RAM under
x Month Alarm	NA	ACPI OS
x Day (of Month)	0	
x Time (hh:mm:ss)	0 0 0	

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

Figure 5: Power Management Setup

⌦ **ACPI Suspend Type**

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

> ↦ S3(STR)   Set ACPI suspend type to S3.

⌦ **Soft-off by PWR_BTIN**

> ↦ Off   The user press the power button once, he can turn off the system.
> (Default Value)

> ↦ Suspend   The user press the power button once, then he can enter suspend mode.

⌦ **System after AC Back**

> ↦ LastState   When AC-power back to the system, the system will return to the Last state
> before AC-power off.

> ↦ Off   When AC-power back to the system, the system will be in "Off" state.
> (Default Value)

> ↦ On   When AC-power back to the system, the system will be in "On" state.

▷ **IRQ [3-7, 9-15], NMI**

- ▸ Disabled   Disable this function.
- ▸ Enabled   Enable this function. (Default value)

▷ **ModemRingOn**

- ▸ Disabled   Disable Modem Ring on function.
- ▸ Enabled   Enable Modem Ring on function. (Default Value)

▷ **PME Event Wake Up**

- ▸ Disabled   Disable this function.
- ▸ Enabled   Enable PME Event Wake up. (Default Value)

▷ **USB Device Wake-up From S3**

- ▸ Enabled   Enable USB Device Wakeup From S3.
- ▸ Disabled   Disable USB Device Wakeup From S3. (Default value)

▷ **Power On by Keyboard**

- ▸ Password   Input password (from 1 to 8 characters) and press Enter to set the Keyboard
                  Power On Password.
- ▸ Any Key   Set Keyboard power on by any key.
- ▸ Disabled   Disable this function. (Default Value)

▷ **Power On by Mouse**

- ▸ Enabled   Enable Power On by Mouse function.
- ▸ Disabled   Disable this function. (Default Value)

▷ **Resume by Alarm**

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

- ▸ Disabled   Disable this function. (Default Value)
- ▸ Enabled   Enable alarm function to POWER ON system.

    If RTC Alarm Lead To Power On is Enabled.

    Month Alarm :   NA, 1~12
    Day (of Month) :   1~31
    Time (hh: mm: ss) :   (0~23) : (0~59) : (0~59)

PnP/PCI Configurations

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PnP/PCI Configurations

PCI 4 IRQ Assignment	[Auto]	Item Help
PCI 1/5 IRQ Assignment	[Auto]	Menu Lev el ▶
PCI 2 IRQ Assignment	[Auto]	
PCI 3 IRQ Assignment	[Auto]	

↑↓→←: Mov e   Enter:Select   +/-/PU/PD:Value   F10:Sav e   ESC:Ex it   F1:General Help
F5:Prev ious Values   F6:Fail-Safe Defaults   F7:Optimized Defaults

Figure 6: PnP/PCI Configurations

⌦ **PCI 4 IRQ Assignment**

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

⌦ **PCI 1/5 IRQ Assignment**

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

⌦ **PCI 2 IRQ Assignment**

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

⌦ **PCI 3 IRQ Assignment**

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

PC Health Status

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PC Health Status

Vcore	OK	Item Help
DDR25	OK	Menu Level ▶
+3.3V	OK	
+12V	OK	
Current CPU Temperature	49°C	
Current CPU FAN Speed	5113 RPM	
Current SYSTEM FAN Speed	0 RPM	
CPU Smart FAN Control ⁽①⁾	[Enabled]	
↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Figure 7: PC Health Status

⌐ **Current Voltage (V) VCORE / DDR25 / +3.3 V / +12V**

  ↦ Detect system's voltage status automatically.

⌐ **Current CPU Temperature**

  ↦ Detect CPU temperature automatically.

⌐ **Current CPU/SYSTM FAN Speed (RPM)**

  ↦ Detect CPU/System Fan speed status automatically.

⌐ **CPU Smart FAN Control** ⁽①⁾

  ↦ Disabled   Disable this function.

  ↦ Enabled   Enable CPU Smart Fan control function.(Default value)

                     a. When the CPU temperature is higher than 40 degrees Celsius, CPU fan

                         will run at full speed.

                     b. When the CPU temperature is lower than 40 degrees Celsius, CPU fan

                         will run at low speed.

① For GA-8S655FX Ultra only.

Frequency/Voltage Control

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Frequency/Voltage Control

CPU Clock Ratio	[15X]	Item Help
Linear Frequency Control	[Disabled]	Menu Level ▶
x CPU Clock (MHz)	100	
x DRAM Clock (MHz)	AUTO	
AGP/PCI Clock Control	[Auto]	
x AGP Clock (MHz)	66	
x PCI Clock (MHz)	33	
AGP Voltage Control	[Normal]	
DRAM Voltage Control	[Normal]	
CPU Voltage Control	[Normal]	
Normal CPU Vcore ①	1.4750V	

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

Figure 8: Frequency/Voltage Control

▄ **CPU Clock Ratio**

This setup option will automatically assign by CPU detection.

For Willamette CPU:
8X~23X default: 14X
For C-Stepping P4:
8X,10X~24X default: 15X
For Northwood CPU:
12X~24X default: 16X

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

▄ **Linear Frequency Control**

➧ Disabled   Disable this function. (Default value)

➧ Enabled   Enable this function.

▄ **CPU Clock (MHz)**

➧ 100~355   Select CPU Clock to 100MHz~355MHz.

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

① For GA-8S655FX Ultra only.

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DRAM Clock (MHz)

» Please set DRAM Clock according to your requirement.

If you use DDR266 DRAM module, please set "DRAM Clock(MHz)" to Auto or 266. If you use

DDR333 DRAM module, please set "DRAM Clock(MHz)" to Auto or 333.

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

AGP/PCI Clock Control

» AUTO   Set AGP/PCI Clock Control to AUTO. (Default value)

» Manual   Set AGP/PCI Clock Control to Manual.

AGP Clock (MHz)

» Please set AGP Clock according to your requirement.

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

PCI Clock (MHz)

» Please set PCI Clock according to your requirement.

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

AGP Voltage Control

» Normal   Set AGP Voltage Control to Normal. (Default value)

» +0.1V   Set AGP Voltage Control to +0.1V.

» +0.2V   Set AGP Voltage Control to +0.2V.

» +0.3V   Set AGP Voltage Control to +0.3V.

DRAM Voltage Control

» Normal   Set DRAM Voltage Control to Normal. (Default value)

» +0.1V   Set DRAM Voltage Control to +0.1V.

☞ **CPU Voltage Control**

➙ Supports adjustable CPU Vcore from 0.8375V to 1.6000V. [①]

➙ +5%   Set CPU Voltage Control to +5%. [②③]

➙ +7.5%   Set CPU Voltage Control to +7.5%. [②③]

➙ +10%   Set CPU Voltage Control to +10%. [②③]

➙ Normal   Set CPU Voltage Control to Normal. (Default value)

☞ **Normal CPU Vcore** [①]

➙ Display your CPU Vcore Voltage.

① For GA-8S655FX Ultra only. ② For GA-8S655FX-L only.   ③ For GA-8S655FX only.

Top Performance

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▶Standard CMOS Features	Top Performance
▶Advanced BIOS Features	Load Fail-Safe Defaults

Top Performance

Disabled...................[■]

Enabled...................[   ]

↑↓: Move	ENTER: Accept
ESC: Abort	

▶Integrated
▶Power Ma
▶PnP/PCI (
▶PC Health
▶Frequenc
ESC:Quit
F8: Dual Bl

Figure 9: Top Performance

Top Performance

If y ou wish to max imize the performance of y our sy stem, set "Top Performance" as "Enabled".

↦ Disabled   Disable this function. (Default Value)

↦ Enabled   Enable Top Performance function.

"Top Performance" w ill increase H/W w orking speed. Different sy stem configuration (both H/W component and OS) w ill effect the result. For ex ample, the same H/W configuration might not run properly w ith Window s XP, but w orks smoothly w ith Window s NT. Therefore, if y our sy stem is not perform enough, the reliability or stability problem w ill appear sometimes, and w e w ill recommend y ou disabling the option to av oid the problem as mentioned abov e.

① For GA-8S655FX Ultra only.

Load Fail-Safe Defaults

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▶Standard CMOS Features	Top Performance
▶Adv anced BIOS Features	Load Fail-Safe Defaults
▶Integrated Peripherals	Load Optimized Defaults
▶Power Ma	Load Fail-Safe Defaults? (Y/N)?Y
▶PnP/PCI C	
▶PC Health Status	Sav e & Ex it Setup
▶Frequency /Voltage Control	Ex it Without Sav ing
ESC:Quit	↑↓→←:Select Item
F8: Dual BIOS (①)/Q-Flash	F10:Sav e & Ex it Setup
Load Fail-Safe Defaults	

Figure 10: Load Fail-Safe Defaults

Load Fail-Safe Defaults

Fail-Safe defaults contain the most appropriate v alues of the sy stem parameters that allow minimum sy stem performance.

① For GA-8S655FX Ultra only.

Load Optimized Defaults

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▶Standard CMOS Features	Top Performance
▶Adv anced BIOS Features	Load Fail-Safe Defaults
▶Integrated Peripherals	Load Optimized Defaults
▶Power M:	
▶PnP/PCI	Load Optimized Defaults? (Y/N)?Y
▶PC Health Status	Sav e & Ex it Setup
▶Frequency /Voltage Control	Ex it Without Sav ing
ESC:Quit	↑↓→←:Select Item
F8: Dual BIOS ^(①)/Q-Flash	F10:Sav e & Ex it Setup
Load Optimized Defaults	

Figure 11: Load Optimized Defaults

Load Optimized Defaults

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

① For GA-8S655FX Ultra only.

Set Supervisor/User Password

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▶Standard CMOS Features	Top Performance
▶Advanced BIOS Features	Load Fail-Safe Defaults
▶Integrated Peripherals	Load Optimized Defaults
▶Power Ma	
▶PnP/PCI O	Enter Password:
▶PC Health Status	Save & Exit Setup
▶Frequency /Voltage Control	Exit Without Saving
ESC:Quit	↑↓→←:Select Item
F8: Dual BIOS (①)/Q-Flash	F10:Save & Exit Setup
Change/Set/Disable Password	

Figure 12: Password Setting

When you select this function, the following message will appear at the center of the screen to assist you in creating a password.

Type the password, up to eight characters, and press <Enter>. You will be asked to confirm the password. Type the password again and press <Enter>. You may also press <Esc> to abort the selection and not enter a password.

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

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

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

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

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

① For GA-8S655FX Ultra only.

Save & Exit Setup

CMOS Setup Utility -Copy right (C) 1984-2003 Aw ard Softw are

▶Standard CMOS Features	Top Performance
▶Adv anced BIOS Features	Load Fail-Safe Defaults
▶Integrated Peripherals	Load Optimized Defaults
▶Power Management Setup	Set Supervisor Password
▶PnP/PCI	Save to CMOS and EXIT (Y/N)? Y
▶PC Health	
▶Frequency /Voltage Control	Exit Without Saving
ESC:Quit	↑↓→←:Select Item
F8: Dual BIOS (①)/Q-Flash	F10:Save & Exit Setup
Save Data to CMOS	

Figure 13: Save & Exit Setup

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

Type "N" will return to Setup Utility.

① For GA-8S655FX Ultra only.

Exit Without Saving

▶Standard CMOS Features	Top Performance
▶Adv anced BIOS Features	Load Fail-Safe Defaults
▶Integrated Peripherals	Load Optimized Defaults
▶Pow er Management Setup	Set Superv isor Password
▶PnP/PCI Co	Quit Without Saving (Y/N)? N
▶PC Health S	
▶Frequency /Voltage Control	Ex it Without Sav ing
ESC:Quit	↑↓→←:Select Item
F8: Dual BIOS (①)/Q-Flash	F10:Sav e & Ex it Setup
Abandon all Data	

Figure 14: Ex it Without Sav ing

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

Type "N" will return to Setup Utility.

① For GA-8S655FX Ultra only .

BIOS Setup

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Chapter 4   Technical Reference

@ BIOS™ Introduction

Gigabyte announces @ BIOS
Windows BIOS live update utility

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

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

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

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

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

Easy Tune™ 4 Introduction

Gigabyte announces *EasyTune™ 4*

Windows based Overclocking utility

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

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

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

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

Face-Wizard™ Utilities Installation (①)

What is Face-Wizard™?

Face-Wizard™ is a windows based utility with user-friendly interface that allows users to change the boot-up logo with picture from Gigabyte Logo Gallery on web site or other compatible picture you have.

How does it work?

Face-Wizard™ allows user to select BIOS on board or file in hard drive, floppy disk , zip, MO or other storage devices and combine the compatible picture you prefer into BIOS. And not only this, Face-Wizard™ also helps user to update BIOS in windows mode.

What's benefit for using Face-Wizard™?

It can personalize boot-up logo to show your unique style from others, and never again looking at the black and white bootup screen.

1.Click "Face-Wizard" item.

(1)

2.Click "Next".

(2)

3.Click "Next".

(3)

4.Click "Start"-"Programs"-"GIGABYTE UTILITY"-"Face-Wizard".

(4)

5.Click "Help".

① **For GA-8S655FX Ultra only.**

(5)
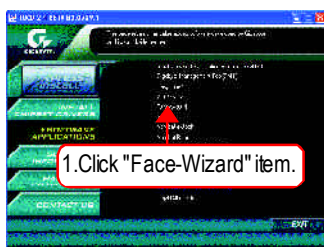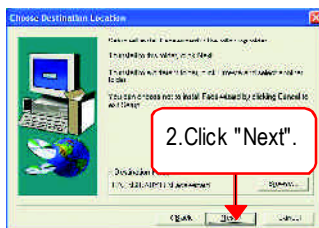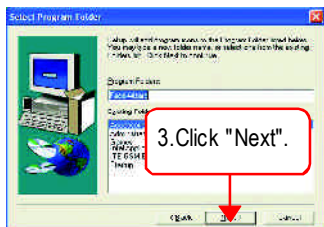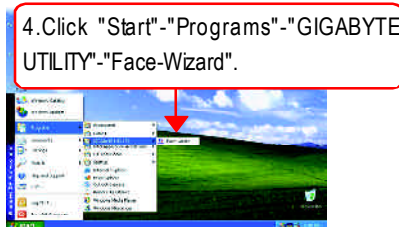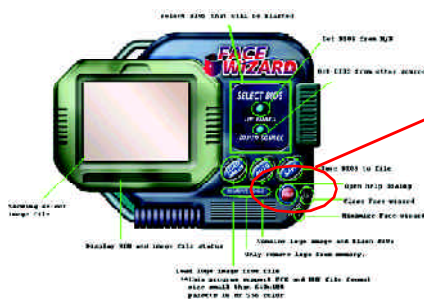
Flash BIOS Method Introduction

Method 1: Dual BIOS ^①/Q-Flash

A. What is Dual BIOS Technology?

Dual BIOS means that there are two system BIOS (ROM) on the motherboard, one is the Main BIOS and the other is Backup BIOS. Under the normal circumstances, the system works on the Main BIOS. If the Main BIOS is corrupted or damaged, the Backup BIOS can take over while the system is powered on. This means that your PC will still be able to run stably as if nothing has happened in your BIOS.

B. How to use Dual BIOS and Q-Flash Utility?

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

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

▶Standard CMOS Features	Top Performance
▶Advanced BIOS Features	Load Fail-Safe Defaults
▶Integrated Peripherals	Load Optimized Defaults
▶Powe	
▶PnP/F Enter Dual BIOS ^①/Q-Flash Utility (Y/N)? Y	
▶PC He	
▶Frequency/Voltage Control	Exit Without Saving
ESC:Quit	↑↓→←:Select Item
F8: Dual BIOS ^①/Q-Flash	F10:Save & Exit Setup
Time, Date, Hard Disk Type...	

① **For GA-8S655FX Ultra only.**

b. Award Dual BIOS Flash ROM Programming Utility

Dual BIOS Utility V1.30			
Boot From...		Main Bios	
Main ROM Type/Size......................................		SST49LF003A	512K
Backup ROM Type/Size.................................		SST49LF003A	512K
Wide Range Protection	Disable		
Boot From	Main Bios		
Auto Recovery	Enable		
Halt On Error	Disable		
Keep DMI Data	Enable		
Copy Main ROM Data to Backup			
Load Default Settings			
Save Settings to CMOS			
Q-Flash Utility			
Update Main BIOS from Floppy			
Update Backup BIOS from Floppy			
Save Main BIOS to Floppy			
Save Backup BIOS to Floppy			
PgDn/PgUp: Modify	↑↓: Move	ESC: Reset	F10: Power Off

c. Dual BIOS Item explanation:

Wide Range Protection: Disable(Default), Enable

Status 1:

If any failure (ex. Update ESCD failure, checksum error or reset…) occurs in the Main BIOS, just before the Operating System is loaded and after the power is on, and that the Wide Range Protection is set to "Enable", the PC will boot from Backup BIOS automatically.

Status 2:

If the ROM BIOS on peripherals cards(ex. SCSI Cards, LAN Cards,..) emits signals to request restart of the system after the user make any alteration on it, the boot up BIOS will not be changed to the Backup BIOS.

Boot From : Main BIOS(Default), Backup BIOS

Status 1:

The user can set to boot from main BIOS or Backup BIOS.

Status 2:

If one of the main BIOS or the Backup BIOS fails, this item *"Boot From : Main BIOS(Default)"* will become gray and will not be changed by user.

Auto Recovery : Enable(Default), Disable

When one of the Main BIOS or Backup BIOS occurs checksum failure, the working BIOS will automatically recover the BIOS of checksum failure.

(In the Power Management Setup of the BIOS Setting, if ACPI Suspend Type is set to Suspend to RAM, the Auto Recovery will be set to Enable automatically.)

(If you want to enter the BIOS setting, please press **"Del"** key when the boot screen appears.)

Halt On Error : Disable(Default), Enable

If the BIOS occurs a checksum error or the Main BIOS occurs a WIDE RANGE PROTECTION error and Halt On Error set to Enable, the PC will show messages on the boot screen, and the system will pause and wait for the user's instruction.

   If Auto Recovery :**Disable**, it will show *<or the other key to continue.>*

   If Auto Recovery :**Enable**, it will show *<or the other key to Auto Recover.>*

Keep DMI Data : Enable(Default), Disable

Enable: The DMI data won't be replaced by flashing new BIOS.(recommend)

Disable: The DMI data will be replaced by flashing new BIOS.

Copy Main ROM Data to Backup

(If you boot from Backup ROM, this item will change to Copy Backup ROM Data to Main)

Auto recovery message:

   BIOS Recovery: Main to Backup

The means that the Main BIOS works normally and could automatically recover the Backup BIOS.

   BIOS Recovery: Backup to Main

The means that the Backup BIOS works normally and could automatically recover the Main BIOS.

(This auto recovery utility is set by system automatically and can't be changed by user.)

Load Default Settings

Load dual BIOS default value.

Save Settings to CMOS

Save revised setting.

DualBIOS™ Technology FAQ

GIGABYTE Technology is pleased to introduce DualBIOS technology, a hot spare for your system BIOS. This newest "Value-added" feature, in a long series of innovations from GIGABYTE, is available on this motherboard. Future GIGABYTE motherboards will also incorporate this innovation.

What's DualBIOS™?

On GIGABYTE motherboards with DualBIOS there are physically two BIOS chips. For simplicity we'll call one your "Main BIOS" and the other we'll call your "Backup" BIOS (your "hot spare"). If your Main BIOS fails, the Backup BIOS almost automatically takes over on your next system boot. Almost automatically and with virtually zero down time! Whether the problem is a failure in flashing your BIOS or a virus or a catastrophic failure of the Main BIOS chip, the result is the same - the Backup BIOS backs you up, almost automatically.

I. Q: What is DualBIOS™ technology?
Answer:

DualBIOS technology is a patented technology from Giga-Byte Technology. The concept of this technology is based on the redundancy and fault tolerance theory. DualBIOS™ technology simply means there are two system BIOSes (ROM) integrated onto the motherboard. One is a main BIOS, and the other is a backup BIOS. The mainboard will operate normally with the main BIOS, however, if the main BIOS is corrupt or damaged for various reasons, the backup BIOS will be automatically used when the system powered-On. Your PC will operate as before the main BIOS was damaged, and is completely transparent to the user.

II. Q: Why does anyone need a motherboard with DualBIOS™ technology?

Answer:

In today's systems there are more and more BIOS failures. The most common reasons are virus attacks, BIOS upgrade failures, and/or deterioration of the BIOS (ROM) chip itself.

1. New computer viruses are being found that attack and destroy the system BIOS. They may corrupt your BIOS code, causing your PC to be unstable or even not boot normally.

2. BIOS data will be corrupted if a power loss/surge occurs, or if a user resets the system, or if the power button is pressed during the process of performing a system BIOS upgrade.

3. If a user mistakenly updates their mainboard with the incorrect BIOS file, then the system may not be able to boot correctly. This may cause the PC system hang in operation or during boot.

4. A flash ROM's life cycle is limited according to electronic characteristics. The modern PC utilizes the Plug and Play BIOS, and is updated regularly. If a user changes peripherals often, there is a slight chance of damage to the flash ROM.

   With Giga-Byte Technology's patented DualBIOS™ technology you can reduce the possibility of hangs during system boot up, and/or loss BIOS data due to above reasons. This new technology will eliminate valuable system down time and costly repair bills cause by BIOS failures.

III. Q: How does DualBIOS™ technology work?

Answer:

1. DualBIOS™ technology provides a wide range of protection during the boot up procedure. It protects your BIOS during system POST, ESCD update, and even all the way to PNP detection/assignment.

2. DualBIOS™ provides automatic recovery for the BIOS. When the first BIOS used during boot up does not complete or if a BIOS checksum error occurs, boot-up is still possible. In the DualBIOS™ utility, the "Auto Recovery" option will guarantee that if either the main BIOS or backup BIOS is corrupted, the DualBIOS™ technology will use the good BIOS and correct the wrong BIOS automatically.

3. DualBIOS™ provides manual recovery for the BIOS. DualBIOS™ technology contains a built-in flash utility, which can flash your system BIOS from backup to main and/or visa versa. There is no need for an OS-dependent flash utility program.

4. DualBIOS™ contains a one-way flash utility. The built-in one-way flash utility will ensure that the corrupt BIOS is not mistaken as the good BIOS during recovery and that the correct BIOS (main vs. backup) will be flashed. This will prevent the good BIOS from being flashed.

IV. Q: Who Needs DualBIOS™ technology?

Answer:

1. Every user should have DualBIOS™ technology due to the advancement of computer viruses.

    Everyday, there are new BIOS-type viruses discovered that will destroy your system BIOS. Most commercial products on the market do not have solutions to guard against this type of virus intrusion. The DualBIOS™ technology will provide a state-of-the-art solution to protect your PC:

    Case I.) Vicious computer viruses may wipe out your entire system BIOS. With a conventional single system BIOS PC, the PC will not be functional until it is sent for repairs.

    Case II.) If the "Auto Recovery" option is enabled in the DualBIOS™ utility, and if a virus corrupts your system BIOS, the backup BIOS will automatically reboot the system and correct the main BIOS.

    Case III.) A user may override booting from the main system BIOS. The DualBIOS™ utility may be entered to manually change the boot sequence to boot from the backup BIOS.

2. During or after a BIOS upgrade, if DualBIOS™ detects that the main BIOS is corrupt, the backup BIOS will take over the boot-up process automatically. Moreover, it will verify the main and backup BIOS checksums when booting-up. DualBIOS™ technology examines the checksum of the main and backup BIOS while the system is powered on to guarantee your BIOS operates properly.

3. Power Users will have the advantage of having two BIOS versions on their mainboard. The benefit is being able to select either version BIOS to suit the performance system needs.

4. Flexibility for high-end desktop PCs and workstation/servers. In the DualBIOS™ utility, the option can be set, "Halt On When BIOS Defects," to be enabled to halt your system with a warning message that the main BIOS has been corrupted. Most workstation/servers require constant operation to guarantee services have not been interrupted. In this situation, the "Halt On When BIOS Defects" message may be disabled to avoid system pauses during normal booting. Another advantage you gain from Giga-Byte's DualBIOS™ technology is the ability to upgrade from dual 2 Mbit BIOS to dual 4 Mbit BIOS in the future if extra BIOS storage is need.

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 because of incorrect manipulation of updating BIOS to avoid any claims from end-users.

Before You Begin:

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

1. Download the latest BIOS for your motherboard from Gigabyte's website.
2. Extract the BIOS file downloaded and save the BIOS file (the one with model name.Fxx. For example, 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.

The BIOS file is F10 before updating

```
        American    Release:08/23/2002
        Megatrends  AMIBIOS (C) 1999 American Megatrend

 7VRXP F10

AMD-Athlon(tm) Processor-1333MHz
Check System Health !
Checking NVRAM..Update OK
262144KB




DEL:Steup/Dual BIOS/Q-Flash F8:Boot Menu F12:Network boot TAB:Logo
Auto-Detecting Pri Master..IDE Hard Disk
Auto-Detecting Pri Slave...Not Detected
Auto-Detecting Sec Master..ATAPI CDROM
Auto-Detecting Sec Slave.. Not Detected

( C ) American Megatrends Inc.,
62-2003-001199-00101111-040201-KT333-GA7VRXP1-
```

Entering the Q-Flash™ utility:

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

```
              AMIBIOS SIMPLE SETUP UTILITY - VERSION 2.00
              (C) 2001 American Megatrends, Inc. All Rights Reserved

STANDARD CMOS SETUP              INTEGRATED PERIPHERALS
BIOS FEATURES SETUP              HARDWARE MONITOR & MISC SETUP
CHIPSET FEATURES SETUP           SUPERVISOR PASSWORD
POWER MANAGEMENT SETUP           USER PASSWORD
PNP / PCI CONFIGURATION          IDE HDD AUTO DETECTION
LOAD FAIL-SAFE DEFAULTS          SAVE & EXIT SETUP
LOAD OPTIMIZED DEFAULTS          EXIT WITHOUT SAVING

ESC: Quit          ↑↓←→: Select Item     F5: Old Values    F6: Fail-Safe Values
     F7: Optimized Values      F8: Dual BIOS/Q-Flash      F10:Save & Exit
              Load Fail-Safe Defaults
```

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

```
┌─────────────────────────────────────────────────────────────────────┐
│              AMIBIOS SIMPLE SETUP UTILITY - VERSION 2.00              │
│            (C) 2001 American Megatrends, Inc. All Rights Reserved     │
├─────────────────────────────────────────────────────────────────────┤
│  STANDARD CMOS SETUP              │  INTEGRATED PERIPHERALS           │
│  BIOS FEATURES SETUP              │  HARDWARE MONITOR & MISC SETUP    │
│  CHIPSET FEATURES SETUP           │  SUPERVISOR PASSWORD              │
│  POWER MANA                                                           │
│              ENTER DUAL BIOS/Q-FLASH UTILITY (Y/N) ? Y               │
│  PNP / PCI CO                                                         │
│  LOAD FAIL-SAFE DEFAULTS          │  SAVE & EXIT SETUP                │
│  LOAD OPTIMIZED DEFAULTS          │  EXIT WITHOUT SAVING              │
├─────────────────────────────────────────────────────────────────────┤
│  ESC: Quit           ↑↓←→ : Select Item    F5: Old Values  F6: Fail-Safe Values │
│      F7: Optimized Values     F8: Dual BIOS/Q-Flash    F10:Save & Exit │
├─────────────────────────────────────────────────────────────────────┤
│                       Load Fail-Safe Defaults                        │
└─────────────────────────────────────────────────────────────────────┘
```

Exploring the Q-Flash™/Dual BIOS utility screen

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

```
┌─────────────────────────────────────────────────────────────┐
│                      Dual BIOS Utility                       │──── Dual BIOS utility bar
│  Boot From……………………………………  Main Bios                            │
│  Main ROM Type/Size………………….  SST 49LF003A          256K        │
│  Backup ROM Type/Size…………….…  SST 49LF003A          256K        │
│                                                              │
│           Wide Range Protection   Disable                    │
│                    Boot From   Main Bios                      │
│               Auto Recovery   Enable                         │
│                Halt On Error   Disable                       │
│            Copy Main ROM Data to Backup                      │
│                 Load Default Settings                        │
│                 Save Settings to CMOS                        │
├─────────────────────────────────────────────────────────────┤
│                      Q-Flash Utility                         │──── Q-Flash™ utility title bar
│               Load Main BIOS from Floppy                     │
│              Load Backup BIOS from Floppy                    │
│               Save Main BIOS to Floppy                       │
│               Save Backup BIOS to Floppy                     │
│  Enter : Run      ↑↓:Move      ESC:Reset    F10:Power Off    │──── Action bar
└─────────────────────────────────────────────────────────────┘
```

Task menu for Dual BIOS utility

Task menu for Q-Flash™ utility

Task menu for Dual BIOS utility:

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

Task menu for Q-Flash™ utility:

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

Action bar:

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

Using the Q-Flash™ utility:

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

Steps:

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

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

Dual BIOS Utility		
Boot From..	Main Bios	
Main ROM Type/Size........................	SST 49LF003A	256K
Backup ROM Type/Size....................	SST 49LF003A	256K
Wide Range Protection	Disable	
Boot From	Main Bios	
Auto Recovery	Enable	
Halt On Error	Disable	
Copy Main ROM Data to Backup		
Load Default Settings		
Save Settings to CMOS		
Q-Flash Utility		
Load Main BIOS from Floppy		
Load Backup BIOS from Floppy		
Save Main BIOS to Floppy		
Save Backup BIOS to Floppy		
Enter : Run ↑↓:Move	ESC:Reset	F10:Power Off

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.

Dual BIOS Utility		
Boot From..	Main Bios	
Main ROM Type/Size........................	SST 49LF003A	256K
Backup ROM Type/Size...................	SST 49LF003A	256K
Wide Range Protection Disable		
Boot From Main Bios		
1 file(s) found		
7VRXP.F12	256K	
Total size: 1.39M	Free size:1.14M	
F5 : Refresh	DEL : Delete	

→ BIOS file in the floppy disk.

Q-Flash Utility		
Load Main BIOS from Floppy		
Load Backup BIOS from Floppy		
Save Main BIOS to Floppy		
Save Backup BIOS to Floppy		
Enter : Run ↑↓:Move ESC:Reset F10:Power Off		

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

Dual BIOS Utility		
Boot From..	Main Bios	
Main ROM Type/Size........................	SST 49LF003A	256K
Backup ROM Type/Size...................	SST 49LF003A	256K
Wide Range Protection Disable		
Boot From Main Bios		
Auto Recovery Enable		
Reading BIOS file from floppy...		
>>>>>>>>>>>.....................		
Don't Turn Off Power Or Reset System		
Load Main BIOS from Floppy		
Load Backup BIOS from Floppy		
Save Main BIOS to Floppy		
Save Backup BIOS to Floppy		
Enter : Run ↑↓:Move ESC:Reset F10:Power Off		
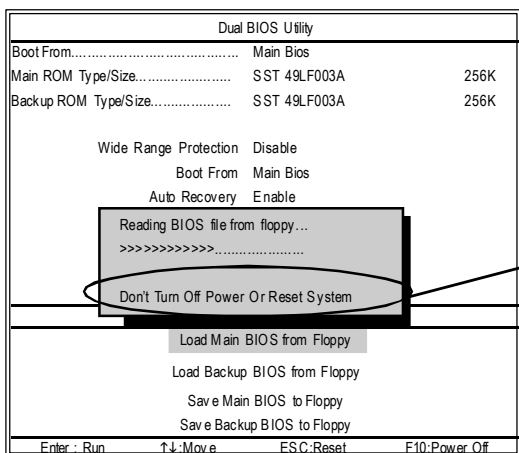
⚠ Do not truning off power or reset your system at this stage!!

⚠ 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?"

Dual BIOS Utility		
Boot From...............................	Main Bios	
Main ROM Type/Size.....................	SST 49LF003A	256K
Backup ROM Type/Size..................	SST 49LF003A	256K
Wide Range Protection	Disable	
Boot From	Main Bios	
Auto Recovery	Enable	

CHECKSUM = 96D2
Are you sure to update BIOS?

[Enter] to continue or [Esc] to abort.....

Load Main BIOS from Floppy
Load Backup BIOS from Floppy
Save Main BIOS to Floppy
Save Backup BIOS to Floppy

Enter : Run   ↑↓:Move   ESC:Reset   F10:Power Off

NOTE
You can press "Enter" to continue updating BIOS or "ESC" to abort.

3. Press **Y** button on your keyboard after you are sure to update BIOS.

Then it will begin to update BIOS. The progress of updating BIOS will be displayed.

Dual BIOS Utility		
Boot From...............................	Main Bios	
Main ROM Type/Size.....................	SST 49LF003A	256K
Backup ROM Type/Size..................	SST 49LF003A	256K
Wide Range Protection	Disable	
Boot From	Main Bios	
Auto Recovery	Enable	

Programming Now.......
>>>>>>>>>>>......................

Don't Turn Off Power Or Reset System

Load Main BIOS from Floppy
Load Backup BIOS from Floppy
Save Main BIOS to Floppy
Save Backup BIOS to Floppy

Enter : Run   ↑↓:Move   ESC:Reset   F10:Power Off

The progress of updating BIOS.

CAUTION
Do not turning off power or reset your system at this stage to avoid damaging your BIOS rom!!

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

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

```
┌─────────────────────────────────────────────────────────────┐
│                      Dual BIOS Utility                        │
├─────────────────────────────────────────────────────────────┤
│ Boot From…….…….……..……..…….….    Main Bios                  │
│ Main ROM Type/Size…..…...……..…..    SST 49LF003A       256K   │
│ Backup ROM Type/Size….....……….    SST 49LF003A       256K   │
│                                                               │
│           Wide Range Protection   Disable                     │
│                     Boot From    Main Bios                     │
│             Auto Recovery   Enable                            │
│        ┌──────────────────────────────────────┐              │
│        │     !! Copy BIOS completed - Pass !!  │              │
│        │     Please press any key to continue  │              │
│        │                                       │              │
│        └──────────────────────────────────────┘              │
│                  Load Main BIOS from Floppy                   │
│                 Load Backup BIOS from Floppy                  │
│                  Save Main BIOS to Floppy                     │
│                 Save Backup BIOS to Floppy                    │
├─────────────────────────────────────────────────────────────┤
│   Enter : Run      ↑↓:Move       ESC:Reset    F10:Power Off   │
└─────────────────────────────────────────────────────────────┘
```

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

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

```
┌─────────────────────────────────────────────────────────────┐
│                      Dual BIOS Utility                        │
├─────────────────────────────────────────────────────────────┤
│ Boot From…….…….……..……..…….….    Main Bios                  │
│ Main ROM Type/Size…..…...……..…..    SST 49LF003A       256K   │
│ Backup ROM Type/Size….....……….    SST 49LF003A       256K   │
│                                                               │
│           Wide Range Protection   Disable                     │
│                     Boot From    Main Bios                     │
│             Auto Recovery   Enable                            │
│        ┌──────────────────────────────────────┐              │
│        │        Are you sure to RESET ?        │              │
│        │   [Enter] to continue or [Esc] to abort...│           │
│        │                                       │              │
│        └──────────────────────────────────────┘              │
│                  Load Main BIOS from Floppy                   │
│                 Load Backup BIOS from Floppy                  │
│                  Save Main BIOS to Floppy                     │
│                 Save Backup BIOS to Floppy                    │
├─────────────────────────────────────────────────────────────┤
│   Enter : Run      ↑↓:Move       ESC:Reset    F10:Power Off   │
└─────────────────────────────────────────────────────────────┘
```

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

American   Release:08/23/2002
Megatrends AMIBIOS (C) 1999 American Megatrend

7VRXP F12

The BIOS file becomes
F12 after updating

AMD-Athlon(tm) Processor- 1333MHz
Check System Health !
Checking NVRAM..Update OK
2621 44KB

DEL:Steup/Dual BIOS/Q-Flash F8:Boot Menu F12:Network boot TAB:Logo
Auto-Detecting Pri Master..IDE Hard Disk
Auto-Detecting Pri Slave...Not Detected
Auto-Detecting Sec Master..ATAPI CDROM
Auto-Detecting Sec Slave.. Not Detected

(C) American Megatrends Inc.,
62-2003-001199-00101111-040201-KT333-GA7VRXP1-

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.

AMIBIOS SIMPLE SETUP UTILITY - VERSION 2.00	
(C) 2001 American Megatrends, Inc. All Rights Reserved	
STANDARD CMOS SETUP	INTEGRATED PERIPHERALS
BIOS FEATURES SETUP	HARDWARE MONITOR & MISC SETUP
CHIPSET FEATURES SETUP	SUPERVISOR PASSWORD
POWER MANAGEMENT SETUP	USER PASSWORD
PNP / PCI CONFIGURATION	IDE HDD AUTO DETECTION
LOAD FAIL-SAFE DEFAULTS	SAVE & EXIT SETUP
LOAD OPTIMIZED DEFAULTS	EXIT WITHOUT SAVING
ESC: Quit ↑↓←→: Select Item	F5: Old Values F6: Fail-Safe Values
F7: Optimized Values F8: Dual BIOS/Q-Flash F10:Save & Exit	
Load Fail-Safe Defaults	

Press Enter on
your keyboard

```
┌─────────────────────────────────────────────────────────────────────┐
│              AMIBIOS SIMPLE SETUP UTILITY - VERSION 2.00             │
│            (C) 2001 American Megatrends, Inc. All Rights Reserved    │
├─────────────────────────────────────────────────────────────────────┤
│  STANDARD CMOS SETUP              INTEGRATED PERIPHERALS             │
│  BIOS FEATURES SETUP              HARDWARE MONITOR & MISC SETUP      │
│  CHIPSET FEATURES SETUP           SUPERVISOR PASSWORD               │
│  POWER MANAGE                                                        │
│  PNP / PCI CONFI    Load Fail-Safe Defaults (Y/N)? Y               │
│  LOAD FAIL-SAFE DEFAULTS          SAVE & EXIT SETUP                  │
│  LOAD OPTIMIZED DEFAULTS          EXIT WITHOUT SAVING               │
│  ESC: Quit          ↑↓←→: Select Item    F5: Old Values  F6: Fail-Safe Values │
│       F7: Optimized Values    F8: Dual BIOS/Q-Flash    F10:Save & Exit │
├─────────────────────────────────────────────────────────────────────┤
│                        Load Fail-Safe Defaults                      │
└─────────────────────────────────────────────────────────────────────┘
```

Press Y on your keyboard to load defaults.
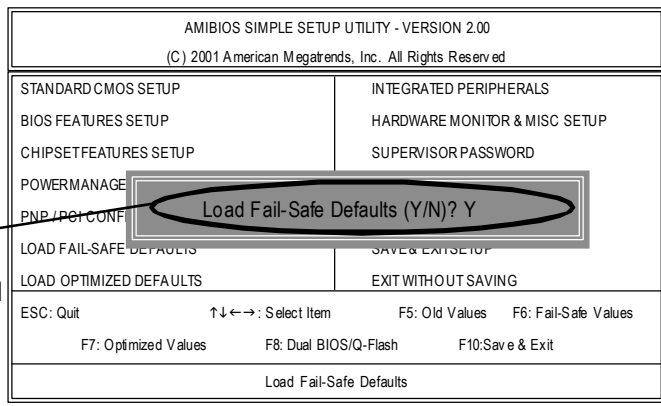
7. Select **Save & Exit Setup** item to save the settings to CMOS and exit the BIOS menu. System will reboot after you exit the BIOS menu. The procedure is completed.

```
┌─────────────────────────────────────────────────────────────────────┐
│              AMIBIOS SIMPLE SETUP UTILITY - VERSION 2.00             │
│            (C) 2001 American Megatrends, Inc. All Rights Reserved    │
├─────────────────────────────────────────────────────────────────────┤
│  STANDARD CMOS SETUP              INTEGRATED PERIPHERALS             │
│  BIOS FEATURES SETUP              HARDWARE MONITOR & MISC SETUP      │
│  CHIPSET FEATURES SETUP           SUPERVISOR PASSWORD               │
│  POWER MANAGE                                                        │
│  PNP / PCI CONFI     SAVE to CMOS and EXIT (Y/N) ? Y               │
│  LOAD FAIL-SAFE DEFAULTS          SAVE & EXIT SETUP                  │
│  LOAD OPTIMIZED DEFAULTS          EXIT WITHOUT SAVING               │
│  ESC: Quit          ↑↓←→: Select Item    F5: Old Values  F6: Fail-Safe Values │
│       F7: Optimized Values    F8: Dual BIOS/Q-Flash    F10:Save & Exit │
├─────────────────────────────────────────────────────────────────────┤
│                        Load Fail-Safe Defaults                      │
└─────────────────────────────────────────────────────────────────────┘
```

Press Y on your keyboard to save and exit.
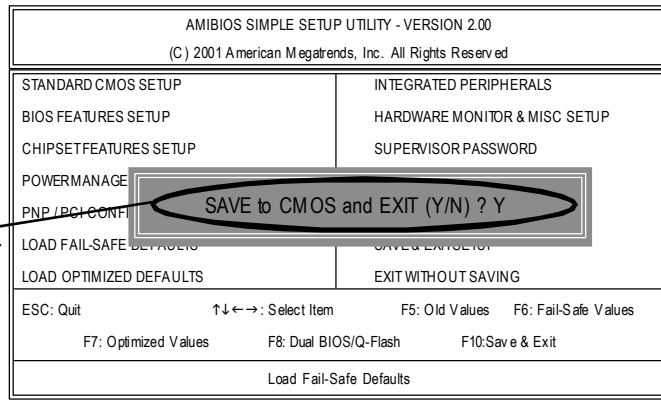
Part Two:

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

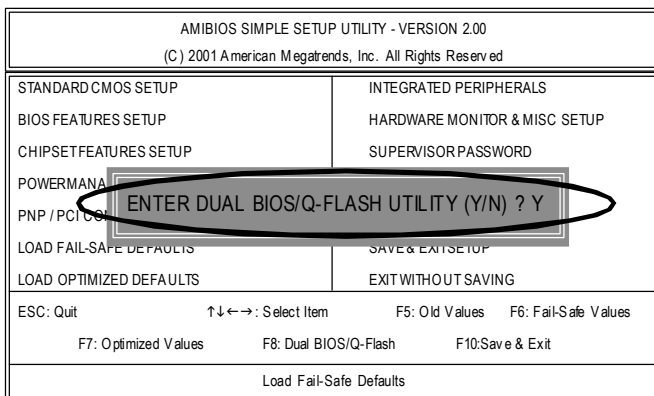This part guides users of single-BIOS motherboards how to update BIOS using the Q-Flash™ utility.

Entering the Q-Flash™ utility:

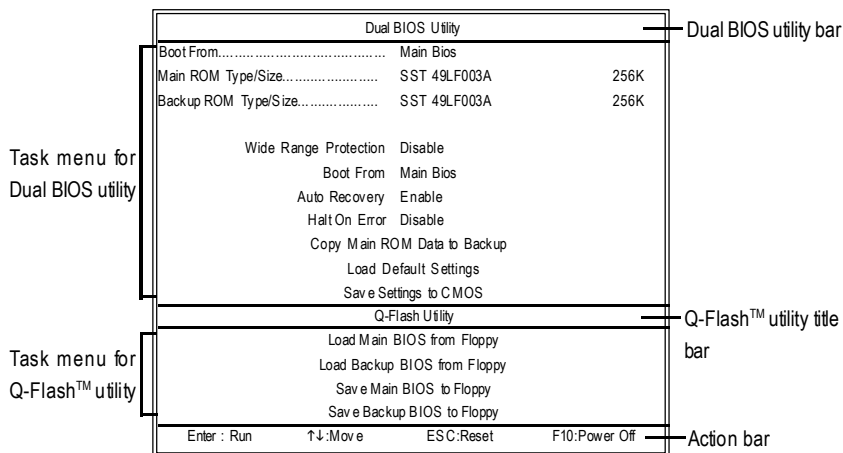Step1: To use the Q-Flash™utility, you must press **Del** in the boot screen to enter BIOS menu.

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
▶ Power Management Setup	Set Supervisor Password
▶ PnP/PCI Configurations	Set User Password
▶ PC Health Status	Save & Exit Setup
▶ Frequency/Voltage Control	Exit Without Saving
ESC:Quit	↑↓→←:Select Item
F8: Q-Flash	F10:Save & Exit Setup
Time, Date, Hard Disk Type...	

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

▶ Standard CMOS Features	Top Performance
▶ Advanced BIOS Features	Load Fail-Safe Defaults
▶ Integrated Peripherals	Load Optimized Defaults
▶ Power Management Setup	Set Supervisor Password
▶	Enter Q-Flash Utility (Y/N) ? Y
▶	
▶ Frequency/Voltage Control	Exit Without Saving
ESC:Quit	↑↓→←:Select Item
F8: Q-Flash	F10:Save & Exit Setup
Time, Date, Hard Disk Type...	
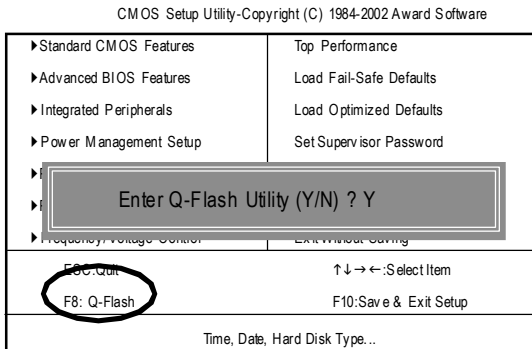
Exploring the Q-Flash™ utility screen

The Q-Flash™ BIOS utility screen consists of the following key components.
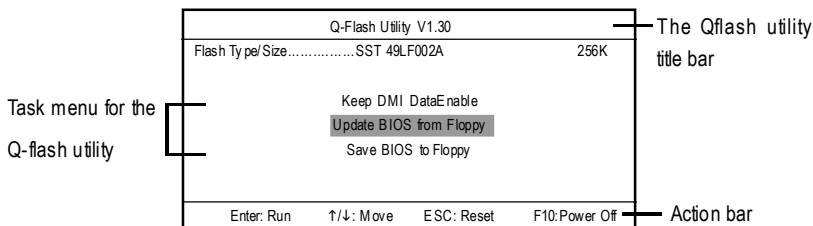
Task menu for the Q-Flash™ utility: Contains the names of three tasks. Blocking a task and pressing **Enter** key on your keyboard to enable execution of the task.

Action bar: Contains the names of four actions needed to operate the Q-Flash™ utility. Pressing the buttons mentioned on your 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 insert it 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:

1.   Press arrow buttons on your keyboard to move the light bar to "Load Main BIOS from Floppy"

      item in the Q-Flash™ menu and press **Enter** button.

      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 flash 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.

```
┌─────────────────────────────────────────────────────────────┐
│                    Q-Flash Utility V1.30                      │
│  Flash Type/Size…….………SST 49LF002A              256K        │
│                                                               │
│                    Keep DMI Data Enable                       │
│                 Update BIOS from Floppy                       │
│                                                               │
│                    1 File(s) found                            │
│     8GE800.F4                        256K                      │
│                                                               │
│  Total Size: 1.39M                  Free Size: 1.14M          │
│  F5: Refresh                         DEL: Delete              │
└─────────────────────────────────────────────────────────────┘
```

BIOS file in the
floppy.

```
┌─────────────────────────────────────────────────────────────┐
│                    Q-Flash Utility V1.30                      │
│  Flash Type/Size…….………SST 49LF002A              256K        │
│                                                               │
│                    Keep DMI Data Enable                       │
│  Reading  BIOS file from floppy ………                          │
│  >>>>>>>>                                                      │
│  Don't turn off Power Or RESET System                         │
│  Enter: Run      ↑↓: Move      ESC: Reset      F10:Power Off  │
└─────────────────────────────────────────────────────────────┘
```

⚠
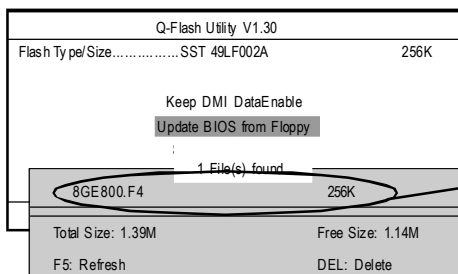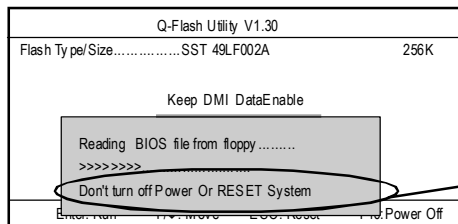
Do not turning
power or reset your
system at this
stage!

After BIOS file is read, you'll see a confirmation dialog box asking you

"Are you sure to update BIOS?"

- 85 -   Technical Reference

```
                    Q-Flash Utility  V1.30
Flash Type/Size................SST 49LF002A              256K

                    CHECKSUM = AC03
                 Are you sure to update BIOS?
          [Enter] to continue updating BIOS or "ESC" to abort.

          Enter: Run      ↑/↓: Move     ESC: Reset     F10: Power Off
```

You can press "Enter" to continue updating BIOS or "ESC" to abort.

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.

```
                    Q-Flash Utility  V1.30
Flash Type/Size................SST 49LF002A              256K

                    Updating BIOS Now...
                 >>>>>>>>>>>>...............
          Do not Turn Off Power On RESET System

          Enter: Run      ↑/↓: Move     ESC: Reset     F10: Power Off
```

The porcess of updating BIOS

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

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

```
                    Q-Flash Utility  V1.30
Flash Type/Size................SST 49LF002A              256K

             !! Copy BIOS completed - pass !!
               Please press any key to continue....

          Enter: Run      ↑/↓: Move     ESC: Reset     F10: Power Off
```

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

```
                    Q-Flash Utility  V1.30
Flash Type/Size................SST 49LF002A              256K

                  Are you sure to RESET?
              [Enter] to continue or [Esc] to abort....

          Enter: Run      ↑/↓: Move     ESC: Reset     F10: Power Off
```

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.

Press here.

1.Click "@BIOS"

(1)

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

(2)

3.Click "✓".

4.Click here.

(3)

5. Please select @BIOS sever site, then Click "OK".
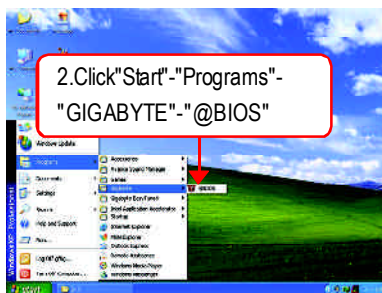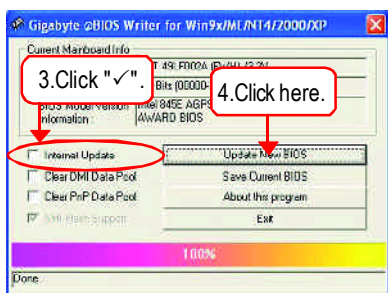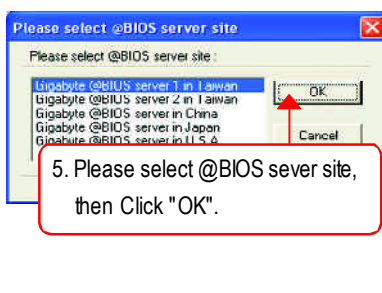
(4)

Methods and steps:

I. Update BIOS through Internet

  a. Click "Internet Update" icon

  b. Click "Update New BIOS" icon

  c. Select @BIOS™ sever

  d. Select the exact model name on your motherboard

  e. System will automatically download and update the BIOS.

II. Update BIOS NOT through Internet:

  a. Do not click "Internet Update" icon

  b. Click "Update New BIOS"

  c. Please select "All Files" in dialog box while opening the old file.

  d. Please search for BIOS unzip file, downloading from internet or any other methods (such as: 8S655FX Ultra.F1).

  e. Complete update process following the instruction.

III. Save BIOS

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

IV. Check out supported motherboard and Flash ROM:

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

Note:

  a. In method I, if it shows two or more motherboard's model names to be selected, please make sure your motherboard's model name again. Selecting wrong model name will cause the system unbooted.

  b. In method II, be sure that motherboard's model name in BIOS unzip file are the same as your motherboard's. Otherwise, your system won't boot.

  c. In method I, if the BIOS file you need cannot be found in @BIOS™ server, please go onto Gigabyte's web site for downloading and updating it according to method II.

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

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

Sound Effect

10:41 AM

STEP 3:

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

2-channel mode for stereo speaker output
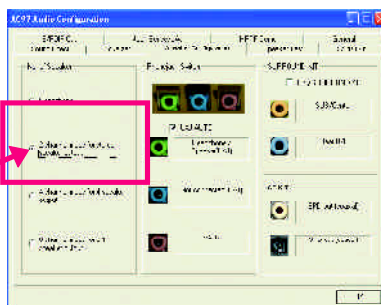
4 Channel Analog Audio Output Mode

STEP 1 :

Connect the front channels to "Line Out",

the rear channels to "Line In".

Line Out   Line In

STEP 2 :

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

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

Sound Effect

10:41 AM

STEP 3 :

Select "Speaker Configuration", and choose the "4 channel for 4 speakers out put".
Disable "Only SURROUND-KIT", and press "OK".
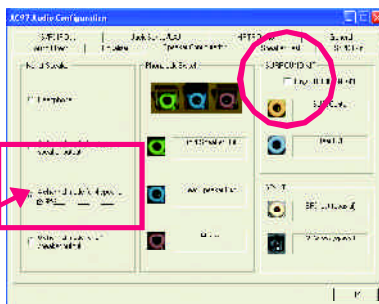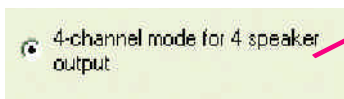
4-channel mode for 4 speaker output

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.
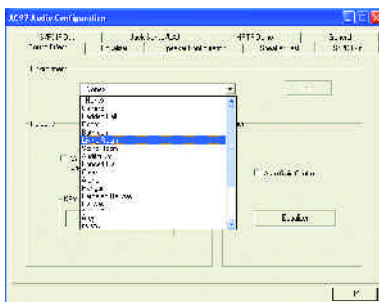
Basic 6 Channel Analog Audio Output Mode

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".
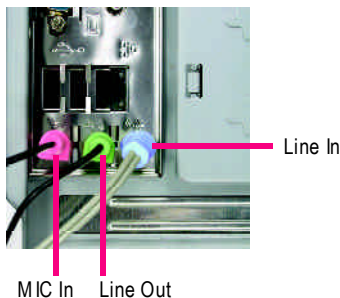
Line In

MIC In   Line Out

STEP 2 :

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

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

Sound Effect

10:41 AM

STEP 3 :

Select "Speaker Configuration", and choose the "6 channel for 5.1 speakers out put".
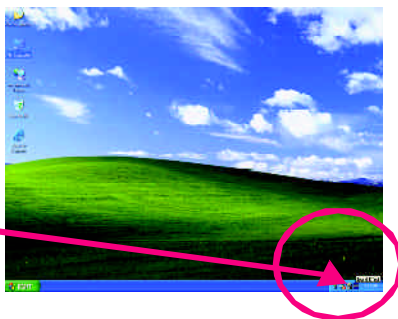
Disable "Only SURROUND-KIT" and pess "OK".

6-channel mode for 5.1 speaker output

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

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

SURROUND-KIT access analog output to rear

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

STEP 1 :

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

STEP 2 :

Connect the "SURROUND-KIT" to SUR_CEN on the M/B.
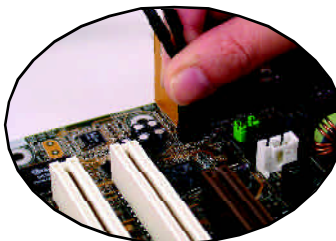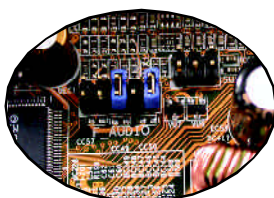
STEP 3 :

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.
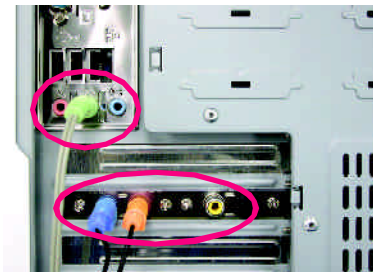
STEP 4 :

Click the audio icon "Sound Effect" from the windows tray at the bottom of the screen.
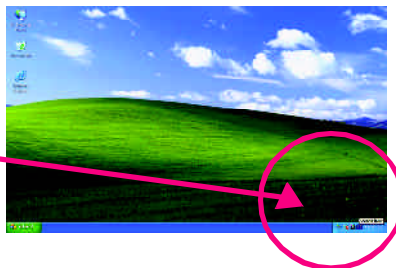
STEP 5 :

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

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

SURROUND-KIT

☑ Only SURROUND-KIT
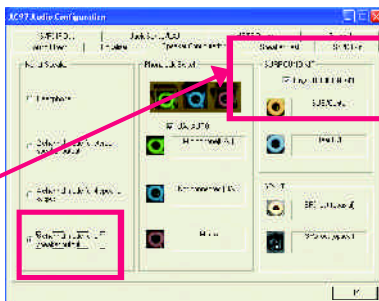
Basic & Advanced 6 Channel Analog Audio Output ModeNotes:

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.
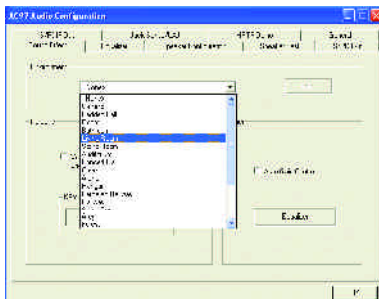
SPDIF Output Device (Optional Device)

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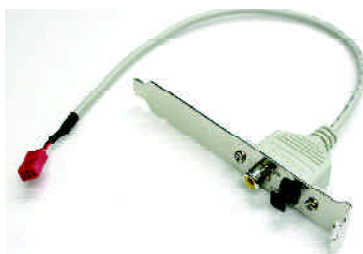
1. Connect the SPDIF output device to the rear
   bracket of PC, and fix it with screw.
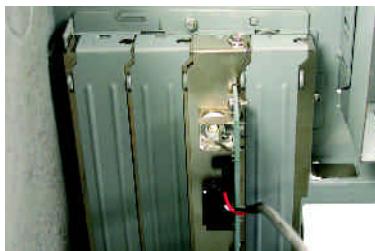
2. Connect SPDIF device to the motherboard.
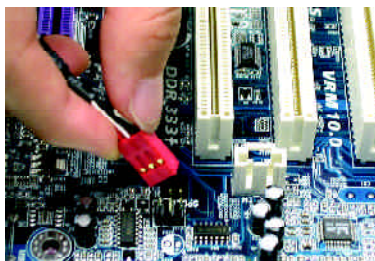
3. Connect SPDIF to the SPDIF decoder.

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.
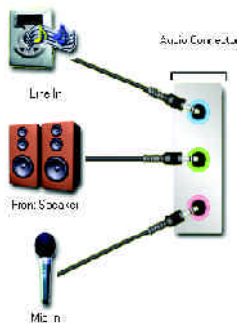
Auto-detecting:

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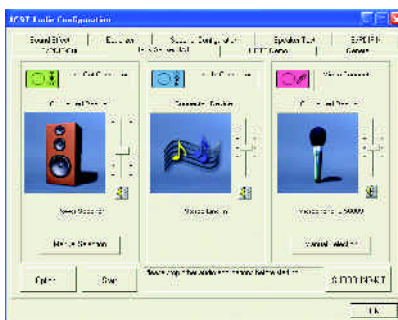
If you set wrong with the connectors, the warning message will come out as right picture.
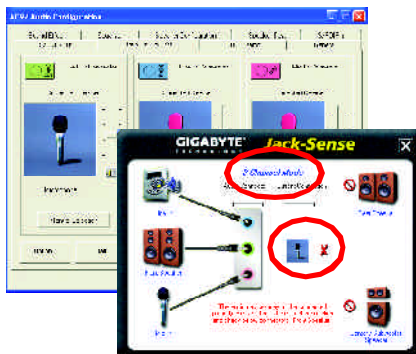
Manual setting:

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

English
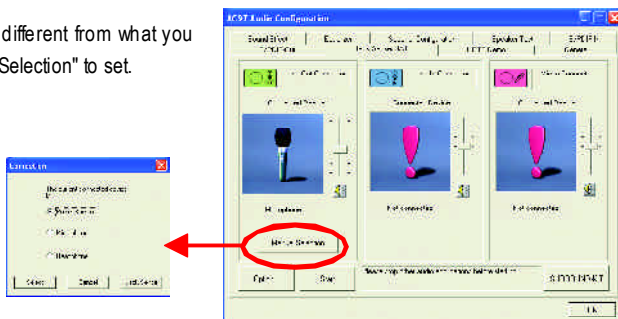
UAJ Introduction

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.

⚠ **CAUTION** Install Microsoft DirectX8.1 or later version before to enable UAJ support for Windows 98/98SE/ 2000/ME.

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 jack (Line-in or Line-out).
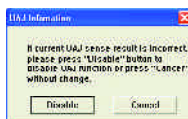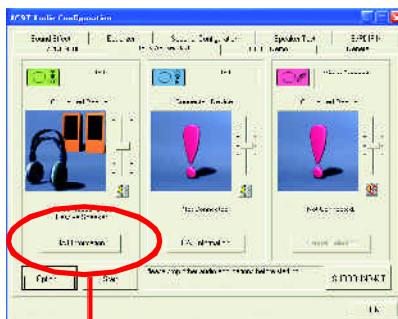
Reviving UAJ:

You can click "UAJ AUTO" to revive UAJ function.
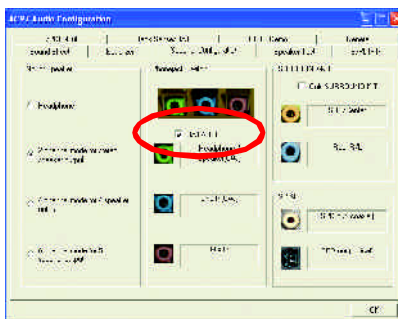
Adjusting Sound Volume:

You can adjust sound volume by moving lever. Also you can mute sound by pressing the "mute button".

Volume lever

Mute button
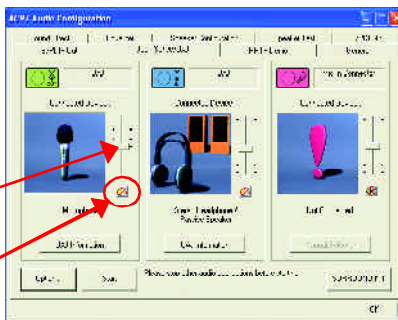
If there is only Line-in device plugged, UAJ will remind you there is no any Line-out device plugged in.
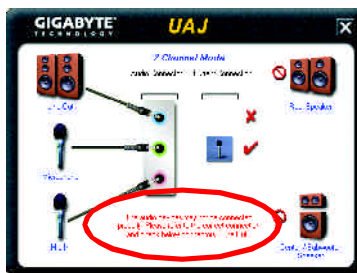
Note:

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 can not work properly, you can restore it to the original state.

1. 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 its size.
6. It is not recommend to use Xpress Recovery if you had ever used Ghost to return boot manager 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 .

Award Modular BIOS v6.00 PG, An Energy Star Ally
Copyright (C) 1984-2002, Award Software, Inc.

Intel 865PE AGPSet BIOS for 8IPE1000Mf F1
Check System Health OK
.
.
.
Press DEL to enter SETUP/ Q-Flash, F9 For Xpress Recovery
08/16/2002-I845GE-6A69YG01C-00
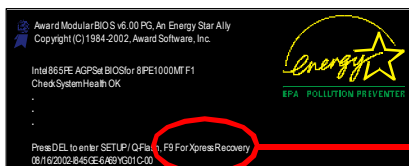
F9 For Xpress Recovery

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 insert MB driver CD into your drive when "Boot from CD:" appears at the bottom of the screen , press any key to enter Xpress Recovery.

.
Verifying DMI Pool Data
Boot from CD:

Boot from CD:

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

Text Mode:
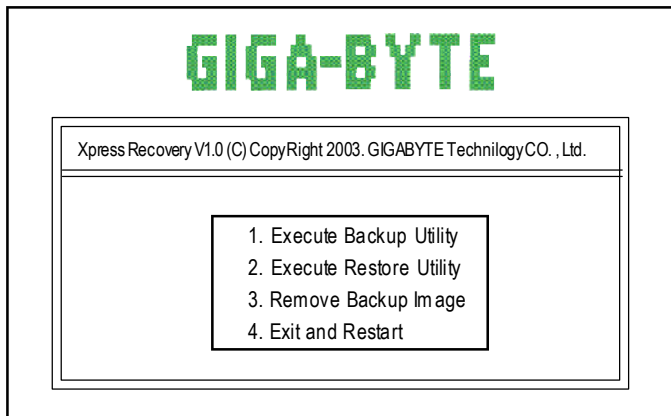
BMP Mode:

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 back up 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:

Exit and restart your computer.

Serial ATA RAID BIOS Utility Operation Introduction

1. Boot your system. If this is the first time you have booted with the South bridge and the drives installed, the onboard BIOS will display the following screen.

> Silicon Integrated System Corp. RAID BIOS Settings Utility V.xxxx
> (c) 2003-2005 Silicon Integrated System Corp. All Rights Reserved.
>
> Press <Ctrl><S> to run BIOS Setting Utility

2. Press <Ctrl>+<S> keys to display the SiS RAID BIOS Setting Utility Main Menu.
3. Press <R> to display the RAID setup menu below. This is the fastest and easiest method to creating your first array.

```
SiS RAID BIOS Setting Utility

                              Disk Status


  [B]: Select Boot Disk
  [R]: Enter Raid Setup Utility

  [Q]: Exit current menu

  Location       Model           Capacity      Mode      RAID Type
  Pri_Master     Maxtor 6Y060M0  58644MB       UDMA6     Single *
  Sec_Master     Maxtor 6Y060M0  58644MB       UDMA6     Single


  The selected boot disk is marked "*"
```

> ☀ Please make sure the RAID Type is "Single" then you can set the others type that you want next.

Creating a RAID 0 Array

To create an RAID 0 array, follow these steps:

1. Press <A> to create array.

```
SiS RAID BIOS Setting Utility

┌─────────────────────────── RAID Setup ───────────────────────────┐
│                                                                   │
│                                                                   │
│  Press [A] to creat RAID                                          │
│  Press [D] to delete RAID                                         │
│                                                                   │
│    [Q]: Exit current menu                                         │
│                                                                   │
│  Location        Model          Capacity      Mode      RAID Type │
│  Pri_Master      Maxtor 6Y060M0  58644MB       UDMA6     Single *  │
│  Sec_Master      Maxtor 6Y060M0  58644MB       UDMA6     Single    │
│                                                                   │
│                                                                   │
│  The selected boot disk is marked '*'                             │
└───────────────────────────────────────────────────────────────────┘
```

2. Press <2> and <Enter> to select RAID 0.

```
┌─────────────────────────────────────────────────────────────┐
│ RAID Type : <1> JBOD  <2> RAID 0  <3> RAID 1 :               │
│                                                               │
│                                                               │
│    [Q]: Exit current menu                                     │
└─────────────────────────────────────────────────────────────┘
```
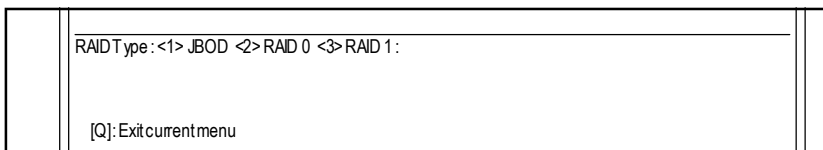
3. Press <1> and <Enter> (Note: We would not suggust your select <2> to create RAID 0 unless you really need it.)

```
┌─────────────────────────────────────────────────────────────┐
│ RAID 0                                                        │
│ <1> Auto Create <2> Manual Create : 1                         │
│                                                               │
│    [Q]: Exit current menu                                     │
└─────────────────────────────────────────────────────────────┘
```
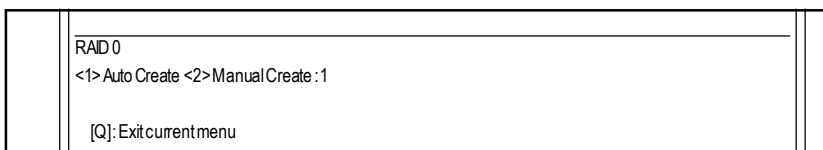
4. Press <N> and <Enter> to Create RAID 0 only. (If Press <Y> and <Enter>, it will split the data
   on source disk to other disks)

```
SiS RAID BIOS Setting Utility

┌─────────────────────────── RAID Setup ───────────────────────────┐
│                                                                    │
│                                                                    │
│  RAID 0                                                            │
│  Do you want to split the SOURCE disk data to other disks? N       │
│                                                                    │
│    [Q]: Exit current menu                                          │
│                                                                    │
│  Location      Model          Capacity    Mode      RAID Type      │
│  Pri_Master    Maxtor 6Y060M0 58644MB     UDMA6     RAID 0 *       │
│  Sec_Master    Maxtor 6Y060M0 58644MB     UDMA6     RAID 0         │
│                                                                    │
│                                                                    │
│  The selected boot disk is marked '*'                              │
└────────────────────────────────────────────────────────────────────┘
```

5. You have create RAID 0 successfully!!

```
SiS RAID BIOS Setting Utility

┌─────────────────────────── RAID Setup ───────────────────────────┐
│  RAID 0 : Disk 1      Disk 2                                       │
│                                                                    │
│  Press [A] to creat RAID                                           │
│  Press [D] to delete RAID                                          │
│                                                                    │
│    [Q]: Exit current menu                                          │
│                                                                    │
│  Location      Model          Capacity    Mode      RAID Type      │
│  Pri_Master    Maxtor 6Y060M0 58644MB     UDMA6     RAID 0 *       │
│  Sec_Master    Maxtor 6Y060M0 58644MB     UDMA6     RAID 0         │
│                                                                    │
│                                                                    │
│  The selected boot disk is marked '*'                              │
└────────────────────────────────────────────────────────────────────┘
```

6. Press <Q> to escape the setup screen and press <Y> to save changes.

SiS RAID BIOS Setting Utility

RAID Setup

RAID 0 : Disk 1   Disk 2

[B] : Select Boot Disk
[R] : Enter Raid   Do You Want to Save changes? N

[Q] : Exit current menu

Location	Model	Capacity	Mode	RAID Type
Pri_Master	Maxtor 6Y060M0	58644MB	UDMA6	RAID 0 *
Sec_Master	Maxtor 6Y060M0	58644MB	UDMA6	RAID 0

The selected boot disk is marked '*'

Creating a RAID 1 Array

To create an RAID 1 array, follow these steps:

1. Press <A> to create array.

SiS RAID BIOS Setting Utility

RAID Setup

Press [A] to creat RAID
Press [D] to delete RAID

[Q] : Exit current menu

Location	Model	Capacity	Mode	RAID Type
Pri_Master	Maxtor 6Y060M0	58644MB	UDMA6	Single *
Sec_Master	Maxtor 6Y060M0	58644MB	UDMA6	Single

The selected boot disk is marked '*'
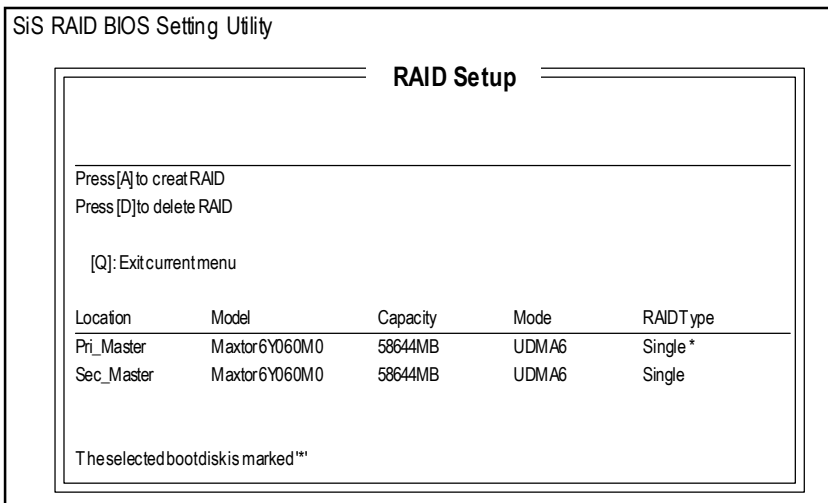
2. Press <3> and <Enter> to select RAID 1.

```
RAID Type : <1> JBOD  <2> RAID 0  <3> RAID 1 :



  [Q] : Exit current menu
```

3. Press <1> and <Enter> (Note: We would not suggust your select <2> to create RAID 1 unless you really need it.)

```
RAID 1
<1> Auto Create <2> Manual Create : 1

  [Q] : Exit current menu
```

4. Press <N> and <Enter> to Create RAID 1 only. (If Press <Y> and <Enter>, it will Duplicate the data on source disk to mirror disk)

```
SiS RAID BIOS Setting Utility

┌──────────────────────── RAID Setup ────────────────────────┐
│                                                            │
│                                                            │
│  RAID 1                                                     │
│  Do you want to Duplicate the SOURCE disk data to MIRROR disks? N │
│                                                            │
│    [Q] : Exit current menu                                 │
│                                                            │
│  Location      Model           Capacity    Mode      RAID Type │
│  Pri_Master    Maxtor 6Y060M0  58644MB     UDMA6     RAID 1 *  │
│  Sec_Master    Maxtor 6Y060M0  58644MB     UDMA6     RAID 1    │
│                                                            │
│                                                            │
│  The selected boot disk is marked '*'                      │
└────────────────────────────────────────────────────────────┘
```

5. You have create RAID 1 successfully!!

```
SiS RAID BIOS Setting Utility

┌──────────────────────── RAID Setup ────────────────────────┐
│                                                             │
│  RAID 1 : Disk 1     Disk 2                                 │
│ ─────────────────────────────────────────────────────────  │
│  Press [A] to creat RAID                                    │
│  Press [D] to delete RAID                                   │
│                                                             │
│    [Q] : Exit current menu                                  │
│                                                             │
│  Location      Model          Capacity   Mode    RAID Type  │
│  Pri_Master    Maxtor 6Y060M0 58644MB    UDMA6   RAID 1 *   │
│  Sec_Master    Maxtor 6Y060M0 58644MB    UDMA6   RAID 1     │
│                                                             │
│                                                             │
│  The selected boot disk is marked '*'                       │
└─────────────────────────────────────────────────────────────┘
```

6. Press <Q> to escape the setup screen and press <Y> to save changes.

```
SiS RAID BIOS Setting Utility

┌──────────────────────── RAID Setup ────────────────────────┐
│                                                             │
│  RAID 1 : Disk 1     Disk 2                                 │
│ ─────────────────────────────────────────────────────────  │
│  [B] : Select Boot Disk                                     │
│  [R] : Enter Raid ┌──────────────────────────────────────┐  │
│                   │   Do You Want to Save changes? N      │  │
│  [Q] : Exit curre │                                       │  │
│                   └──────────────────────────────────────┘  │
│  Location      Model          Capacity   Mode    RAID Type  │
│  Pri_Master    Maxtor 6Y060M0 58644MB    UDMA6   RAID 1 *   │
│  Sec_Master    Maxtor 6Y060M0 58644MB    UDMA6   RAID 1     │
│                                                             │
│                                                             │
│  The selected boot disk is marked '*'                       │
└─────────────────────────────────────────────────────────────┘
```
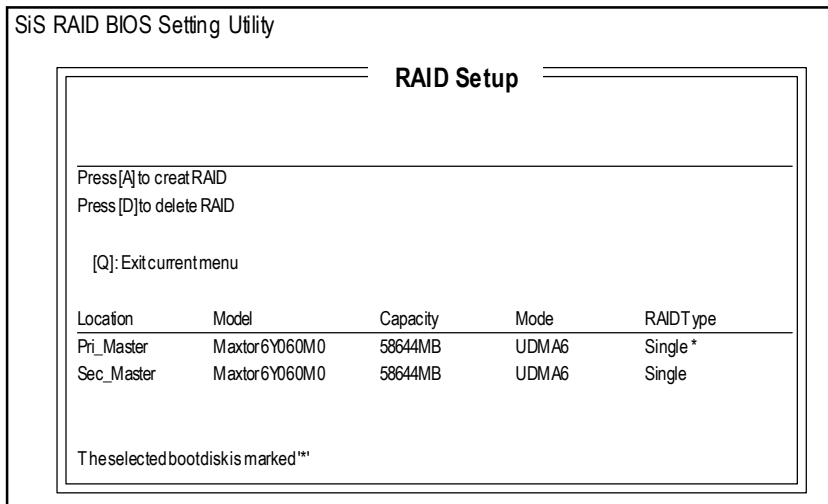
Creating a JBOD Array

To create an JBOD array, follow these steps:

1. Press <A> to create array.

SiS RAID BIOS Setting Utility

| **RAID Setup** |

Press [A] to creat RAID
Press [D] to delete RAID

  [Q]: Exit current menu

Location	Model	Capacity	Mode	RAID Type
Pri_Master	Maxtor 6Y060M0	58644MB	UDMA6	Single *
Sec_Master	Maxtor 6Y060M0	58644MB	UDMA6	Single

The selected boot disk is marked '*'

2. Press <1> and <Enter> to select JBOD.

RAID Type : <1> JBOD <2> RAID 0 <3> RAID 1 :

  [Q]: Exit current menu

3. Press <1> and <Enter> (Note: We would not suggust your select <2> to create JBOD unless you really need it.)

JBOD
<1> Auto Create <2> Manual Create : 1

  [Q]: Exit current menu

4. You have create JBOD successfully!!

```
SiS RAID BIOS Setting Utility

═══════════════════════ RAID Setup ═══════════════════════

  JBOD : Disk 1      Disk 2
  ─────────────────────────────────────────────────────────
  Press [A] to creat RAID
  Press [D] to delete RAID

    [Q]: Exit current menu

  Location          Model            Capacity     Mode        RAID Type
  Pri_Master        Maxtor 6Y060M0   58644MB      UDMA6       JBOD *
  Sec_Master        Maxtor 6Y060M0   58644MB      UDMA6       JBOD

  The selected boot disk is marked '*'
```
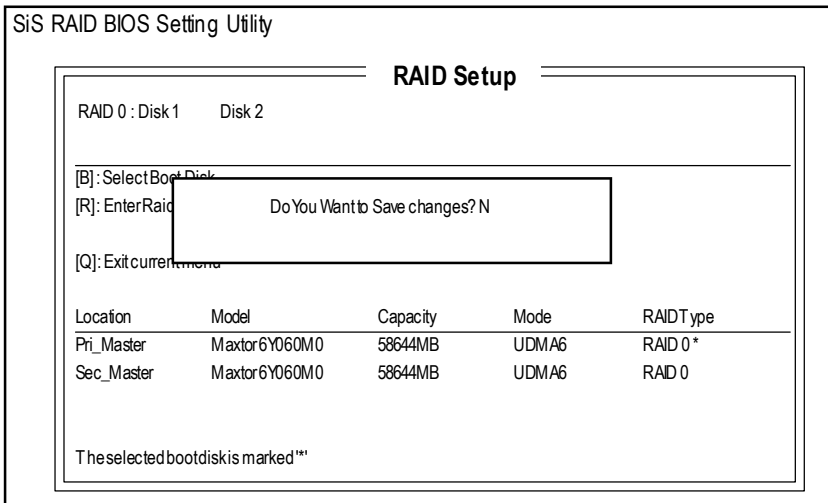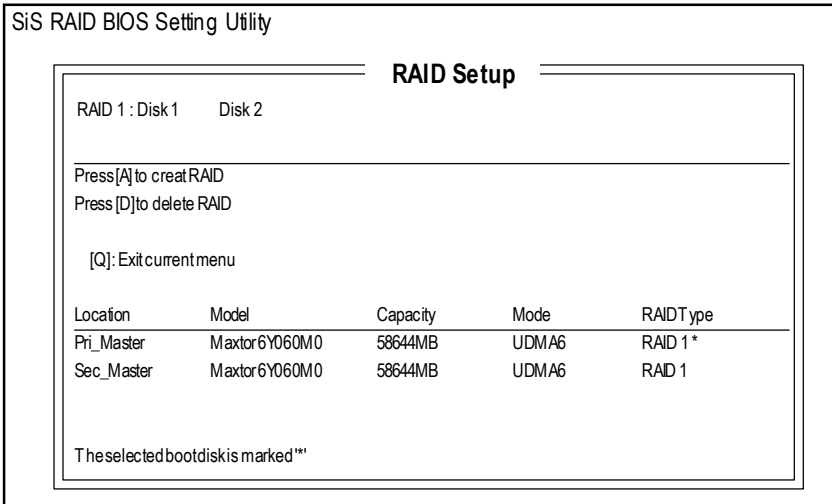
5. Press <Q> to escape the setup screen and press <Y> to save changes.

```
SiS RAID BIOS Setting Utility

═══════════════════════ RAID Setup ═══════════════════════

  JBOD : Disk 1      Disk 2
  ─────────────────────────────────────────────────────────
  [B]: Select Boot Disk
  [R]: Enter Raid        Do You Want to Save changes? N

  [Q]: Exit current menu

  Location          Model            Capacity     Mode        RAID Type
  Pri_Master        Maxtor 6Y060M0   58644MB      UDMA6       JBOD *
  Sec_Master        Maxtor 6Y060M0   58644MB      UDMA6       JBOD

  The selected boot disk is marked '*'
```

Chapter 5 Appendix

Install Drivers

NOTE

Pictures below are shown in Windows XP (CD ver. 2.4)

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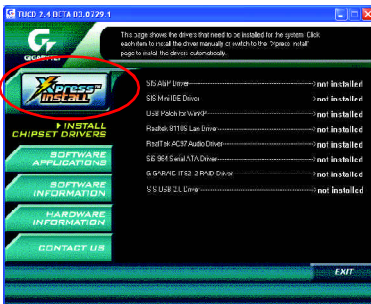
Massage: Some device drivers will restart your system automatically. After restarting your system the "Xpress Install" will continue to install other drivers.

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.

We recommend that you install all components in the list.

Click "GO".
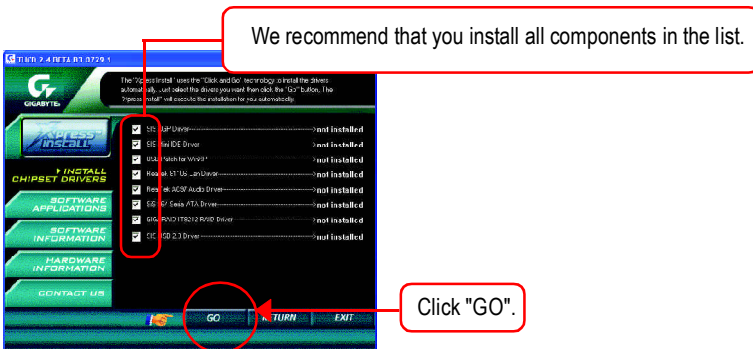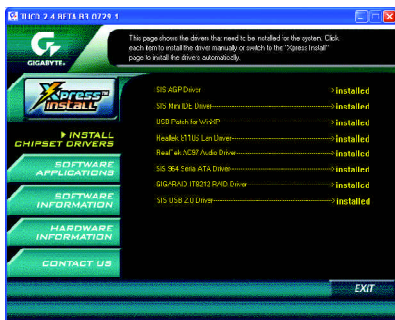
Driver install finished!! you have to reboot system!!

Item Description

■ SIS AGP Driver

Install SIS AGP Driver.

■ SIS Mini IDE Driver

For SiS 964/962/963/964 IDE Controller Driver.

■ USB Patch for WinXP

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

■ Realtek 8110S Lan Driver (①) / RealTek LAN Drive (②)

Realtek Giga Lan Driver (①)

RealTek 10/100 LAN driver for 81xx series chips (②)

■ RealTek AC97 Audio Driver

Install RealTek AC97 audio driver.

■ SiS 964 Serial ATA Driver

Install SiS 964 Serial ATA Driver.

■ GIGARAID IT8212 RAID Driver (①)

GIGARAID IT8212 RAID Driver.

■ SIS 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).

① For GA-8S655FX Ultra only. ② For GA-8S655FX-L only.

SOFTWARE APPLICATION

This page reveals the value-added software developed by Gigabyte and its worldwide partners.
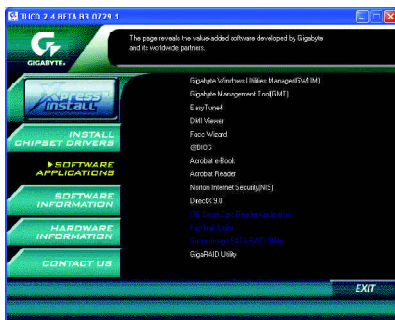
■ Gigabyte Windows Utilities Manager(GWUM)

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-Wizard

New utility for adding BIOS logo.

■ @BIOS

Gigabyte windows flash BIOS utility.

■ Acrobat e-Book

Useful utility from Adobe.

■ Acrobat Reader

Popular utility from Adobe for reading .PDF file format documents.

■ Norton Internet Security(NIS)

Integrated utility which includes anti-virus, ad control, etc

■ DirectX 9.0

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

■ GigaRAID Utility ^①

RAID utility for IT8212.

① For GA-8S655FX Ultra only.

SOFTWARE INFORMATION

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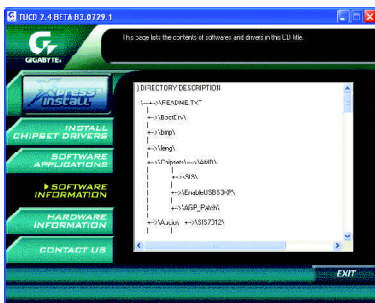
HARDWARE INFORMATION

This page lists all device you have for this motherboard.
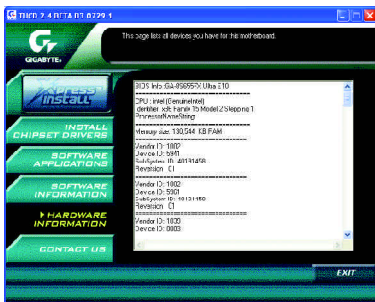
CONTACT US

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

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

Question 5: How do I clear CMOS?
Answer: If your board has a Clear CMOS jumper, please refer to the Clear CMOS steps in the manual. If your board doesn't have such jumper, you can take off the on-board battery to leak voltage to clear CMOS. Please refer to the steps below:
   Steps:
      1. Turn off power.
      2. Disconnect the power cord from MB.
      3. Take out the battery gently and put it aside for about 10 minutes (Or you can use a metal object to connect the positive and negative pins in the battery holder to make them short for one minute).
      4. Re-insert the battery to the battery holder.
      5. Connect power cord to MB again and turn on power.
      6. Press Del to enter BIOS and load Fail-Safe Defaults.
      7. Save changes and reboot the system.

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

Question 7: Why do I still get a weak sound after turning up the speaker to the maximum volume?
Answer: Please make sure the speaker you are using is equipped with an internal amplifier. If not, please change another speaker with power/amplifier and try again later.

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

Question 9: Why cannot I use the IDE 2?
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"

    2. 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 .

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

A

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

Yes

Failure has been excluded.

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

Yes

Failure has been excluded.

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

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

Yes

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

Failure has been excluded.

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

Yes

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

Failure has been excluded.

END

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

Technical Support/RMA Sheet

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

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

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

Problem Description:

<u>Acronyms</u>

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

to be continued......

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

Memo

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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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