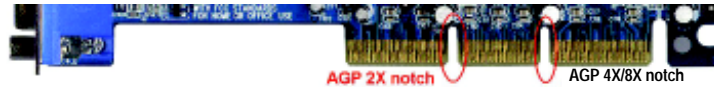**When you installing AGP card, please make sure the following notice is fully understood and practiced. If your AGP card has "AGP 4X/8X(1.5V) notch"(show below), please make sure your AGP card is AGP 4X/8X (1.5V).**

AGP 2X notch   AGP 4X/8X notch

Caution: AGP 2X(3.3V) card is not supported by VIA PT880. You might experience system unable to boot up normally. Please insert an AGP 4X/8X (1.5V) card

Example 1: Diamond Vipper V770 golden finger is compatible with 2X/4X mode AGP slot. It can be switched between AGP 2X(3.3V) or 4X (1.5V) mode by adjusting the jumper. The factory default for this card is 2X(3.3V).
The GA-8VT880 Series motherboards might not function properly, if you install this card without switching the jumper to 4X(1.5V) mode in it.

Example 2: Some ATi Rage 128 Pro graphics cards made by "Power Color", the graphics card manufacturer & some SiS 305 cards, their golden finger is compatible with 2X/4X mode AGP slot, but they support 2X(3.3V) only. The GA-8VT880 Series 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 VIA PT880 based motherboards.

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- ❂ Due to rapid change in technology, some of the specifications might be out of date before publication of this booklet.

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

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

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

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

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

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

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

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

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

Declaration of Conformity

We, Manufacturer/Importer
(full address)

G.B.T. Technology 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-8VT880 / GA-8VT880-L / GA-8VT880 Ultra
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 requirments for uninterruptible power systems (UPS)

Manufacturer/Importer

(Stamp)

Date : November 25, 2003

Signature: *Timmy Huang*
Name: Timmy Huang

DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2.1077(a)

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

Address: **17358 Railroad Street**

City of Industry, CA 91748

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

hereby declares that the product

Product Name: **Motherboard**

Model Number: **GA-8VT880 / GA-8VT880-L / GA-8VT880 Ultra**

Conforms to the following specifications:

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

Supplementary Information:

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

Representative Person's Name: ERIC LU

Signature: *Eric Lu*

Date: November 25,2003

GA-8VT880 Series

P4 Titan Series Motherboard

USER'S MANUAL

Table of Content

WARNING!

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 power connector on the motherboard.

Installing the motherboard to the chassis…

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

Chapter 1 Introduction

Features Summary

Form Factor	•	30.5cm x 24.4cm ATX size form factor, 4 layers PCB.
Motherboard	•	GA-8VT880 Series:
		GA-8VT880 Ultra / GA-8VT800-L / GA-8VT880
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	•	Chipset VIA PT880 HOST/AGP/Controller
	•	VT8237 I/O Controller Hub
Memory	•	4 184-pin DDR DIMM sockets
	•	Supports Dual Channel DDR400/DDR333/DDR266 DIMM
	•	Supports 128MB/256MB/512MB/1GB unbuffered DRAM
	•	Supports up to 4GB DRAM (Max)
I/O Control	•	IT8705
Slots	•	1 AGP 3.0 slot supports 8X/4X mode
	•	5 PCI slot supports 33MHz & PCI 2.2 compliant
On-Board IDE	•	2 IDE controllers on the VIA VT8237 PCI chipset provides IDE HDD/CD-ROM (IDE1, IDE2) with PIO, Bus Master (Ultra DMA33/ATA66/ATA100/ATA133) operation modes.
	•	IDE3 and IDE4 Compatible with RAID,Ultra ATA133/100.♦
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 and COMB)
	•	8 USB 2.0/1.1 ports (4 x Rear, 4 xFront by cable)
	•	3 IEEE1394 ports (by cable)
	•	1 IrDA connector for IR
	•	1 Front Audio Connector

♦ For GA-8VT880 Ultra * For GA-8VT880-L

Hardware Monitor	• CPU/System fan revolution detect
	• CPU temperature detect
	• CPU warning temperature
	• System voltage detect
	• CPU/System fan fail warning
	• CPU Smart Fan control(♦)
On-Board LAN(*,♦)	• Builit in Realtek 8110S Gigabit (♦)
	• Builit in Realtek 8100C (*)
	• 1 RJ45 port(*,♦)
On-Board Sound	• Realtek ALC658 CODEC (UAJ)
	• Supports Jack Sensing function
	• 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 Connector
On-Board SATA RAID	• Built in VT8237
	• Supports Disk striping (RAID0) or DISK Mirroring (RAID1)
	• Supports UDMA up to 150 MB/sec
	• Up to 2 SATA Devices (Note)
On-Board IDE RAID (♦)	• Onboard GigaRAID IT8212F chipset
	• Supports data striping (RAID 0) or mirroring (RAID 1) or striping+mirroring (RAID 0 + RAID 1)
	• Supports 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

to be continued......

(Note)   It is recommended to use SATA (1.5Gb/s) hard disks.

♦ For GA-8VT880 Ultra * For GA-8VT880-L

On-Board IEEE1394	•	Built-in VT6306
PS/2 Connector	•	PS/2 Keyboard interface and PS/2 Mouse interface
BIOS	•	Licensed AWARD BIOS
	•	Supports Dual BIOS (♦)
	•	Supports Face Wizard
	•	Supports Q-Flash
Additional Features	•	PS/2 Keyboard power on by password
	•	PS/2 Mouse power on
	•	STR(Suspend-To-RAM)
	•	AC Recovery
	•	Poly fuse for keyboard over-current protection
	•	USB KB/Mouse wake up from S3
	•	Supports EasyTune 4
	•	Supports @BIOS
Overclocking	•	Over Voltage (DDR/AGP/CPU) by BIOS
	•	Over Clock (DDR/AGP/CPU/PCI) by BIOS

♦ For GA-8VT880 Ultra * For GA-8VT880-L

HT functionality requirement content :
Enabling the functionality of Hyper-Threading Technology for your computer system requires all of the following platform components:
- CPU: An Intel® Pentium 4 Processor with HT Technology
- Chipset: An Intel® Chipset that supports HT Technology
- BIOS: A BIOS that supports HT Technology and has it enabled
- OS: An operation system that has optimizations for HT Technology

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

GA-8VT880 Series Motherboard Layout

Labels on the motherboard layout:

- CPU_FAN
- KB_MS
- COMA
- LPT
- COMB
- USB
- USB /LAN
- AUDIO
- F_AUDIO
- NB_FAN♦
- ATX_12V
- VIA PT880
- Hyper Threading
- SOCKET478
- GA-8VT880 Ultra
- DDR1
- DDR2
- DDR3
- DDR4
- PWR_FAN♦
- ATX
- IDE1
- IDE2
- FDD
- BATTERY
- SATA1
- SATA0
- CLR_CMOS
- VT8237
- AGP
- RTL8110C *
- RTL8110S ♦
- PCI1
- PCI2
- Backup BIOS♦
- SYS_FAN
- INFO_LINK
- CD_IN
- CODEC
- PCI3
- MAIN BIOS
- GigaRAID IT8212 ♦
- VIA VT6306
- SUR_CEN
- IR
- PCI4
- AUX_IN
- ITE8705F
- PCI5
- IDE4♦
- IDE3♦
- F_PANEL
- GAME
- SPDIF_IO
- F_USB1
- F_USB2
- F2_1394
- F1_1394
- PWR_LED

♦ For GA-8VT880 Ultra * For GA-8VT880-L

Block Diagram

Pentium 4
Socket 478
CPU

CPUCLK+/- (100/133/200MHz)

AGP 8X/4X

AGPCLK
(66MHz)

System Bus
400/533/800MHz

DDR

266/333/400MHz

VIA PT880

GCLKNB

HCLK+/- (100/133/200MHz)

5 PCI

RJ45(*,♦)

66MHz
33 MHz
14.318 MHz

48 MHz

RTL8110S♦
RTL8100C*

PS/2 KB/Mouse

BIOS/
Dual BIOS♦

VT8237

Game Port

LPC BUS

ITE8705

Floppy

LPT Port

GigaRAID
IT8212♦

IEEE1394
VT6306

AC97 Link

PCICLK
(33MHz)

COM
Ports

IDE4♦ IDE3♦

AC97
CODEC

8 USB
(2.0/1.1)
Ports

ATA33/66/
100/133
IDE Channels

2 Serial
ATA

48 MHz

33 MHz

3 IEEE1394

MIC

LINE-IN

LINE-OUT

PCICLK (33MHz)

GCLKNB

USBCLK (48MHz)

CPUCLK+/- (100/133/200MHz)

14.318 MHz

CLK GEN

AGPCLK (66MHz)

33 MHz

HCLK+/- (100/133/200MHz)

48 MHz

VCLK (66MHz)

"♦" FOR GA-8VT880 Ultra Only.   "* " FOR GA-8VT880-L Only.

English

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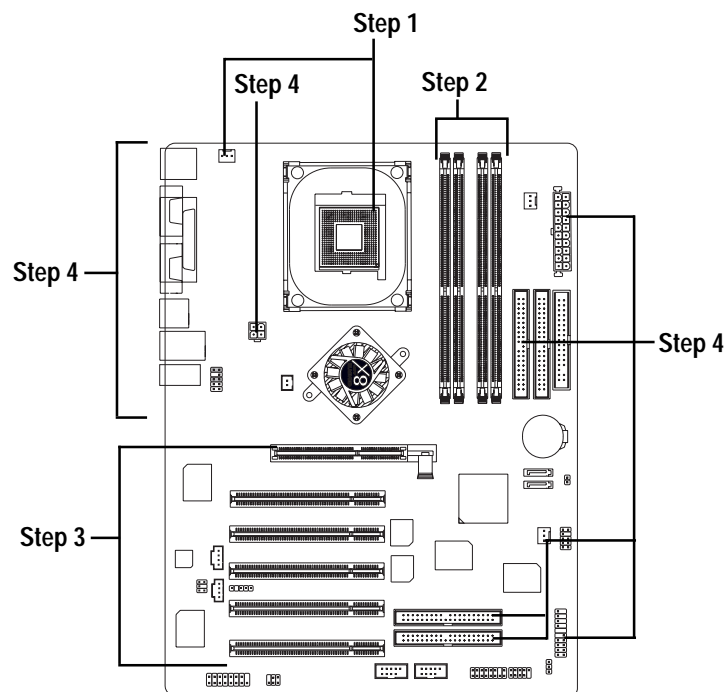
Congratulations you have accomplished the hardware installation!
Turn on the power supply or connect the power cable to the power outlet. Continue with
the BIOS/software installation.

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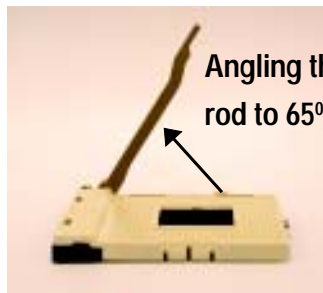
1. Angling the rod to 65-degree maybe feel a kind of tight, and then continue pull the rod to 90-degree when a noise "cough" made.

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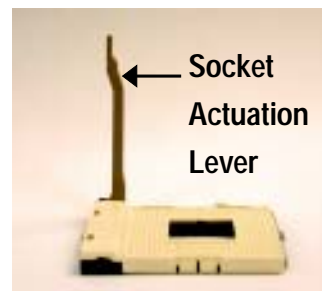
2. Pull the rod to the 90-degree directly.

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

⚠ CAUTION

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

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

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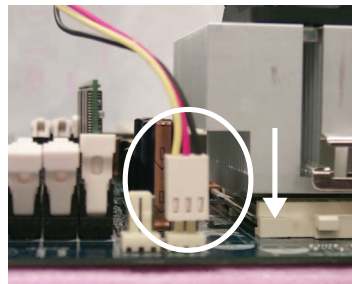
2. Make sure the CPU fan is plugged to the CPU fan connector, than install complete.

Step 2: Install memory modules

⚠️
CAUTION

Before installing the processor and heatsink, adhere to the following warning:
1.When RAM_LED is ON, do not install/remove DIMM from socket.
2.Please note that the DIMM module can only fit in one direction due to the one 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.
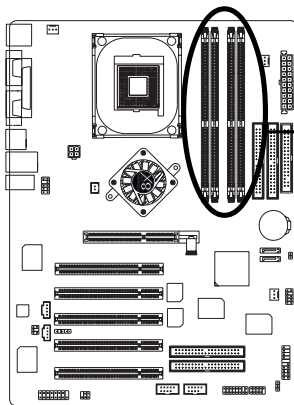
Notch

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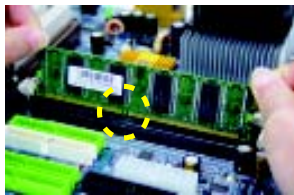
1. The DIMM slot has a notch, so the DIMM memory module can only fit in one direction.

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 perfor-
mance 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 bottle-
neck by doubling the memory bandwidth. Nowadays, with the highest bandwidth of 3.2GB/s of
DDR400 memory and complete line of DDR400/333/266/200 memory solutions, DDR memory is
the best choice for building high performance and low latency DRAM subsystem that are suitable
for servers, workstations, and full range of desktop PCs.

Dual Channel DDR:

GA-8VT880 Series supports Dual Channel Technology.

When Dual Channel Technology is activated, the bandwidth of memory bus will be double the original one,
with the fastest speed at 6.4GB/s DDR400.

GA-8VT880 Series includes four DIMM slots, and each Channel has 2 DIMMs as following:

> ▸▸ Channel A : DIMM 1, 2
> ▸▸ Channel B : DIMM 3, 4

Below are the explanations:

1. One, or three memory modules are installed: The Dual Channel Technology will not operate
   when one, three, memory modules are installed and they will only work as Single Channel.
2. Two DDR memory modules are installed (the same memory size and type): The Dual Chan-
   nel Technology will operate when two DDR memory modules are inserted individually into
   Channel A and Channel B (DIMM 1 pairs up with DIMM 3, DIMM 2 and DIMM 4). However,
   if the two DDR memory modules are inserted into the same Channel (DIMM 1,2 or DIMM 3,
   4) then Dual Channel Technology will not operate.
3. Three memory modules are installed: Please note that The Dual Channel Technology will
   not operate when three DDR memory modules are installed; part of them will not be detected.
4. If four DDR memory modules are installed (two pairs of DDR memory modules with the
   same memory size and type): The Dual Channel Technology will operate when a pair of
   DDR memory modules are inserted into DIMM1, 3 and another pair into DIMM 2,4.

The following tables include all memory-installed combination types:

(If you wish to use memory-installed combination type, please use it in unity with BIOS(FORCE Dual/FORCE Single/ Auto)

● 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
	X	DS/SS	X	DS/SS
4 memory modules	DS/SS	DS/SS	DS/SS	DS/SS

● Figure 2: Single Channel Technology (DS: Double Side, SS: Single Side)

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

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.
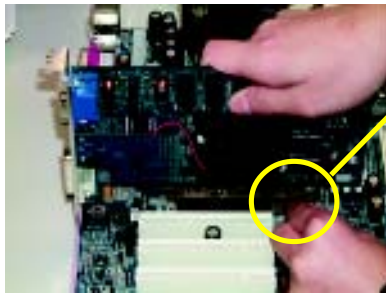
AGP Card

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
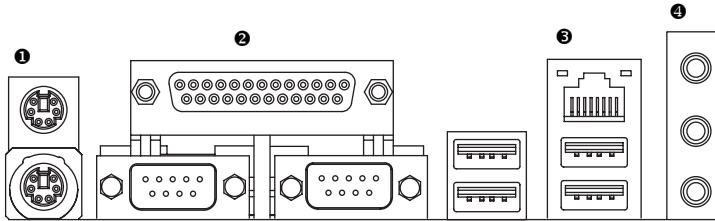
❶ PS/2 Keyboard and PS/2 Mouse Connector
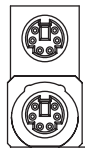
PS/2 Mouse Connector
(6 pin Female)

PS/2 Keyboard Connector
(6 pin Female)

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

❷ Parallel Port and Serial Ports (COMA / COMB)

Parallel Port
(25 pin Female)

COMA   COMB
Serial Port (9 pin Male)
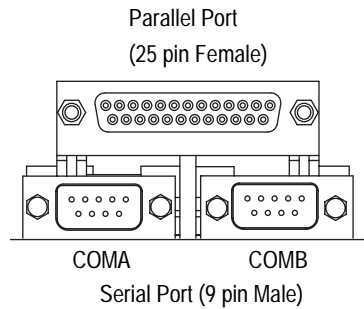
➢ This connector supports 2 standard COM ports and 1 Parallel port. Device like printer can be connected to Parallel port; mouse and modem etc. can be connected to Serial ports.

❸ **USB /LAN Connector**

LAN
(*,♦)

USB 0
USB 1

USB 2
USB 3
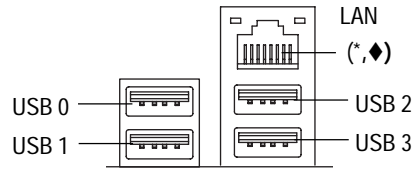
➢ Before you connect your device(s) into USB connector(s), please make sure your device(s) such as USB keyboard,mouse, scanner, zip, speaker..etc. Have a standard USB interface. Also make sure your OS supports USB controller.
If your OS does not support USB controller, please contact OS vendor for possible patch or driver upgrade. For more information please contact your OS or device(s) vendors.

❹ **Audio Connectors**

Line In(Rear Speaker)

Line Out(Front Speaker)

MIC In(Center and Subwoofer)
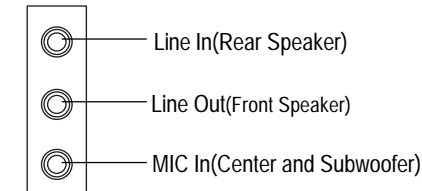
➢ After install onboard audio driver, you may connect speaker to Line Out jack, micro phone to MIC In jack.
Device like CD-ROM , walkman etc can be connected to Line-In jack.
Please note:
You are able to use 2-/4-/6- channel audio feature by S/W selection.
If you want to enable 6-channel function, you 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 nearest dealer for optional SUR_CEN cable.

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

♦ For GA-8VT880 Ultra * For GA-8VT880-L

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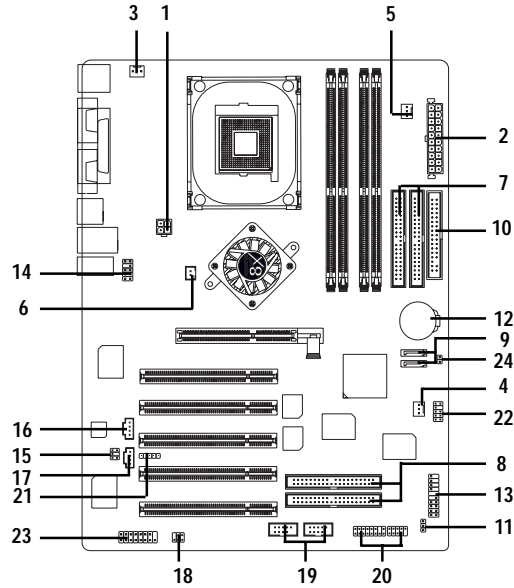
1)	ATX_12V	13)	F_PANEL
2)	ATX	14)	F_AUDIO
3)	CPU_FAN	15)	SUR_CEN
4)	SYS_FAN	16)	CD_IN
5)	PWR_FAN(♦)	17)	AUX_IN
6	NB_FAN(♦)	18)	SPDIF_IO
7)	IDE1/IDE2	19)	F_USB1/F_USB2
8)	IDE3/IDE4(♦)	20)	F1_1394/F2_1394
9)	SATA0/SATA1	21)	IR
10)	FDD	22)	INFO_LINK
11)	PWR_LED	23)	GAME
12)	BATTERY	24)	CLR_CMOS

"♦" FOR GA-8VT880 Ultra Only.   "* " FOR GA-8VT880-L Only.

1) ATX_12V (+12V Power Connector)

This connector (ATX _12V) suppliesthe CPU operation voltage (Vcore). If this " ATX_ 12V connector" is not connected, system cannot boot.
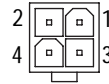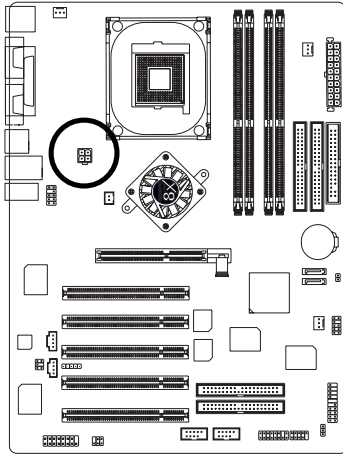
Pin No.	Definition
1	GND
2	GND
3	+12V
4	+12V

2) ATX (ATX Power)

AC power cord should only be connected to your power supply unit after ATX power cable and other related devices are firmly connected to the mainboard.
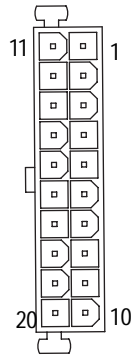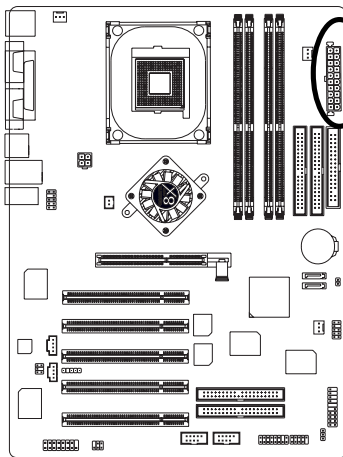
Pin No.	Definition
1	3.3V
2	3.3V
3	GND
4	VCC
5	GND
6	VCC
7	GND
8	Power Good
9	5V SB(stand by +5V)
10	+12V
11	3.3V
12	-12V
13	GND
14	PS_ON(softOn/Off)
15	GND
16	GND
17	GND
18	-5V
19	VCC
20	VCC

Hardware Installation Process

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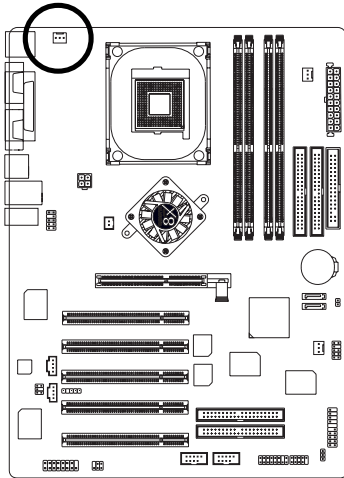
Pin No.	Definition
1	GND
2	+12V
3	Sense

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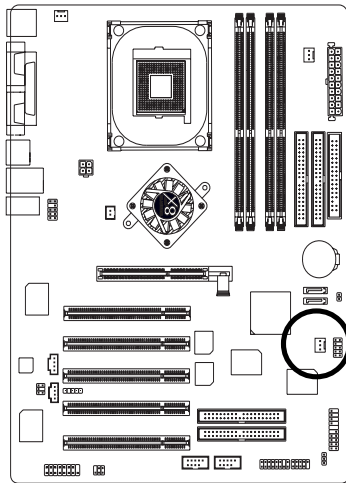
Pin No.	Definition
1	GND
2	+12V
3	Sense

5) PWR_FAN (Power Fan Connector)(♦)

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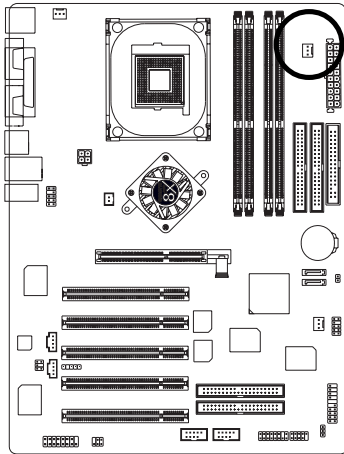
Pin No.	Definition
1	GND
2	+12V
3	Sense

6) NB_FAN (Chip Fan Connector)(♦)

If you installed wrong direction, the chip fan will not work. Sometimes will damage the chip fan.(Usually black cable is GND)
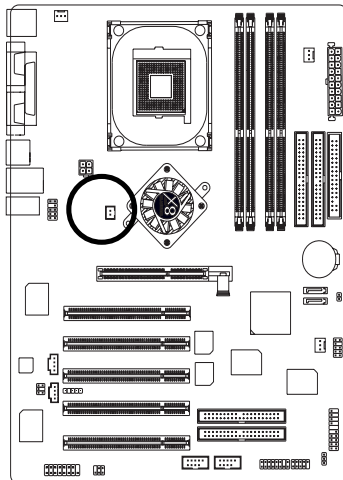
Pin No.	Definition
1	VCC
2	GND

"♦" FOR GA-8VT880 Ultra Only. "* " FOR GA-8VT880-L 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.

40 □□
39
IDE1   IDE2
2   1
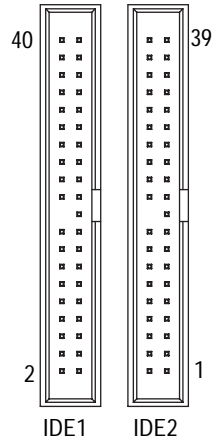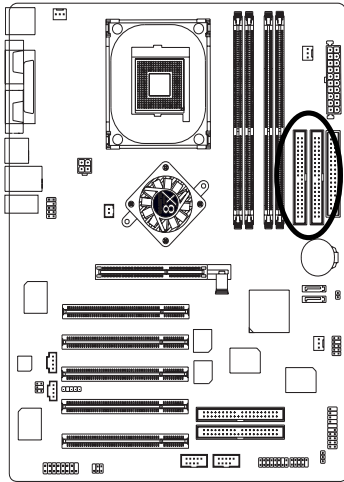
8) IDE3 / IDE4 (RAID/ATA133, Green Connector)(♦)

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.

2   40
IDE4

IDE3
1   39
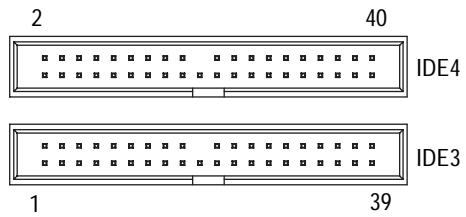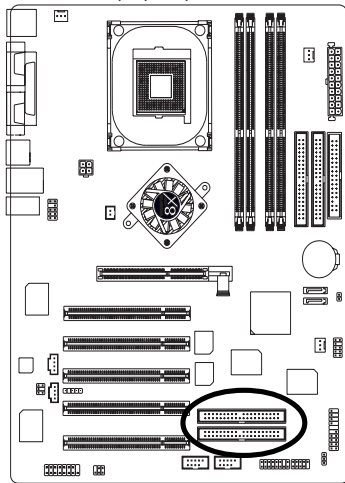
"♦" FOR GA-8VT880 Ultra Only.   "* " FOR GA-8VT880-L Only.

9) SATA0 / SATA1 (Serial ATA Connector)

You can connect the Serial ATA device to this connector, it provides you high speed transfer rates (150MB/sec).
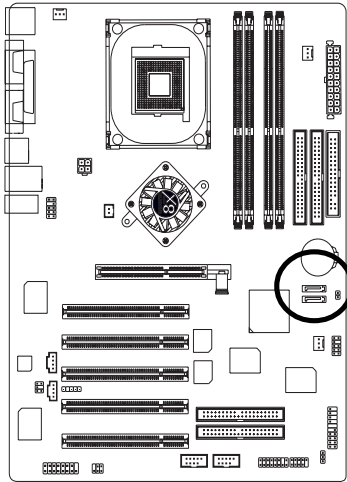
SATA1

7   1
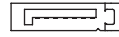
SATA0

7   1

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

10)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

Hardware Installation Process
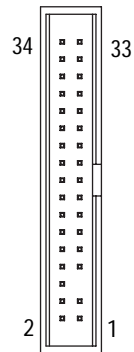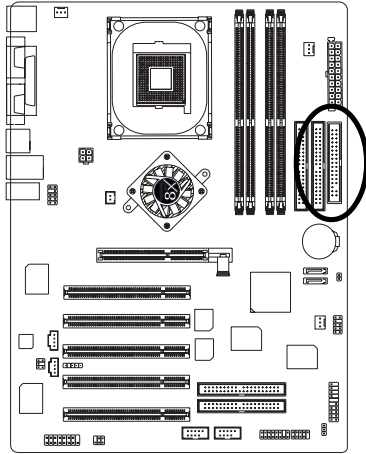
11) PWR_LED

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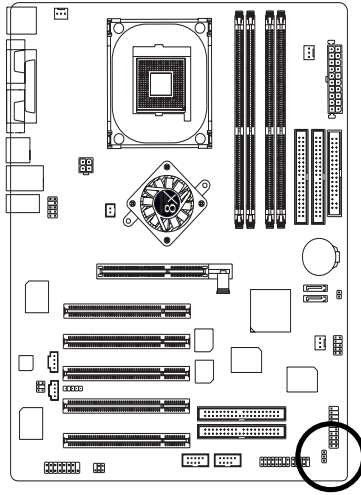
Pin No.	Definition
1	MPD+
2	MPD-
3	MPD-

12) BAT (Battery)
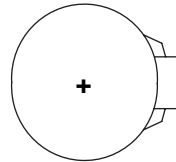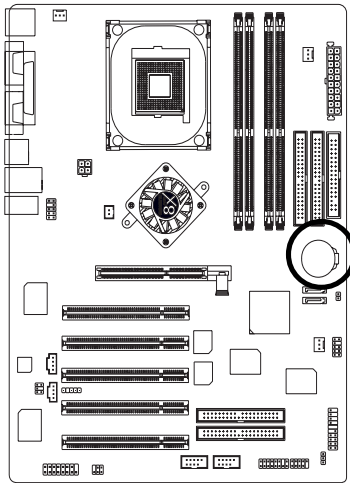
CAUTION

❖ 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.
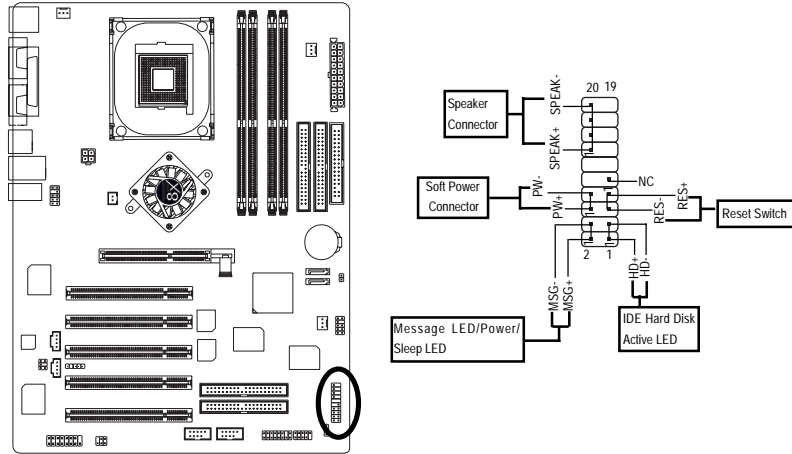
HD (IDE Hard Disk Active LED)	Pin 1: LED anode(+)
(Blue)	Pin 2: LED cathode(-)
SPEAK (Speaker Connector)	Pin 1: VCC(+)
(Amber)	Pin 2- Pin 3: NC
	Pin 4: Data(-)
RES (Reset Switch)	Open: Normal Operation
(Green)	Close: Reset Hardware System
PW (Soft Power Connector)	Open: Normal Operation
(Red)	Close: 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.
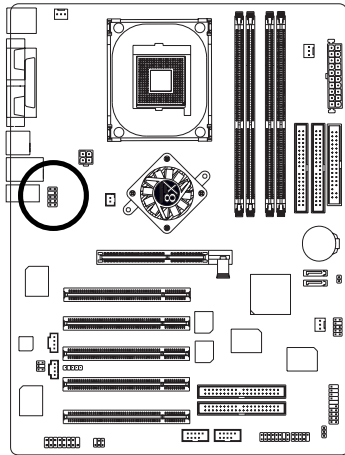
Pin No.	Definition
1	MIC
2	GND
3	REF
4	POWER
5	FrontAudio(R)
6	RearAudio(R)
7	Reserved
8	No Pin
9	FrontAudio (L)
10	RearAudio(L)

15) SUR_CEN

Please contact your nearest dealer for optional SUR_CEN cable.
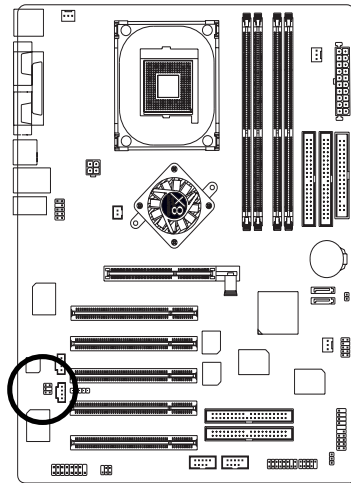
Pin No.	Definition
1	SUR OUTL
2	SUR OUTR
3	GND
4	No Pin
5	CENTER_OUT
6	BASS_OUT

16) CD_IN (CD IN,Black)

Connect CD-ROM or DVD-ROM audio out to the connector.
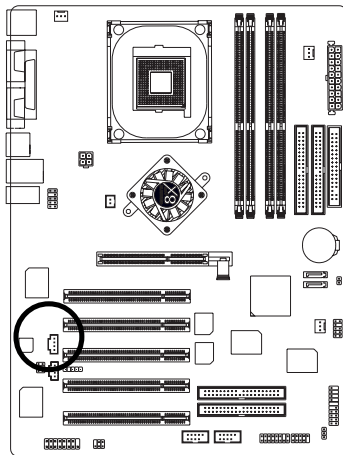
Pin No.	Definition
1	CD-L
2	GND
3	GND
4	CD_R

17) AUX_IN (AUX In Connector)

Connect other device(such as PCI TV Tunner audio out)to the connector.
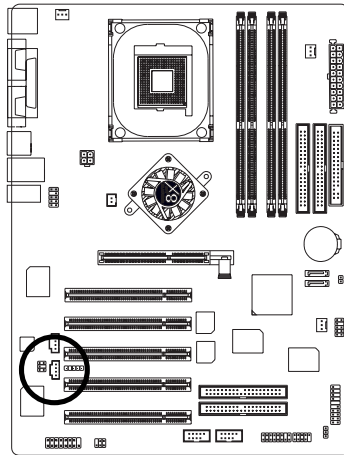
Pin No.	Definition
1	AUX-L
2	GND
3	GND
4	AUX_R

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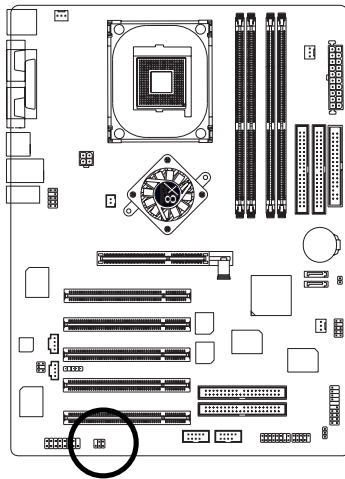
Pin No.	Definition
1	VCC
2	No Pin
3	SPDIF
4	SPDIFI
5	GND
6	GND

19) F_ USB1 / F_USB2(Front USB Connector, Yellow)
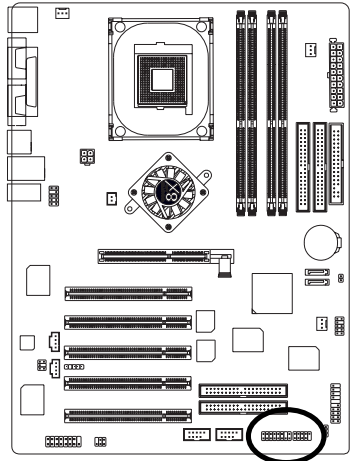
Be careful with the polarity of the F_USB connector. Check the pin assignment carefully while you connect the F_USBcable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional F_USB cable, please contact your local dealer.
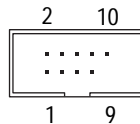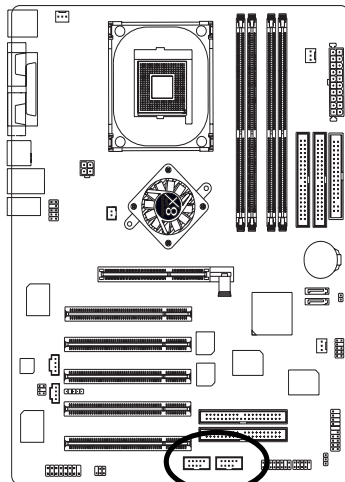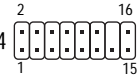
Pin No.	Definition
1	Power
2	Power
3	USB0 DX-/USB6 DX-
4	USB1 Dy-/USB7 Dy-
5	USB0 DX+/USB6 DX+
6	USB1 Dy+/USB7 Dy+
7	GND
8	GND
9	No Pin
10	NC

20) F1_1394 / F2_1394 (Front IEEE1394 Connector)
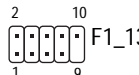
Serial interface standard set by Institute of Electrical and Electronics Engineers, which has features like high speed, highbandwidth and hot plug. Be careful with the polarity of the IEEE1394 connector. Check the pin assignment carefully while you connect the IEEE1394 cable, incorrect connection between the cable and connector will make the device unable to work or even damage it. For optional IEEE1394 cable, please contact your local dealer.
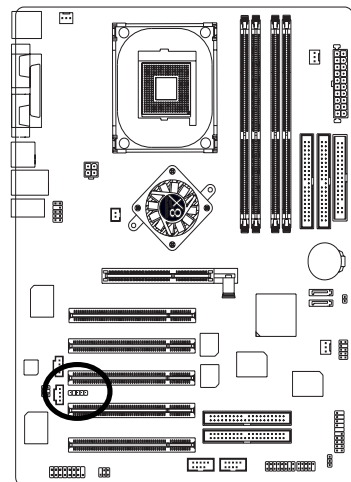
Pin No.	Definition
1	Power
2	Power
3	TPA0+
4	TPA0-
5	GND
6	GND
7	TPB0+
8	TPB0-
9	Power
10	Power
11	TPA1+
12	TPA1-
13	GND
14	No Pin
15	TPB1+
16	TPB1-

Pin No.	Definition
1	TPA2+
2	TPA2-
3	GND
4	GND
5	TPB2+
6	TPB2-
7	Power
8	Power
9	No Pin
10	GND

21) 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.

IR

Pin No.	Definition
1	VCC(+5V)
2	No Pin
3	IR Data Input
4	GND
5	IR Data Output

Hardware Installation Process

22) INFO_LINK

This connector allows you to connect some external devices to provide you extra function. Check the pin assignment while you connect the external device cable. Please contact your nearest dealer for optional external device cable.
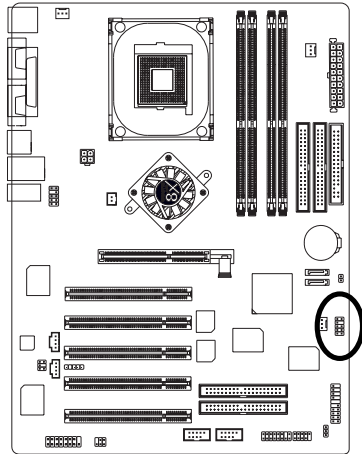
Pin No.	Definition
1	SMBCLK
2	VCC
3	SMBDATA
4	GPIO
5	GND
6	GND
7	No Pin
8	NC
9	+12V
10	+12V

23) GAME (GAME Connector)

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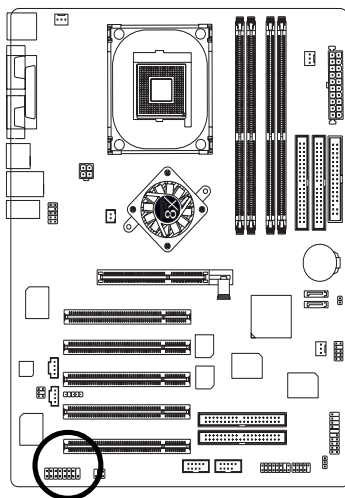
Pin No.	Definition
1	VCC
2	GRX1_R
3	GND
4	GPSA2
5	VCC
6	GPX2_R
7	GPY2_R
8	MSI_R
9	GPSA1
10	GND
11	GPY1_R
12	VCC
13	GPSB1
14	MSO_R
15	GPSB2
16	No Pin

24) CLR_CMOS

You may clear the CMOS data to its default values by this jumper.

Default doesn't include the "Shunter" to prevent from improper use this jumper. To clear CMOS, temporarily short 1-2 pin.
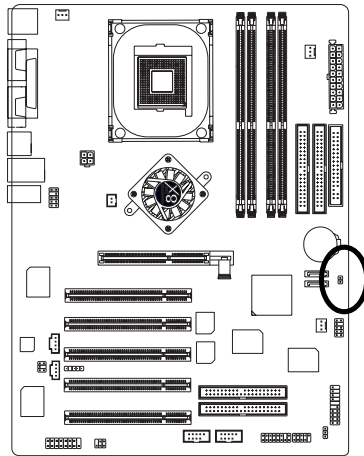
1 Open: Normal

1 1-2 close: Clear CMOS

Chapter 3 BIOS Setup

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

ENTERING SETUP

Powering ON the computer and pressing <Del> immediately will allow you to enter Setup. If you require more advanced BIOS settings, please go to "Advanced BIOS" setting menu.To enter Advanced BIOS setting menu, press "Ctrl+F1" key on the BIOS screen.

CONTROL KEYS

<↑>	Move to previous item
<↓>	Move to next item
<←>	Move to the item in the left hand
<→>	Move to the item in the right hand
Enter	Select item
<Esc>	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>	Q-Flash function
<F9>	System Information
<F10>	Save all the CMOS changes, only for Main Menu

GETTING HELP

Main Menu

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

Status Page Setup Menu / Option Page Setup Menu

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

The Main Menu (For example: BIOS Ver. : F1)

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

Figure 1: Main Menu

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

● **Standard CMOS Features**

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

● **Advanced BIOS Features**

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

- **Integrated Peripherals**

  This setup page includes all onboard peripherals.

- **Power Management Setup**

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

- **PnP/PCI Configurations**

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

- **PC Health Status**

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

- **Frequency/Voltage Control**

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

- **Load Fail-Safe Defaults**

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

- **Load Optimized Defaults**

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

- **Set 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

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Standard CMOS Features

		Item Help
Date (mm:dd:yy)	Wed, Jan 1 2003	
Time (hh:mm:ss)	22:31:24	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

		Item Help
First Boot Device	[Floppy]	
Second Boot Device	[HDD-0]	Menu Level ▶
Third Boot Device	[CD-ROM]	
x SATA/RAID/SCSI Boot Order	SCSI	
Password Check	[Setup]	
# CPU Hyper-Threading	[Enabled]	
Flexible AGP 8X	[Auto]	

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

Figure 3: Advanced BIOS Features

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

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

▸ 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.
▸ 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.

☞ **SCSI /SATA/RAID Boot Order**

This feature allows you to select the boot order Serial ATA, RAID or SCSI device.

➤ SCSI   Select your boot device priority by PCI SCSI.

➤ RAID   Select your boot device priority by RAID.

➤ SATA   Select your boot device priority by Serial ATA.

☞ **Password Check**

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

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

☞ **CPU Hyper-Threading**

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

➤ Disabled   Disables CPU Hyper Threading.

☞ **Flexible AGP 8X**

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

➤ 8X   Always set AGP transfer rate to 8X if 8X mode supported by the AGP card.

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

Integrated Peripherals

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Integrated Peripherals

		Item Help
IDE DMA transfer access	[Enabled]	
On-Chip IDE Channel 0	[Enabled]	Menu Level ▶
On-Chip IDE Channel 1	[Enabled]	If a hard disk
OnChip Serial ATA	[Enabled]	controller card is
AC97 Audio	[Auto]	used, set at Disable
USB 1.1 Controller	[Enabled]	
USB 2.0 Controller	[Enabled]	[Enabled]
USB Keyboard Support	[Disabled]	Enable on-chip IDE
USB Mouse Support	[Disabled]	Channel
Onboard H/W LAN ♦ˈ	[Enabled]	
Onboard H/W 1394	[Enabled]	[Disabled]
Onboard H/W ATA/RAID♦	[Enabled]	Disable on-chip IDE
GigaRAID Function ♦	[RAID]	Channel
Onboard LAN Boot ROM♦	[Disabled]	
Onboard Serial Port 1	[3F8/IRQ4]	
Onboard Serial Port 2	[2F8/IRQ3]	
UART Mode Select	[Normal]	
xUR2 Duplex Mode	Half	
Onboard Parallel Port	[378/IRQ7]	
Parallel Port Mode	[SPP]	
Game Port Address	[201]	
Midi Port Address	[Disabled]	
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

☞ **IDE DMA transfer access**

    ⟐ Enabled   Detect the IDE UDMA automatically.

    ⟐ Disabled   Disable UDMA function. (Default value)

♦ For GA-8VT880 Ultra   * For GA-8VT880-L

☞ **On-Chip IDE Channel 0**

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

    ▶ Disabled   Disable onboard 1st channel IDE port.

☞ **On-Chip IDE Channel 1**

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

    ▶ Disabled   Disable onboard 2nd channel IDE port.

☞ **OnChip Serial ATA**

    ▶ Enabled   Enable VT8237 Serial ATA support. (Default value)

    ▶ Disabled   Disable VT8237 Serial ATA support.

☞ **AC97 Audio**

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

    ▶ Disabled   Disable this function.

☞ **USB 1.1 Controller**

    ▶ Enabled   Enable USB 1.1 Controller. (Default value)

    ▶ Disabled   Disable USB 1.1 Controller.

☞ **USB 2.0 Controller**

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

    ▶ Enabled   Enable USB 2.0 Controller. (Default value)

    ▶ Disabled   Disable USB 2.0 Controller.

☞ **USB Keyboard Support**

    ▶ Enabled   Enable USB Keyboard Support.

    ▶ Disabled   Disable USB Keyboard Support. (Default value)

☞ **USB Mouse Support**

    ▶ Enabled   Enable USB Mouse Support.

    ▶ Disabled   Disable USB Mouse Support. (Default value)

☞ **Onboard H/W LAN *,♦**

  ➠ Enabled   Auto detect onborad LAN function. (Default Value)

  ➠ Disabled   Disable this function.

☞ **Onboard H/W 1394**

  ➠ Enabled   Auto detect on-chip 1394 function. (Default Value)

  ➠ Disabled   Disable this function.

☞ **Onboard H/W ATA/RAID ♦**

  ➠ Enabled   Enable onboard GigaRAID chip function. (Default value)

  ➠ Disabled   Disable this function.

☞ **GigaRAID Function♦**

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

  ➠ ATA   Select onboard GigaRAID chip function as ATA.

☞ **Onboard LAN Boot ROM♦**

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

  ➠ Enabled   Enable Onboard LAN chip function.

  ➠ Disabled   Disable this function. (Default value)

☞ **Onboard Serial Port 1**

  ➠ Auto   BIOS will automatically setup the port 1 address.

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

♦ For GA-8VT880 Ultra * For GA-8VT880-L

☞ **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.

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

⏵ IrDA   Set onboard I/O chip UART to IrDA Mode.

⏵ ASKIR   Set onboard I/O chip UART to ASKIR Mode.

☞ **UR2 Duplex Mode**

This feature allows you to seclect IR mode.

This function will available when "UART Mode Select" doesn't set at "Normal" nor "SCR".

⏵ 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.

☞**Game Port Address**

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

    ▸ 209   Set Game Port Address to 209.

    ▸ Disabled   Disable this function.

☞**Midi Port Address**

    ▸ 300   Set Midi Port Address to 300.

    ▸ 330   Set Midi Port Address to 330.

    ▸ Disabled   Disable this function.(Default Value)

☞**Midi Port IRQ**

    ▸ 5   Set Midi Port IRQ to 5.

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

Power Management Setup

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Power Management Setup

		Item Help
ACPI Suspend Type	[S1(POS)]	
x USB Device Wake-Up From S3	Disabled	Menu Level ▶
Soft-Off by PWRBTN	[Instant-Off]	[S1]
AC BACK Function	[Soft-Off]	Set suspend type to
Keyboard Power On	[Disabled]	Power On Suspend under
Mouse Power On	[Disabled]	ACPI OS
PME Event Wake Up	[Enabled]	[S3]
Modem Ring Resume	[Enabled]	PSet suspend type to
Resume by Alarm	[Disabled]	Suspend to RAM under
x Date (of Month) Alarm	Everyday	ACPI OS
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.

☞ **USB Device Wake-Up from S3**

   ▸ Disabled   Disabled USB Device Wake-Up from S3. (Default Value)

   ▸ Enabled   Enabled USB Device Wake-Up from S3.

☞ **Soft-Off by PWRBTN**

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

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

               than 4 sec.

☞ **AC BACK Function**

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

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

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

☞ **Keyboard Power On**

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

    ▶▶ Disabled   Disabled this function. (Default value)

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

☞ **Mouse Power On**

    ▶▶ Disabled   Disabled this function. (Default value)

    ▶▶ Enabled   Double click on PS/2 mouse left button to power on system.

☞ **PME Event Wake Up**

    ▶▶ Disabled   Disable this function.

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

☞ **Modem Ring Resume**

    ▶▶ Disabled   Disable Modem Ring on function.

    ▶▶ Enabled   Enable Modem Ring on Function. (Default Value)

☞ **Resume by Alarm**

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

    ▶▶ Disabled   Disable this function. (Default Value)

    ▶▶ Enabled   Enable alarm function to POWER ON system.

      If RTC Alarm Lead To Power On is Enabled.

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

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

PnP/PCI Configurations

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PnP/PCI Configurations

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

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

Figure 6: PnP/PCI Configurations

☞ **PCI 1/PCI 5 IRQ Assignment**

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

  ⇥ 3,4,5,7,9,10,11,12,14,15   Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI 1/PCI 5.

☞ **PCI 2 IRQ Assignment**

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

  ⇥ 3,4,5,7,9,10,11,12,14,15   Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI 2.

☞ **PCI 3 IRQ Assignment**

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

  ⇥ 3,4,5,7,9,10,11,12,14,15   Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI 3.

☞ **PCI 4 IRQ Assignment**

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

  ⇥ 3,4,5,7,9,10,11,12,14,15   Set IRQ 3,4,5,7,9,10,11,12,14,15 to PCI 4.

PC Health Status

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PC Health Status

		Item Help
Vcore	OK	Menu Level ▶
DDR25V	OK	
+3.3V	OK	
+12V	OK	
Current CPU Temperature	28°C	
Current CPU FAN Speed	4963 RPM	
Current SYSTEM FAN Speed	0 RPM	
CPU FAN Fail Warning	[Disabled]	
SYSTEM FAN Fail Warning	[Disabled]	
CPU Smart FAN Control♦	[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 /DDR25V +3.3V / +12V**

▸ Detect system's voltage status automatically.

☞ **Current CPU Temperature**

▸ Detect CPU Temp. automatically.

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

▸ Detect CPU/SYSTEM Fan speed status automatically.

♦ For GA-8VT880 Ultra   * For GA-8VT880-L

☞ **CPU FAN Fail Warning**

  ▶ Disabled   Fan Warning Function Disable. (Default value)

  ▶ Enabled   Fan Warning Function Enable.

☞ **SYSTEM FAN Fail Warning**

  ▶ Disabled   Fan Warning Function Disable. (Default value)

  ▶ Enabled   Fan Warning Function Enable.

☞ **CPU Smart FAN Control◆**

  ▶ 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.

Frequency/Voltage Control

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Frequency/Voltage Control

CPU Clock Ratio	[15X]	Item Help
Auto Detect DIMM/PCI Clk	[Enabled]	Menu Level ▶
Spread Spectrum	[Enabled]	
CPU Host Clock Control	[Disabled]	
xCPU Clock	[100MHz]	
xFixed PCI/AGP Frequency	[Disabled]	
PCI/AGP Frequency (MHz)	[Disabled]	
DRAM Clock	[By SPD]	
CPU Voltage Control	[Normal]	
Normal CPU Vcore	1.4750V	
AGP OverVoltage Control	[Auto]	
DIMM OverVoltage Control	[Auto]	

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

Figure 8: Frequency/Voltage Control

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

☞**CPU Clock Ratio**

This option will not be shown or not be available if you are using a CPU with the locked ratio.

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

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

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

☞ **Auto Detect DIMM/PCI clk**

▸▸ Enabled   Detect the DIMM/PCI clock automatically. (Default value)

▸▸ Disabled   Disable this function.

☞ **Spread Spectrum**

» Enabled   Enable clock spread spectrum. (Default value)

» Disabled   Disable this function.

☞ **CPU Host Clock Control**

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

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

» Enabled   Enable CPU Host Clock Control.

☞ **CPU Clock**

» 200MHz ~ 255MHz   Set CPU Host Clock from 200MHz to 255MHz.

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

☞ **Fixed PCI/AGP Frequency**

» Select PCI/AGP frequency asynchronous with CPU frequency.

☞ **PCI/AGP Frequency (MHz)**

» The values depend on CPU Host Frequency(Mhz .

☞ **DRAM Clock (MHz)**

» Please set DRAM Clock according to your requirement.

If you use DDR266 DRAM module, please set "DRAM Clock(MHz)" to "133-DDR266". If you use
DDR333 DRAM module, please set "DRAM Clock(MHz)" to "166-DDR333" . If you use DDR400
DRAM module, please set "DRAM Clock(MHz)" to "200-DDR400".

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

» By SPD   Set Memory frequency by DRAM SPD data. (Default value)

☞ **CPU Voltage Control**

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

» Supports adjustable CPU Vcore from 0.8375V to 1.8500V by 0.025V step.

💣* Incorrect using it may cause your system to fail. For power End-User use only!

☞ **Normal CPU Vcore**

▶ Display your CPU Vcore Voltage.

☞ **AGP OverVoltage Control**

▶ Auto	Supply voltage as AGP Card reguired. (Default value)
▶ +0.1V	Set AGP OverVoltage Control to +0.1V.
▶ +0.2V	Set AGP OverVoltage Control to +0.2V.
▶ +0.3V	Set AGP OverVoltage Control to +0.3V.

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

☞ **DIMM OverVoltage Control**

▶ Auto	Supply voltage as DRAM module reguired. (Default value)
▶ +0.1V	Set DIMM OverVoltage Control to +0.1V.
▶ +0.2V	Set DIMM OverVoltage Control to +0.2V.
▶ +0.3V	Set DIMM OverVoltage Control to +0.3V.

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

Load Fail-Safe Defaults

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▶Standard CMOS Features	Load Fail-Safe Defaults
▶Advanced BIOS Features	Load Optimized Defaults
▶Integrated Peripherals	Set Supervisor Password
▶Power Management Setup	Set User Password
▶PnP/PCI	Load Fail-Safe Defaults? (Y/N)?Y
▶PC Heal	
▶Frequency/Voltage Control	
ESC:Quit	↑↓→←:Select Item
F8: Q-Flash	F10:Save & Exit Setup
Load Fail-Safe Defaults	

Figure 9: Load Fail-Safe Defaults

Load Fail-Safe Defaults

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

Load Optimized Defaults

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▶ Standard CMOS Features	Load Fail-Safe Defaults
▶ Advanced BIOS Features	Load Optimized Defaults
▶ Integrated Peripherals	Set Supervisor Password
▶ Power Management Setup	Set User Password
▶ PnP/PCI Configurations	Save & Exit Setup
▶ PC Hea	
▶ Freque	

Load Optimized Defaults? (Y/N)?Y

ESC:Quit	↑↓→←:Select Item
F8: Q-Flash	F10:Save & Exit Setup
Load Optimized Defaults	
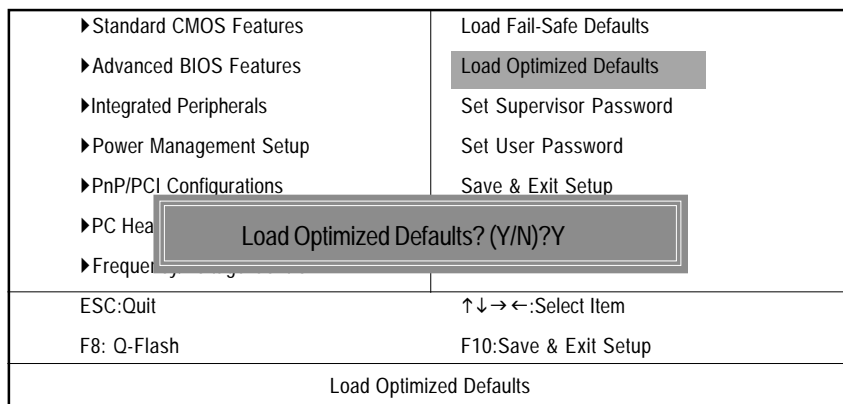
Figure 10: Load Optimized Defaults

Load Optimized Defaults

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

Set Supervisor/User Password

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▶Standard CMOS Features	Load Fail-Safe Defaults
▶Advanced BIOS Features	Load Optimized Defaults
▶Integrated Peripherals	Set Supervisor Password
▶Power Management Setup	Set User Password
▶PnP/P(	Enter Password:
▶PC Hea	
▶Frequency/Voltage Control	
ESC:Quit	↑↓→←:Select Item
F8: Q-Flash	F10:Save & Exit Setup
Change/Set/Disable Password	

Figure 11: Password Setting

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

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

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

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

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

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

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

Save & Exit Setup

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

Figure 12: Save & Exit Setup

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

Type "N" will return to Setup Utility.

Exit Without Saving

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

Figure 13: Exit Without Saving

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

Type "N" will return to Setup Utility.

English

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Chapter 4 Technical Reference

Flash BIOS Method Introduction

Method 1 : Q-Flash

Flash BIOS Method Introduction

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

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

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

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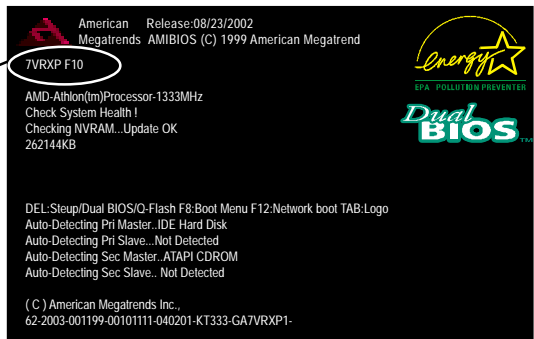
Entering the Q-Flash™ utility:

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

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

```
┌─────────────────────────────────────────────────────────────────┐
│              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                                                        │
│ PNP / PCI CO    ENTER DUAL BIOS/Q-FLASH UTILITY (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                        │
└─────────────────────────────────────────────────────────────────┘
```

Exploring the Q-Flash™/Dual BIOS utility screen

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

```
┌──────────────────────────────────────────────────────┐── Dual BIOS utility bar
│                   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          │
Task menu for ─│          Auto Recovery   Enable          │
Dual BIOS utility│         Halt On Error    Disable         │
│  │          Copy Main ROM Data to Backup              │
│  │               Load Default Settings                │
│  └               Save Settings to CMOS                │
├──────────────────────────────────────────────────────┤── Q-Flash™ utility title
│                   Q-Flash Utility                    │   bar
│  ┌           Load Main BIOS from Floppy               │
Task menu for ─│        Load Backup BIOS from Floppy        │
Q-Flash™ utility│        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:

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.

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

⚠️ CAUTION 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	
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		
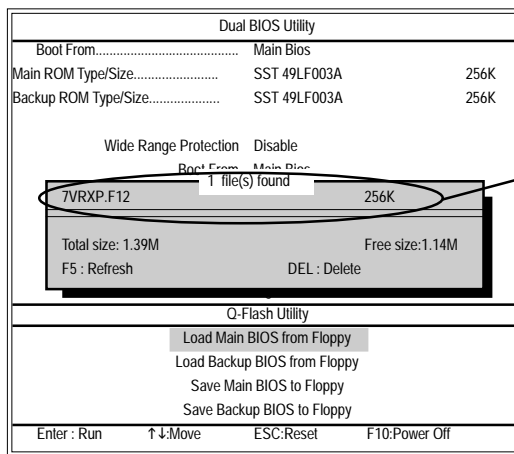
→ BIOS file in the floppy disk.

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		

⚠️ CAUTION
→ Do not truning off power or reset your system at this stage!!

⚠️ CAUTION 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
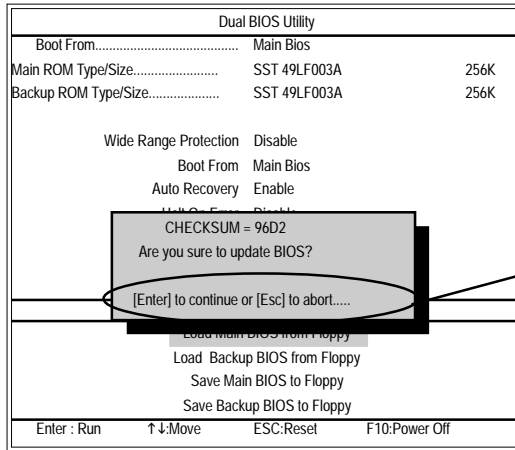
You can press "Enter" to continue up-dating BIOS or "ESC" to abort.

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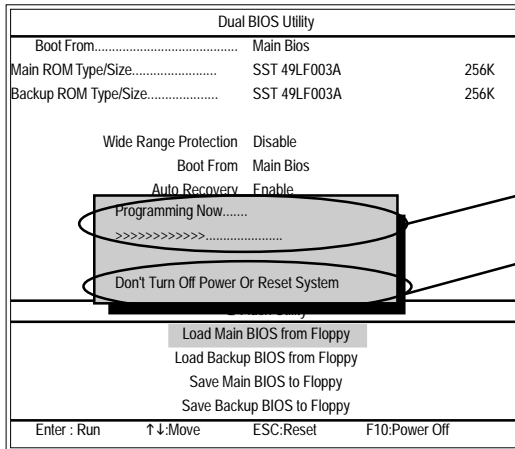
Do not turning off power or reset your system at this stage to avoid damaging your BIOS rom!!

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	
Halt On Error	Disable	

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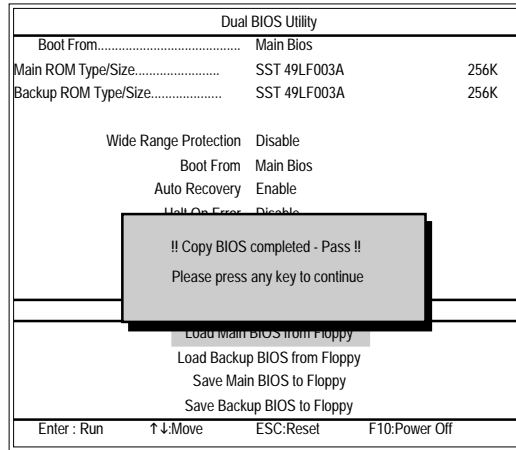
> You can repeat Step 1 to 4 to flash the backup BIOS, too.

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
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-

> 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...	
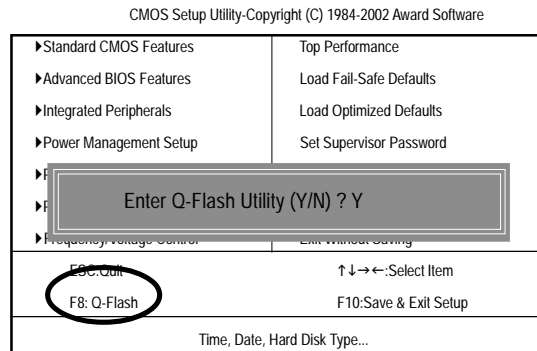
Exploring the Q-Flash™ utility screen

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

Task menu for the
Q-flash utility

The Qflash utility title bar

Action bar

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


                    Keep DMI DataEnable
                    Update BIOS from Floppy
                    Save BIOS to Floppy


   Enter: Run      ↑/↓: Move     ESC: Reset     F10:Power Off
```
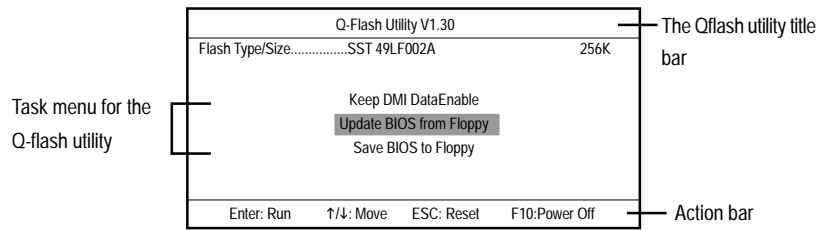
Task menu for the Q-Flash™ utility: Contains the names of three tasks. Blocking a task and pressing **Enter** key on your keyboard to enable execution of the task.
Action bar: Contains the names of four actions needed to operate the Q-Flash™ utility. Pressing the buttons mentioned on your keyboard to 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.

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


                    Keep DMI DataEnable
                    Update BIOS from Floppy
                    Save BIOS to Floppy


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

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 DataEnable

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 DataEnable

Reading BIOS file from floppy.........

>>>>>>> ....

Don't turn off Power Or RESET System

Enter: Run   ↑↓: Move   ESC: Reset   F10: Power Off
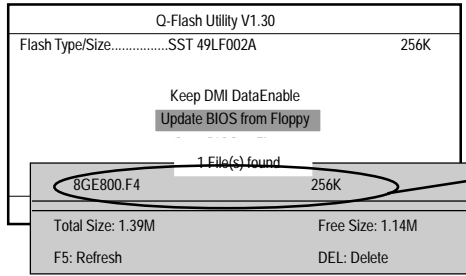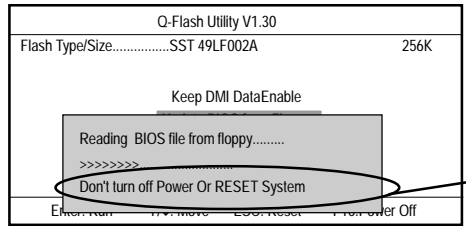
⚠ Do not turning power or reset your system at this stage!

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

"Are you sure to update BIOS?"

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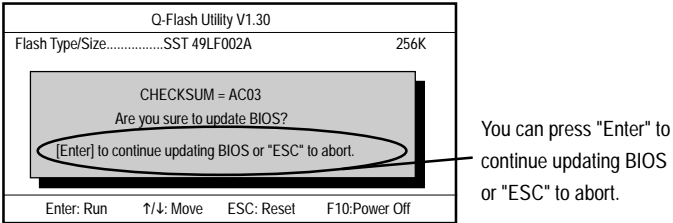
3. Press **Y** button if you make sure to update BIOS.

Then it will begin to update BIOS. The progress of updating will be shown at the same time.
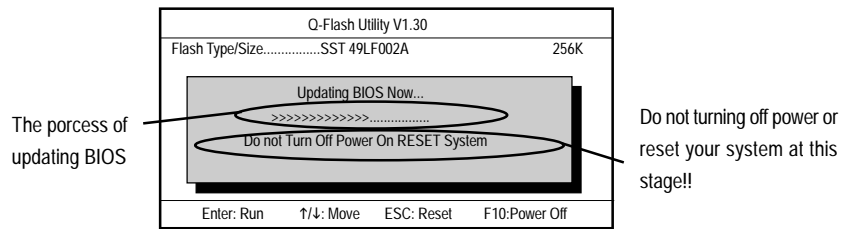
```
                Q-Flash Utility V1.30
Flash Type/Size................SST 49LF002A              256K

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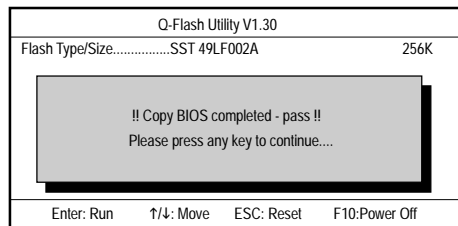
5. Press **Esc** and then **Enter** to exit the Q-Flash™ utility. System will restart.

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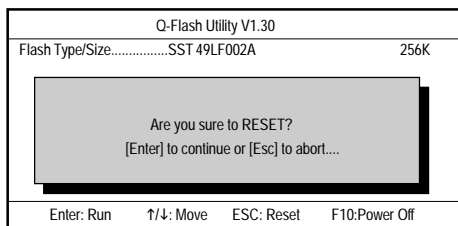
6. Press **Del** to enter BIOS menu after system reboots and load BIOS Fail-Safe Defaults. See how to load BIOS Fail-Safe Defaults, please kindly refer to Step 6 to 7 in Part One.

Congratulation!! You have updated BIOS successfully!!

😊 Method 2:

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

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

Press here.

1.Click "@BIOS .

(1)

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

(2)

Click "✓".   Click here.

(3)

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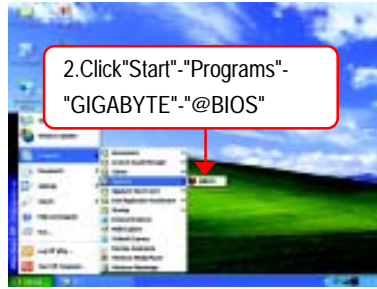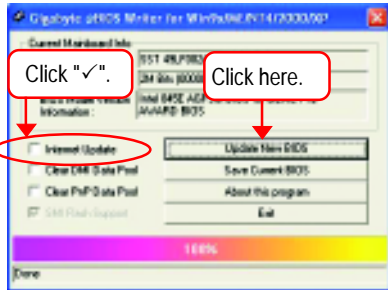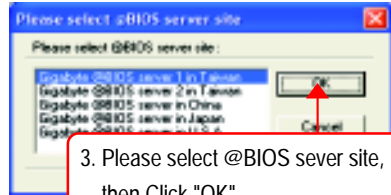
(4)

Methods and steps:

  I. Update BIOS through Internet

    a. Click "Internet Update" icon

    b. Click "Update New BIOS" icon

    c. Select @BIOS™ sever

    d. Select the exact model name on your motherboard

    e. System will automatically download and update the BIOS.

II. Update BIOS NOT through Internet:

  a. Do not click "Internet Update" icon

  b. Click "Update New BIOS"

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

  d. Please search for BIOS unzip file, downloading from internet or any other methods (such as: 8VT880U.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^{TM} 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

             Technical Reference

@ BIOS Introduction

Gigabyte announces @ BIOS
Windows BIOS live update utility

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

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

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

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

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

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 overclocking 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.

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

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

Stereo Speakers Connection and Settings:

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

STEP 1:

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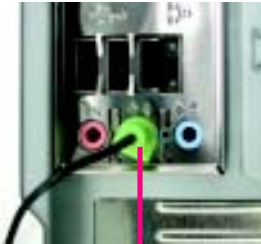
Line Out

STEP 2 :

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

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

STEP 3:

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

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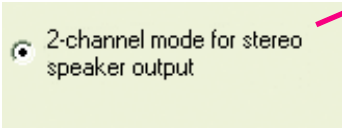
4 Channel Analog Audio Output Mode

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.
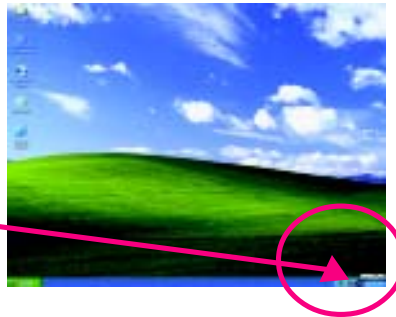
STEP 3 :

Select "Speaker Configuration", and choose the

"4 channel for 4 speakers out put".

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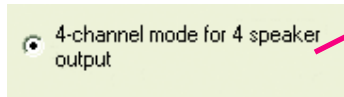
"OK".

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".
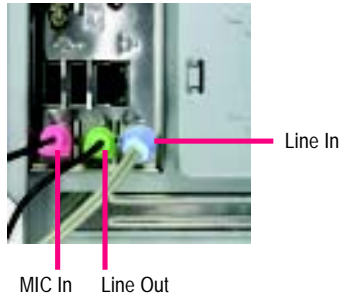
Line In

MIC In   Line Out

STEP 2 :

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

icon 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
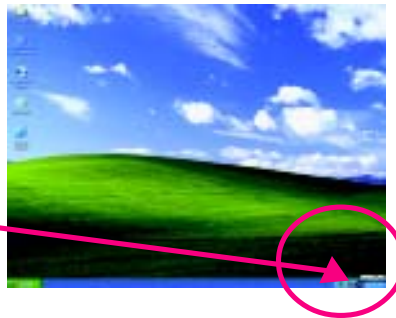
STEP 3 :

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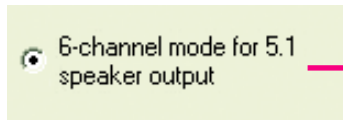
Advanced 6 Channel Analog Audio Output Mode (using Audio Combo Kit,Optional Device):

(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.
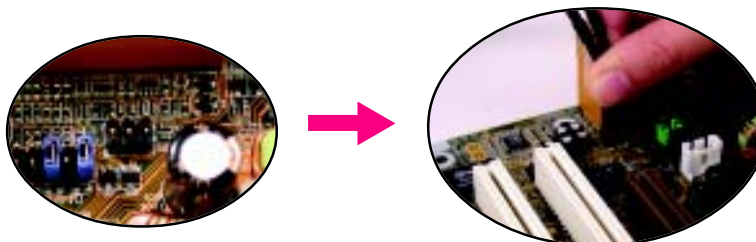
STEP 3 :

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.
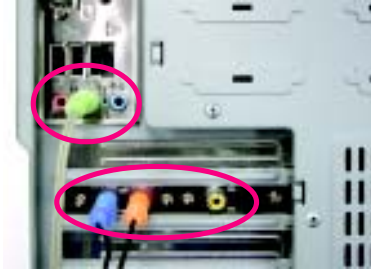
STEP 4 :

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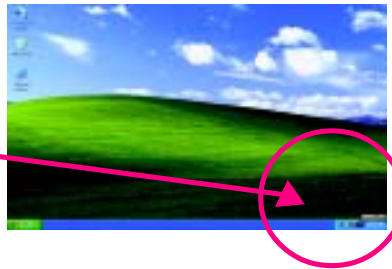
STEP 5 :

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

Enable "Only SURROUND-KIT" and press "OK".
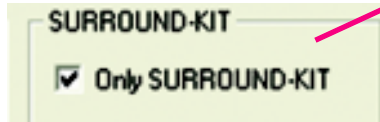
Basic & Advanced 6 Channel Analog Audio Output Mode Notes:

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

channels output.

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 Introuction

Jack-Sensing provides audio connectors error-detection function.

⚠️ **CAUTION** Install Microsoft DirectX8.1 before to enable Jack-Sensing support for Windows 98/98SE/2000 /ME.

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

Introduction of audio connectors

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

Auto-detecting:

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

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

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

Manual setting:

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

UAJ Introuction

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).
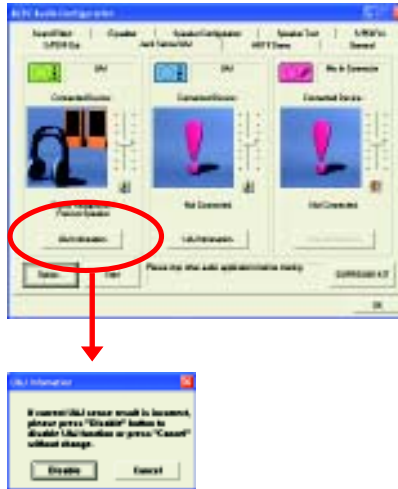
Reviving UAJ:

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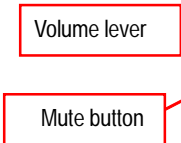
If there is only Line-in device plugged, UAJ will
remind you there is no any Line-out device
plugged in.

Note:

If you want to use AUX IN function, you must disable UAJ function from the Speaker Configuration
item in the AC97 Audio Configation 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.

⚠️ **CAUTION**
1. It supports FAT16 ¡ΒFAT32 ¡ΒNTFS format .
2. It must be connected to IDE1 Master .
3. It's only allows you to install one O.S .
4. It must be used with IDE hard disk supporting HPA .
5. The first partition must be set as the boot partition. When the boot partition is backed up, please do not change the its size.
6. It is not recommend to use Xpress Recovery if you had ever used Ghost to return boot manager to NTFS format.

🗒️ **NOTE**
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 .
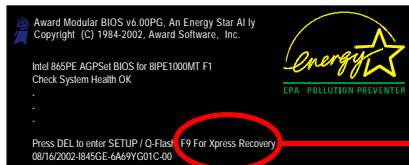
```
Award Modular BIOS v6.00PG, An Energy Star Al ly
Copyright (C) 1984-2002, Award Software, Inc.

Intel 865PE AGPSet BIOS for 8IPE1000MT 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:
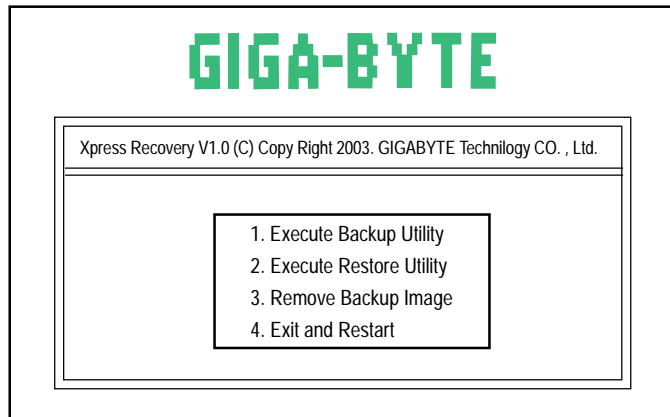
BMP Mode:
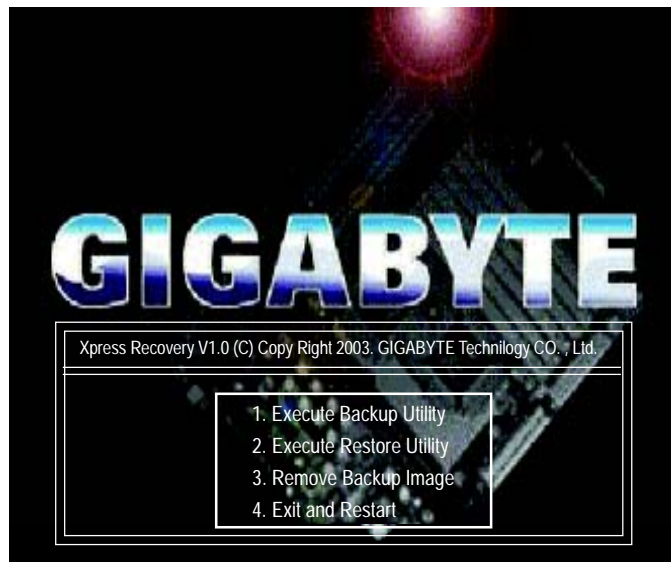
⚠ CAUTION If you ever entered Xpress Recovery by booting from CD-ROM, you'll still be directed to BMP mode by pressing F9 in the bootup screen.

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 BIOS Setting Utility Introduction

A.RAID Levels

RAID (Redundant Array of Independent Disks) is a method of combining two hard disk drives into one logical unit. The advantage of an Array is to provide better performance or data fault tolerance. Fault tolerance is achieved through data redundant operation, where if one drives fails, a mirrored copy of the data can be found on another drive. This can prevent data loss if the operating system fails or hangs. The individual disk drives in an array are called .members. The configuration information of each member is recorded in the .reserved sector. that identifies the drive as a member. All disk members in a formed disk array are recognized as a single physical drive to the operating system.

Hard disk drives can be combined together through a few different methods. The different methods are referred to as different RAID levels. Different RAID levels represent different performance levels, security levels and implementation costs. The RAID levels which the VIA VT8237 southbridge chipset supports are RAID 0, 1, and JBOD.

RAID 0 (Striping)

RAID 0 reads and writes sectors of data interleaved between multiple drives. If any disk member fails, it affects the entire array. The disk array data capacity is equal to the number of drive members times the capacity of the smallest member. The striping block size can be set from 4KB to 64KB. RAID 0 does not support fault tolerance.

RAID 1 (Mirroring)

RAID 1 writes duplicate data onto a pair of drives and reads both sets of data in parallel. If one of the mirrored drives suffers a mechanical failure or does not respond, the remaining drive will continue to function. Due to redundancy, the drive capacity of the array is the capacity of the smallest drive. Under a RAID 1 setup, an extra drive called the .spare drive. can be attached. Such a drive will be activated to replace a failed drive that is part of a mirrored array. Due to the fault tolerance, if any RAID 1 drive fails, data access will not be affected as long as there are other working drives in the array.

JBOD (Spanning)

A spanning disk array is equal to the sum of the all drives when the drives used are having different capacities. Spanning stores data onto a drive until it is full, then proceeds to store files onto the next drive in the array. When any disk member fails, the failure affects the entire array. JBOD is not really a RAID and does not support fault tolerance.

B.Enter BIOS Configuration Utility

When the system powers on, the following information will appear on screen. Press the .Tab. key to enter BIOS configuration utility.

```
VIA Technologies,Inc. VIA VT8237 Serial ATA BIOS Setting Utility V1.20
Copyright (C) VIA Technologies, Inc. All Right reserved.

Scan Devices, Please wait...
Press <Tab> key into User Windows
Serial_Ch0 Master: ST380013AS
Serial_Ch1 Master: ST3120023AS
```
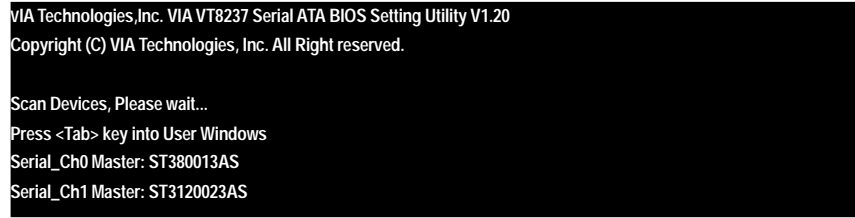
The main interface of BIOS configuration utility is as below:

```
           VIA Technologies,Inc. VIA VT8237 Serial ATA BIOS Setting Utility V1.20

    ▶Create Array                      Create a RAID array with the hard disks
    ▶Delete Array                      attached to VIA IDE controller
    ▶Create/Delete Spare               F1       : View Array/disk Status
    ▶Select Boot Array                 ↑↓       : Move to next item
    ▶Serial Number View                Enter    : Confirm the selection
                                       ESC      : Exit


         Channel        Driver Name     Array Name     Mode    Size(GB)    Status
    Serial_Ch0 Master    ST380013AS                    SATA     74.53      Hdd
    Serial_Ch1 Master    ST9120023AS                   SATA     111.79     Hdd
```

B-1Create Disk Array

1. Use the arrow keys to navigate the main menu. Use the up and down arrow keys to select the **Create Array** command and press <Enter> to call out the list of creation steps.

```
            VIA Technologies,Inc. VIA VT8237 Serial ATA BIOS Setting Utility V1.20

  ▶Auto Setup For Data Security        Create a RAID array with the hard disks
  ▶Array Mode RAID 0 (Striping)        attached to VIA IDE controller
  ▶Select Disk Drives                  F1      : View Array/disk Status
  ▶Start Create Process                ↑↓      : Move to next item
                                       Enter   : Confirm the selection
                                       ESC     : Exit


       Channel          Driver Name    Array Name       Mode   Size(GB)   Status
  Serial_Ch0 Master     ST380013AS                      SATA   74.53      Hdd
  Serial_Ch1 Master     ST9120023AS                     SATA   111.79     Hdd
```

2. Select **Array Mode** and press <Enter>, a list of array modes will appear. Highlight the target array mode that you want to create, and press <Enter> to confirm the selection. If RAID 1 is selected, an option list will popup and enable the users to select **Create only** or **Create and duplicate**. **Create only** will allow BIOS to only create an array. The data on the mirroring drive may be different from the source drive. **Create and duplicate** lets BIOS copy the data from the source to the mirroring drive.

```
            VIA Technologies,Inc. VIA VT8237 Serial ATA BIOS Setting Utility V1.20

  ▶                                    Create a RAID array with the hard disks
  ▶  RAID 0 for performance            attached to VIA IDE controller
  ▶  RAID 1 for data protection        F1      : View Array/disk Status
  ▶  RAID 0/1                          ↑↓      : Move to next item
  ▶  RAID SPAN for capacity            Enter   : Confirm the selection
                                       ESC     : Exit


       Channel          Driver Name    Array Name       Mode   Size(GB)   Status
  Serial_Ch0 Master     ST380013AS                      SATA   74.53      Hdd
  Serial_Ch1 Master     ST9120023AS                     SATA   111.79     Hdd
```

3. After array mode is selected, there are two methods to create a disk array. One method is . **Auto Setup**. and the other one is .**Select Disk Drives**. **Auto Setup** allows BIOS to select the disk drives and create arrays automatically, but it does not duplicate the mirroring drives even if the user selected **Create and duplicate** for RAID 1. It is recommended all disk drives are new ones when wanting to create an array. **Select Disk Drives** lets the user select the array drives by their requirements. When using **Select Disk Drives**, the channel column will be activated. Highlight the target drives that you want to use and press <Enter> to select them. After all drives have been selected, press <Esc> to go back to the creation steps menu.

```
VIA Technologies,Inc. VIA VT8237 Serial ATA BIOS Setting Utility V1.20

▶Auto Setup For Performance              Create a RAID array with the hard disks
▶Array Mode RAID 0 (Striping)            attached to VIA IDE controller
▶Select Disk Drives                      F1          : View Array/disk Status
▶Block Size 64K                          ↑↓          : Move to next item
▶Start Create Process                    Enter       : Confirm the selection
                                         ESC         : Exit


      Channel            Driver Name    Array Name       Mode    Size(GB)   Status
[*]Serial_Ch0 Master     ST380013AS                      SATA    74.53      Stripe0
[*]Serial_Ch1 Master     ST9120023AS                     SATA    111.79     Stripe1
```

4. If user selects a RAID 0 array in step 2, the block size of the array can also be selected. Use the arrow key to highlight **Block Size** and press <Enter>, then select a block size from the popup menu. The block size can be 4KB to 64KB.

```
VIA Technologies,Inc. VIA VT8237 Serial ATA BIOS Setting Utility V1.20

▶Auto Setup For Performan   4K          Create a RAID array with the hard disks
▶Array Mode RAID 0 (Stripi  8K          attached to VIA IDE controller
▶Select Disk Drives         16K         F1          : View Array/disk Status
▶Block Size 64K             32K         ↑↓          : Move to next item
▶Start Create Process       64K         Enter       : Confirm the selection
                                        ESC         : Exit


      Channel            Driver Name    Array Name       Mode    Size(GB)   Status
[*]Serial_Ch0 Master     ST380013AS                      SATA    74.53      Stripe0
[*]Serial_Ch1 Master     ST9120023AS                     SATA    111.79     Stripe1
```

5. Use the arrow key to highlight **Start Create Process** and press <Enter>. A warning message will appear, Press **Y** to finish the creation, or press **N** to cancel the creation.

6. Important note: All existing content in the hard drive will be destroyed after array creation.

B-2 Delete Disk Array

A RAID can be deleted after it has been created. To delete a RAID, use the following steps:

1. Select **Delete Array** in the main menu and press <Enter>. The channel column will be activated.

2. Select the member of an array that is to be deleted and press <Enter>. A warning message will show up, press Y to delete or press N to cancel.

```
          VIA Technologies,Inc. VIA VT8237 Serial ATA BIOS Setting Utility V1.20

    ►Auto Setup For Performance          Delete a RAID array contain the hard disks
    ►Array Mode RAID 0 (Striping)        attached to VIA IDE controller
    ►Select Disk Drives                  F1        : View Array/disk Status
    ►Block Size 64K                      ↑↓        : Move to next item
    ►Start Create Process                Enter     : Confirm the selection
    The select array will be destoried.  ESC       : Exit
    Are you sure? Continue ?Press Y/N

       Channel          Driver Name      Array Name    Mode     Size(GB)   Status
    [*]Serial_Ch0 Master  ST380013AS      ARRAY0        SATA     74.53      Stripe0
    [*]Serial_Ch1 Master  ST9120023AS     ARRAY0        SATA     111.79     Stripe1
```

Deleting a disk array will destroy all the data on the disk array except RAID 1 arrays. When a RAID is deleted, the data on these two hard disk drives will be reserved and become two normal disk drives.

B-3 Select Boot Array

User can select a disk array as boot device if user wants to boot operating system from an array. Boot disk array cannot be selected if the operating system does not boot from the disk array. Highlight the **Select Boot Array** item; press <Enter> and the channel column will be activated. Then highlight the target disk array and press <Enter>. If user selects a disk array that has a boot mark and press <Enter>, its boot setting will be canceled.

```
                VIA Technologies,Inc. VIA VT8237 Serial ATA BIOS Setting Utility V1.20

   ▶Create Array                        Set/Clear bootable array
   ▶Delete Array
   ▶Create/Delete Spare                 F1        : View Array/disk Status
   ▶Select Boot Array                   ↑↓        : Move to next item
   ▶Serial Number View                  Enter     : Confirm the selection
                                        ESC       : Exit


       Channel            Driver Name    Array Name     Mode    Size(GB)   Status
   [*]Serial_Ch0 Master   ST380013AS     ARRAY0         SATA    74.53      Hdd
   [*]Serial_Ch1 Master   ST9120023AS    ARRAY0         SATA    111.79     Hdd
```

B-4 View Serial Number of Hard Drive

Highlight **Serial Number View** and press <Enter>. Use arrow key to select a drive, the selected
drive.s serial number can be viewed in the last column. The serial number is assigned by the disk
drive manufacturer.

B-5 View Array Status

Press the **F1** key to show the array status on the lower screen. If there are no disk arrays then
nothing will be displayed on the screen.

```
                VIA Technologies,Inc. VIA VT8237 Serial ATA BIOS Setting Utility V1.20

   ▶Create Array                        Set/Clear bootable array
   ▶Delete Array
   ▶Create/Delete Spare                 F1        : View Array/disk Status
   ▶Select Boot Array                   ↑↓        : Move to next item
   ▶Serial Number View                  Enter     : Confirm the selection
                                        ESC       : Exit


      Array Name         Array Mode        Block Size(GB)     Size(GB)
       ARRAY0            Stripe            64K                149.06
```
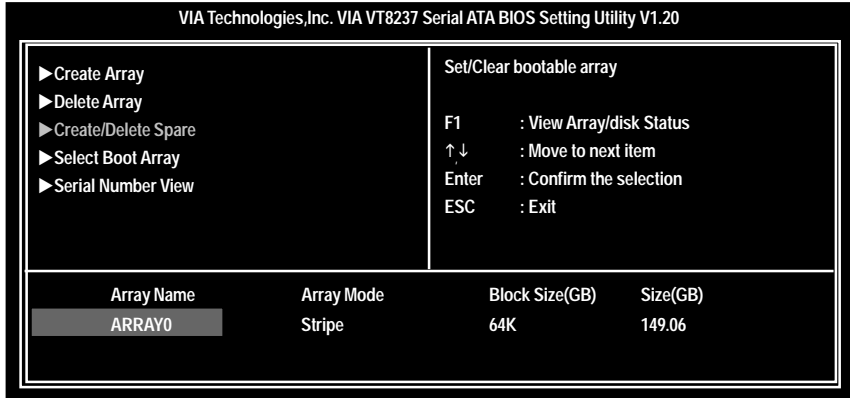
Chapter 5 Appendix

Install Drivers

Pictures below are shown in Windows XP

NOTE

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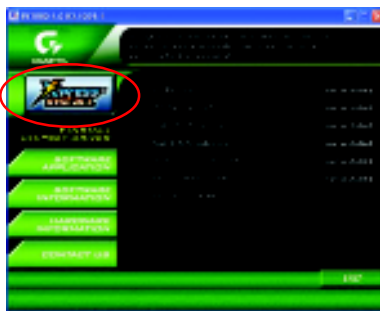
The "Xpress Install" uses the"Click and Forget" technology to install the drivers automatically. Just select the drivers you want then click the "GO" button. The [image] will finish the installation for you automatically.

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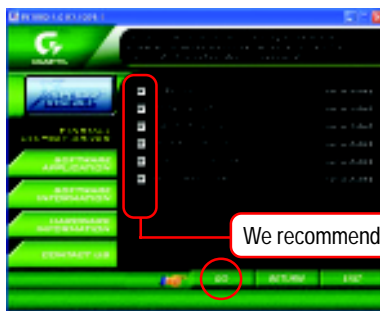
Massage: Some device drivers will restart your system automatically. After restarting your system the "Xpress Install" will continue to install other drivers.

We recommend that you install all components in the list.

NOTE

Driver installation finished !
You have to reboot system !

Item Description

- VIA 4IN1 Driver

    For INF, AGP, IDE and DMA Driver

- USB Path 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(♦) / RealTek LAN Drive(*)

    Realtek Giga Lan Driver(♦)

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

- RealTek AC97 Codec Driver

    Realtek Audio Driver

- GIGARAID IT8212 RAID Driver (♦)

    For GigaRAID IT8212 RAID IDE controller

- VIA 8237 Serial ATA Driver

    For VIA 8237 SATA Driver

- VIA USB 2.0 Controller

    USB 2.0 Driver information for XP

> ⚠ *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).*

♦ For GA-8VT880 Ultra * For GA-8VT880-L

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SOFTWARE APPLICATION

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

- Gigabyte Windows Utilities Manager (GWUM)
  This utility can integrate the Gigabyte's applications in the system tray
- Gigabyte Management Tool (GMT)
  A useful tool which can manage the computer via the network
- EasyTune 4
  Powerful utility that integrates the overclocking and hardware monitoring functions
- DMI Viewer
  Windows based utility which is used to browse the DMI/SMBIOS information of the system
- Face-Wizard
  New utility for adding BIOS logo
- @BIOS
  Gigabyte windows flash BIOS utility
- Acrobat e-Book
  Useful utility from Adobe
- Acrobat Reader
  Popular utility from Adobe for reading .PDF file format documents
- Norton Internet Security (NIS)
  Integrated utility which includes anti-virus, ads, etc.
- DirectX 9.0
  Install Microsoft DirectX 9 to enable 3D hardware acceleration that support for operating system
  to achieve better 3D performence.
- GigaRAID Utility (♦)
  RAID utility for GigaRAID IT8212

♦ For GA-8VT880 Ultra * For GA-8VT880-L

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.

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EasyTune 4 Utilities Installation

Powerful utility that integrates the overclocking and hardware monitoring functions

1. Click "EasyTune4" item.

(1)

2. Click "Next".

(2)

(3)

3. Click "Finish" to restart computer.

(4)

4. Right Click the icon to start "EasyTune 4".

(5)

(6)
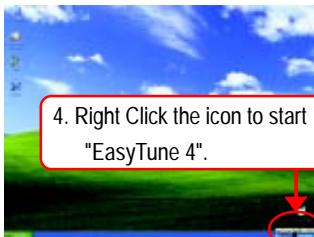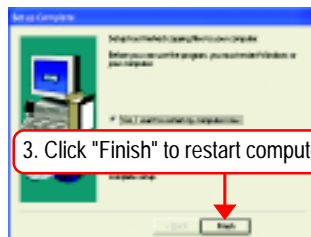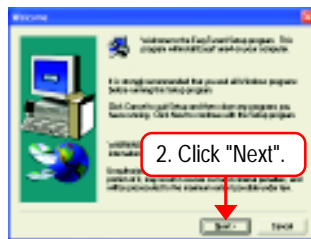
FAQ

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

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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.  --No-->  The problem was
Check if the system can reboot successfully.                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:

_____

_____

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Acronyms

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

Appendix

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

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

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

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

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