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

⚠️ Example 1: Diamond Vipper V770 golden finger is compatible with 2X/4X mode AGP slot. It can be switched between AGP 2X(3.3V) or 4X/8X(1.5V) mode by adjusting the jumper. The factory default for this card is 2X(3.3V). The GA-8IP900MK (or any AGP 4X/8X only) motherboards might not function properly, if you install this card without switching the jumper to 4X/8X (1.5) mode in it.

Example 2: Some ATi Rage 128 Pro graphics cards made by "Power Color", the graphics card manufacturer & some SiS 305 cards, their golden finger is compatible with 2X(3.3V)/4X(1.5V) mode AGP slot, but they support 2X(3.3V) only. The GA-8IP900MK (or any AGP 4X/8X only) motherboards might not function properly, If you install this card in it.

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

The author assumes no responsibility for any errors or omissions that may appear in this document nor does the author make a commitment to update the information contained herein.

Third-party brands and names are the property of their respective owners.

Please do not remove any labels on motherboard, this may void the warranty of this motherboard.

Due to rapid change in technology, some of the specifications might be out of date before publication of this booklet.

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

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

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

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

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

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

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

경고: 히트싱크를 제대로 또 난난히 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-8IP900MK
is in conformity with
(reference to the specification under which conformity is declared)
in accordance with 89/336 EEC-EMC Directive

☐ EN 55011	Limits and methods of measurement of radio disturbance characteristics of industrial,scientific and medical (ISM high frequency equipment	☐ EN 61000-3-2* ☒ EN 60555-2	Disturbances in supply systems cause by household appliances and similar electrical equipment "Harmonics"
☐ EN 55013	Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment	☐ EN 61000-3-3* ☒ EN 60555-3	Disturbances in supply systems cause by household appliances and similar electrical equipment "Voltage fluctuations"
☐ EN 55014	Limits and methods of measurement of radio disturbance characteristics of household electrical appliances, portable tools and similar electrical apparatus	☒ EN 50081-1	Generic emission standard Part 1: Residual commercial and light industry
		☒ EN 50082-1	Generic immunity standard Part 1: Residual commercial and light industry
☐ EN 55015	Limits and methods of measurement of radio disturbance characteristics of fluorescent lamps and luminaries	☐ EN 55081-2	Generic emission standard Part 2: Industrial environment
☐ EN 55020	Immunity from radio interference of broadcast receivers and associated equipment	☐ EN 55082-2	Generic emission standard Part 2: Industrial environment
☒ EN 55022	Limits and methods of measurement of radio disturbance characteristics of information technology equipment	☐ ENV 55104	Immunity requirements for household appliances tools and similar apparatus
☐ DIN VDE 0855 ☐ part 10 ☐ part 12	Cabled distribution systems; Equipment for receiving and/or **distribution** from sound and television signals	☐ EN50091-2	EMC requirements for uninterruptible power systems (UPS)

☒ **CE marking**   C E (EC conformity marking)

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

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

Manufacturer/Importer

Signature: *Timmy Huang*

Date : April 8, 2003   Name: Timmy Huang

(Stamp)

DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2.1077(a)

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

Address: 17358 Railroad Street

City of Industry, CA 91748

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

hereby declares that the product

Product Name: Motherboard

ModelNumber:GA-8IP900MK

Conforms to the following specifications:

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

Supplementary Information:

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

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

Signature: *Eric Lu*

Date: <u>April 8, 2003</u>

GA-8IP900MK

P4 Titan Series Motherboard

USER'S MANUAL

Table of Content

Item Checklist

☑ The GA-8IP900MK motherboard

☑ CD for motherboard driver & utility

☑ GA-8IP900MK user's manual

☐ Quick PC Installation Guide

☐ SATA RAID Manual

☐ GC-SATA Card **(optional)**

   (Manual; SATA cable x 1; Power cable x 1)

☑ I/O Shield

☑ IDE cable x 1 / Floppy cable x 1

☑ Serial ATA cable x 2

☐ 2 Port USB Cable x 1

☐ 4 Port USB Cable x 1

☐ SPDIF Kit x 1 (SPDIF Out Kit)

☐ IEEE 1394 Cable x1

☐ Audio Combo Kit x 1

   (SURROUND-Kit + SPDIF Out Kit)

☐ Motherboard Settings Label

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

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

Installing the motherboard to the chassis...

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

Chapter 1 Introduction

Features Summary

Form Factor	• 24.4cm x 24.4cm Micro ATX size form factor, 4 layers PCB
CPU	• Socket 478 for Intel® Micro FC-PGA2 Pentium® 4 processor
	• Support Intel® Pentium® 4 (Northwood, Prescott) processor
	• Support Intel® Pentium® 4 Processor with HT Technology *
	• Intel® Pentium® 4 533/400MHz FSB
	• 2nd cache depends on CPU
Chipset	• Intel® Chipset 865P HOST/AGP/Controller
	• Intel® ICH5 I/O Controller Hub
Memory	• 4 184-pin DDR DIMM sockets
	• Supports Dual Channel DDR333/DDR266 DIMM
	• Supports 128MB/256MB/512MB/1GB unbuffered DRAM
	• Supports up to 4GB DRAM (Max)
	• Supports only DDR DIMM
I/O Control	• ITE8712F
Slots	• 3 PCI slot supports 33MHz & PCI 2.3 compliant
On-Board IDE	• 2 IDE controllers provides IDE HDD/CD-ROM (IDE1, IDE2) with PIO, Bus Master (Ultra DMA33/ATA66/ATA100) operation modes
	• Can connect up to 4 IDE devices
Serial ATA	• 2 Serial ATA connectors in 150 MB/s operation mode
	• Controlled by ICH5
On-Board Peripherals	• 1 Floppy port supports 2 FDD with 360K, 720K,1.2M, 1.44M and 2.88M bytes
	• 1 Parallel port supports Normal/EPP/ECP mode
	• 2 Serial ports (COMA & COMB)
	• 8 USB 2.0/1.1 ports (4 x Rear, 4 x Front by cable)
	• 1 IrDA connector for IR/CIR
	• 1 Front Audio connector
Hardware Monitor	• CPU/System fan revolution detect
	• CPU temperature detect
	• CPU warning temperature
	• System voltage detect
	• CPU/System fan fail warning
On-Board LAN	• Builit in Intel® 82562 Chipset Data transfer rate 10/100 supported
	• 1 RJ45 port

to be continued......

On-Board Sound	• Realtek ALC655 codec
	• 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)
	• CD In / AUX In / Game port
PS/2 Connector	• PS/2 Keyboard interface and PS/2 Mouse interace
BIOS	• Licensed Phoenix BIOS, 2M bit FWH
Additional Features	• PS/2 Keyboard power on by password
	• PS/2 Mouse power on
	• STR (Suspend-To-RAM)
	• AC Recovery
	• Poly fuse for key board over-current protection
	• USB KB/Mouse wake up from S3
	• Supports @BIOS
	• Supports EasyTune 4
	• Supports clear password function

"*" HT functionality requirement content :

Enabling the functionality of Hyper-Threading Technology for your computer system requires all of the following platform components:
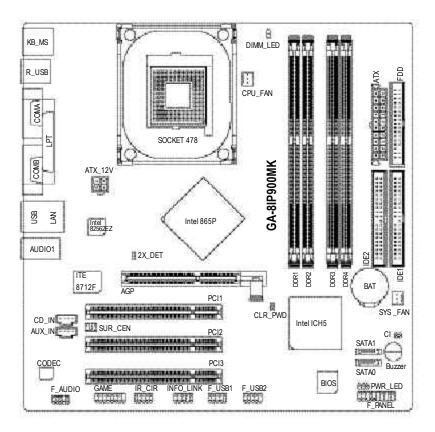
- CPU: An Intel® Pentium 4 Processor with HT Technology
- Chipset: An Intel® Chipset that supports HT Technology
- BIOS: A BIOS that supports HT Technology and has it enabled
- OS: An operation system that has optimizations for HT Technology
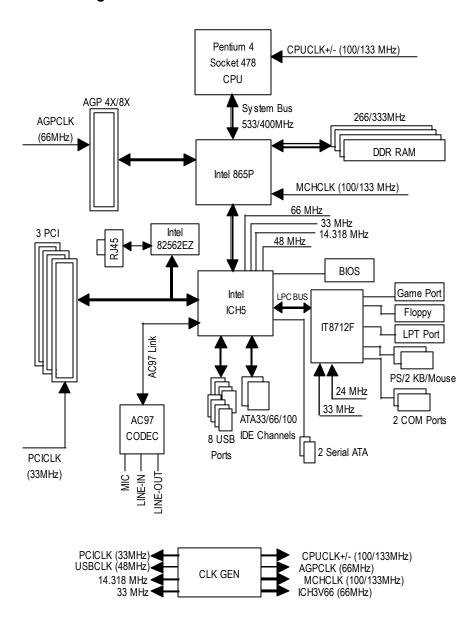
Please set the CPU host frequency in accordance with your processor's specifications.

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-8IP900MK Motherboard Layout

KB_MS
R_USB
COMA
LPT
COMB
USB   LAN
AUDIO1
Intel 82562EZ
ATX_12V
ITE 8712F
CD_IN
AUX_IN
CODEC
F_AUDIO   GAME   IR_CIR   INFO_LINK   F_USB1   F_USB2

SOCKET 478
DIMM_LED
CPU_FAN
Intel 865P
2X_DET
AGP
PCI1
SUR_CEN
PCI2
PCI3
CLR_PWD
Intel ICH5
BIOS

GA-8IP900MK

ATX   FDD
DDR1 DDR2   DDR3 DDR4
BAT
IDE2   IDE1
SYS_FAN
CI
SATA1
SATA0   Buzzer
PWR_LED
F_PANEL

- 7 -   Introduction

Block Diagram

Pentium 4 Socket 478 CPU — CPUCLK+/- (100/133 MHz)

AGP 4X/8X

AGPCLK (66MHz)

System Bus 533/400MHz

266/333MHz

DDR RAM

Intel 865P

MCHCLK (100/133 MHz)

66 MHz
33 MHz
14.318 MHz
48 MHz

3 PCI

RJ45 — Intel 82562EZ

BIOS

Intel ICH5

LPC BUS

IT8712F

Game Port
Floppy
LPT Port

PS/2 KB/Mouse

AC97 Link

24 MHz
33 MHz

2 COM Ports

AC97 CODEC

8 USB Ports

ATA33/66/100 IDE Channels

2 Serial ATA

PCICLK (33MHz)

MIC LINE-IN LINE-OUT

PCICLK (33MHz)
USBCLK (48MHz)
14.318 MHz
33 MHz

CLK GEN

CPUCLK+/- (100/133MHz)
AGPCLK (66MHz)
MCHCLK (100/133MHz)
ICH3V66 (66MHz)

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

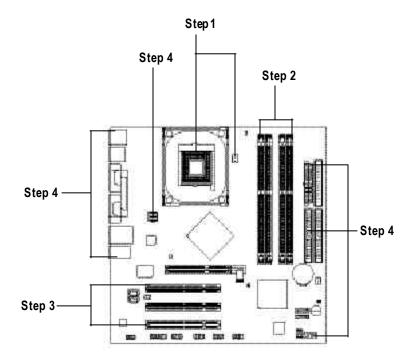_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

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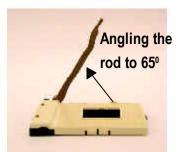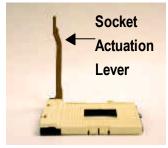
Step 1: Install the Central Processing Unit (CPU)

Before installing the processor, adhere to the following warning:
1. Please make sure the CPU type is supported by the motherboard.
2. If you do not match the CPU socket Pin 1 and CPU cut edge well, it will cause improper installation. Please change the insert orientation.

Step 1-1: CPU Installation

Angling the rod to 65⁰

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

Socket Actuation Lever

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

Pin1 indicator

3. CPU Top View

Pin1 indicator

4. Locate Pin 1 in the socket and look for a (golden) cut edge on the CPU upper corner. Then insert the CPU into the socket.
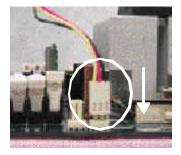
Step 1-2: CPU Cooling Fan Installation

Before installing the CPU cooling fan, adhere to the following warning:
1. Please use Intel approved cooling fan.

2. We recommend you to apply the thermal tape to provide better heat conduction between your CPU and cooling fan.

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

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

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

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

2. Make sure the CPU fan is plugged to the CPU fan connector, than install complete.
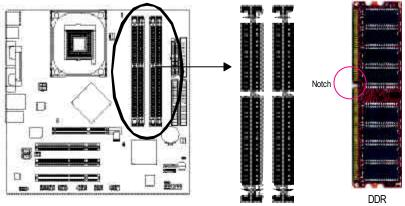
Step 2: Install Memory Modules

Before installing the memory modules, adhere to the following warning:
1. When DIMM LED is ON, do not install / remove DIMM from socket.
2. Please note that the DIMM module can only fit in one direction due to the one notch. Wrong orientation will cause improper installation. Please change the insert orientation.

CAUTION

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

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

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

DDR Introduction

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

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

Dual Channel DDR:

GA-8IP900MK 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 5.3GB/s DDR333.

GA-8IP900MK 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:

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

1. Only one DDR memory module is installed: The Dual Channel Technology can't operate when only one DDR memory module is installed. Additionally, you can boot the system only when the memory module is inserted into Channel A. On the other hand, the memory module must be inserted into DIMM1 or DIMM3 sockets.

2. Two DDR memory modules are installed (the same memory size and type): The Dual Channel Technology will operate when two memory modules are inserted individually into Channel A and B. If you install two memory modules in the same channel, the Dual Channel Technology will not operate. Additionally, you can boot the system only when one of the memory modules is inserted into Channel A. On the other hand, the memory module must be inserted into DIMM1 or DIMM3 sockets.

3. Three DDR memory modules are installed: Please note that the Dual Channel Technology will "not" operate when three DDR memory modules are installed. If you install three memory modules, the system will only detect those memory modules inserted in Channel A, and those in Channel B will not be detected!

4. Four DDR memory modules are installed: If you install four memory modules at the same time, the Dual Channel Technology will operate only when those modules have the same memory size and type.

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

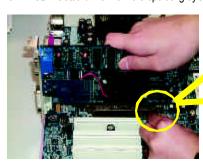● Figure 1: Dual Channel Technology (DS: Double Side, SS: Single Side)

	DIMM1	DIMM2	DIMM3	DIMM4
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: Don't operate Dual Channel Technology (DS: Double Side, SS: Single Side)

	DIMM1	DIMM2	DIMM3	DIMM4
1 memory module	DS/SS	X	X	X
	X	X	DS/SS	X
2 memory modules	DS/SS	DS/SS	X	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, screws and slot bracket from the computer.
3. Press the expansion card firmly into expansion slot in motherboard.
4. Be sure the metal contacts on the card are indeed seated in the slot.
5. Replace the screw to secure the slot bracket of the expansion card.
6. Replace your computer's chassis cover.
7. Power on the computer, if necessary, setup BIOS utility of expansion card from BIOS.
8. Install related driver from the operating system.

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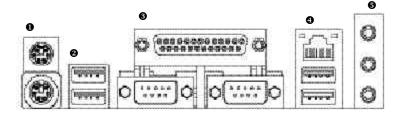
Please carefully pull out the small white-drawable bar at the end of the AGP slot when you try to install/ Uninstall the AGP card. Please align the AGP card to the onboard AGP slot and press firmly down on the slot .Make sure your AGP card is locked by the small white-drawable bar.

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

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

Step 4-1: I/O Back Panel Introduction

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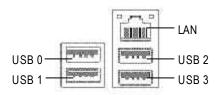
PS/2 Mouse Connector
(6 pin Female)

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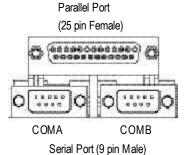
➢ This connector supports standard PS/2 keyboard and PS/2 mouse.

❷/❹ USB/LAN Connector

USB 0
USB 1

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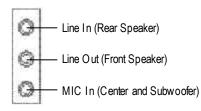
➢ Before you connect your device(s) into USB connector(s), please make sure your device(s) such as USB keyboard, mouse, scanner, zip, speaker...etc. Have a standard USB interface. Also make sure your OS supports USB controller. If your OS does not support USB controller, please contact OS vendor for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

❸ **Parallel Port and Serial Ports (COMA/COMB)**

Parallel Port
(25 pin Female)

➢ 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.

COMA   COMB

Serial Port (9 pin Male)

❺ **Audio Connectors**

Line In (Rear Speaker)

Line Out (Front Speaker)

MIC In (Center and Subwoofer)

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

Please note:

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

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

Method1:

Connect "Front Speaker" to "Line Out"

Connect "Rear Speaker" to "Line In"

Connect "Center and Subwoofer" to "MIC Out".
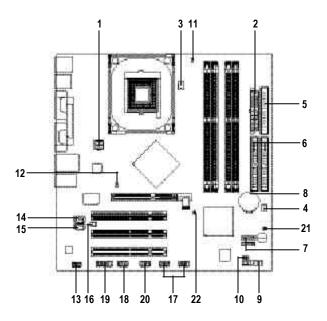
Method2:

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

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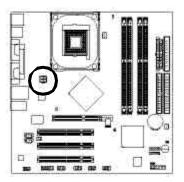
Step 4-2: Connectors Introduction

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

Hardware Installation Process

1) ATX_12V (+12V Power Connector)

This connector (ATX_12V) supplies the CPU operation v oltage (Vcore).
If this "ATX_12V connector" is not connected, sy stem cannot boot.
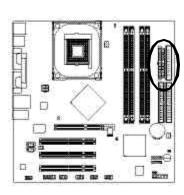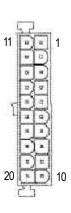
Pin No.	Definition
1	GND
2	GND
3	+12V
4	+12V

2) ATX (ATX Power)

AC pow er cor d should only be connected to y our pow er supply unit after ATX pow er cable and other related dev ices are firmly connected to the mainboard.
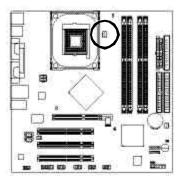
Pin No.	Definition
1	3.3V
2	3.3V
3	GND
4	VCC
5	GND
6	VCC
7	GND
8	Power Good
9	5V SB (stand by +5V)
10	+12V
11	3.3V
12	-12V
13	GND
14	PS_ON(soft on/off)
15	GND
16	GND
17	GND
18	-5V
19	VCC
20	VCC

3) CPU_FAN (CPU Fan Connector)

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

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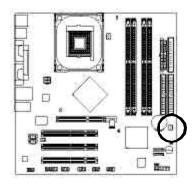
Pin No.	Definition
1	GND
2	+12V
3	Sense

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.

1

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

- 21 -   Hardware Installation Process
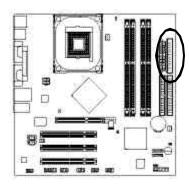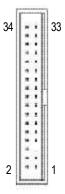
5) FDD (Floppy Connector)

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

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

34 33

2 1
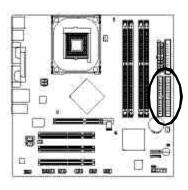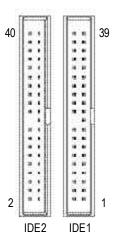
6) IDE1 / IDE2 (IDE1 / IDE2 Connector)

Important Notice:

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

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

40 39

2 1
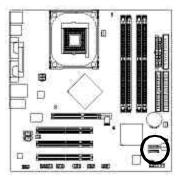
IDE2   IDE1

7) SATA0 / SATA1 (Serial ATA Connector)
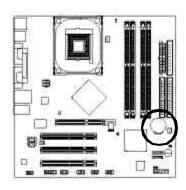
You can connect the Serial ATA device to this connector, it provides you high speed transfer rates (150MB/sec).

7 ☐☐☐☐ 1
SATA1

7 ☐☐☐☐ 1
SATA0
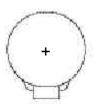
Pin No.	Definition
1	GND
2	TXP
3	TXN
4	GND
5	RXN
6	RXP
7	GND

8) BAT (BATTERY)

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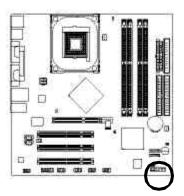
- ❖ Danger of explosion if battery is incorrectly replaced.
- ❖ Replace only with the same or equivalent type recommended by the manufacturer.
- ❖ Dispose of used batteries according to the manufacturer's instructions.
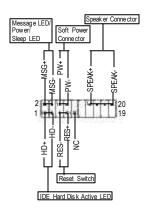
If you want to erase CMOS...

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

9) F_PANEL (2 x 10 pins Connector)

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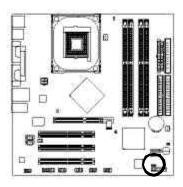
HD (IDE Hard Disk Active LED)	Pin 1: LED anode(+)
(Blue)	Pin 2: LED cathode(-)
SPK (Speaker Connector)	Pin 1: VCC(+)
(Amber)	Pin 2- Pin 3: NC
	Pin 4: Data(-)
RES (Reset Switch)	Open: Normal Operation
(Green)	Close: Reset Hardware System
PW (Soft Power Connector)	Open: Normal Operation
(Red)	Close: Power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

10) PWR_LED
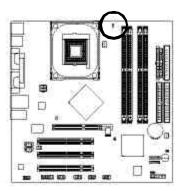
PWR_LED is connect with the sy stem power indicator to indicate whether the sy stem is on/off. It will blink when the sy stem enters suspend mode. If y ou use dual color LED, power LED will turn to another color.

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

11) DIMM_LED
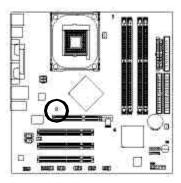
Do not remov e memory modules while DIMM_LED is on. It might cause short or other unex pected damages due to the stand by v oltage. Remove memory modules only w hen AC power cord is disconnected.

12) 2X_DET
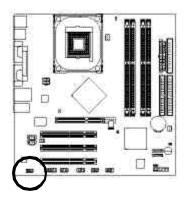
When an AGP 2X (3.3V) card is installed the 2X_DET will light up, indicating a non-supported graphics card is inserted. Informing users that system might not boot up normally due to AGP 2X (3.3V) is not supported by the chipset.

13) F_AUDIO (Front Audio Connector)

If you want to use Front Audio connector, you must remove 5-6, 9-10 Jumper.
In order to utilize the front audio header, your chassis must have front audio connector. Also please make sure the pin assigment on the cable is the same as the pin assigment on the MB header. To find out if the chassis you are buying support front audio connector, please contact your dealer. Please note, you can have the alternative of using front audio connector or of using rear audio connector to play sound.
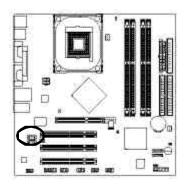
Pin No.	Definition
1	MIC
2	GND
3	REF
4	Power
5	Front Audio (R)
6	Rear Audio (R)
7	Reserved
8	No Pin
9	Front Audio (L)
10	Rear Audio (L)

14) CD_IN (CD In Connector)

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

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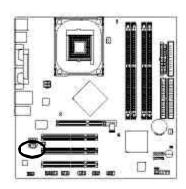
Pin No.	Definition
1	CD-L
2	GND
3	GND
4	CD-R

15) AUX_IN (AUX In Connector)

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

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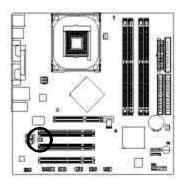
Pin No.	Definition
1	AUX-L
2	GND
3	GND
4	AUX-R

Hardware Installation Process

16) SUR_CEN (Surround Center Connector)

Please contact your nearest dealer for optional SUR_CEN cable.


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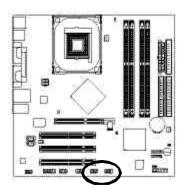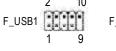
Pin No.	Definition
1	SUR OUTL
2	SUR OUTR
3	GND
4	No Pin
5	CENTER_OUT
6	BASS_OUT

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

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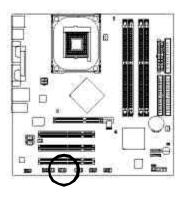

```
       2      10              2      10
F_USB1 [::::]        F_USB2  [::::]
       1      9               1      9
```

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

18) IR_CIR

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

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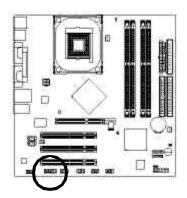
Pin No.	Definition
1	VCC
2	NC
3	IRRX
4	GND
5	IRTX
6	NC
7	CIRRX
8	+5VSB
9	CIRTX
10	NC

19) GAME (Game Connector)

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

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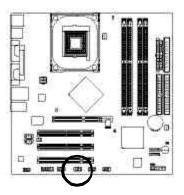
Pin No.	Definition
1	VCC
2	GRX1_R
3	GND
4	GPSA2
5	VCC
6	GPX2_R
7	GPY2_R
8	MSI_R
9	GPSA1
10	GND
11	GPY1_R
12	VCC
13	GPSB1
14	MSO_R
15	GPSB2
16	No Pin

20) INFO_LINK

This connector allows y ou to connect some external devices to prov ide you extra function.
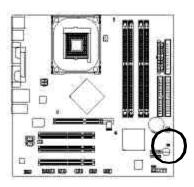
Pin No.	Definition
1	SMBCLK
2	VCC
3	SMBDATA
4	GPIO
5	GND
6	GND
7	No Pin
8	NC
9	+12V
10	+12V

21) CI (CAS E OPEN)

This 2-pin connector allows your sy stem to enable or disable the "Case Open" item in BIOS, if the sy stem case begin rem ov e.
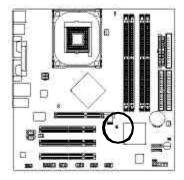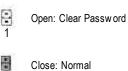
Pin No.	Definition
1	Signal
2	GND

GA-8IP900MK Motherboard   - 30 -

22) CLR_PWD

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

Open: Clear Password

Close: Normal

Chapter 3   BIOS Setup

BIOS 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. : F2)

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.

GA-8IP900MK Motherboard   - 34 -

- **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

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

Standard CMOS Features

Date (mm:dd:yy)	Sat, Mar 22 2003	Item Help
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"]	<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	111M	<Year>
Total Memory	112M	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

ﾐ **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.

ﾐ **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.

- ﾐ CYLS.   Number of cylinders
- ﾐ HEADS   Number of heads
- ﾐ PRECOMP   Write precomp
- ﾐ LANDZONE   Landing zone
- ﾐ SECTORS   Number of sectors

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

ﾐ **Drive A / Drive B**

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

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

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

    ▸ Disabled   Normal Floppy Drive. (Default value)

    ▸ Drive A   Drive A is 3 mode Floppy Drive.

    ▸ Drive B   Drive B is 3 mode Floppy Drive.

    ▸ Both   Drive A & B are 3 mode Floppy Drives.

◦ **Halt on**

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

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

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

    ▸ All, But Keyboard The system boot will not stop for all errors except a keyboard error. (Default value)

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

    ▸ All, But Disk/Key The system boot will not stop for all errors except keyboard and disk errors.

◦ **Memory**

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

Base Memory

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

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

Extended Memory

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

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

Advanced BIOS Features

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

Advanced BIOS Features

		Item Help
First Boot Device	[Floppy]	
Second Boot Device	[HDD-0]	Menu Level ▶
Third Boot Device	[CDROM]	Select Boot Device
Password Check	[Setup]	Priority
# CPU Hyper-Threading	[Enabled]	
		[Floppy]
		Boot from floppy
		[LS120]
		Boot from LS120
↑↓→←: 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.
➠ Hard Disk	Select your boot device priority by Hard Disk.
➠ CDROM	Select your boot device priority by CDROM.
➠ ZIP	Select your boot device priority by ZIP.
➠ USB-FDD	Select your boot device priority by USB-FDD.
➠ USB-ZIP	Select your boot device priority by USB-ZIP.
➠ USB-CDROM	Select your boot device priority by USB-CDROM.
➠ USB-HDD	Select your boot device priority by USB-HDD.
➠ LAN	Select your boot device priority by LAN.
➠ Disabled	Select your boot device priority by Disabled.

☐ **Password Check**

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

☐ **CPU Hyper-Threading** #

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

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

Integrated Peripherals

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

Integrated Peripherals

		Item Help
On-Chip Primary PCI IDE	[Enabled]	
On-Chip Secondary PCI IDE	[Enabled]	Menu Level ▶
On-Chip SATA	[Auto]	If a hard disk
x SATA Port0 Configure as	SATA Port0	controller card is
SATA Port1 Configure as	SATA Port1	used, set at Disabled
USB Controller	[Enabled]	
USB 2.0 Controller	[Enabled]	[Enabled]
USB Keyboard Support	[Disabled]	Enabled onboard IDE
USB Mouse Support	[Disabled]	Port
AC97 Audio	[Auto]	
Onboard H/W LAN	[Enabled]	[Disabled]
Onboard Serial Port 1	[3F8/IRQ4]	Disabled onboard IDE
Onboard Serial Port 2	[2F8/IRQ3]	Port
UART Mode Select	[Normal]	
x UR2 Duplex Mode	Half	
Onboard Parallel Port	[378/IRQ7]	
Parallel Port Mode	[SPP]	
x ECP Mode Use DMA	3	
Game Port Address	[201]	
Midi Port Address	[330]	
Midi Port IRQ	[10]	

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

Figure 4: Integrated Peripherals

○ **On-Chip Primary PCI IDE**

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

　➤ Disabled　　　　Disable onboard 1st channel IDE port.

○ **On-Chip Secondary PCI IDE**

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

　➤ Disabled　　　　Disable onboard 2nd channel IDE port.

○ **On-chip SATA**

　➤ Disabled　　　　Disable SATA controller.

　➤ Auto　　　　　　When there is no device to be plugged in IDE1 or IDE2, SATA controller will
　　　　　　　　　　remap to IDE controller. (Default Value)

　➤ Manual　　　　Set SATA Mode manually.

○ **SATA Port0 Configure as**

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

　➤ IDE Pri. Master　Remap SATA Port 0 to IDE Pri. Master.

　➤ IDE Pri. Slave　Remap SATA Port 0 to IDE Pri. Slave.

　➤ IDE Sec. Master　Remap SATA Port 0 to IDE Sec. Master.

　➤ IDE Sec. Slave　Remap SATA Port 0 to IDE Sec. Slave.

　➤ SATA Port0　　SATA controller set to SATA port0. As this mode, it support by WinXP or
　　　　　　　　　　later OS only. (Default value)

　➤ SATA Port1　　SATA controller set to SATA port1. As this mode, it support by WinXP or
　　　　　　　　　　later OS only.

○ **SATA Port1 Configure as**

　➤ The values depend on SATA Port0.

○ **USB Controller**

　➤ Enabled　　　　Enable USB Controller. (Default value)

　➤ Disabled　　　　Disable USB Controller.

○ **USB 2.0 Controller**

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

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

○ **USB Keyboard Support**

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

○ **USB Mouse Support**

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

○ **AC97 Audio**

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

○ **Onboard H/W LAN**

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

○ **Onboard Serial Port 1**

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

☞ **Onboard Serial Port 2**

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

☞ **UART Mode Select**

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

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

☞ **UR2 Duplex Mode**

This feature allows you to seclect IR mode.

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

☛ Half	IR Function Duplex Half. (Default Value)
☛ Full	IR Function Duplex Full.

☞ **Onboard Parallel port**

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

☛ Disabled	Disable onboard LPT port.
☛ 378/IRQ7	Enable onboard LPT port and address is 378/IRQ7. (Default Value)
☛ 278/IRQ5	Enable onboard LPT port and address is 278/IRQ5.
☛ 3BC/IRQ7	Enable onboard LPT port and address is 3BC/IRQ7.

☞ **Parallel Port Mode**

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

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

❍ **ECP Mode Use DMA**

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

This function will available when "Parallel Port Mode" set at ECP or ECP+EPP.

- ➤ 3   Set ECP Mode Use DMA to 3. (Default Value)
- ➤ 1   Set ECP Mode Use DMA to 1.

❍ **Game Port Address**

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

❍ **Midi Port Address**

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

❍ **Midi Port IRQ**

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

Power Management Setup

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

Power Management Setup

		Item Help
ACPI Suspend Type	[S1(POS)]	
Power LED in S1 state	[Blinking]	Menu Level ▶
Off by Power button	[Instant-off]	[S1]
PME Event Wake Up	[Enabled]	Set suspend type to
ModemRingOn/WakeOnLan	[Enabled]	Power On Suspend under
Resume by Alarm	[Disabled]	ACPI OS
x Date (of Month) Alarm	Everyday	
x Time (hh:mm:ss) Alarm	0 : 0 : 0	[S3]
Power On by Mouse	[Disabled]	Set suspend type to
Power On by Keyboard	[Disabled]	Suspend to RAM under
x KB Power ON Password	Enter	ACPI OS
AC Back Function	[Soft-Off]	

↑↓→←: 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.

☞ **Power LED in S1 state**

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

➠ Dual/OFF In standby mode(S1):

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

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

◌ **Off by Power button**

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

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

◌ **PME Event Wake Up**

▸ Disabled   Disable this function.

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

◌ **Modem Ring On/Wake On LAN**

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

▸ Disabled   Disable Modem Ring on/wake on Lan function.

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

◌ **Resume by Alarm**

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

▸ Disabled   Disable this function. (Default Value)

▸ Enabled   Enable alarm function to POWER ON system.

                      If RTC Alarm Lead To Power On is Enabled.

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

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

◌ **Power On By Mouse**

▸ Disabled   Disabled this function. (Default value)

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

◌ **Power On By Keyboard**

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

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

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

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

▸ Disabled   Disabled this function. (Default value)

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

- 47 -   BIOS Setup

○ **KB Power ON Password**

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

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

○ **AC BACK Function**

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

▸ Full-On — When AC-power back to the system, the system always in "On" state.

▸ Memory — When AC-power back to the system, the system will return to the Last state before AC-power off.

GA-8IP900MK Motherboard — - 48 -

PnP/PCI Configurations

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

PnP/PCI Configurations

		Item Help
PCI 1 IRQ Assignment	[Auto]	
PCI 2 IRQ Assignment	[Auto]	Menu Level ▶
PCI 3 IRQ Assignment	[Auto]	
↑↓→←: Move Enter:Select +/-/PU/PD:Value F10:Save ESC:Exit F1:General Help		
F5:Previous Values F6:Fail-Safe Defaults F7:Optimized Defaults		

Figure 6: PnP/PCI Configurations

◌ **PCI1 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.

◌ **PCI2 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.

◌ **PCI3 IRQ Assignment**

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

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

PC Health Status

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

PC Health Status

		Item Help
Reset Case Open Status	[Disabled]	Menu Level ▶
Case Opened	Yes	[Disabled]
Vcore	OK	Don't reset case
DDR25V	OK	open status
+3.3V	OK	
+5V	OK	[Enabled]
+12V	OK	Clear case open
Current CPU Temperature	33°C	status at next boot
Current CPU FAN Speed	4687 RPM	
Current SYSTEM FAN Speed	0 RPM	
CPU Warning Temperature	[Disabled]	
CPU FAN Fail Warning	[Disabled]	
SYSTEM FAN Fail Warning	[Disabled]	

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

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

Figure 7: PC Health Status

✑ **Reset Case Open Status**

✑ **Case Opened**

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

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

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

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

➠ Detect system's voltage status automatically.

⊙ Current CPU Temperature

➡ Detect CPU Temp. automatically.

⊙ Current CPU/SYSTEM FAN Speed (RPM)

➡ Detect CPU/SYSTEM Fan speed status automatically.

⊙ CPU Warning Temperature

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

⊙ CPU FAN Fail Warning

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

⊙ SYSTEM FAN Fail Warning

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

Frequency/Voltage Control

Frequency/Voltage Control

CPU Clock Ratio	[15X]	Item Help
CPU Host Clock Control	[Disabled]	Menu Level ▶
※ CPU Host Frequency (Mhz)	133	
※ AGP/PCI/SRC Fixed	66/33/100	
Memory Frequency For	[Auto]	
Memory Frequency (Mhz)	266	
AGP/PCI/SRC Frequency (Mhz)	66/33/100	

↑↓→←: 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.

▷ CPU Host Clock Control

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

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

▶ Enabled   Enable CPU Host Clock Control.

○ **CPU Host Frequency (Mhz)**

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

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

○ **AGP/PCI/SRC Fixed**

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

➠ Adjust AGP/PCI/SRC clock asychrohous with CPU.

○ **Memory Frequency For**

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

➠ 2.0   Memory Frequency = Host clock X 2.0.

➠ 2.66   Memory Frequency = Host clock X 2.66.

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

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

➠ 2.0   Memory Frequency = Host clock X 2.0**.**

➠ 2.5   Memory Frequency = Host clock X 2.5.

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

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

➠ 2.0   Memory Frequency = Host clock X 2.0.

➠ 1.6   Memory Frequency = Host clock X 1.5.

➠ 1.33   Memory Frequency = Host clock X 1.33.

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

○ **Memory Frequency (Mhz)**

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

○ **AGP/PCI/SRC Frequency (Mhz)**

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

Load Fail-Safe Defaults

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

▶ Standard CMOS Features	Load Fail-Safe Defaults
▶ Advanced BIOS Features	Load Optimized Defaults
▶ Integrated Peripherals	Set Supervisor Password
▶ Power M:	Load Fail-Safe Defaults (Y/N) ? Y
▶ 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
Load Fail-Safe Defaults	
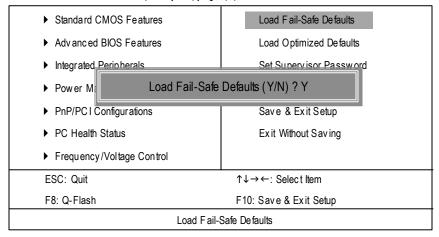
Figure 11: Load Fail-Safe Defaults

Load Fail-Safe Defaults

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

Load Optimized Defaults

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

▶ Standard CMOS Features	Load F ail-Safe Defaults
▶ Adv anced BIOS Features	Load Optimized Defaults
▶ Integrated Peripherals	Set Supervisor Password
▶ Power M	Load Optimized Defaults (Y/N) ? Y
▶ PnP/PC I Configurations	Save & Exit Setup
▶ PC Health Status	Exit Without Saving
▶ Frequency /Voltage Control	
ESC: Quit	↑↓→←: Select Item
F8: Q-Flash	F10: Save & Exit Setup
Load Optimized Defaults	
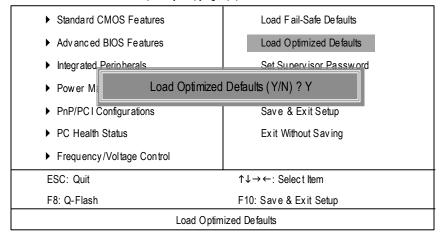
Figure 12: Load Optimized Defaults

Load Optimized Defaults

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

Set Supervisor/User Password

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

▶ Standard CMOS Features	Load Fail-Safe Defaults
▶ Advanced BIOS Features	Load Optimized Defaults
▶ Integrated Peripherals	Set Supervisor Password
▶ Power M	Enter 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

Change/Set/Disable Password
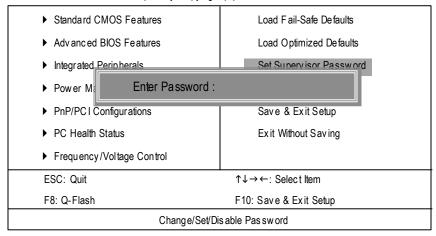
Figure 13: Password Setting

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

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 M	Save to CMOS and EXIT (Y/N) ? Y
▶ 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
Save Data to CMOS	
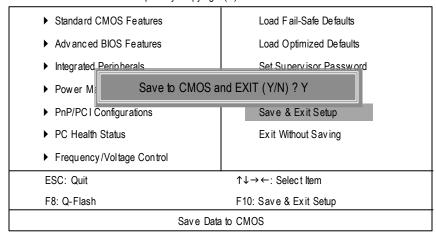
Figure 14: Save & Exit Setup

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

Type "N" will return to Setup Utility.

Exit Without Saving

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

▶ Standard CMOS Features	Load Fail-Safe Defaults
▶ Advanced BIOS Features	Load Optimized Defaults
▶ Integrated Peripherals	Set Supervisor Password
▶ Power M⋮	Quit Without Saving (Y/N) ? N
▶ 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
Abandon all Data	
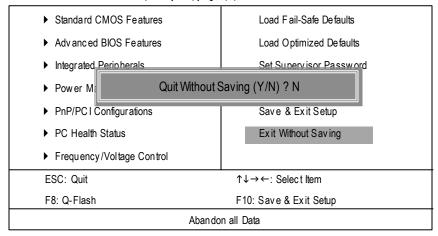
Figure 15: Exit Without Saving

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

Type "N" will return to Setup Utility.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

GA-8IP900MK Motherboard   - 60 -

Chapter 4   Technical Reference

@BIOS™ Introduction

Gigabyte announces @BIOS™
Windows BIOS live update utility

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

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

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

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

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

EasyTune™ 4 Introduction

Gigabyte announces *EasyTune*™ *4*

Windows based Overclocking utility

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

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

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

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

Flash BIOS Method Introduction

Method 1 : Q-Flash
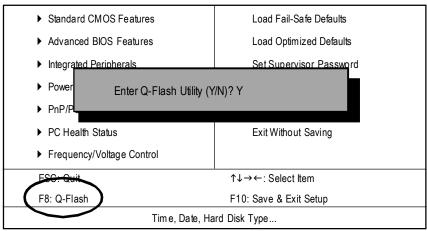
A. What is Q-Flash Utility?

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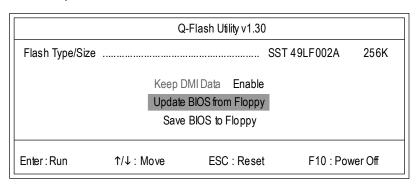
B. How to use Q-Flash?

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

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	Enter Q-Flash Utility (Y/N)? Y
▶ PnP/P	
▶ 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...	

b. Q-Flash Utility

Q-Flash Utility v1.30			
Flash Type/Size .... SST 49LF002A 256K			
Keep DMI Data **Enable**			
Update BIOS from Floppy			
Save BIOS to Floppy			
Enter : Run	↑/↓ : Move	ESC : Reset	F10 : Power Off
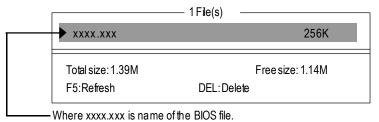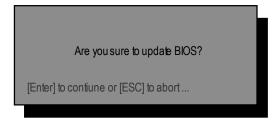
Load BIOS From Floppy
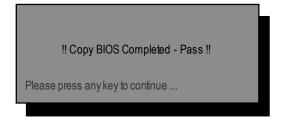
✎ In the A:drive, insert the "BIOS" diskette, then Press Enter to Run.

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

▶  xxxx.xxx                                      256K


   Total size: 1.39M                Free size: 1.14M
   F5: Refresh              DEL: Delete
```

────── Where xxxx.xxx is name of the BIOS file.

✎ Press Enter to Run.

```
            Are you sure to update BIOS?


        [Enter] to contiune or [ESC] to abort ...
```

✎ Press Enter to Run.

```
            !! Copy BIOS Completed - Pass !!


        Please press any key to continue ...
```
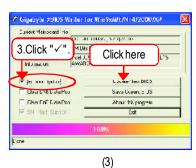
Congratulation! You have completed the flashed and now can restart system.
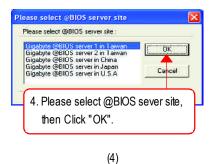
Method 2 : @BIOS Utility

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

Press here.

1. Click "@BIOS" item.

(1)

2. Click Start/ All Programs/ GIGABYTE/ @BIOS.

(2)

3. Click "✓".

Click here

(3)

4. 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: 8IP900MK.F2).

   e. Complete update process following the instruction.

III. Save BIOS

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

IV. Check out supported motherboard and Flash ROM:

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

Note:

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

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

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

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

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

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

Stereo Speakers Connection and Settings:

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

STEP 1:
Connect the stereo speakers or earphone to "Line Out".
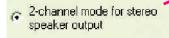
Line Out

STEP 2 :
After installation of the audio driver, you'll find an

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

STEP 3:
Select "Speaker Configuration", and choose the "2 channels for stereo speakers out put".

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

Sound Effect

10:41 AM

STEP 3 :

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

Disable "Only SURROUND-KIT",

and press "OK".

4-channel mode for 4 speaker output

When the "Environment settings" is "None", the sound would be performed as stereo mode (2 channels output). Please select the other settings for 4 channels output.
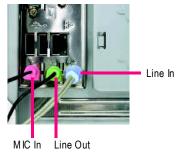
Basic 6 Channel Analog Audio Output Mode

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

STEP 1 :

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

Line In

MIC In   Line Out

STEP 2 :

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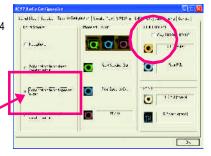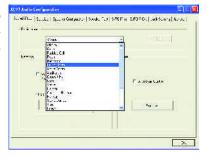

STEP 3 :

Select "Speaker Configuration", and choose the "6 channels 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 & Center/subwoofer)

SURROUND-KIT access analog output to rear channels and Center/Subwoofer channels. It is the best solution if you need 6 channel output, Line In and MIC at the same time. "SURROUND-KIT" is included in the GIGABYTE unique "Audio Combo Kit" as picture.
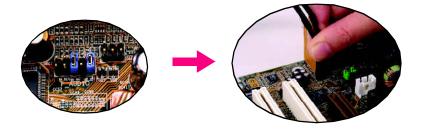
STEP 1 :

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

STEP 2 :

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

STEP 3 :

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

STEP 4 :

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

STEP 5 :

Select "Speaker Configuration", and choose the "6 channels for 5.1 speakers out put".
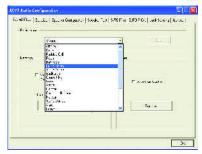
Enable "Only SURROUND-KIT" and press "OK".

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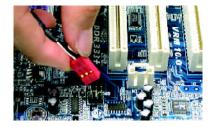
A "S/PDIF output" device is available on the motherboard. Cable with rear bracket is provided and could link to the "S/PDIF output" connector (As picture.) For the further linkage to decoder, rear bracket provides coaxial cable and Fiber connecting port.

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

2. Connect SPDIF wire to the motherboard.

3. Connect co-axial or optical output to the AC3 decoder.

GA-8IP900MK Motherboard   - 72 -

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.

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Chapter 5 Appendix

Install Drivers

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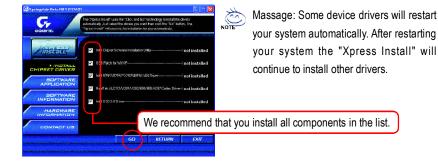
Insert the driver CD-title that came with your motherboard into your CD-ROM drive, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

INSTALL CHIPSET DRIVER

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

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

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

We recommend that you install all components in the list.

Driver installation finished !
You have to reboot system !

Item Description

■ Intel Chipset Software Installation Utility
Tell the operating system how the chipset components will be configured.
■ USB Patch for WinXP
This patch driver can help you to resolve the USB device wake up S3 hang up issue in XP.
■ Intel 82562/82562EX/82540EM LAN Driver
For Intel® PRO/10/100/1000/Wireless Ethernet connections
■ RealTek ALC11A/201A/202/650 AC97 Codec Driver
For Intel® ICH/ICH2/ICH4/ICH5/ICH5R AC97 audio
■ Intel USB 2.0 Driver
It is recommended that you use the Microsoft Windows update for the most updated driver for
XP/2K

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

SOFTWARE APPLICATION

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

- Gigabyte Windows Utilities Manager (GWUM)

  This utility can integrate the Gigabyte's applications in the system tray

- Gigabyte Management Tool (GMT)

  A useful tool which can manage the computer via the network

- 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 performance.

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.
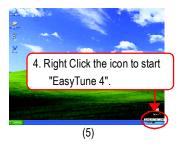
EasyTune 4 Utilities Installation

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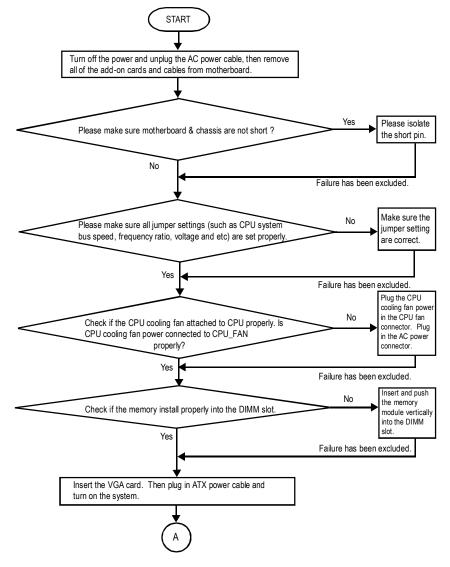
→ AWARD BIOS Beep Codes
    1 short: System boots successfully
    2 short: CMOS setting error
    1 long 1 short: DRAM or M/B error
    1 long 2 short: Monitor or display card error
    1 long 3 short: Keyboard error
    1 long 9 short: BIOS ROM error
    Continuous long beeps: DRAM error
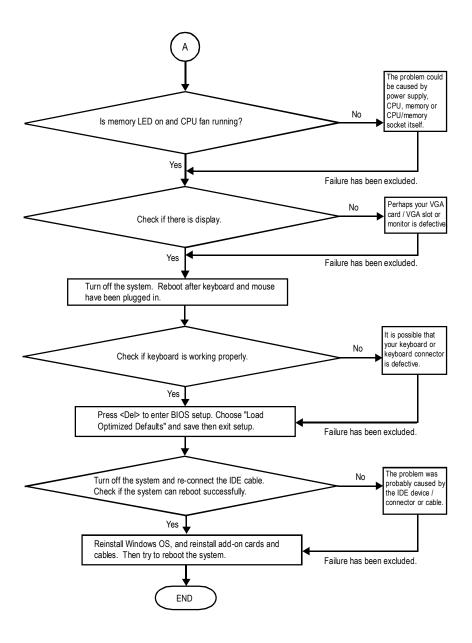   Continuous short beeps: Power error

Troubleshooting

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

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

A

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

Yes

Failure has been excluded.

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

Yes

Failure has been excluded.

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

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

Yes

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

Failure has been excluded.

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

Yes

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

Failure has been excluded.

END

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

Technical Support/RMA Sheet

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

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

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

Problem Description:

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

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

English

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

CONTACT US

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

- Taiwan

Gigabyte Technology Co., Ltd.

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

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

FAX: 886 (2) 8912-4004

E-mail:english@gigabyte.com.tw

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

- USA

G.B.T. INC.

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

Tel: 1 (626) 854-9338

Fax: 1 (626) 854-9339

E-mail:sales@giga-byte.com

　　　support@giga-byte.com

Web Address: www.giga-byte.com

- Germany

G.B.T. Technology Trading GmbH

Tel: 49-40-2533040

Fax: 49-40-25492343 (Sales)

Tel: 49-01803-428468 (Tech.)

Fax: 49-01803-428329 (Tech.)

E-mail:support@gigabyte.de

Web Address: www.gigabyte.de

- Japan/Nippon Giga-Byte Corporation

Web Address: www.gigabyte.co.jp

- U.K

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

Tel: 44-1908-362700

Fax: 44-1908-362709

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

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

- The Netherlands

Giga-Byte Technology B.V.

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

Tel: +31 40 290 2088

Fax: +31 40 290 2089

E-mail:info@giga-byte.nl

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

- China

Shanghai Office

Tel: 86-21-64737410

Fax: 86-21-64453227

Web Address: www.gigabyte.com.cn

GuangZhou Office

Tel: 86-20-87586273

Fax: 86-20-87544306

Web Address: www.gigabyte.com.cn

Beijing Office

Tel: 86-10-82856054

86-10-82856064

86-10-82856094

Fax: 86-10-82856575

Web Address: www.gigabyte.com.cn

E-mail:bjsupport@gigabyte.com.cn

Chengdu Office

Tel: 86-28-85236930

Fax: 86-28-85256822

Web Address: www.gigabyte.com.cn