

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



Do not use AGP 2X card (3.3V) in this motherboard. It will burn and damage the motherboard due to Intel® 845(E/G) / 850(E) chipset can't support AGP 2X(3.3V).



Example 1: Diamond Vipper V770 golden finger is compatible with 2X/4X mode AGP slot. It can be switched between AGP 2X(3.3V) or 4X (1.5V) mode by adjusting the jumper. The factory default for this card is 2X (3.3V). If you install this card in GA-8IHXP(or any AGP 4X only) motherboards without switching the jumper to 4X mode (1.5V), it will burn the motherboard.

Example 2: Some ATi Rage 128 Pro graphics cards made by "Power Color", the graphics card manufacturer & some SiS 305 cards, their golden finger is compatible with 2X/4X mode AGP slot, but they support 2X(3.3V) only. If you install this card in GA-8IHXP (or any AGP 4X only) motherboards, it will burn the motherboard.

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



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- Due to rapid change in technology, some of the specifications might be out of date before publication of this booklet.



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

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

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

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

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

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

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!

히트싱크를 제대로 또 난단히 부획시키지 않은 제 프로세시를 구동시키지 마십시오. 영구적 고장이 반생합니다! 경고:

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-8IHXP
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 | ☐ EN 61000-3-2* ☑ EN 60555-2 | Disturbances in supply systems cause by household appliances and similar electrical equipment "Harmonics" |
|---|--|-------------------------------|--|
| | high frequency equipment | | electrical equipment. Trainfornes |
| □ EN 55013 | Limits and methods of measurement of radio disturbance characteristics of broadcast receivers and associated equipment | ☐ EN 61000-3-3* ⊠ EN 60555-3 | Disturbances in supply systems cause by household appliances and similar electrical equipment "Voltage fluctuations" |
| □ EN 55014 | Limits and methods of measurement of radio disturbance characteristics of household electrical appliances, | ⊠ EN 50081-1 | Generic emission standard Part 1: Residual commercial and light industry |
| | portable tools and similar electrical | ☑ EN 50082-1 | Generic immunity standard Part 1: |
| | apparatus | | Residual commercial and light industry |
| □ EN 55015 | Limits and methods of measurement of radio disturbance characteristics of | ☐ EN 55081-2 | Generic emission standard Part 2: Industrial environment |
| | fluorescent lamps and luminaries | | industrial environment |
| □ EN 55020 | Immunity from radio interference of | ☐ EN 55082-2 | Generic emission standard Part 2: |
| | broadcast receivers and associated equipment | | Industrial environment |
| ⊠ EN 55022 | Limits and methods of measurement | ☐ ENV 55104 | Immunity requirements for household |
| | of radio disturbance characteristics of information technology equipment | | appliances tools and similar apparatus |
| ☐ DIN VDE 0855 | Cabled distribution systems; Equipment | □ EN50091-2 | EMC requirements for uninterruptible |
| part 10 | for receiving and/or distribution from | | power systems (UPS) |
| □ part 12 | sound and television signals | | |
| | | (EC conformi | |
| ∠ CE marking | | (EC conformi | ty 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 business equipment |
| □ EN 60335 | Safety of household and similar electrical appliances | □ EN 50091-1 | General and Safety requirements for uninterruptible power systems (UPS) |
| | | Manufacturer/Importer | |
| | | Date : Aug. 28, 2002 | Signature: Timmy Huang |
| | (Slamp) | Date : Aug. 20, 2002 | Name: Timmy Huang |

DECLARATION OF CONFORMITY

Per FCC Part 2 Section 2.1077(a)



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

Address: 17358 Railroad Street

City of Industry, CA 91748

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

hereby declares that the product

Product Name: Motherboard Model Number: GA-8IHXP

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: Aug. 28, 2002

GA-8IHXP P4 Titan-RDRAM Motherboard

USER'S MANUAL

Pentium*4 Processor Motherboard Rev. 3001 12ME-8IHXP-3001

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Item Checklist

- ☑ The GA-8IHXP motherboard
- ☑ I/O Shield
- ☑ Quick PC Installation Guide
- ☑ IDE cable x 3
- ☑ CD for motherboard driver & utility
- ☑ Audio combo bracket x 1 (PCB Ver.:3.0 only)
- ☑ GA-8IHXP User's manual
- ☑ CRIMM x 2
- ☑ Floppy cable x 1
- ☑ USB cable x 2
- ☑ SPD-KIT x 1

WARNING!



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

- 1. Unplug your computer when working on the inside.
- 2. Use a grounded wrist strap before handling computer components. If you do not have one, touch both of your hands to a safely grounded object or to a metal object, such as the power supply case.
- 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 mother board 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 mother board to the base without worrying about short circuits. Sometimes you may need to use the plastic springs to isolate the screw from the mother board 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 Summary of Features

| Form Factor | 30.5cm x 24.4cm ATX size form factor, 6 layers PCB. |
|----------------------|--|
| CPU | Socket 478 for Intel® Micro FC-PGA2 Pentium® 4 processor |
| | Intel Pentium®4 400/533MHz FSB |
| | Support Intel® Pentium® 4 (Northwood, 0.13 µm) processor |
| | 2nd Level cache depend on CPU |
| Chipset | Chipset 82850E HOST/AGP/Controller |
| | ICH4 I/O Controller Hub |
| Memory | 4 184-pin RIMM Sockets |
| | Supports 4 x PC800 RIMM or 4 x PC1066 RIMM DIMM |
| | Dual direct RDRAM channel |
| | Supports up to 2GB (Max) |
| I/O Control | Winbond W83627H F |
| Slots | 1 CNR(Communication and Networking Riser) Slot |
| | 1 AGP support 4X(1.5V) device |
| | 6 PC1 slot supports 33MHz & PC1 2.2 compliant |
| On-Board IDE | 2 IDE bus master (DMA33/ATA66/ATA100) IDE ports for up to 4 |
| | ATAPI devices |
| | IDE3 and IDE4 Compatible with RAID, Ultra ATA133/100. |
| On-Board Peripherals | 1 Floppy port supports 2 FDD with 360K, 720K,1.2M, 1.44M |
| | and 2.88M bytes. |
| | 1 Parallel port supports Normal/EPP/ECP mode |
| | 2 Serial ports (COMA&COMB) |
| | • 6 x USB 2.0/1.1 by ICH4 |
| | 4 x USB 2.0/1.1by NEC D720100AS1 |
| | 1 IrDA connector for IR/CIR |
| Hardware Monitor | CPU/Power/System Fan Revolution detect |
| | CPU Overheat Warning |
| | System Voltage Detect |
| On-Board LAN | Build in RTL8100BL Chipset |
| On-Board USB 2.0 | NEC D720100AS1 Chipset |

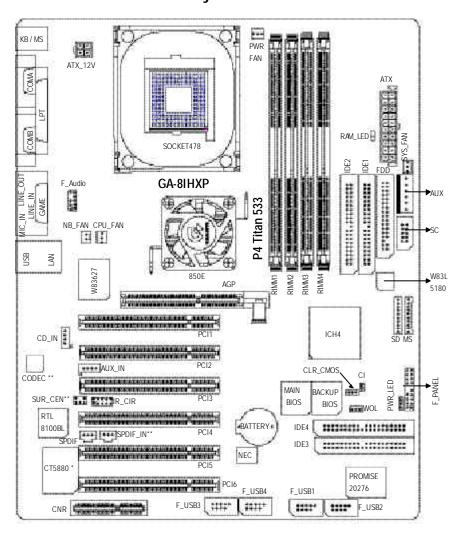
GA-8IHXP Motherboard

| On-Board MS,SD,SC | Winbond SMART@I/O Chipset (Memory Stick, Security Digital and SC header) | |
|------------------------|--|--|
| On-Board Sound | Creative CT5880 Sound Chipset + Sigmatel 9708T CODEC | |
| (PCB Ver.: 2.1 only) | 4 channel audio CODEC | |
| (I OD Vol 2.1 offly) | Line In/Line Out/Mic In/Game Port/CD In/AUX IN/SPDIF | |
| | (5.1 channel) | |
| On-Board Sound | Realtek ALC 650 CODEC | |
| (PCB Ver.: 3.0 only) | Line Out / 2 front speaker | |
| (1 OD Val.: 3.0 of my) | Line In / 2 rear speaker(by s/w switch) | |
| | Mic In / center& subwoofer(by s/w switch) | |
| | SPDIF out / SPDIF In | |
| | CD In / AUX In / Game port | |
| On-Board RAID | Onbard Promise PDC 20276 | |
| On Board 10 (18 | Support data striping (RAID 0) or mirroring (RAID 1) | |
| | Supports concurrent dual IDE controller operation | |
| | Supports IDE bus master operation | |
| | Display's status and error checking messages during boot-up | |
| | Mirroring supports automatic background rebuilds | |
| | Features LBA and Extended Interrupt13 drive translation in | |
| | controller onboard BIOS | |
| PS/2 Connector | PS/2 Key board interface and PS/2 Mouse interface | |
| BIOS | Licensed AMI BIOS, 4M bit FWH | |
| | Supports Dual BIOS / Q-Flash / Multi Language | |
| Additional Features | PS/2 Keyboard power on by password | |
| | PS/2 Mouse power on | |
| | External Modem wake up | |
| | STR(Suspend-To-RAM) | |
| | Wake on LAN | |
| | AC Recovery | |
| | USB KB/Mouse wake up from S3 | |
| | Supports @BIOS | |
| | Supports Easy Tune4 | |
| | Supports Face Wizard | |

Special Features

- Over Voltage (RIMM/AGP/CPU)
- Over Clock (CPU/PCI/AGP)
- ◆ 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. Whetheryour system can run under these specific bus frequencies properly will depend on your hardware configurations, including CPU, Chipsets, SDRAM, Cards... .etc.

GA-8IHXP Motherboard Layout

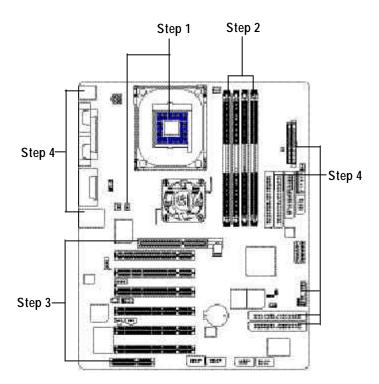


" * " FOR PCB Ver. : 2.1 used " ** " FOR PCB Ver.: 3.0 used

Chapter 2 Hardware Installation Process

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

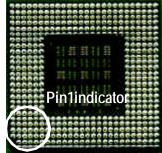
- Step 1- Install the Central Processing Unit (CPU)
- Step 2- Install memory modules
- Step 3- Install expansion cards
- Step 4- Connect ribbon cables, cabinet wires, and power supply
- Step 5- Setup BIOS software
- Step 6- Install supporting software tools



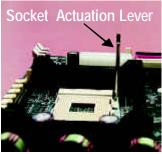
Step 1: Install the Central Processing Unit (CPU) CPU Installation



CPU Top View



CPU Bottom View



1. Pull up the CPU socket level and up to 90-degree angle.



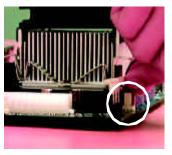
 Locate Pin 1 in the socket and look for a (golden) cut edge on the CPU upper corner. Then insert the CPU into the socket.

- 3. Press down the CPU socketlever and finish CPU installation.
- Please make sure the CPU type is supported by the motherboard.

CPU Heat Sink Installation



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



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

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

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

- Make sure the CPU fan power cable is plugged in to the CPU fan connector, this completes the installation.
- Please refer to CPU heat sink user's manual for more detail installation procedure.

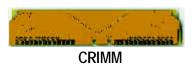
Step 2: Install memory modules

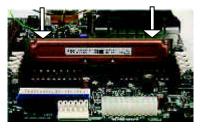
The motherboard has 4 Rambus In-line Memory Module (RIMM) sockets. The BIOS will automatically detect memory type and size. To install the memory module, just push it vertically into the RIMM Slot .The RIMM module can only fit in one direction due to the two notches. Please note; Both RIMM modules inserted on RIMM1 and RIMM2 slots are recommended to have the same size, frequency. If not, the larger sized module will I be automatically re-sized by BIOS to match the smaller sized module. The same rule applies to both RIMM3 and RIMM4 slots. You can insert two RIMMs or four RIMMs into RIMM slots, but C-RIMM (Continuity RIMM) modules must be inserted into the empty slots.



RIMM

Check RIMM module if it is supported by the $\mathsf{M/B}$.

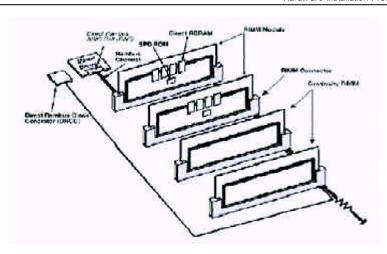




Insert the RIMM module into the slot.



Push the ejector tab towards the RIMM.



Introduce RIMM (Rambus In-line Memory Module)

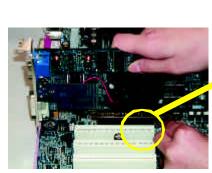
Direct Rambus Memory Controller

- ⇒Directly support a Dual Direct Rambus * Channel
 - Supports 300&400 MHz Direct Rambus * Channel @ 100MHz host bus frequency.
 - Maximum memory array size up b 256MB using 64Mb/72Mb, 512MB using 128Mb/144Mb, 1GB using 256Mb/288Mb DRAM technology
- ⇒Supports up to 32 Direct Rambus devices per channel
- ⇒Supports a maximum DRAM address decode space of 4GB
- ⇒ Configurable optional ECC operation
 - ECC with single bit Error Correction and multiple bit Error Detection
 - Single bit errors corrected and written back to memory (auto-scrubbing)
 - Parity mode not supported

APIC memory space in hardware. It is the BIOS or system designer's responsibility to limit DRAM population so that adequate PCI, AGP, High BIOS, and APIC memory space can be allocated.

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.



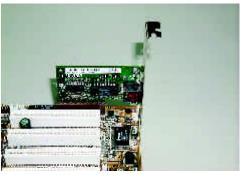
AGP Card



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.

Issues To Beware Of When Installing CNR

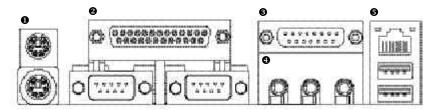
Please use standard ${\sf CNR}$ card like the one in order to avoid mechanical problem.



Standard CNR Card

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

Step 4-1: I/O Back Panel Introduction



PS/2 Keyboard and PS/2 Mouse Connector

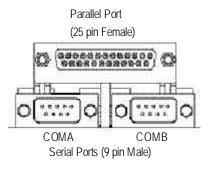


PS/2 Mouse Connector (6 pin Female)

PS/2 Keyboard Connector (6 pin Female)

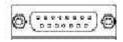
➤ This connector supports standard PS/2 keyboard and PS/2 mouse.

Parallel Port and Serial Ports (COMA/COMB)



➤ This connector supports 2 standard COM ports and 1 Parallel port. Device like printer can be connected to Parallel port; mouse and modem etc can be connected to Serial ports.

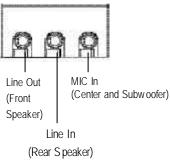
❸ Game /MIDI Ports



Joystick/ MIDI (15 pin Female)

➤ This connector supports joy stick, MIDI key board and other relate audio devices.

Audio Connectors



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

Please note:

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

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

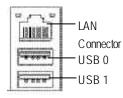
Method1:

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

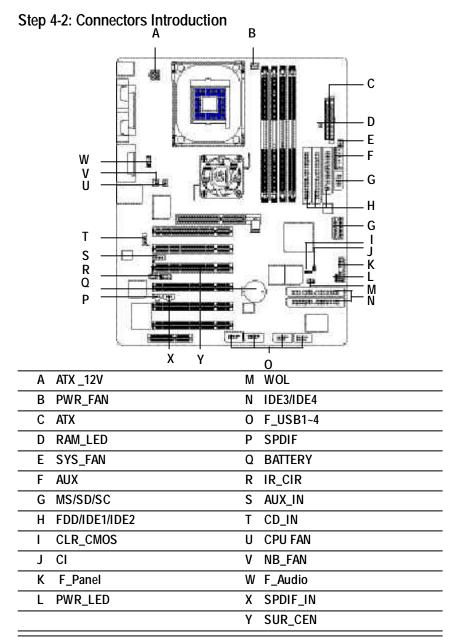
Method2:

You can refer to page 24, and contact your nearest dealer for optional SUR_CEN cable.

6 USB/LAN Connector



➤ 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.



B / E / U: PWR_FAN / SYS_FAN / CPU_Fan Connector



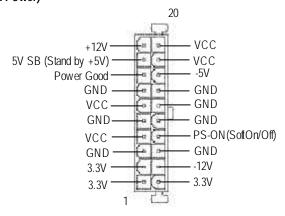
➤ Please note, a proper installation of the CPU cooler is essential to prevent the CPU from running under abnormal condition or damaged by overheating. The CPU fan connector supports Max. current up to 600 mA.

D: RAM_LED



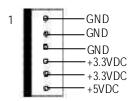
➤ Do not remove memory modules while RAM LED is on. It might cause short or other unexpected damages due to the 2.5V stand by voltage. Remove memory modules only when STR function is disabled by jumper and AC Power cord is disconnected.

C: ATX (ATX Power)



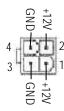
> AC power cord should only be connected to your power supply unit after ATX power cable and other related devices are firmly connected to the mainboard.

F: AUX



- ➤ The 6-pin Aux. Power connector provides additional current to meet the board's +3.3VDC and +5VDC requirments.

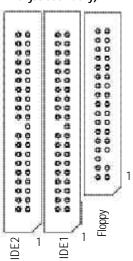
 Please refer to the detail on P.23
- A: ATX_12V Power Connector



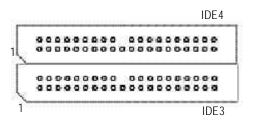
➤ This connector (ATX_12V) supplies the CPU operation voltage (Vcore).

If this "ATX_12V connector" is not connected, system cannot boot.

H : Floppy / IDE1 / IDE2 Connector (Primary/Secondary)



N: IDE3 / IDE4 Connector (RAID / ATA133)



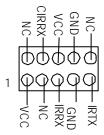
➤ Important Notice:
Please connect first harddisk to IDE1
and connect CDROM to IDE2.

➤ Important Notice:

If you wish to use IDE3 and IDE4, please use it in unity with BIOS(P.42).

Then, install the correct driver to have proper operation. For details, please refer to the RAID manual inside the CDROM.

R: 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 Giga-Byte distributor.

To use IR function only, please connect IR module to Pin1 to Pin5.

M: WOL (Wake On Lan)



L: PWR_LED



P: SPDIF



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

J: CI (CASE_OPEN)



T: CD_IN (CD Audio Line In)

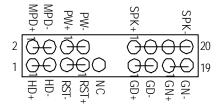


This 2 pin connector allows your system to enable or disable the system alarm if the system case begin remove.

S: AUX_IN



K: F_PANEL (2x10 pins jumper)

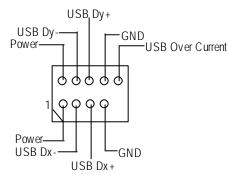


| GN (Green Switch) | Open: Normal Operation |
|-------------------------------|------------------------------|
| | Close: Entering Green Mode |
| GD (Green LED) | Pin 1: LED anode(+) |
| | Pin 2: LED cathode(-) |
| HD (IDE Hard Disk Active LED) | Pin 1: LED anode(+) |
| | Pin 2: LED cathode(-) |
| SPK (Speaker Connector) | Pin 1: VCC(+) |
| | Pin 2- Pin 3: NC |
| | Pin 4: Data(-) |
| RE (Reset Switch) | Open: Normal Operation |
| | Close: Reset Hardware System |
| P+P-P-(Power LED) | Pin 1: LED anode(+) |
| | Pin 2: LED cathode(-) |
| | Pin 3: LED cathode(-) |
| PW (Soft Power Connector) | Open: Normal Operation |
| | Close: Power On/Off |
| MPD(Message LED/Power/ | Pin 1: LED anode(+) |
| Sleep LED) | Pin 2: LED cathode(-) |

➤ Please connect the power LED, PC speaker, reset switch and power switch etc of your chassis front panel to the front panel jumper according to the pin assignment above.

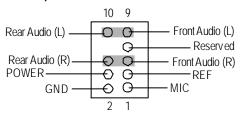
O: F_USB1~ F_USB4 (Front USB Connector)

(F_USB1 ~ F_USB4 connector in yellow are for USB 2.0)



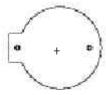
Be careful with the polarity of the front panel USB connector. Check the pin assignment while you connect the front panel USB cable. Please contact your nearest dealer for optional front panel USB cable.

W: F_AUDIO (Front Audio)



➤ If you want to use "Front Audio" connector, you must move 5-6, 9-10 Jumper. In order to utilize the front audio header, your chassis must have front audio connector. Also please make sure the pin assignment on the cable is the same as the pin assignment on the MB header. To find out if the chassis you are buying support front audio connector, please contact your dealer.

Q : Battery

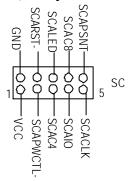


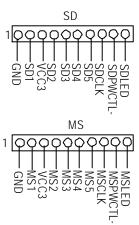
CAUTION

- 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.

I : CLR_CMOS (Clear CMOS Function)#

- 1 OOO 1-2 close: Clear CMOS
- 1 O 2-3 close: Normal
- ➤ Please note: You may clear the CMOS data to its default values by this jumper.
- "#" Default doesn't include the "Shunter" to prevent from improper use this jumper. To clear CMOS, temporarily short 1-2 pin.
- G: SC(Smart Card Interface), SD (Secure Digital Memory Card Interface), MS (Memory Stick Interface)





The device could be expanded for reading Flash Memory, such as SD(Security Digital),MS (Memory Stick) and Smart Card Reader Connector. The Smart IC Card could increase security in authenticating online transactions; the card reader device (inquire local distributor) made by Third Party could be purchased by users.

V) NB_FAN



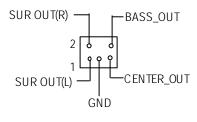
➤ If you installed wrong direction, the Chip Fan will not work. Sometimes will damage the Chip Fan. (Usually black cable is GND)

X) SPDIF_IN(*)



➤ Use this feature only when your stereo system has digital output function.

Y) SUR_CEN(*)



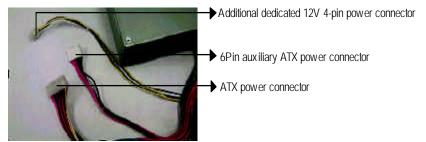
Please contact your nearest dealer for optional SUR_CEN cable.

" * " FOR PCB Ver.: 3.0 used

Step 4-3: ATX 12V Power Supply Introduction

- -Additional 4 pin connector for 12V voltage
- -Backward compatibility maintained with load sharing capability
- -Support 12V or 5V CPU VRs

Check power supply if it is supported by ATX12V Power Supply.



6 Pin Aux. Power Connector

Step1: In a 45° angle position, alignthe tooth of aux. Step2: Insert the aux. Power cable downward. Power cable onto the gird of aux. Power socket.

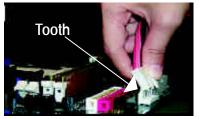


Figure 1



Figure 2

Step3: Properly installed shown below.



Figure 3

| GA-8IHXP Motherboard |
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| Hardware Installation Process |
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| GA-8IHXP Motherboard |
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Chapter 3 BIOS Setup

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

ENTERING SETUP

Press < F8 > to enter Boot Menu during POST (Power On Self Test); press < F12 > to enter Network boot function, press < Del > to enter CMOS Setup.

a. Boot Screen



b. Press <F8> to enter Boot Menu

| Select First Boot Device | | |
|--------------------------|----------------------------|--|
| Floppy | : 1.44MB 3 ^{1/2} | |
| USB RMD-FDD | : Apacer Handy Drive | |
| IDE-0 | : ST320420A | |
| CD/DVD | : IDE/ATAPI DVD-ROM 10X | |
| BBS-0(Network) | : Realtek Boot Agent | |
| [Up/Dn] Select | [RETURN] Boot [ESC] Cnacel | |

Boot order depends on the devices you use, for example: Floppy, HDD, CD-ROM...

c. Press<F12> to boot from Network.

d. After power on the computer, pressing immediately during POST (Power On Self Test) it will allow you to enter AMI BIOS CMOS SETUP.

CONTROL KEYS

| < 1>> | Move to previous item |
|------------------|---|
| <√> | Move to next item |
| < ← > | Move to the item in the left hand |
| < → > | Move to the item in the right hand |
| <esc></esc> | Main Menu - Quit and not save changes into CMOS Status Page Setup Menu and |
| | Option Page Setup Menu - Exit current page and return to Main Menu |
| <+/PgUp> | Increase the numeric value or make changes |
| <-/PgDn> | Decrease the numeric value or make changes |
| <f1></f1> | General help, only for Status Page Setup Menu and Option Page Setup Menu |
| <f2></f2> | Reserved |
| <f3></f3> | Select Language |
| (Shift)F3 | Select Language |
| <f4></f4> | Reserved |
| <f5></f5> | Restore the previous CMOS value from CMOS, only for Option Page Setup Menu |
| <f6></f6> | Load the default CMOS value from BIOS default table, only for Option Page Setup |
| | Menu |
| <f7></f7> | Load the Setup Defaults |
| <f8></f8> | Dual BIOS/Q-Flash |
| <f9></f9> | System Information |
| <f10></f10> | Save all the CMOS changes, only for Main Menu |
| | |

GETTING HELP

Main Menu

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

Status Page Setup Menu / Option Page Setup Menu

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

Select Language

You can press <F3> or Shift-F3 to select multi language. There are 7 languages available, include English, Japanese, French, Spanish, Germany, Simplified Chinese, Traditional Chinese.

The Main Menu (For example: BIOS Ver. :F5a)

Once you enter AMI 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.

| AMI NEW SETUP UTILITY-VISION 3.31a | | |
|--|-------------------------|--|
| ▶Standard CMOS Features | Set Supervisor Password | |
| ►Adv anced BIOS Features | Set User Password | |
| ►Adv anced Chipset Features | Load Optimized Defaults | |
| ▶Integrated Peripherals | Load Fail Safe Defaults | |
| ▶Power Management Features | Save & Exit Setup | |
| ▶PnP/PCI Configurations | Ex it Without Saving | |
| ▶PC Health Status | | |
| ESC:Quit ↑↓→←:Select Item (Shift)F3:Select Language F8:Dual BIOS/Q-Flash | | |
| F5:Old Values F6:Fail-Safe Values F7:Optimized Values F10: Save & Exit | | |
| Set Time, Date, Hard Disk Type | | |

Figure 1: Main Menu

• 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 AMI special enhanced features.

• Advanced Chipset Features

This setup page includes all the adjustable items of chipset special features.

• Integrated Peripherals

This setup page includes all onboard peripherals.

• Power Management Features

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.

Set Supervis or pass word

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

• Set User password

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

• Load Optimized Defaults

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

• Load Fail-Safe Defaults

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

• 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

AMI NEW SETUP UTILITY-VISION 3.31a

| Standard CMOS Features | 3 | Setup Help |
|----------------------------------|----------------------------|--------------------|
| System Time | 22:31:24 | Menu Level ► |
| System Date | Mon, Feb 21 2002 | |
| Current Language | English | |
| Boot Sector Virus Protection | Disabled | |
| | | |
| Floppy Drive A | 1.44M, 3.5 in. | |
| Floppy Drive B | Not Installed | |
| | | |
| ▶IDE Primary Master | None | |
| ▶IDE Primary Slave | None | |
| ►IDE Secondary Master | None | |
| ▶IDE Secondary Slave | None | |
| | | |
| ESC :Previous Menu ↑↓: Select It | tem PU/PD/+/-/:Modify F8 | :Dual BIOS/Q-Flash |
| F5: Old Values F6:Fail-Safe V | Values F7:Optimized Values | F10:Save & Exit |

Figure 2: Standard CMOS Features

☞ SystemTime

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.

☞ System Date

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

Month The month, Jan. Through Dec.

→ Day The day, from 1 to 31 (or the maximum allowed in the month)

➤ Year The year, from 1990 through 2099

➤ Week The week, from Sun to Sat, determined by the BIOS and is display only

© Current Language

There are 7 languages available, include English, Japanese, French, Spanish, Germany, Simplified Chinese, Traditional Chinese.

Boot Sector Virus Protection

If it is set to enable, the category willflash on the screen whenthere is any attempt to write to the boot sector or partition table of the hard disk drive. The system will halt and the following error message will appear in the mean time. You can run anti-virus program to locate the problem.

► Enabled Activate automatically when the system boots up causing a warning message to appear when any thing attempts to access the boot sector or hard disk partition table

▶ Disabled No warning message to appear when any thing attempts to access the boot sector or hard disk partition table (Default Value)

Floppy Drive A / Drive B

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

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

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

Primary Master, Slave / Secondary Master, Slave

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

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

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

▶CYLS. Number of cylinders
 ▶HEADS number of heads
 ▶PRECOMP write precomp
 ▶LANDZONE Landing zone
 ▶SECTORS number of sectors

Advanced BIOS Features

AMI NEW SETUP UTILITY-VISION 3.31a

| Advanced BIOS Features | Setup Help |
|-------------------------------------|--|
| Boot Device Priority | |
| 1st Floppy: 1.44MB 31/2 | |
| 2nd Disabled | |
| 3rd Disabled | |
| BIOS Flash Protection | Auto |
| Show Full Screen Logo | Enabled |
| Floppy Drive Seek | Disabled |
| BootUp Num-Lock | On |
| Password Check | Setup |
| S.M.A.R.T. for Hard Disks | Disabled |
| Interrupt Mode | APIC |
| ESC :Previous Menu ↑↓: Select Item | PU/PD/+/-/:Modify F8:Dual BIOS/Q-Flash |
| F5: Old Values F6: Fail-Safe Values | F7:Optimized Values F10:Save & Exit |

Figure 3: Advanced BIOS Features

₱ 1st / 2nd / 3rd Boot device

► Floppy:1.44MB 3^{1/2} Select your boot device priority by Floppy.

► BBS-0(Network):Realtek Boot Agent Select your boot device priority by Network.

▶ Disabled Disabled this function.

▶IDE-0:ST320420A Select your boot device priority by IDE Device.▶USB RMD-FDD:Apacer Handy Drive Select your boot device priority by USB Device.

Boot order depends on the devices you use, for example: Floppy, HDD, CD-ROM...

***BIOS Flash Protection**

➤ Auto Will be automatically detected by BIOS. (Default value)

▶ Enabled Enable BIOS Flash Protection. This will prevent BIOS Flash write after POST.

☞ Show Full Screen Logo

▶ Disabled Disabled show full screen logo.

▶ Enabled Enable show full screen logo(Default value)

Floppy Drive Seek

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

▶ Enabled BIOS searches for floppy disk drive to determine it is 40 or 80 tracks. Note

that BIOS can not tell from 720 K, 1.2 M or 1.44 M drive type as they are all

80tracks.

→ Disabled BIOS will not search for the type of floppy disk drive by track number. Note

that there will not be any warning message if the drive installed is 360 K.

(Default value)

Boot Up Num-Lock

→ On Key pad is number key s. (Default value)

→ Off Key pad is arrow keys.

Password Check

Please refer to the detail on P.51

➤ Always The user must entercorrect password in order to access the system and/or BIOS

Setup.

→ Setup The user must enter correct password in order to access BIOS setup utility.

(Default Value)

FHDD S.M.A.R.T Capability

▶ Enabled Enable HDD S.M.A.R.T. Capability.

→ Disabled Disable HDD S.M.A.R.T. Capability. (Default value)

☐ Interrupt Mode

► APIC Through IOAPIC generate more IRQ for system use. (Default value)

▶PIC Use AT stantard IRQ controller to generate IRQ.

When you already have IOAPIC enable system and want to upgrade the system please note, since running an IOAPIC enabled OS (like Windows NT, Windows 2000, Windows XP...) system with none IOAPIC HW support will cause the system to hang. Following are some situations users might run into: 1.An IOAPIC enabled OS and change the BIOS setting from IOAPIC to PIC, this will cause your system to hang.

Advanced Chipset Features

AMI NEW SETUP UTILITY-VISION 3.31a

| Advanced Chipset Features | Setup Help |
|------------------------------------|--|
| Front Side Bus Clock (MHz) | By Hardware |
| CPU Frequency Ratio | 8.0x (Safe) |
| RDRAM Bus Frequency | Auto |
| Vcore Voltage | Original |
| Over RIMM Voltage | Disabled |
| Over AGP Voltage | 1.5V |
| Memory ECC Mode | Disabled |
| Graphics Aperture Size | 64MB |
| ICH Delay ed Transaction | Enabled |
| DMA Collection Buffer | Enabled |
| ESC :Previous Menu ↑↓: Select Item | PU/PD/+/-/:Modify F8:Dual BIOS/Q-Flash |
| F5: Old Values F6:Fail-Safe Values | F7:Optimized Values F10:Save & Exit |

Figure 4: Adv anced Chipset Features

Front Side Bus Clock (MHz)

When set to "By Hardware", the FSB clock frequency will be set to 100MHz. You may also set FSB clock by BIOS. For power End-User use only.

| ▶ By Hardware | Set Front Side Bus Clock (MHz) to By Hardware. (Default Value) |
|-----------------|--|
| ▶ 100.00 | Set Front Side Bus Clock (MHz) to 100.00. |
| ▶ 103.00 | Set Front Side Bus Clock (MHz) to 103.00. |
| ▶ 105.00 | Set Front Side Bus Clock (MHz) to 105.00. |
| ▶ 108.00 | Set Front Side Bus Clock (MHz) to 108.00. |
| ▶ 110.00 | Set Front Side Bus Clock (MHz) to 110.00. |
| ▶ 112.00 | Set Front Side Bus Clock (MHz) to 112.00. |
| ▶ 115.00 | Set Front Side Bus Clock (MHz) to 115.00. |
| ▶ 118.00 | Set Front Side Bus Clock (MHz) to 118.00. |
| ▶ 120.00 | Set Front Side Bus Clock (MHz) to 120.00. |
| ▶ 122.00 | Set Front Side Bus Clock (MHz) to 122.00. |
| ▶ 125.00 | Set Front Side Bus Clock (MHz) to 125.00. |
| ▶ 130.00 | Set Front Side Bus Clock (MHz) to 130.00. |
| ▶ 133.33 | Set Front Side Bus Clock (MHz) to 133.33. |
| | |

| ▶ 133.66 | Set Front Side Bus Clock (MHz) to 133.66. |
|-----------------|---|
| ▶ 136.00 | Set Front Side Bus Clock (MHz) to 136.00. |
| ▶ 138.00 | Set Front Side Bus Clock (MHz) to 138.00. |
| ▶ 140.00 | Set Front Side Bus Clock (MHz) to 140.00. |
| ▶ 142.00 | Set Front Side Bus Clock (MHz) to 142.00. |
| ▶ 144.00 | Set Front Side Bus Clock (MHz) to 144.00. |
| ▶ 145.00 | Set Front Side Bus Clock (MHz) to 145.00. |
| ▶ 148.00 | Set Front Side Bus Clock (MHz) to 148.00. |
| ▶ 150.00 | Set Front Side Bus Clock (MHz) to 150.00. |
| ▶ 152.00 | Set Front Side Bus Clock (MHz) to 152.00. |
| → 154.00 | Set Front Side Bus Clock (MHz) to 154.00. |
| ▶ 156.00 | Set Front Side Bus Clock (MHz) to 156.00. |

© CPU Frequency Ratio

This setup option will automatically as sign by CPU detection.

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

12X~24X default: 16X

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

FRDRAM Bus Frequency

for FSB(Front Side Bus) frequency=100MHz,

➤ Auto Set RDRAM Bus Frequency automatically.

▶ PC800 Set RDRAM Bus Frequency to PC800.(Default Value)

▶ PC600 Set RDRAM Bus Frequency to PC600.

for FSB(Front Side Bus) frequency =133MHz,

➤ Auto Set RDRAM Bus Frequency automatically.

▶ PC800 Set RDRAM Bus Frequency to PC800.(Default Value)

▶ PC1066 Set RDRAM Bus Frequency to PC1066.

☞ Vcore Voltage

| → Original | Original Vcore Voltage. (Default Value) |
|-------------------|---|
| ▶ +0.025V | Original Vcore Voltage +0.025V. |
| ▶ +0.050V | Original Vcore Voltage +0.050V. |
| ▶ +0.075V | Original Vcore Voltage +0.075V. |
| ▶ +0.100V | Original Vcore Voltage +0.100V. |

© Over RIMM Voltage

Disabled Disable this function. (Default Value)► Enabled Enable Over RIMM Voltage function.

POver AGP Voltage

| ▶ 1.5V | Set Over AGP Voltage to 1.5V. (Default Value) |
|---------------|---|
| ▶ 1.6V | Set Over AGP Voltage to 1.6V. |
| → 1.7V | Set Over AGP Voltage to 1.7V. |
| ▶ 1.8V | Set Over AGP Voltage to 1.8V. |

☞ Memory ECC Mode

▶ Enabled Enable Memory Data Check ECC Mode.▶ Disabled Disable this function. (Default Value)

F Graphics Aperture

| ▶ 4 MB | Display Graphics Aperture Size is 4MB. |
|-----------------|---|
| № 8 MB | Display Graphics Aperture Size is 8MB. |
| ▶ 16 MB | Display Graphics Aperture Size is 16MB. |
| ≯ 32 MB | Display Graphics Aperture Size is 32MB. |
| ▶ 64 MB | Display Graphics Aperture Size is 64MB. (Default Value) |
| ▶ 128 MB | Display Graphics Aperture Size is 128MB. |
| ▶ 256 MB | Display Graphics Aperture Size is 256MB. |

FICH Delayed Transaction

▶ Enabled Enable PCI 2.1 features including release and delayed transaction for the

chipset.(Default Value)

▶ Disabled Disable this function.

PDMA Collection Buffer

► Enabled Enable DMA collection buffer for LPC I/F and PC/PCI DMA. (Default Value)

Disabled Disable this function.

Integrated Peripherals

AMI NEW SETUP UTILITY-VISION 3.31a

| Integrated Peripherals | JP UTILITY-VISION 3.31a | Setup Help |
|----------------------------|-------------------------|------------|
| OnBoard IDE | Both | |
| IDE1 Conductor Cable | Auto | |
| IDE2 Conductor Cable | Auto | |
| OnBoard FDC | Auto | |
| OnBoard Serial Port A | Auto | |
| OnBoard Serial Port B | Auto | |
| Serial Port B Mode | Normal | |
| IR Duplex Mode | Half Duplex | |
| OnBoard CIR Port | Disabled | |
| CIR IRQ Select | 10 | |
| OnBoard Parallel Port | Auto | |
| Parallel Port Mode | ECP | |
| EPP Version | N/A | |
| Parallel Port IRQ | Auto | |
| Parallel Port DMA | Auto | |
| OnBoard Midi Port | 330 | |
| Midi IRQ Select | 5 | |
| OnBoard Game Port | 200 | |
| Mouse PowerOn Function | Disabled | |
| Key board PowerOn Function | Disabled | |
| Specific Key for PowerOn | N/A | |
| OnBoard SC Interface | Enabled | |
| Smart Card IRQ Select | 10 | |
| OnBoard MS/SD Interface | Memory Stick | |
| MS/SD Card IRQ Select | 11 | |
| USB Controller | 6 USB Ports | |
| USB Legacy Support | Disabled | |
| AC97 Audio | Auto | |

| AC97 Modem | Auto |
|------------------------------------|--|
| Onboard USB2.0 Chip | Enabled |
| Onboard Lan Chip | Enabled |
| Onboard Sound Chip | Enabled |
| Onboard Promise Chip | ATA |
| ESC :Previous Menu ↑↓: Select Item | PU/PD/+/-/:Modify F8:Dual BIOS/Q-Flash |
| F5: Old Values F6:Fail-Safe Values | F7:Optimized Values F10:Save & Exit |

Figure 5: Integrated Peripherals

☞ OnBoard IDE

▶ Disabled Disable OnBoard IDE.

▶Both Both Primary & Secondary IDE channel will be enabled. (Default Value)

▶ Primary▶ SecondaryOnly Primary IDE channel is enabled.▶ SecondaryDescriptionIDE channel is enabled.

IDE1 Conductor Cable

➤ Auto Will be automatically detected by BIOS. (Default Value)

▶ ATA66/100 Set IDE1 Conductor Cable to ATA66/100 (Please make sure your IDE device and

cable is compatible with ATA66/100).

▶ ATA33 Set IDE1 Conductor Cable to ATA33 (Please make sure your IDE device and

cable is compatible with ATA33).

FIDE2 Conductor Cable

➤ Auto Will be automatically detected by BIOS. (Default Value)

→ ATA66/100 Set IDE2 Conductor Cable to ATA66/100 (Please make sure your IDE device and

cable is compatible with ATA66/100).

▶ ATA33 Set IDE2 Conductor Cable to ATA33 (Please make sure your IDE device and

cable is compatible with ATA33).

☞ OnBoar d FDC

▶ Disabled Disable this function.

▶ Enabled Enable on board floppy disk controller.

▶ Auto Set the floppy disk controller automatically. (Default Value)

TOnboard Serial Port A

→ Auto BIOS will automatically setup the port A address. (Default Value)

▶ 3F8/COM1 Enable onboard Serial port A and address is 3F8.
 ▶ 2F8/COM2 Enable onboard Serial port A and address is 2F8.
 ▶ 3E8/COM3 Enable onboard Serial port A and address is 3E8.
 ▶ 2E8/COM4 Enable onboard Serial port A and address is 2E8.

▶ Disabled Disable onboard Serial port A.

TOnboard Serial Port B

▶ Auto BIOS will automatically setup the port B address. (Default Value)

▶3F8/COM1 Enable onboard Serial port B and address is 3F8.
 ▶2F8/COM2 Enable onboard Serial port B and address is 2F8.
 ▶3E8/COM3 Enable onboard Serial port B and address is 3E8.
 ▶2E8/COM4 Enable onboard Serial port B and address is 2E8.

→ Disabled Disable onboard Serial port B.

Serial Port B Mode

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

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

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

FIR Dupl ex Mode

→ Half Duplex IR Function Duplex Half. (Default Value)

▶ Full Duplex IR Function Duplex Full.

☞ OnBoard CIR Port

▶ Disabled Disable this function. (Default Value)

▶ Enabled Enable Onboard CIR port.

© CIR IRQ Select

→ IRQ 3 / 4 / 9 / 10 (Default Value) / 11

TOnboard Parallel Port

▶ 378 Set On Board LPT port and address to 378.
 ▶ 278 Set On Board LPT port and address to 278.
 ▶ 3BC Set On Board LPT port and address to 3BC.
 ▶ Auto Set On Board LPT port Automatically. (Default Value)

▶ Disabled Disable onboard Serial port A.

Note: 3BC will not available if Parallel Port Mode=EPP.

Parallel Port Mode

▶EPP Using Parallel port as Enhanced Parallel Port.

▶ECP Using Parallel port as Extended Capabilities Port. (Default Value)

Normal Normal Operation.

Note: EPP will not available if Parallel Port Address=3BC.

© EPP Version

N/A Disable this function. (Default Value)
 ▶1.9 Compliant with EPP 1.9 version.
 ▶1.7 Compliant with EPP 1.7 version.

Display "N/A" (Read Only) if Parallel Port Mode is not set to "EPP". "1.9" is the default for EPP mode.

Parallel Port IRQ

▶7 Set Parallel Port IRQ to 7.▶5 Set Parallel Port IRQ to 5.

➤ Auto Set Parallel Port IRQ automatically. (Default Value)

Parallel Port DMA

▶3 Set Parallel Port DMA to 3.
 ▶1 Set Parallel Port DMA to 1.
 ▶0 Set Parallel Port DMA to 0.

➤ Auto Set Parallel Port DMA automatically. (Default Value)

Display "N/A" (Read Only) if Parallel Port Mode is not set to "ECP".

☞ OnBoard MIDI Port

→ 300 Set 300 for MIDI Port.
 → 310 Set 310 for MIDI Port .
 → 320 Set 320 for MIDI Port.

▶ 330 Set 330 for MIDI Port. (Default Value)

▶ Disabled Disabled this function.

← Midi Port IRQ Select

▶5 Set Midi Port IRQ to 5. (Default Value)

▶10 Set Midi Port IRQ to 10.▶7 Set Midi Port IRQ to 11.

© OnBoard Game Port

→ 200 Set 200 for Game Port. (Default Value)

▶ 208 Set 208 for Game Port.▶ Disabled Disabled this function.

Mouse Power On Function

▶ Disabled Disable this function. (Default Value)

▶ Right -button Double Click right-button to power on the system.▶ Left-button Double Click Left-button to power on the system.

F Keyboard PowerOn Function

▶ Disabled Disable this function. (Default Value)

▶ Specific key Set password key to power on by keyboard.▶ Power Key Set "Power key" to power on the system.

☞ Specific Key for PowerOn

→ N/A Disable this function. (Default Value)

▶ Password ← Input password (from 1 to 5 characters) and press Enter to set the Key

board Power On Password.

☞ OnBoard SC Interface

▶ Disabled Disable onboard SC Interface.

▶ Enabled Enabled onboard SC Interface. (Default Value)

☞ Smart Card IRQ Select

▶ IRQ 3 / 4 / 5 / 10 /11 (Default Value: 10)

☞ OnBoardMS/SD Interface

► Memory Stick Set MS/SD Interface to Memory Stick. (Default value)

▶ Secure Digital Set MS/SD Interface to Secure Digital.

→ Disabled Disabled MS/SD Interface.

MS/SD Card IRQ Select

→ IRQ 3 / 4 / 5 / 10 /11 (Default Value: 11)

USB Controller

▶ Disabled Disable this function.

▶2 USB Ports Set USB Controller to 2USB Ports.▶4 USB Ports Set USB Controller to 4USB Ports.

▶ 6 USB Ports Set USB Controller to 6USB Ports.(Default Value)

USB Legacy Support

▶ Enabled Enable USB Legacy Support.▶ Disabled Disable this function. (Default Value)

ℱAC97 Audio

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

▶ Disabled Disable this function.

☞ AC97 Modem

▶ Auto BIOS will search MC97 Codec (CNR Modem Card). If found, MC97

function will be enabled. If no MC97 Codec found, MC97 function will

be disabled. (Default Value)

▶ Disabled Disable this function.

TOnboard US B2.0 Chip

▶ Disabled Disable this function.

▶ Enabled Enable Onboard USB2.0 Chip function. (Default Value)

© Onboard Lan Chip

▶ Disabled Disable this function.

▶ Enabled Enable Onboard Lan Chip function. (Default Value)

TOnboard Sound Chip

▶ Disabled Disable this function.

▶ Enabled Enable Onboard Sound Chip function. (Default Value)

Tonboard Promise Chip

▶ Disabled Disable this function.

► ATA Enable Onboard ATA function. (Default Value)

▶ RAID Enable Onboard RAID function.

Power Management Feature

AMI NEW SETUP UTILITY-VISION 3.31a

| Power Management Feature | Setup Help |
|-------------------------------------|--|
| ACPI Sleep Type | S1/POS |
| USB Dev Wakeup From S3 | Disabled |
| PS/2 Dev Wakeup From S3 | Disabled |
| Power LED in S1 State | Blinking |
| Suspend Time Out (Minute) | Disabled |
| Throttle Slow Clock Ratio | 50.0% |
| Soft-Off by Power Button | Instant Off |
| System After AC Back | Off |
| ModemRingOn/WakeOnLan | Enabled |
| PME Event Wake Up | Enabled |
| Resume by RTC Alarm | Disabled |
| RTC Alarm Date | Ev ent Day |
| RTC Alarm Hour | 00 |
| RTC Alarm Minute | 00 |
| RTC Alarm Second | 00 |
| KB & PS/2 Mouse Access | Monitor |
| FDC/LPT/COM Ports Access | Monitor |
| Pri. Master IDE Access | Monitor |
| Pri. Slave IDE Access | Ignore |
| Sec. Master IDE Access | Monitor |
| Sec. Slave IDE Access | Ignore |
| PIRQ[A] IRQ Active | lgnore |
| PIRQ[B] IRQ Active | Ignore |
| PIRQ[C] IRQ Active | Ignore |
| PIRQ[D] IRQ Active | Ignore |
| ESC :Previous Menu ↑↓: Select Item | PU/PD/+/-/:Modify F8:Dual BIOS/Q-Flash |
| F5: Old Values F6: Fail-Safe Values | F7:Optimized Values F10:Save & Exit |

Figure 6: Power Management Feature

☞ ACPISle ep Type

⇒S1/POS Set ACPI Sleep Type to S1/POS (Power On Suspend). (Default value)

► S3/STR Set ACPI Sleep Type to S3/STR (Suspend To RAM).

USB Dev Wakeup From S3

▶ Enabled Enable USB Device Wakeup From S3.

▶ Disabled Disable USB Device Wakeup From S3. (Default value)

FPS/2 Dev Wak eup From S3

▶ Enabled Enable PS/2 Device Wakeup From S3.

▶ Disabled Disable PS/2 Device Wakeup From S3. (Default value)

♡ 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.

☞ Suspend Time Out

⇒ Disabled Disable the timer to enter suspend mode. (Default Value)

→ 1Minute ~ 60 Minute Set the timer to enter suspend mode.

Throttle Slow Clock Ratio

▶ 12.5%/25.0%/37.5%/50.0% (Default Value)/62.5%/75.0%/87.5%

Soft-off by Power Button

▶ Instant off The user press the power button once, he can turn off the system.

(Default Value)

→ Suspend The user press the power button once, then the system will enter

suspend mode.

System after AC Back

▶ Off When AC-power back to the system, the system will be in "Off" state.

Default Value)

▶On When AC-power back to the system, the system will be in "On" state.▶Last State When AC-power back to the system, the system will return to the Last

state before AC-power off.

☞ ModemRingOn/WakeOnLan

▶ Disabled Disable Modem Ring On / Wake On LAN function.

▶ Enabled The modem ring / LAN wake up will bring the system out of soft-off or

suspend state if this option is set "Enabled". (Default Value)

PME Event Wake up

→ Disabled Disable PME event wake up function.

▶ Enabled The PME event wake up will bring the system out of soft-off or suspend

state if this option is set "Enabled". (Default Value)

Resume by RTC Alarm

You can set "Resume by RTC 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 Resume by RTC Alarm is Enabled.

▶RTC Alarm Date:
Every Day, 1~31

▶RTC Alarm Hour: 0~23▶RTC Alarm Minute: 0~59▶RTC Alarm Second: 0~59

FKB & PS/2 Mouse Access

► Monitor Monitor Key board & PS/2 Mouse Access. (Default Value)

▶ Ignore Ignore Key board & PS/2 Mouse Access.

FDC/LPT/COM Ports Access

► Monitor Monitor FDC/LPT/COM Ports Access. (Default Value)

▶ Ignore Ignore FDC/LPT/COM Ports Access.

Pri. Master IDE Access

➤ Monitor Primary Master IDE Access. (Default Value)

Pri. slave IDEAccess

➤ Monitor Monitor Primary slaveIDE Access.

▶ Ignore Primary slave IDE Access. (Default Value)

☞ Sec. Master IDE Access

→ Monitor Secondary Master IDE Access. (Default Value)

▶ Ignore Secondary Master IDE Access.

☞ Sec. slave IDE Access

➤ Monitor Monitor Secondary slave IDE Access.

▶ Ignore Secondary slave IDE Access.(Default Value)

FPIRQ[A] IRQ Active

Monitor Monitor PIRQ[A] IRQ Active.

▶ Ignore PIRQ[A] IRQ Active. (Default Value)

PIRQ[B] IRQ Active

Monitor Monitor PIRQ[B] IRQ Active.

▶ Ignore PIRQ[B] IRQ Active. (Default Value)

PIRQ[C] IRQ Active

Monitor PIRQ[C] IRQ Activ e.

▶ Ignore PIRQ[C] IRQ Active. (Default Value)

FPIRQ[D] IRQ Active

➤ Monitor PIRQ[D] IRQ Active.

▶ Ignore PIRQ[D] IRQ Active. (Default Value)

PNP/PCI Configurations

AMI NEW SETUP UTILITY-VISION 3.31a

| PNP/PCI Configurations | Setup Help | |
|------------------------------------|--|--|
| VGA Boot From | AGP | |
| PCI Slot 1/5 IRQ Priority | Auto | |
| PCI Slot 2/6 IRQ Priority | Auto | |
| PCI Slot 3 IRQ Priority | Auto | |
| PCI Slot 4 IRQ Priority | Auto | |
| IRQ3 | PCI/PnP | |
| IRQ4 | PCI/PnP | |
| IRQ5 | PCI/PnP | |
| IRQ7 | PCI/PnP | |
| IRQ9 | PCI/PnP | |
| IRQ10 | PCI/PnP | |
| IRQ11 | PCI/PnP | |
| IRQ14 | PCI/PnP | |
| IRQ15 | PCI/PnP | |
| ESC :Previous Menu ↑↓: Select Item | PU/PD/+/-/:Modify F8:Dual BIOS/Q-Flash | |
| F5: Old Values F6:Fail-Safe Values | F7:Optimized Values F10:Save & Exit | |

Figure 7: PNP/PCI Configurations

☞ VGA Boot From

► AGP Set VGA Boot from AGP VGA Card. (Default Value)

▶PCI Set VGA Boot from PCI VGA Card.

FPCI Slot1/5, 2/6, 3, 4 IRQ Priority

▶ Auto The system will reserved a free IRQ for PCI slot 1/5, 2/6, 3, 4 device. (Default Value) **→**3 The system will reserved IRQ3 for PCI slot 1/5, 2/6, 3, 4 device if no legacy ISA device using IRQ3. The system will reserved IRQ for PCI slot 1/5, 2/6, 3, 4 device if no legacy ISA **>>** 4 device using IRQ4. The system will reserved IRQ5 for PCI slot 1/5, 2/6, 3, 4 $\,$ device if no legacy ISA **≯**5 device using IRQ5. **▶** 7 The system will reserved IRQ7 for PCI slot 1/5, 2/6, 3, 4 device if no legacy ISA device using IRQ7. ₩9 The system will reserved IRQ9 for PCI slot 1/5, 2/6, 3, 4 device if no legacy ISA device using IRQ9. The system will reserved IRQ10 for PCI slot 1/5, 2/6, 3, 4 device if no legacy **▶**10 ISA device using IRQ10. The system will reserved IRQ11 for PCI slot 1/5, 2/6, 3, 4 device if no legacy **₩**11 ISA device using IRQ11.

FIRQ (3,4,5,7,9,10,11,14,15)

▶ISA The resource reserved for Legacy ISA device.▶PCI / PnP The resource can be assigned to PCI/ PnP device.

PC Health Status

AMI NEW SETUP UTILITY-VISION 3.31a

| PC Health Status | | Setup Help |
|-----------------------------------|-------------------------|---------------------|
| CPU Temperature Alarm | Disabled | |
| CPU Fan Fail Alarm | No | |
| Power Fan Fail Alarm | No | |
| System Fan Fail Alarm | No | |
| Reset Case Open Status | No | |
| Case Status | Opened | |
| CPU Temperature | 35°C/ 95°F | |
| System Temperature | 33℃/ 91°F | |
| CPU Fan Speed | 5273 RPM | |
| System Fan Speed | 0 RPM | |
| Power Fan Speed | 0 RPM | |
| CPU VID | 1.700 V | |
| Vcore | +1.632V | |
| Vcc18 | +1.840V | |
| Vio | +3.344V | |
| +5.000V | +5.080V | |
| +12.000V | +11.840V | |
| Battery | +3.020V | |
| +5V SB | +4.972V | |
| ESC :Previous Menu ↑↓: Select Ite | m PU/PD/+/-/:Modify F | 8:Dual BIOS/Q-Flash |
| F5: Old Values F6:Fail-Safe Valu | ues F7:Optimized Values | F10:Save & Exit |

Figure 8: PC Health Status

© CPU Temperature Alarm

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

Fan Fail Alarm

CPU / Power / System

No Fan Fail Alarm Function Disable. (Default Value)

Yes Fan Fail Alarm Function Enable.

▽ 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.

© CPU Temperature

▶ Detect CPU Temp. automatically.

☞ System Temperature

▶ Detect System Temp. automatically.

© CPU Fan / System Fan / Power Fan Speed (RPM)

▶ Detect Fan speed status automatically.

© CPU VID / Vcore / Vcc18 / Vio /+12 / +5V / Battery / +5VSB

Set Supervisor / User Password

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

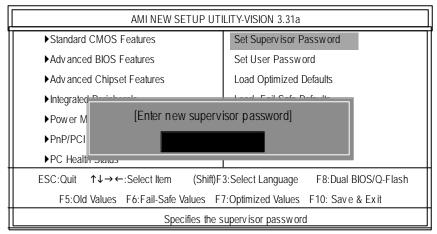


Figure 9: Password Setting

Type the password, up to 8 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 programallows you to specify two separate passwords: a SUPERVISOR PASS WORD and a USER PASSWORD. When disabled, anyone may access all BIOS Setup program function. When enabled, the Supervisor password is required for entering the BIOS Setup program and having full configuration fields, the User password is required to access only basic items.

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

Load Optimized Defaults

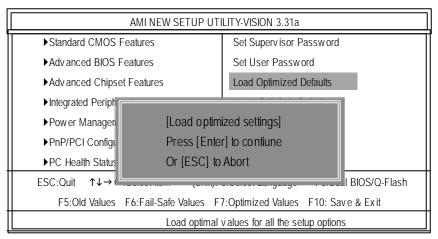


Figure 10: Load Optimized Defaults

Toad Optimized Defaults

Optimized defaults contain the most appropriate system parameter values to configure the system to achieve maximum performance.

Load Fail-Safe Defaults

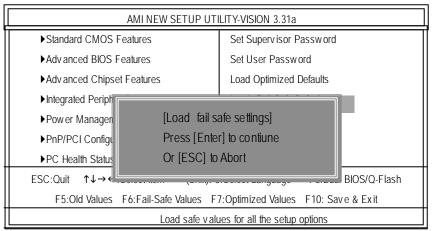


Figure 11: Load Fail-Safe Defaults

☞ Load Fail-Safe Defaults

Fail-Safe defaults contain the most appropriate system parameter values of to configure the system to achieve maximum stability.

Save & Exit Setup

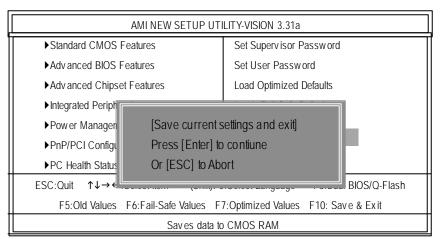


Figure 12: Save & Exit Setup

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

Exit Without Saving

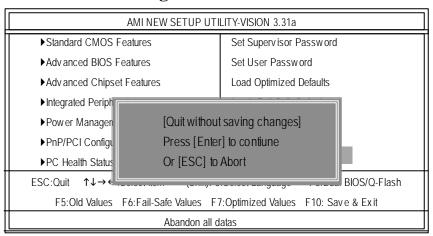


Figure 13: Exit Without Saving

Type "Enter" will quit the Setup Utility without saving to RTC CMOS. Type "ESC" will return to Setup Utility.

| GA-8IHXP Motherboard |
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Chapter 4 Technical Reference **Block Diagram** Pentium 4 CPUCLK+/- (100/133MHz) Socket 478 CPU AGP 4X System Bus **AGPCLK** 100/133MHz (66MHz) **RDRAM** 300/400/533MHz Intel MCH66 (66MHz) 82850E 6 PCI MCHCLK+/- (100MHz) RJ45 66 MHz - 33 MHz - 14.318 MHz 48 MHz RTL8100BL SST49LF004A Intel Game Port ICH 4 LPC BUS Floppy Winbond LPT Port W83627HF Creative CT5880 * PS/2 **PCICLK** 48 MHz KB/Mouse (33MHz) 6 USB ATA 33 MHz Ports 33/66/100 Game Smart I/O COM USB2.0 AC97 IDE Channels Port W83L518D Ports CODEC CNR SD— Sc— Promise PDC20276 LINE-IN LINE-OUT T ATA133/RAID 4 USB IDE Channels Ports ➤ MCH66 (66MHz) PCICLK (33MHz) USBCLK (48MHz) USBCLK (48MHz) "* "For PCB Ver.: 2.1 Only. 14.318 MHz ➤ CPUCLK+/- (100M Hz) ICS ➤ AGPCLK (66MHz) 9250AF-37 MCHCLK+/- (100MHz) ICH3V66 (66MHz) " ** " For PCB Ver.: 3.0 Only.

Dual BIOS / Q-Flash Introduction

A. What is Dual BIOS Technology?

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

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

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

| AMI NEW SETUP UTILITY-VISION 3.31a | | | | |
|--|-------------------------|--|--|--|
| ▶Standard CMOS Features | Set Supervisor Password | | | |
| ►Advanced BIOS Features | Set User Password | | | |
| ►Advanced Chipset Features | Load Optimized Defaults | | | |
| ►Integrated Peripherals | Load Fail Safe Defaults | | | |
| ▶Power Management Features | Save & Exit Setup | | | |
| ▶PnP/PCI Configurations | Exit Without Saving | | | |
| ▶PC Health Status | | | | |
| ESC:Quit ↑↓→←:Select Item (Shift)F3:Select Language F8:Dual BIOS/Q-Flash | | | | |
| F5:Old Values F6:Fail-Safe Values F7:Optimized Values F10: Save & Exit | | | | |
| Set Time, Date, Hard Disk Type | | | | |

b. Dual BIOS Utility

| Dual BIOS Utility | | | | |
|------------------------------|----------|----------|----|---------------|
| Boot FromMain BIOS | | | | |
| Main ROM TypeST M50FW040 | | | | |
| Backup ROM TypeST M50FW040 | | | | |
| Wide Range Pr | otection | Disable | | |
| Вос | t From | MainBIOS | | |
| Auto Re | covery | Enable | | |
| Halt Oi | ı Error | Disable | | |
| Copy Main ROM Data to Backup | | | | |
| Load Default Settings | | | | |
| Save Settings to CMOS | | | | |
| Q-Flash Utility | | | | |
| Load Main BIOS From Floppy | | | | |
| Load Backup BIOS From Floppy | | | | |
| Save Main BIOS to Floppy | | | | |
| Save Backup BIOS to Floppy | | | | |
| PgDn/PgUp:Modify ↑ | ↓:Move | ESC:Res | et | F10:Power Off |

c. Dual BIOS Item explanation:

BIOS will auto detect: Boot From : Main BIOS

Main ROM Type: ST M50FW040 Backup ROM Type: ST M50FW040

Wide Range Protection: Disable(Default), Enable

Status 1:

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

Status 2:

If the ROM BIOS on peripherals cards(ex. SCSI Cards, LAN Cards,..) emits signals to request restart of the system after the user make any alteration on it, the bootup BIOS will notbe changed to the Backup BIOS.

Boot From: Main BIOS (Default), Backup BIOS

Status 1:

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

Auto Recovery: Enabled(Default), Disabled

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

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

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

Halt On Error: Disable(Default), Enable

If the BIOS occurs a checksum error or the Main BIOS occurs a WIDE RANGE PROTECTION error and Halt On BIOS Defects set to Enable, the PC will show mes sages on the bootscreen, and the system will pause and wait for the user's instruction. If Auto Recovery: Disable, it will show <or the other key to continue.>

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

Copy Main ROM Data to Backup

Backupmessage:

Are you sure to copy BIOS?

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

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

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

C. 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 anyOS.

D. How to use Q-Flash?

Load Main (Backup) BIOS From Floppy

- ${\mathscr I}$ In the A:drive, insert the "BIOS" diskette, then Press Enter to Run.

| Tot Example. 5100 File flame. 7 v tot 1.20 | | | | | |
|--|-----------------|---------------|---------------|--|--|
| Dual BIOS Utility | | | | | |
| Boot FromMain BIOS | | | | | |
| Main ROM TypeSST 39SF020 | | | | | |
| Backup ROM TypeSST 39SF020 | | | | | |
| 3 file(s) found | | | | | |
| COMMAN | D.COM | 92.8K | | | |
| FLASH848 | .EXE | 472.16K | | | |
| 7VRXP.E8 | | 256K | | | |
| Total size: 1 | .39M | Freesize:316k | | | |
| F5:Refresh | | DEL:Delete | | | |
| Q-Flash Utility | | | | | |
| Load Main BIOS From Floppy | | | | | |
| Load Backup BIOS From Floppy | | | | | |
| Save Main BIOS to Floppy | | | | | |
| Save Backup BIOS to Floppy | | | | | |
| PgDn/PgUp:Modify | ↑ ↓:Move | ESC:Reset | F10:Power Off | | |

Reading BIOS file from Floppy

Don't Turn Off Power or RESET System...

CHECKSUM=78B7

Are you sure to update BIOS?

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

!!COPY BIOS Complete-Pass!!

Please press any key to continue

Save Main (Backup) BIOS to Floppy

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

| Dual BIOS Utility | | | | | |
|------------------------------|--|---------------|--|--|--|
| Boot FromMain BIOS | | | | | |
| Main ROM TypeSST 39SF020 | | | | | |
| Backup ROM TypeSST 39SF020 | | | | | |
| TYPE FILE NAME | | | | | |
| | File name: | | | | |
| | 3 file(s) found | | | | |
| | COMMAND.COM | 92.8K | | | |
| | FLASH848.EXE | 472.16K | | | |
| | 7VRXP.E8 | 256K | | | |
| | Total size: 1.39M | Freesize:316k | | | |
| | F5:Refresh | DEL:Delete | | | |
| Load Backup BIOS From Floppy | | | | | |
| Save Main BIOS to Floppy | | | | | |
| Save Backup BIOS to Floppy | | | | | |
| PgDn/Pg | PgDn/PgUp:Modify ↑↓:Move ESC:Reset F10:Power Off | | | | |

Saving BIOS to floppy

Don't Turn Off Power or RESET System...



DualBIOS™ Technology FAQ

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

What's DualBIOS™?

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

I. Q: What is DualBIOS™ technology?

Answer:

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

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

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

- 1. New computer viruses are being found that attack and destroy the system BIOS. They may corrupt your BIOS code, causing your PC to be unstable or even not boot normally.
- 2. BIOS data will be corrupted if a power loss/surge occurs, or if a user resets the system, or if the power button is pressed during the process of performing a system BIOS upgrade.
- If a user mistakenly updates their mainboard with the incorrect BIOS file, then the system
 maynot be able to boot correctly. This may cause the PC system hang in operation or
 duringboot.
- 4. A flash ROM's life cycle is limited according to electronic characteristics. The modern PC utilizes the Plug and Play BIOS, and is updated regularly. If a user changes peripherals often, there is a slight chance of damage to the flash ROM.
 With Giga-Byte Technology's patented DualBiOS™ technology you can reduce the possibility of hangs during system boot up, and/or loss BIOS data due to above reasons. This new technology will eliminate valuable system down time and costlyrepair bills cause by BIOS failures.

III. Q: How does DualBIOS™ technology work? Answer:

- DualBIOS™ technology provides a wide range of protection during the boot up procedure. It
 protects your BIOS during system POST, ESCD update, and even all the way to PNP
 detection/assignment.
- 2. DualBIOS™ provides automatic recovery for the BIOS. When the first BIOS used during bootup does not complete or if a BIOS checksum error occurs, boot-up is still possible. In the DualBIOS™ utility, the "Auto Recovery" option will guarantee that if either the main BIOS or backup BIOS is corrupted, the DualBIOS™ technology will use the good BIOS and correct the wrong BIOS automatically.
- 3. DualBIOS[™] provides manual recovery for the BIOS. DualBIOS[™] technology contains a built-in flash utility, which can flash your system BIOS from backup to main and/or visa versa. There is no need for an OS-dependent flash utility program.
- 4. DualBIOS™ contains a one-way flash utility. The built-in one-way flash utility will ensure that the corruptBIOS is not mistaken as the good BIOS during recovery and that the correct BIOS (main vs. backup) will be flashed. This will prevent the good BIOS from being flashed.

IV. Q: Who Needs DualBIOS™ technology?

Answer:

- Every user should have DualBIOS[™] technology due to the advancement of computer viruses.
 - Everyday, there are new BIOS-type viruses discovered that will destroy your system BIOS. Most commercial products on the market do not have solutions to guard against this type of virus intrusion. The DualBIOS technology will provide a state-of-the-art solution to protect your PC:
- Case I.) Vicious computer viruses may wipe out your entire system BIOS. With a conventional single system BIOS PC, the PC will not be functional until it is sent for repairs.
- Case II.) If the "Auto Recovery" option is enabled in the DualBIOS™ utility, and if a virus corrupts your system BIOS, the backup BIOS will automatically reboot the system and correct the main BIOS.
- Case III.) A user may override booting from the main system BIOS. The DualBIOS™ utility maybe entered to manually change the boot sequence to boot from the backup BIOS.

- 2. During or after a BIOS upgrade, if DualBIOS™ detects that the main BIOS is corrupt, the backup BIOS will take over the boot-up process automatically. Moreover, it will verify the main and backup BIOS checksums when booting-up. DualBIOS™ technologyexamines the checksum of the main and backup BIOS while the system is powered on to guarantee your BIOS operates properly.
- 3. Power Users will have the advantage of having two BIOS versions on their mainboard. The benefit is being able to select either version BIOS to suit the performance system needs.
- 4. Flexibility for high-end desktop PCs and workstation/servers. In the DualBIOS™ utility, the option can be set, 'Halt On When BIOS Defects," to be enabled to halt your system with awarning message that the main BIOS has been corrupted. Most workstation/servers require constantoperation to guarantee services have not been interrupted. In this situation, the 'Halt On When BIOS Defects "message may be disabled to avoid system pauses during normal booting. Another advantage you gain from Giga-Byte's DualBIOS™ technology is the ability to upgrade from dual 2 Mbit BIOS to dual 4 Mbit BIOS in the future if extra BIOS storage is need.

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

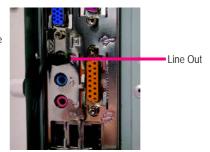
The installation of Windows 98SE/2K/ME/XP is very simple. Please follow next step to install the function!

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"



STEP 2:

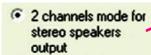
After installation of the audio driver, you'll find an icon on the taskbar's status area. Click the audio icon "Sound Effect" from the windows tray at the bottom of the screen.





STEP 3:

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

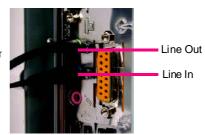




4 Channel Analog Audio Output Mode

STEP1:

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



STEP 2:

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

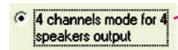




STEP 3:

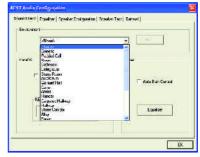
Select "Speaker Configuration", and choose the "4 channels for 4 speakers out put".

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





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".



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.

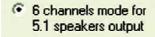




STEP 3:

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

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





Advanced 6 Channel Analog Audio Output Mode (using SURROUND-KIT):

"SURROUND-KIT" is an optional device, which 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.



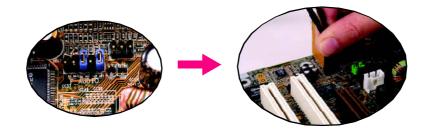
STEP1:

the M/B.

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



STEP 2 : Connect the "SURROUND-KIT" to SUR_CEN on



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)

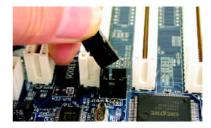
A "S/PDIF output" device is available on the motherboard. Cable with rear bracket is provided and could link to the "S/PDIF output" connector (As picture.) For the further linkage to decoder, rear bracket provides coaxial cable and Fiber connectingport.



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.



@ BIOS Introduction

Gigabyte announces @ BIOS Windows BIOS live update utility



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

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

Certainly, you wonder why motherboard vendors could not just do something right to save your time and effort and save you from the lousy BIOS updating work? Here it comes! Now Gigabyte announces @BIOS— the first Windows BIOS live update utility. This is a smart BIOS update software. It could help you to download the BIOS from internet and update it. Not like the other BIOS update software, 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 producterects a milestone in mainboard industries.

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

Easy Tune[™] 4 Introduction

Gigabyte announces *EasyTune™ 4*Windows based Overclocking utility

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



Overclock" mightbe one of the most common issues in computer field. But have many users ever tried it? The answer is probably "no". Because "Overclock" is thought to be very difficult and includes a lot of technical know-how, sometimes "Overclock" is even considered as special skills found only in some enthusiasts. But as to the experts in "Overclock", what's the truth? They may spend quite a lot of time and money to study, try and use many different hard-

ware or BIOS tools to do "Overclock". And even with these technologies, they still learn that it's quite a risk because the safety and stability of an "Overclock" system is unknown. Now everything is different because of a Windows based overclocking utility "EasyTune 4" -- announced by Gigabyte. This windows based utility has totally changed the gaming rule of "Overclock". This is the first windows based overclocking utility is suitable for both normal and power users. Users can choose either "Easy Mode" or "Advanced Mode" for overclocking at their convenience. For users who choose "Easy Mode", they 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" itin next time. Obviously, Gigabyte EasyTune 4 has already turned the "Overclock" technology toward to a newer generation. This wonderful software is now free bundled in Gigabyte motherboard attached in driver CD. Users may make a test drive of "EasyTune 4" to find out more amazing features by themselves.

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

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

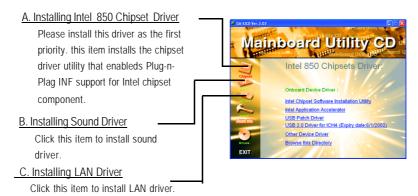
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| GA-8IHXP Motherboard |
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Chapter 5 Appendix

Picture below are shown in Windows XP (IUCD driver version 2.11)

Insert the driver CD-title that came with your motherboard into your CD-ROM driver, 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.



Appendix A: Intel 850 Chipset Driver Installation

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



 $In order \ to \ in stall \ the \ driver \ successfully, please \ refer \ to \ the \ following \ in stall \ ation \ procedures.$



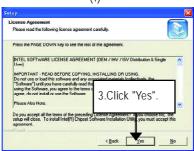


A-1. Intel Chipset Software Installation Utility

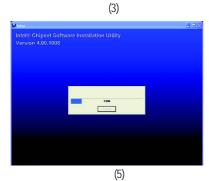
Insert the driver CD-title that came with your motherboard into your CD-ROM driver, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

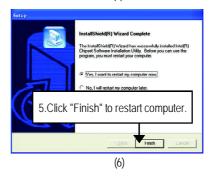












A-2. Intel Application Accelerator

Insert the driver CD-title that came with your motherboard into your CD-ROM driver, 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.



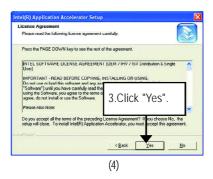


Intel(2) Application Accelerator Sotup

Welcome to the InstallShield Wizard(R) for Intel(R) Application Accelerator

The InstallShield(R) Wizard rill intel(R) Application Accelerator en your computer. To continue, click Next.

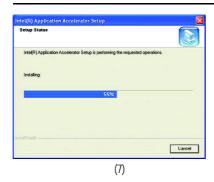
2. Click "Next".







GA-8IHXP Motherboard

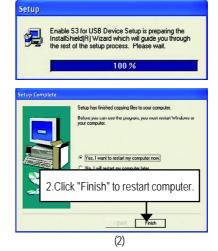




A-3. USB Patch Driver

Insert the driver CD-title that came with your motherboard into your CD-ROM driver, 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.





A-4: USB 2.0 Driver for ICH4 (Expiry date: 6/1/2002)

USB2.0 Driver Installation for ICH4 is the same with "NEC 2.0 Host Controller Driver", please go to the gigabyte's website (http://www.gigabyte.com.tw) and download the latest ICH4 USB2.0 driver version after expiry date (6/1/2002).

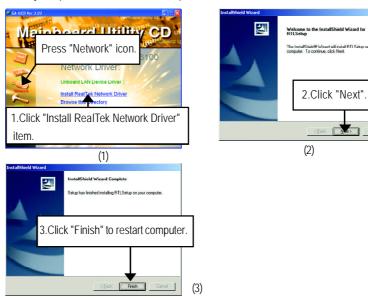
Appendix B: RealTek AC'97 Audio Driver

Insert the driver CD-title that came with your motherboard into your CD-ROM driver, 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.



Appendix C: RealTek 8139/8130/8100 Network Driver

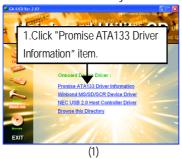
Insert the driver CD-title that came with your motherboard into your CD-ROM driver, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.



Appendix D: Other Device Driver

D-1. Promise ATA133 Driver information

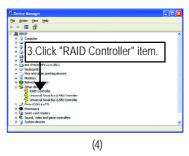
(This manual assumes that your CD-ROM device drive letter is D:).





If you want to install ATA133 Driver, go to "Control Panel-->System-->Device Manager" and install driver by manually. Please refer to the following precedure:



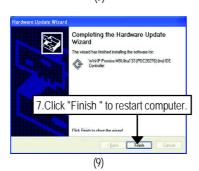












D-2. Winbond MS/SD/SCR Device Driver

Insert the driver CD-title that came with your motherboard into your CD-ROM driver, 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.









D-3.NEC USB 2.0 Host Controller Driver

(This manual assumes that your CD-ROM device drive letter is D:).





If you want to install USB 2.0 Driver, go to "Control Panel-->System-->Device Manager" and install driver by manually. Please refer to the following precedure:





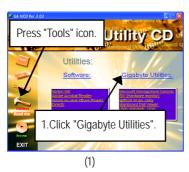




If there is any problem occurred during USB2.0 device installing, using or upgrading. Please visit Microsoft or GIGABYTE website for downloading the latest drivers.

Appendix E: EasyTune 4 Utilities Installation

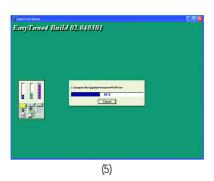
Insert the driver CD-title that came with your motherboard into your CD-ROM driver, the driver CD-title will auto start and show the installation guide. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.













Appendix F: Face-Wizard Utilities Installation

What is Face-Wizard™?

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

How does it work?

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

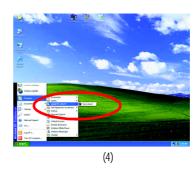
What's benefit for using Face-Wizard $^{\text{TM}}$?

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

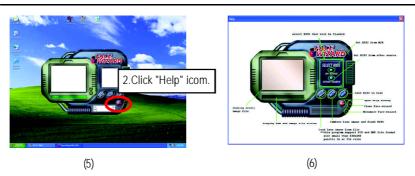








GA-8IHXP Motherboard



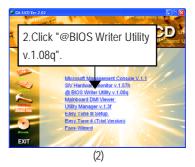
Appendix G: BIOS Flash Procedure

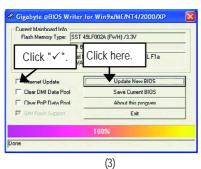
BIOS update procedure:

Method 1:

If your OS is Win9X, we recommend that you used Gigabyte @BIOS™ Program to flash BIOS.







Methods and steps:

- I. Update BIOS through Internet
- a. Click "Internet Update" icon
- b. Click "Update New BIOS" icon
- c. Select @BIOS™ sever ("Gigabyte @BIOSTM sever 1 in Taiwan" and "Gigabyte @BIOS™ sever 2 in Taiwan" are available for now, the others will be completedsoon)
- 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: 8IHXP.F5a).
- 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

Method 2:

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

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

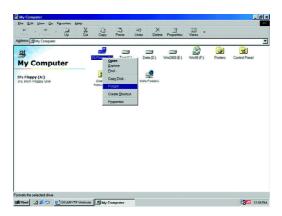
STEP 1:

(1) Please make sure your system has installed the extraction utility such as winzip or pkunzip. Firstly you have to install the extraction utility such as winzip or pkunzip for unzip the files. Both of these utilities are available on many shareware download pages like http://www.shareware.cnet.com

STEP 2: Make a DOS boot diskette. (See example: Windows 98 O.S.)

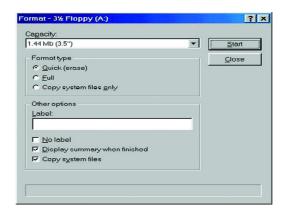
Beware: Windows ME/2000 are not allowed to make a DOS boot diskette.

(1) With an available floppy disk in the floppy drive. Please leave the diskette "UN-write protected" type. Double click the "My Computer" icon from Desktop, then click "3.5 diskette (A)" and right click to select "Format (M)"

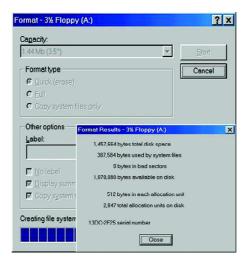


(2) Select the "Quick (erase)" for Format Type, and pick both "Display summary when finished" and "Copy system files", after that press "Start". That will format the floppy and transfer the needed system files to it.

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



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

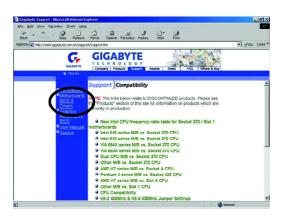


STEP 3: Download BIOS and BIOS utility program.

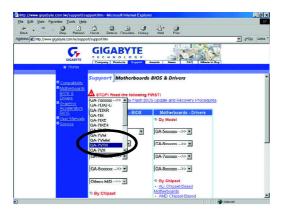
(1) Please go to Gigabyte website http://www.gigabyte.com.tw/index.html, and click "Support".



(2) From Support zone, click the "Motherboards BIOS & Drivers".



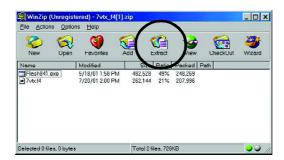
(3) We use GA-7VTX motherboard as example. Please select GA-7VTX by Model or Chipset optional menu to obtain BIOS flash files.



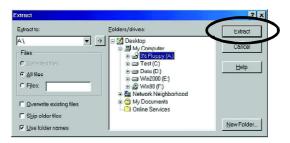
(4) Select an appropriate BIOS version (For example: F4), and click to download the file. It will pop up a file download screen, then select the "Open this file from its current location" and press "OK".



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



(6) Please extract the download files into the clean bootable floppy disk A mentioned in STEP 2, and press "Extract".



STEP 4: Make sure the system will boot from the floppy disk.

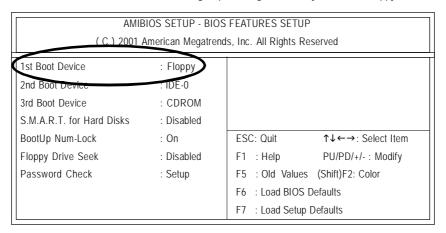
(1) Insert the floppy disk (contains bootable program and unzip file) into the floppy drive A. Then, restart the system. The system will boot from the floppy disk. Please press key to enter BIOS setup main menu when system is boot up.



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

| AMIBIOS SIMPLE SETUP UTILITY - VERSION 1.24b | | | | |
|--|-------------------------------|--|--|--|
| (C) 1999 American Megatrends, Inc. All Rights Reserved | | | | |
| STANDARD CMOS SETUP | INTEGRATED PERIPHERALS | | | |
| BIOS FEATURES SETUP | HARDWARE MONITOR & MISC SETUP | | | |
| CHIPSET FEATURES SETUP | SUPERVISOR PASSWORD | | | |
| POWER MANAGEMENT SETUP | USER PASSWORD | | | |
| PNP / PCI CONFIGURATION | IDE HDD AUTO DETECTION | | | |
| LOAD BIOS DEFAULTS | SAVE & EXIT SETUP | | | |
| LOAD SETUP DEFAULTS | EXIT WITHOUT SAVING | | | |
| ESC: Quit ↑↓←→ : Select Item (Shift)F2 : Change Color F5: Old Values | | | | |
| F6: Load BIOS Defaults F7: Load Setup Defaults F10:Save & Exit | | | | |
| | | | | |
| Time, Date , Hard Disk Type | | | | |

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



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

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

STEP 5: BIOS flashing.

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

Starting Windows 98...

Microsoft(R) Windows98

© Copyright Microsoft Corp 1981-1999

A:\> dir/w

Volume in drive A has no label

Volume Serial Number is 16EB-353D

Directory of A:\

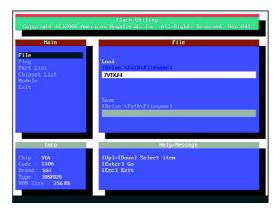
COMMAND.COM 7VTX.F4 FLASH841.EXE

3 file(s) 838,954 bytes

0 dir(s) 324,608 bytes free

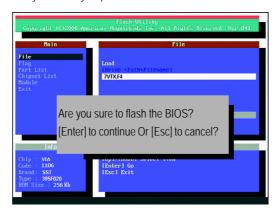
A:\> Flash841 7VTX.F4

(2) Now screen appears the following Flash Utility main menu. Press "Enter", the highlighted item will locate on the model name of the right-upper screen. Right after that, press "Enter" to start BIOS Flash Utility.

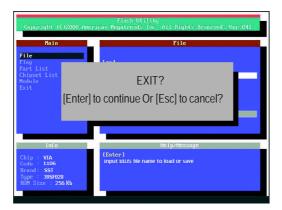


(3) It will pop up a screen and asks "Are you sure to flash the BIOS?" Press [Enter] to continue the procedure, or press [ESC] to quit.

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



(4) The BIOS flash completed. Please press [ESC] to exit Flash Utility.



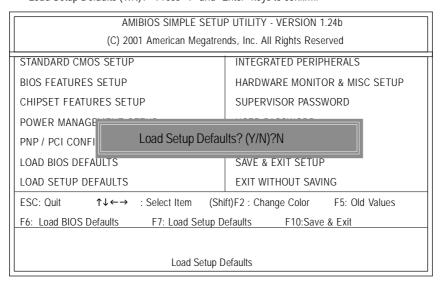
STEP 6: Load BIOS defaults.

Normally the system redetects all devices after BIOS has been upgraded. Therefore, we highly recommend reloading the BIOS defaults after BIOS has been upgraded. This important step resets everything after the flash.

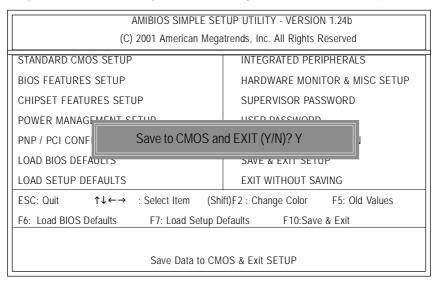
(1) Take out the floppy diskette from floppy drive, and then restart the system. The boot up screen will indicate your motherboard model and current BIOS version.



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



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



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

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Appendix H: Acronyms Acronyms Meaning ACPI Advanced Configuration and Power Interface Advanced Power Management APMAGP 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 I/O Input / Output **IOAPIC** Input Output Advanced Programmable Input Controller

to be continued.....

Industry Standard Architecture

Local Area Network

Appendix

| Acronyms | Meaning |
|----------|--------------------------------------|
| 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 |
| SMP | Symmetric Multi-Processing |
| SMI | System Management Interrupt |
| USB | Universal Serial Bus |
| VID | Voltage ID |

GA-8IHXP Motherboard

| Customer/Country: | Company: | | Phone No.: |
|------------------------|---------------|-------|-----------------|
| Contact Person: | E-mail Add. : | | |
| | | | |
| Model name/Lot Number: | | | PCB revision: |
| BIOS version: | O.S./A.S.: | | . |
| | - | | |
| Hardware Mfs. | Model name | Size: | Driver/Utility: |
| Configuration | | | |
| CPU | | | |
| Memory | | | |
| Brand | | | |
| Video Card | | | |
| Audio Card | | | |
| HDD | | | |
| CD-ROM / | | | |
| DVD-ROM | | | |
| Modem | | | |
| Vetwork | | | |
| AMR / CNR | | | |
| Keyboard | | | |
| Mouse | | | |
| Power supply | | | |
| Other Device | | | |
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