GA-8IEXW

P4 Titan 533 Motherboard

USER'S MANUAL

Pentium® 4 Processor Motherboard

Rev. 1001

12ME-8IEXW-1001

Table of Content

Item Checklist

- ☑ The GA-8IEXW motherboard
- ☑ IDE (ATA100) cable x 1 / Floppy cable x 1
- ☑ IDE (ATA133)cable x 2
- ☑ CD for motherboard driver & utility
- ☑ GA-8IEXW user's manual
- ☑ I/O Shield

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.
3. Hold components by the edges and try not touch the IC chips, leads or connectors, or other components.
4. Place components on a grounded antistatic pad or on the bag that came with the components whenever the components are separated from the system.
5. Ensure that the ATX power supply is switched off before you plug in or remove the ATX power connector on the motherboard.

Installing the motherboard to the chassis...

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

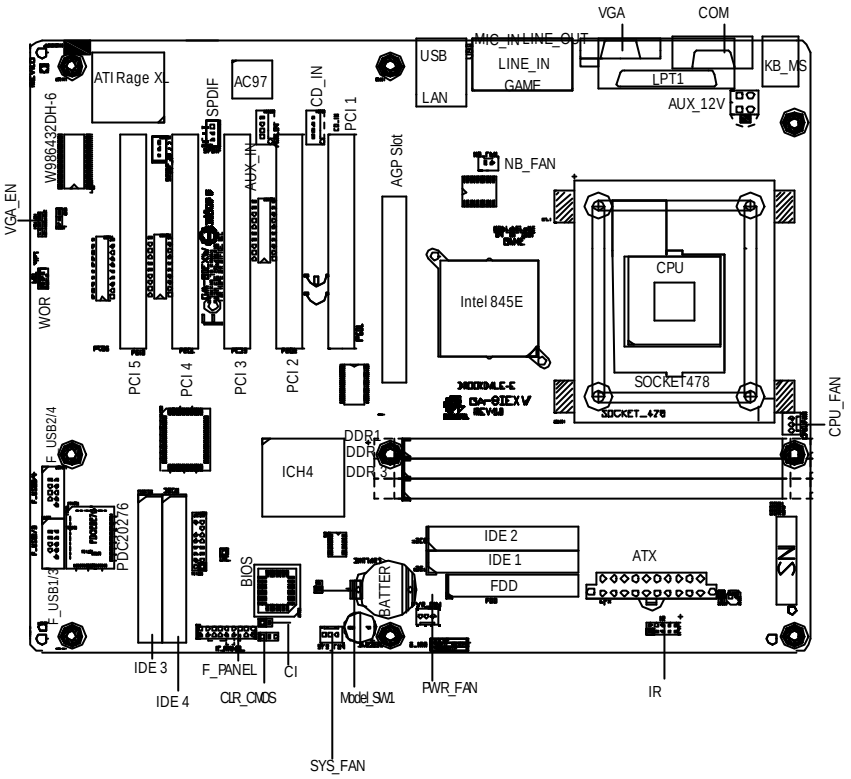
Chapter 1 Introduction

Features Summary

Form Factor	• 30.6cm x 24.4cm ATX size form factor, 4 layers PCB.
Motherboard	• GA-8IEXW Motherboard:
CPU	• Socket 478 for Intel® Micro FC-PGA2 Pentium® 4 processor • Intel Pentium®4 533MHz/400MHz FSB • Support Intel ® Pentium ® 4 (Northwood, 0.13μm) processor • 2nd cache depend on CPU
Chipset	• Chipset 845E HOST/AGP/Controller • ICH4 I/O Controller Hub
Memory	• 3 184-pin DDR DIMM sockets • Supports PC2100 DDR or PC1600 DDR DIMM • Supports up to 2GB DRAM (Max) • Supports only 2.5V DDR DIMM • Supports 64bit ECC type DRAM integrity mode
I/O Control	• IT8712 F-A
Slots	• 1 AGP slot 4X (1.5V only) device support • 5 PCI slot support 33MHz & PCI 2.2 compliant
On-Board IDE	• 2 IDE controllers on the Intel ICH4 PCI chipset provides IDE HDD/CD-ROM (IDE1, IDE2) with PIO, Bus Master (Ultra DMA33/ATA66/ATA100) operation modes. • IDE3 and IDE4 Compatible with RAID, Ultra ATA133/100.
On-Board Peripherals	• 1 Floppy port supports 2 FDD with 360K, 720K, 1.2M, 1.44M and 2.88M bytes. • 1 Parallel port supports Normal/EPP/ECP mode • 1 Serial port (COM) • 6 x USB 2.0/1.1 (2 x Rear, 4 x Front by cable) • 1 IrDA connector for IR/CIR • 1 Front Audio connector

Hardware Monitor	• CPU/Power/System Fan Revolution Detect • CPU/Power/System Fan Control • CPU Overheat Warning • System Voltage Detect
On-Board Sound	• Realtek ALC650 CODEC
On-Board RAID	• Onbard Promise PDC20276 • Supports data striping (RAID 0) or mirroring (RAID 1) • Supports concurrent dual ATA133 IDE controller operation • Support ATAPI mode for CD ROM, DVD ROM ..etc. • Supports IDE bus master operation • Support ATA133/RAID mode switch by BIOS • Mirroring supports automatic background rebuilds • Features LBA and Extended Interrupt 13 drive translation in controller onboard BIOS
On-Board LAN	• Intel 82550PM
On-Board USB 2.0	• Built in ICH4 Chipset
PS/2 Connector	• PS/2 Keyboard interface and PS/2 Mouse interace
BIOS	• Licensed AWARD BIOS, 4M Bit x FWH • Supports Q-Flash
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 (WOL) • AC Recovery • Poly fuse for keyboard over-current protection • Supports EasyTune 4
Overclocking	• Over Voltage (DDR/AGP/CPU) by BIOS • Over Clock (CPU/DDR/AGP) by BIOS

GA-8IEXW Motherboard Layout



Chapter 2 Hardware Installation Process

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

Step 1- Install the Central Processing Unit (CPU)

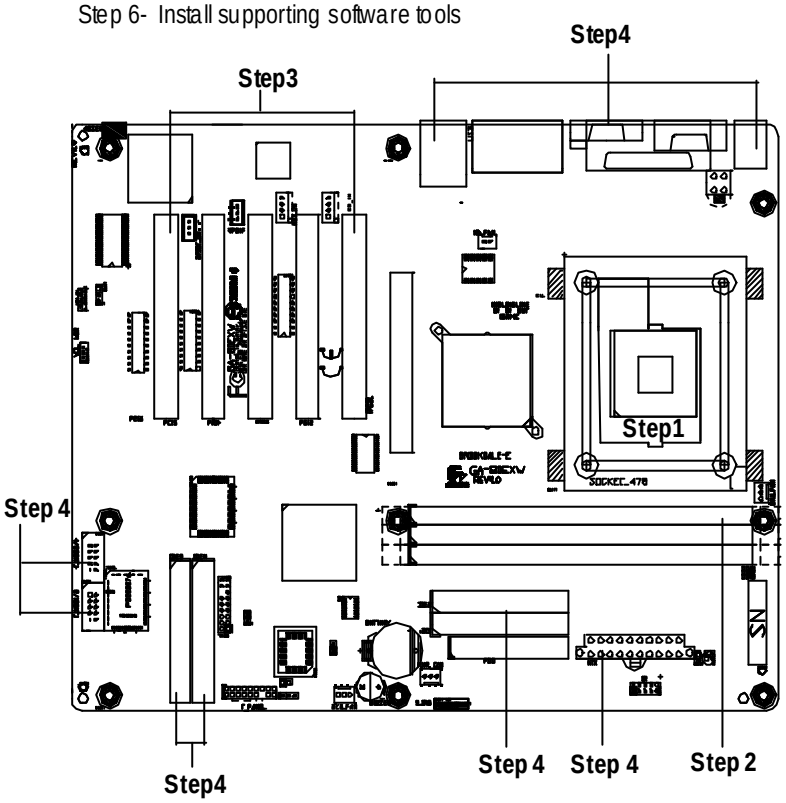
Step 2- Install memory modules

Step 3- Install expansion cards

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

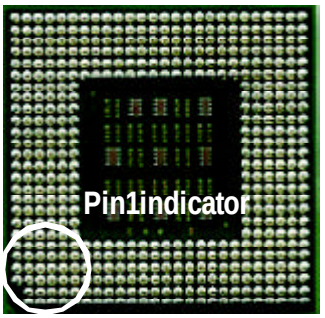
Step 5- Setup BIOS software

Step 6- Install supporting software tools

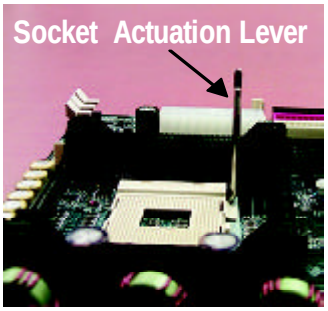


Step 1: Install the Central Processing Unit (CPU)

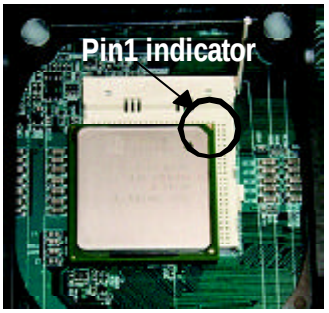
CPU Top View



CPU Bottom View



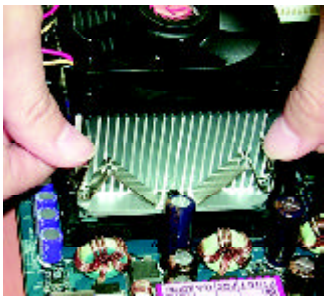
1. Pull up the CPU socket lever and up to 90-degree angle.
3. Press down the CPU socket lever and finish CPU installation.



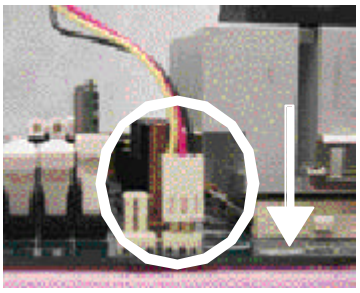
2. Locate Pin 1 in the socket and look for a (golden) cut edge on the CPU upper corner. Then insert the CPU into the socket.

- **Please make sure the CPU type is supported by the motherboard.**
- **If you do not match the CPU socket Pin 1 and CPU cut edge well, it will cause improper installation. Please change the insert orientation.**

Step 1-2:CPU Heat Sink Installation



1. Hook one end of the cooler bracket to the CPU socket first. Hook the other end of the cooler bracket to the CPU socket.



2. Make sure the CPU fan is plugged to the CPU fan connector. Install complete.

- **Please use Intel® approved cooling fan.**
- **We recommend you to apply the thermal paste to provide better heat conduction between the CPU and heatsink.**
- **Make sure the CPU fan power cable is plugged in to the CPU fan connector, to 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 3 dual inline memory module (DIMM) sockets, but it can only support a maximum of 4 banks DDR memory. DDR socket 1 uses 2 banks, DDR socket 2& 3 share the remaining 2 banks. Please refer to the following tables for possible memory configurations supported. The BIOS will automatically detects memory type and size. To install the memory module, just push it vertically into the DIMM Slot .The DIMM module can only fit in one direction due to the notch. Memory size can vary between sockets.

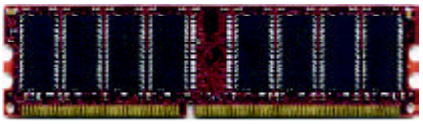
Total Memory Size with Unbuffered DDR DIMM

Device used on DIMM	1 DIMM x 64/ x72	2 DIMMs x 64/ x72	3 DIMMs x 64/ x72
64 Mbit (2Mx 8x 4 banks)	128 MBytes	256 MBytes	256 MBytes
64 Mbit (1Mx 16x 4 banks)	32 MBytes	64 MBytes	96 MBytes
128 Mbit(4Mx 8x 4 banks)	256 MBytes	512 MBytes	512 MBytes
128 Mbit(2Mx 16x 4 banks)	64 MBytes	128 MBytes	96 MBytes
256 Mbit(8Mx 8x 4 banks)	512 MBytes	1 GBytes	1 GBytes
256 Mbit(4Mx 16x 4 banks)	128 MBytes	256 MBytes	384 MBytes
512 Mbit(16Mx 8x 4 banks)	1 GBytes	2 GBytes	2 GBytes
512 Mbit(8Mx 16x 4 banks)	256 MBy es	512 MBytes	786 MBytes

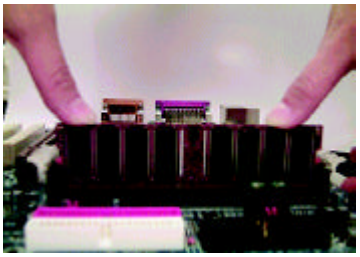
Notes: Double-sided x 16 DDR memory dev ices are not support by Intel 845E/G chipset.

DDR 1	DDR 2	DDR 3
S	S	S
D	S	S
D	D	X
D	X	D
S	D	X
S	X	D

D:Double Sided DIMM; S:Single Sided DIMM; X:Not Use



DDR



1. The DIMM slot has a notch, so the DIMM memory module can only fit in one direction.
2. Insert the DIMM memory module vertically into the DIMM slots. Then push it down.
3. Close the plastic clip at both edges of the DIMM slots to lock the DIMM module.

Reverse the installation processes when you want to remove the DIMM module.

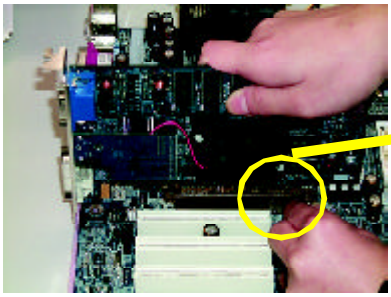
DDR Introduction

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

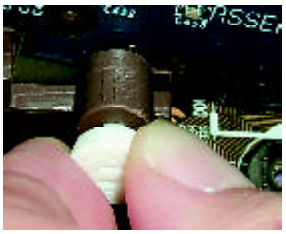
DDR memory is a sensible evolutionary solution for the PC industry that builds on the existing SDRAM infrastructure, yet makes awesome advances in solving the system performance bottleneck by doubling the memory bandwidth. DDR SDRAM will offer a superior solution and migration path from existing SDRAM designs due to its availability, pricing and overall market support. PC2100 DDR memory (DDR266) doubles the data rate through reading and writing at both the rising and falling edge of the clock, achieving data bandwidth 2X greater than PC133 when running with the same DRAM clock frequency. With peak bandwidth of 2.1GB per second, DDR memory enables system OEMs to build high performance and low latency DRAM subsystems that are suitable for servers, workstations, high-end PC's and value desktop SMA systems. With a core voltage of only 2.5 Volts compared to conventional SDRAM's 3.3 volts, DDR memory is a compelling solution for small form factor desktops and notebook applications.

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



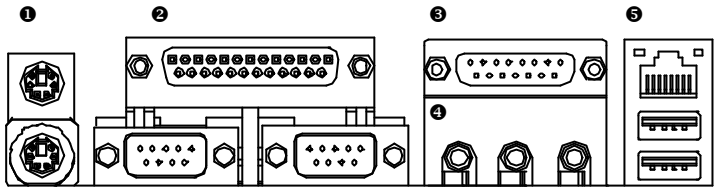
AGP Card



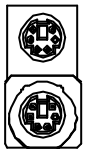
Please carefully pull out the small white-drawable bar at the end of the AGP slot when you try to install/ Uninstall the AGP card. Please align the AGP card to the onboard AGP slot and press firmly down to the slot . Make sure your AGP card is locked by the small white- drawable bar.

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

Step 4-1 : I/O Back Panel Introduction



❶ PS/2 Keyboard and PS/2 Mouse Connector



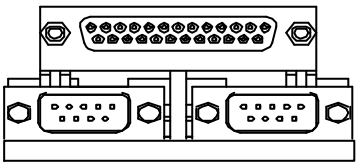
PS/2 Mouse Connector
(6 pin Female)

PS/2 Keyboard Connector
(6 pin Female)

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

❷ Parallel Port and Serial Ports (COMA/COMB)

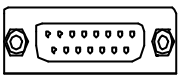
Parallel Port
(25 pin Female)



COM VGA
Serial Ports (9 pin Male)

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

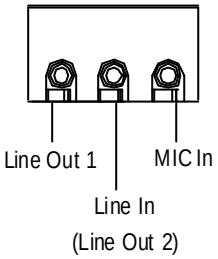
❸ Game/MIDI Ports



Joystick/ MIDI (15 pin Female)

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

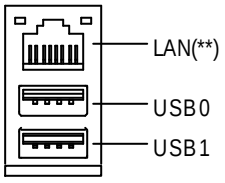
❹ Audio Connectors



➢ 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: Line Out 1: Line Out or SPDIF (The SPDIF output is capable of providing digital audio to external speakers or compressed AC3 data to an external Dolby digital decoder). To enable SPDIF, simply insert SPDIF connector into Line Out1. Line Out1 will become SPDIF Out automatically.
To enable Four Speaker (for Creative 5880 audio only), and Line In will become Line Out2 to support second pair of stereo speakers.

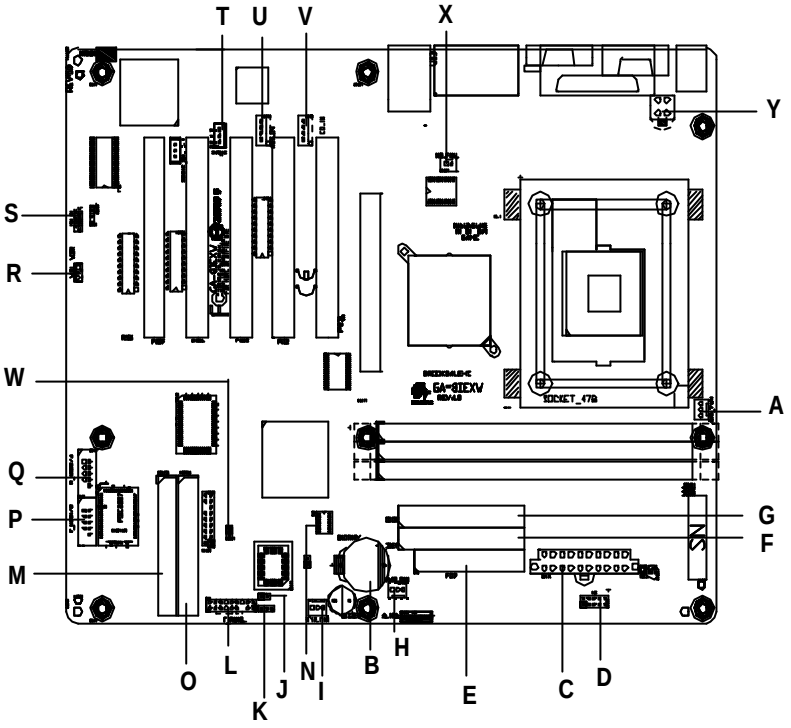
If you want the detail information for "6 / 4 Channel Audio & SPDIF " setup, please download 8IEX Series manual (Complete Version) from Gigabyte web. http://www.gigabyte.com.tw.

❺ USB/LAN(**) Connector



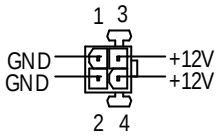
➢ Before you connect your device(s) into USB connector(s), please make sure your device(s) such as USB keyboard, mouse, scanner, zip, speaker..etc. Have a standard USB interface. Also make sure your OS (Win 95 with USB supplement, Win98, Windows 2000, Windows ME, WinNT with SP 6) supports USB controller. 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.

Step 4-2 :Connectors & Jumper Setting Introduction



A) CPU_FAN	N) Model_SW1
B) BATTERY	O) IDE4
C) ATX	P) F_USB1/F_USB3
D) IR/CIR	Q) F_USB2/F_USB4
E) FDD	R) WOL
F) IDE 1	S) VGA_EN
G) IDE 2	T) SPDIF
H) PWR_FAN	U) AUX_IN
I) SYS_FAN	V) CD_IN
J) CI	W) SCSI_CON
K) CLR_CMOS	X) NB_FAN
L) F_PANEL	Y) AUX_12V
M) IDE3	

Y) AUX_12V(+12V Power Connector)

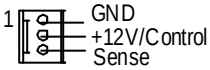


- This connector (ATX +12V) is used only for CPU Core Voltage.

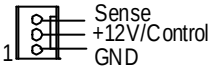
A) CPU_FAN (CPU Fan Connector)

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

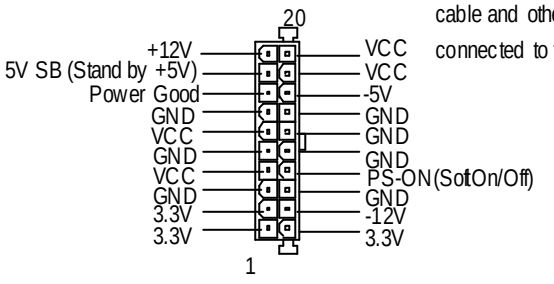
I) SYS_FAN (System Fan Connector)



J) PWR_FAN (Power Fan Connector)

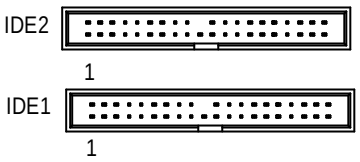


C) ATX (ATX Power Connector)



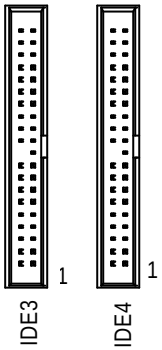
- AC power cord should only be connected to your power supply unit after ATX power cable and other related devices are firmly connected to the mainboard.

F,G) IDE1 / IDE2 Connector(Primary/Secondary]



- Important Notice:
  Please connect first hard disk to IDE1 and connect CDROM to IDE2.

M,O) IDE3/IDE4 Connector

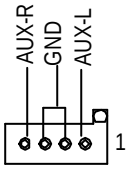


Important Notice:

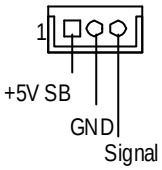
1. Please connect first harddisk to IDE1 and connect CDROM to IDE2.
2. If you wish to use IDE3 and IDE4, please use it in unity with BIOS (either RAID or ATA133). Then, install the correct driver to have proper operation. For details, please refer to the RAID manual.

If you want the detail information for "RAID" setup , please download 8IEX Series manual (Complete Version) from Gigabyte web. http://www.gigabyte.com.tw.

U) AUX_IN (AUX In Connector)



R) WOL(Wake on LAN)

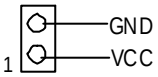


T)SPDIF

SPDIF

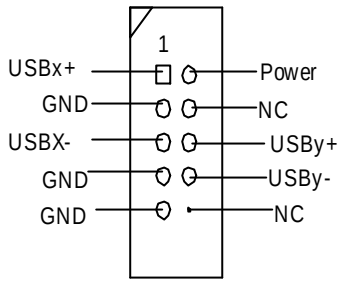
- The SPDIF output is capable of providing digital audio to external speakers or com pressed AC3 data to an external Dolby Digital Decoder. Use this feature only when your stereo system has digital output function.

X) NB_FAN



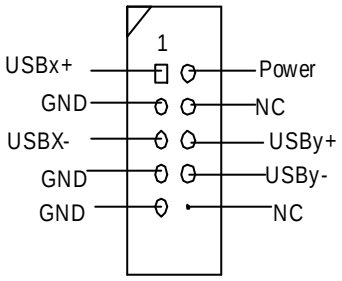
- If installed wrong direction, the Chip Fan will not work. Sometimes will damage the Chip Fan. (Usually black cable is GND)

P)F_ USB1 / F_USB3(Front USB Connector)



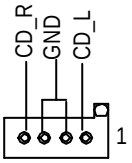
- Be careful with the polarity of the front panel USB connector. Check the pin assignment while you connect the front panel USB cable. Please contact your nearest dealer for optional front panel USB cable.

Q) F_ USB2 / F_USB4(Front USB Connector)

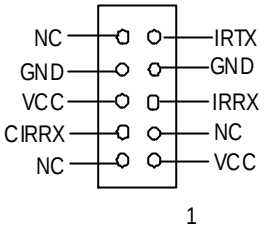


- Be careful with the polarity of the front panel USB connector. Check the pin assignment while you connect the front panel USB cable. Please contact your nearest dealer for optional front panel USB cable.

V) CD_IN (CD Audio Line In Connector)

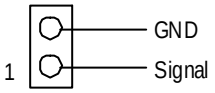


D) IR/CIR (IR/CIR Connectors)



- Make sure the pin 1 on the IR device is aling with pin one 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.

J) CI



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

K) CLR_CMOS (Clear CMOS)

1-2 close: Clear CMOS

2-3 close: Normal

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

S) VGA_EN (Enable VGA Functions)

1-2 close: Enable VGA function

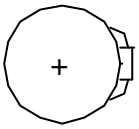
2-3 close: Disable VGA function

N) Model_SW1

Non-jumper: Logo 1 (Default values)

Jumpered: Logo 2

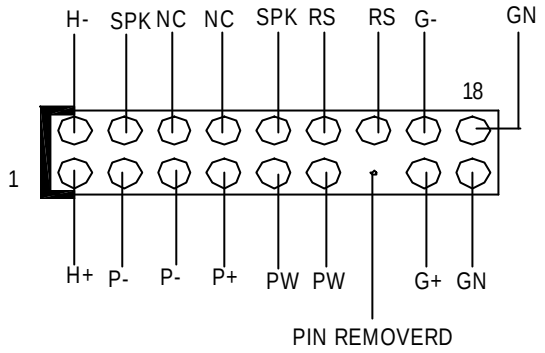
B) BATTERY (Battery)



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.

L) F_PANEL (2x9 pins connector)



H+	Pin 1: Hard Disk LED power
H-	Pin 2: Hard Disk Active LED signal
P-	Pin 3: Front panel Green LED signal
SPK	Pin 4: Front panel speaker signal
P-	Pin 5: Front panel power LED signal
P+	Pin 7: Front panel power LED power
PW	Pin 9: Front panel power button signal
SPK	Pin 10: Front panel speaker signal
PW	Pin 11: Front panel power button signal
RS	Pin 12: Front panel reset button
RS	Pin 14: Front panel reset button
G+	Pin 15: Front panel Green LED power
G-	Pin 16: Front panel Green LED signal
GN	Pin 17: Front panel sleep button signal
GN	Pin 18: Front panel sleep button signal

- Please connect the power LED, PC speaker, reset switch and power switch of your chassis front panel to the F_PANEL connector according to the pin assignment above.

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

Power ON the computer and press <F2> immediately will allow you to enter Setup.

CONTROL KEYS

<↑>	Move to previous item
<↓>	Move to next item
<←>	Move to the item in the left hand
<→>	Move to the item in the right hand
<Esc>	Main Menu - Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu - Exit current page and return to Main Menu
<+/PgUp>	Increase the numeric value or make changes
<-/PgDn>	Decrease the numeric value or make changes
<F1>	General help, only for Status Page Setup Menu and Option Page Setup Menu
<F2>	Reserved
<F3>	Reserved
<F4>	Reserved
<F5>	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
<F6>	Reserved
<F7>	Load the Optimized Defaults
<F8>	Reserved
<F9>	Reserved
<F10>	Save all the CMOS changes, only for Main Menu

Q-Flash Utility

After power on the computer, pressing <Del> immediately during POST (Power On Self Test) it will allow you to enter Award BIOS CMOS SETUP, then press <F8> to enter Q-Flash utility. ***If you request detail information for "Q-Flash Utility ", please download the manual from Gigabyte web http://www.gigabyte.com.tw.***

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>.

- **Main**

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

- **Advanced**

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

  (ex: Auto detect fan and temperature status, automatically configure hard disk parameters.)

- **Boot**

  This setup page includes all the items of first boot function features.

- **Server**

  This setup page includes the main function features of auto detect fan and temperature status.

- **Security**

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

- **Clk/Voltage**

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

- **Defaults**

  Load Optimized Defaults option and loads preset system parameter values to set the system in its highest performance configurations.

- **Exit**

  Save CMOS value settings to CMOS and exit setup or abandon all CMOS value changes and exit setup.

Main (For example: BIOS Ver. :F1)

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

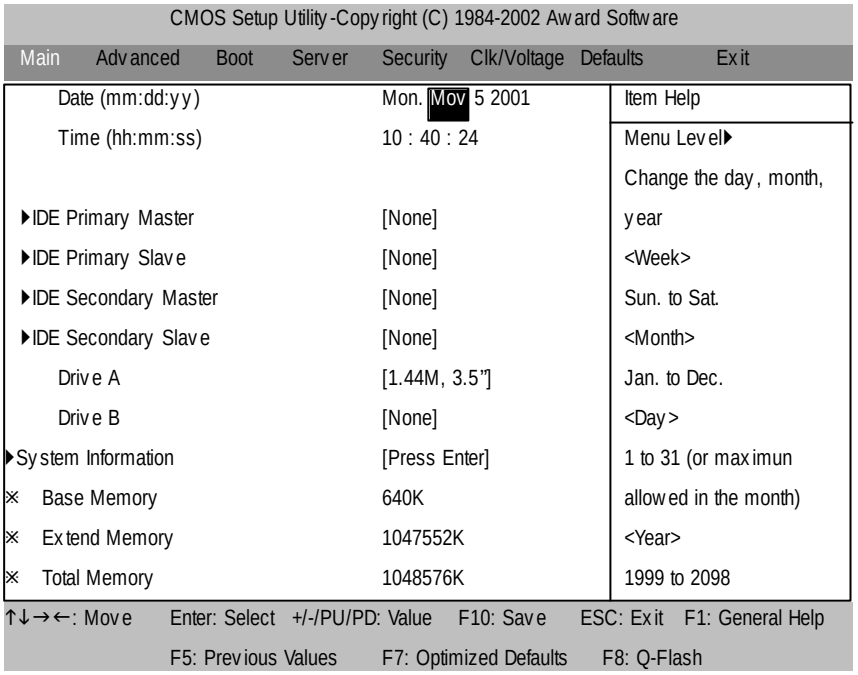


Figure 1: Main

☞ Date

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

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

Note: ※ indicates Display ONLY

☞ Time

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

☞ IDE Primary Master, Slave / 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 that will automatically detect HDD type.

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

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

- **Write Cache**

  - Disabled — Disabled write cache function. (Default values)
  - Enabled — Enabled write cache function.

- **Access Mode**

  This option allows user to set hard drive parameters.

  Option: CHS, LBA, Large, Auto (Default Value)

  - Capacity — Displays the capacity of HDD
  - CYLS. — Number of cylinders
  - HEADS — Number of heads
  - PRECOMP — Write precomp
  - LANDZONE — Landing zone
  - SECTORS — Number of sectors

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

☞ Drive A / Drive B

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

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

☞ Memory

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

Base Memory

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

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

Extended Memory

The BIOS determines the amount of extended memory is present during the POST. This is the amount of memory located above 1 MB in the CPU's memory address map.

☞ System Information

▸▸Please press enter to view the system configuration.

Advanced

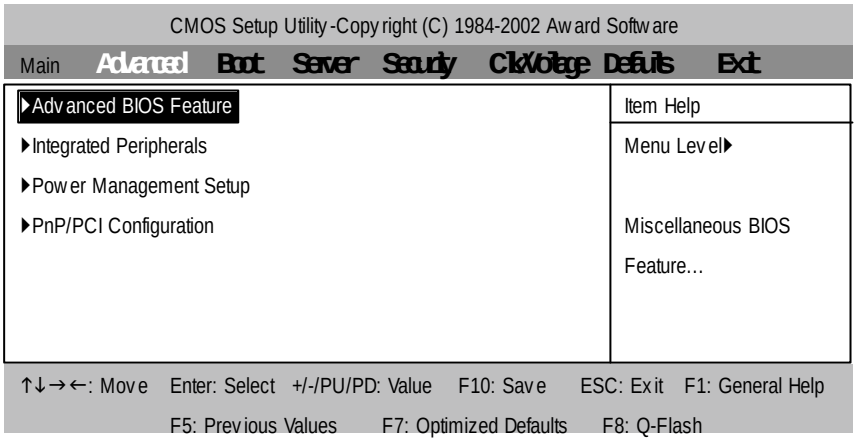


Figure 2: Advanced

Advanced BIOS Features

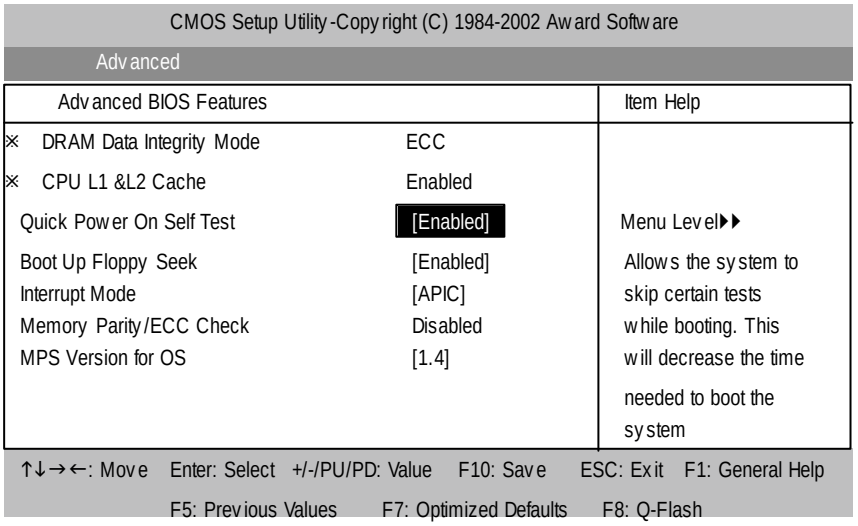


Figure 2-1: Advanced BIOS Features

☞ Quick Power On Self Test

This category speeds up Power On Self Test (POST) after you power on the computer. If it is set to Enable, BIOS will shorten or skip some check items during POST.

- ⏩ Enabled — Enable quick POST. (Default Value)
- ⏩ Disabled — Normal POST.

☞ Boot Up Floppy Seek

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

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

☞ 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.

☞ Memory Parity/ECC Check

This item will be available when you use ECC memory.

☞ MPS Version Control For OS

This option allows user to set OS Multi Processors version. (Support Multi Processor Specification revision 1.4)

Note: Some old MPS OS support 1.1 version only.

⏩1.4 Support MPS Version 1.4 . (Default Value)

⏩1.1 Support MPS Version 1.1.

Integrated Peripherals

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Advanced

Integrated Peripherals		Item Help
On-Chip Primary PCI IDE	[Enabled]	Menu Level▶▶
On-Chip Secondary PCI IDE	[Enabled]	If a hard disk
IDE 1 Conductor Cable	[Auto]	controller card is used,
IDE 2 Conductor Cable	[Auto]	set at Disabled
USB Controller	[Enabled]	
USB Keyboard Support	[Disabled]	[Enabled]
Onboard ATA/RAID Device	[Enabled]	Enable onboard IDEPORT
RAID Controller Function	[RAID]	
Onboard Serial Port 1	[Auto]	[Disabled]
Onboard Parallel Port	[378/IRQ7]	Disable onboard IDE PORT
Parallel Port Mode	[ECP+EPP]	
x ECP Mode Use DMA	3	
Game Port Address	[Disabled]	
Midi Port Address	[Disabled]	
x Midi Port IRQ	10	

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

F5: Previous Values F7: Optimized Defaults F8: Q-Flash

Figure 2-2: Integrated Peripherals

☞ IDE 1/ 2 Conductor Cable

- ⏩ Auto — Set this functio to auto detect IDE cable type. (Default value)
- ⏩ ATA66/100 — Set conductor cable to ATA66/100
- ⏩ ATA33 — Set conductor cable to ATA33

☞ USB Controller

- ⏩ Enabled — Enable USB Controller function. (Default value)
- ⏩ Disabled — Disable USB Controller function.

☞ USB Keyboard Support

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

☞ USB Mouse Support

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

☞ Onboard ATA/RAID Devices

- ⏩ Enabled — Enable Onboard ATA/RAID Device. (Default value)
- ⏩ Disabled — Disable Onboard ATA/RAID Device.

☞ RAID Controller Function

- ⏩ RAID — Set RAID Controller Function to RAID. (Default value)
- ⏩ ATA — Set RAID Controller Function to ATA.

☞ Onboard Serial Port 1

⏩ Auto	BIOS will automatically setup the port 1 address. (Default value)
⏩ 3F8/IRQ4	Enable onboard Serial port 1 and set IO address to 3F8.
⏩ 2F8/IRQ3	Enable onboard Serial port 1 and set IO address to 2F8.
⏩ 3E8/IRQ4	Enable onboard Serial port 1 and set IO address to 3E8.
⏩ 2E8/IRQ3	Enable onboard Serial port 1 and set IO address to 2E8.
⏩ Disabled	Disable onboard Serial port 1.

☞ Onboard Parallel port

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

☞ Parallel Port Mode

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

☞ Game Port Address

⏩ Disabled	Disable this function. (Default values)
⏩ 201	Enabled Game Port and set address to 201.
⏩ 209	Enabled Game Port and address to 209.

☞ Midi Port Address

⏩ Disabled	Disable this function. (Default values)
⏩ 330	Enabled Midi Port and set address to 201.
⏩ 300	Enabled Midi Port and set address to 209.

Power Management Setup

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Advanced

Power Management Setup		Item Help
ACPI Suspend Type	[S1 POS]	Menu Level▸▸
Soft-Off by PWR BTTN	[Instantt-Off]	[User Define]
State After Power Failure	[Auto]	Configure our own
PME Event Wake Up	[Auto]	power management
Resume by Alarm	[Disabled]	feature
x Date (of Month) Alarm	Everyday	[Min Saving]
x Time (hh: mm: ss) Alarm	0:0:0	Minimun power
Power On By Mouse	[Disabled]	savings in suspend
Power On By Keyboard	[Disabled]	mode
X KB Power On Password	Enter	[Max Saving]
		Maximun power
		savings in suspend
		mode

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

F5: Previous Values F7: Optimized Defaults F8: Q-Flash

Figure 2-3: Power Management Setup

☞ ACPI Suspend Type

- ⏩ S1 — Set suspend type to Power On Suspend under ACPI OS. (Default Value)
- ⏩ S3 — Set suspend type to RAM under ACPI OS.

☞ Soft-off by PWR-BTTN

- ⏩ Instant-off — Press power button then Power off instantly. (Default value)
- ⏩ Delay 4 Sec. — Press power button 4 sec to Power off. Enter suspend if button is pressed less than 4 sec.

☞ State After Power Failure

- ⏩ Auto — When AC-power back to the system, the system will return to the Last state before AC-power off. (Default value)
- ⏩ Off — When AC-power back to the system, the system will be in "Off" state.
- ⏩ On — When AC-power back to the system, the system will be in "On" state.

☞ PME Event Wake UP

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

☞ Wake Up On Ring

- ⏩ Disabled — Disable Wake Up On Ring function. (Default Value)
- ⏩ Enabled — Enable Wake Up On Ring function.

☞ Resume by Alarm

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

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

If RTC Alarm Lead To Power On is Enabled.

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

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

☞ Power On By Mouse

- Disabled — Disable this function. (Default Value)
- Mouse Click — Mose double click to power system.

☞ Power On By Keyboard

- Disabled — Disable this function. (Default Value)
- Password — Enter from 1 to 5 characters to set the Keyboard Power On Password.
- Keyboard 98 — if your keyboard has "keyboard 98" button, you can press the key to power on your system.

Pnp/PCI Configuration

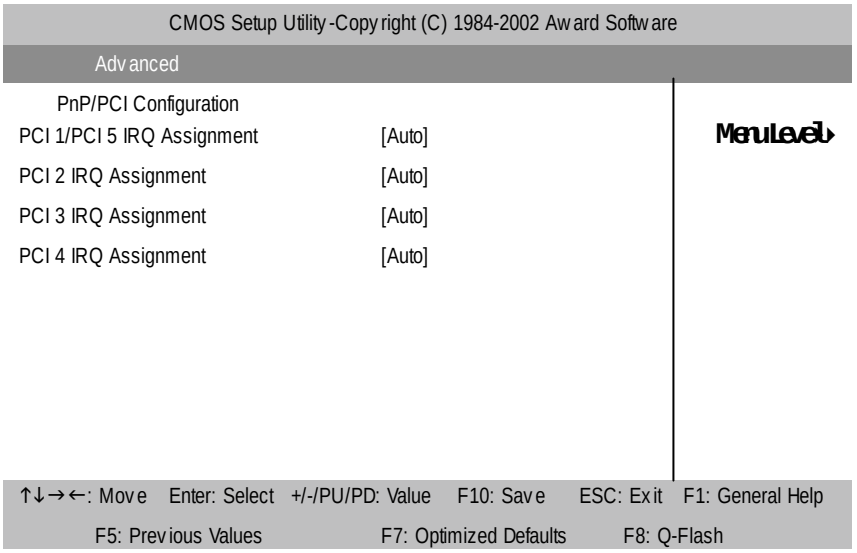

Figure 2-4: PnP/PCI Configuration

☞ PCI 1/PCI 5 IRQ Assignment

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

☞ PCI 2 IRQ Assignment

⏩ Auto	Auto assign IRQ to PCI 2. (Default value)
⏩ 3,4,5,7,9.,10,11,12,14,15	Set 3,4,5,7,9,10,11,12,14,15 to PCI2.

☞ PCI 3 IRQ Assignment

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

☞ PCI 4 IRQ Assignment

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

Boot

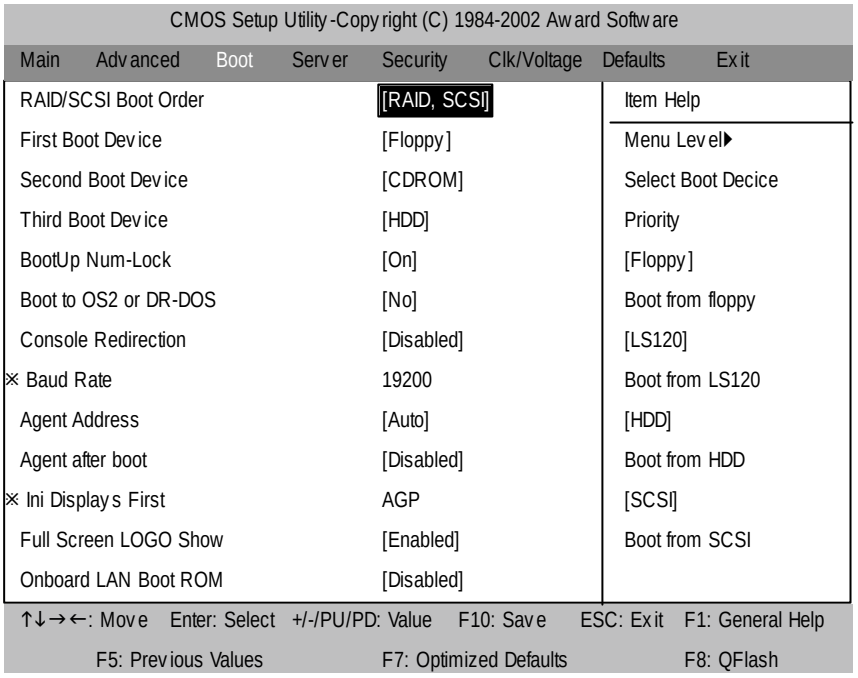

Figure 3: Boot

☞ RAID/SCSI Boot Order

- ⏩ RAID, SCSI — Select your boot device priority by RAID. (Default value)
- ⏩ SCSI, RAID — Select your boot device priority by SCSI.

☞ First/Second/Third Boot Device

- ⏩ Floppy — Select your boot device priority by Floppy.
- ⏩ LS120 — Select your boot device priority by LS120.
- ⏩ HDD — Select your boot device priority by HDD.
- ⏩ CDROM — Select your boot device priority by CDROM.
- ⏩ SCSI — Select your boot device priority by SCSI.
- ⏩ ZIP — Select your boot device priority by ZIP.
- ⏩ LAN — Select your boot device priority by LAN.
- ⏩ Disabled — Disable this function.

☞ BootUpNum-Lock

⏩On	Keypad is number keys. (Default value)
⏩Off	Keypad is arrow keys.

☞ Boot to OS2 or DR-DOS

⏩No	Disable this function. (Default Value)
⏩Yes	Select Yes, if you are running OS/2 or DR-DOS with greater than 64MB of RAM on the system.

☞ Console Redirection

⏩Disabled	Attempt to redirect console when keyboard absent.
⏩Enabled	Attempt to redirect console via COM port. (Default Value)

☞ Agent Address

⏩Auto	Auto assign agent address. (Default values)
⏩COM 1	Assign agent address to COM 1.
⏩COM 3	Assign agent address to COM 3.
⏩COM 4	Assign agent address to COM 4.

☞ Agent after boot

⏩Disabled	Disable this function. (Default Value)
⏩Enabled	Keep Agent running after OS boot.

☞ Full Screen LOGO Show

⏩Disabled	Disable this function.
⏩Enabled	Enable this function to show full screen logo. (Default Value)

☞ Onboard LAN Boot ROM

Decide whether to invoke the boot ROM of the Onboard LAN chip.

⏩Disabled	Disable this function. (Default Value)
⏩Enabled	Select your boot device priority by LAN.

Server

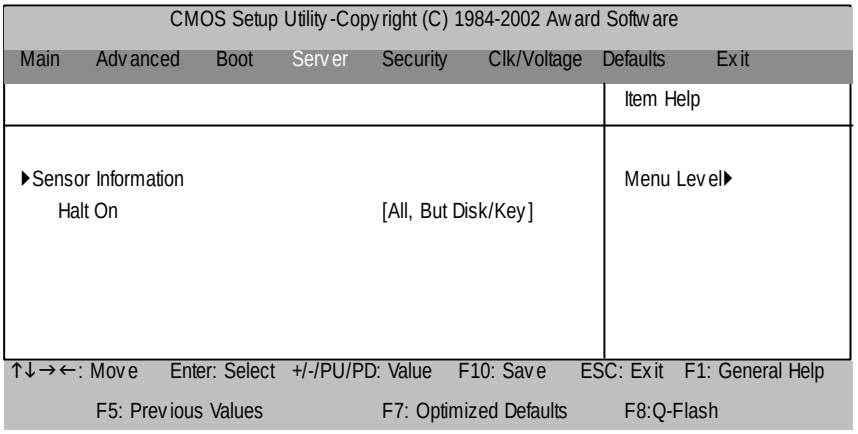

Figure 4: Server

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Server

Sensor Information		Item Help
Reset Case Open Status	[Disabled]	Menu Level▸▸
※ Case Opened	Yes	
※ VCORE	1.746V	
※ VCC18	1.776V	
Current CPU Temperature	-48°C	
Current CPU FAN Speed	4687 RPM	
Current POWER FAN Speed	0 RPM	
Current System FAN Speed	0 RPM	
+3.3V	3.37V	
+5V	5.10V	
+12V	11.96V	
CPU Warning Temperature	[Disabled]	
CPU FAN Fail Warning	[Disabled]	
Power FAN Fail Warning	[Disabled]	
System FAN Fail Warning	[Disabled]	

↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help
F5: Previous Values F7: Optimized Defaults F8: Q-Flash

Figure 4-1: Sensor Information

☞**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, and restart your computer.

☞ Sensor Information

☞ Current CPU Temperature/System Temp.1/ System Temp.2

⏩ Detect Temp. automatically.

☞ Current CPU FAN/Power FAN/ System FAN Speed (RPM)

⏩ Detect Fan speed status automatically.

☞ Current System Voltage: +3.3V / +5V / +12V

⏩ Detect system's voltage status automatically.

☞ CPU Warning Temperature

⏩ Disabled Don't monitor current temperature.(Default values)

⏩ 60°C~90°C Alarmed when current temperature is over than the selected temperature.

☞ CPU FAN Fail Warning

⏩ Disabled Don't monitor current FAN speed.(Default values)

⏩ Enabled Alarmed when FAN stops.

☞ POWER FAN Fail Warning

⏩ Disabled Don't monitor current FAN speed.(Default values)

⏩ Enabled Alarmed when FAN stops.

☞ SYSTEM FAN Fail Warning

⏩ Disabled Don't monitor current FAN speed.(Default values)

⏩ Enabled Alarmed when FAN stops.

☞Halt On

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

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

Security

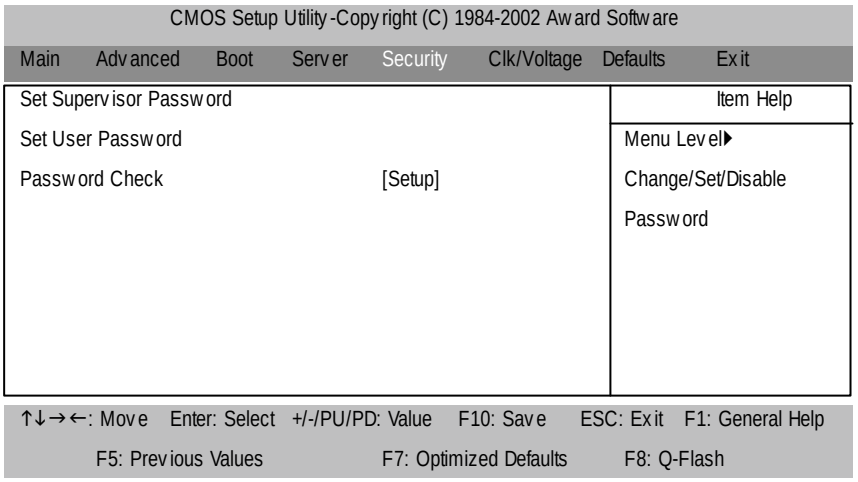


Figure 5: Security

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

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

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

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

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

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

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

☞ **Password Check**

- System — The system can not boot and can not access to Setup page will be denied if the correct password is not entered at the prompt.
- Setup — The system will boot, but access to Setup will be denied if the correct password is not entered at the prompt. (Default value)

Clk/Voltage

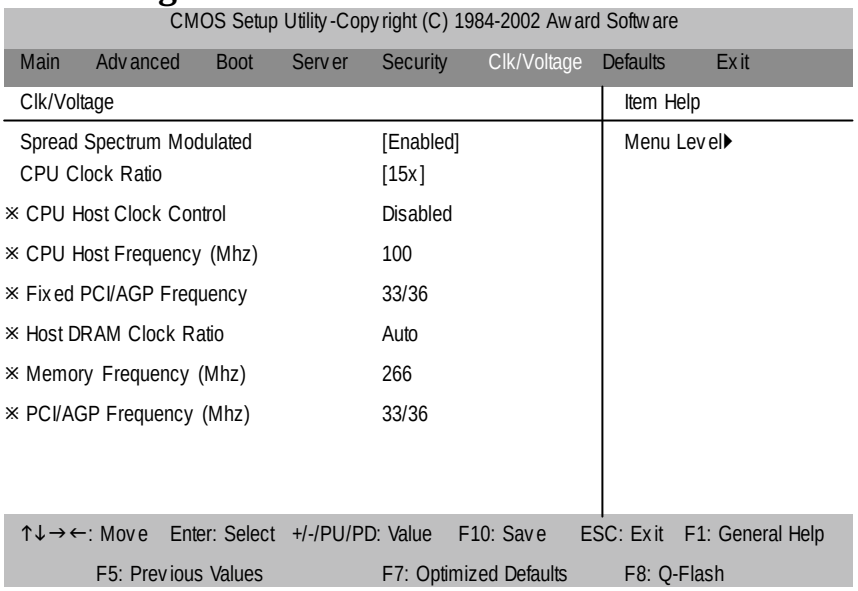


Figure 6: Clk/Voltage

☞ Spread Spectrum

- ⏩ Enabled — Enable Spread Spectrum of Centre. (Default values)
- ⏩ Disabled — Disable this function.

☞ CPU Clock Ratio

Key in a DEC number.

- ⏩ Min = 10
- ⏩ Max = 24

Defaults

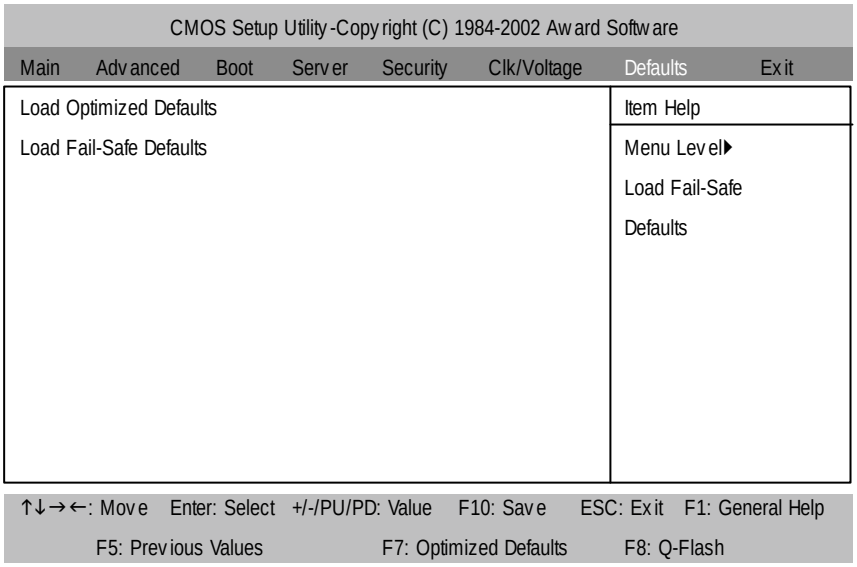


Figure 7: Defaults

☞Load Optimized Defaults

When you press <Enter> on this item, you will get a confirmation dialog box with a message as below:

Load Optimal Defaults? (Y/N) **Y**

☞Load Fail-Safe Defaults

When you press <Enter> on this item, you will get a confirmation dialog box with a message as below:

Load Failsafe Defaults? (Y/N) **N**

Press 'Y' to load the BIOS default values for the most stable, minimum-performance system operation.

Exit

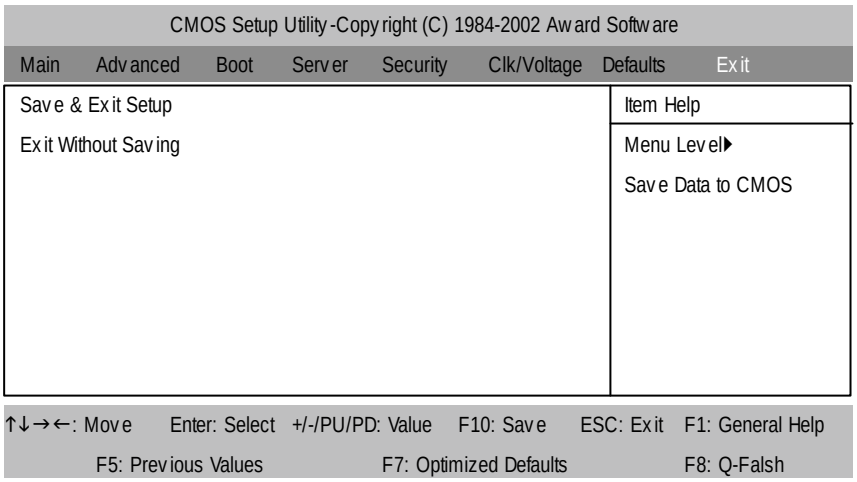


Figure 8: Exit

☞Save & Exit Setup

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

Type "N" will return to Setup Utility.

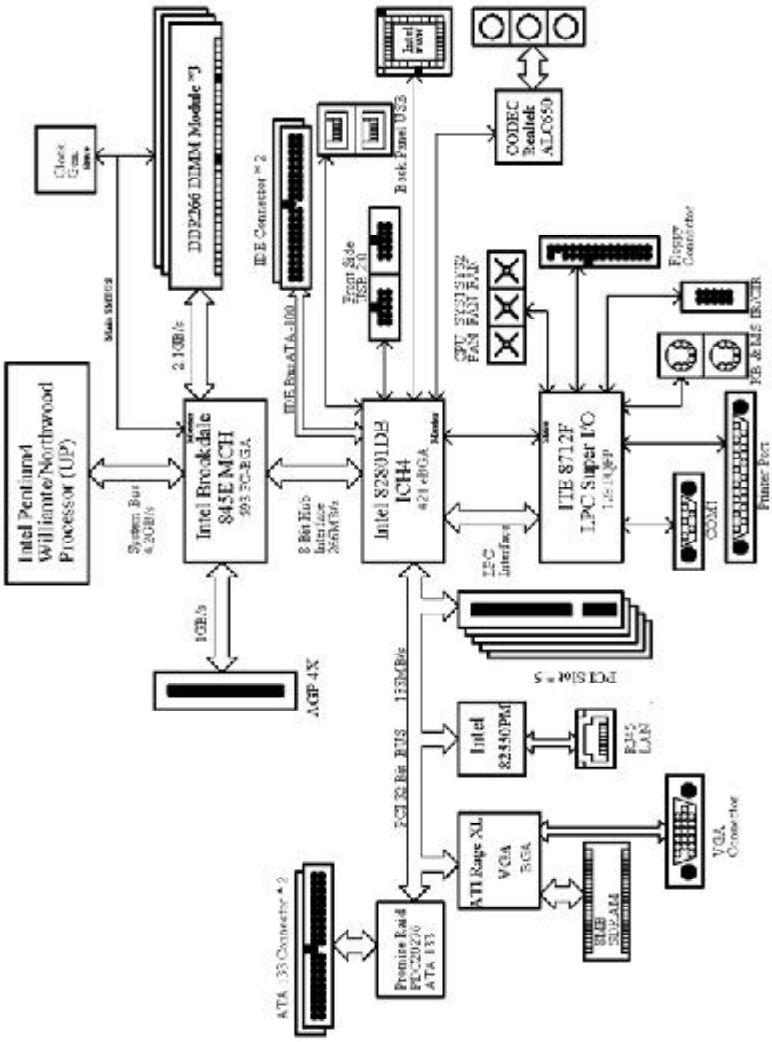
☞Exit Without Saving

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

Type "N" will return to Setup Utility.

Chapter 4 Technical Reference

Block Diagram



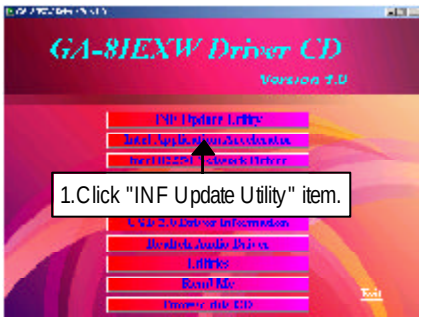
Chapter 5 Appendix

Appendix A: INF Update Utility 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 a series of Setup Wizard dialog boxes. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

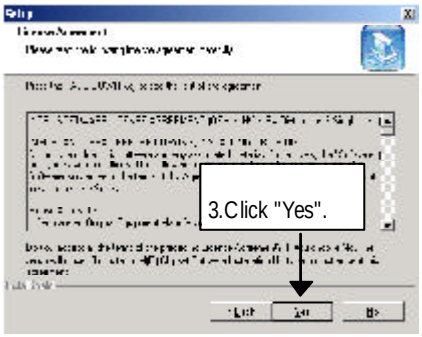
Installation Procedures:

1. The CD auto run program starts, **Double click** on "INF UPDATE UTILITY" to start the installation.
2. Then, a series of dialog boxes appear.
3. Setup completed, click "Finish" to restart your computer.

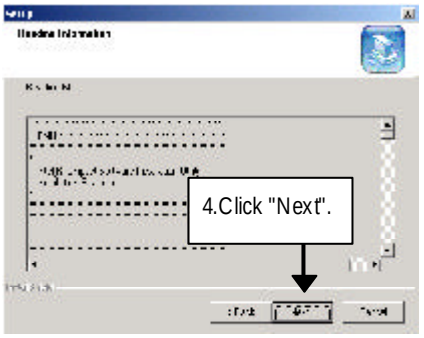


(1)

(2)



(3)



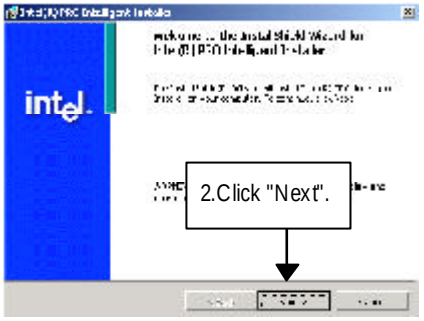
(4)

(5)

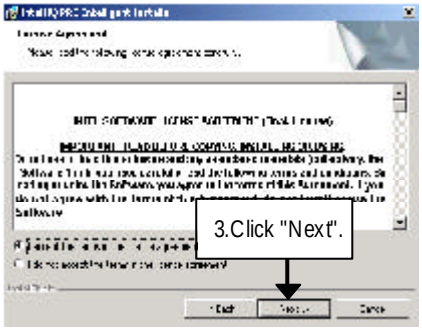
Appendix B: Intel® 82550 Network Driver Installation:

Insert the driver CD-title that came with your motherboard into your CD-ROM driver, the driver CD-title will auto start and show a series of Setup Wizard dialog boxes. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

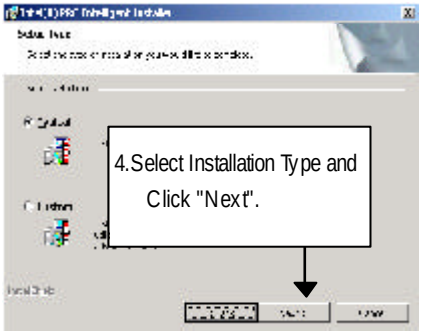
(1)



(2)



(3)



(4)


5. Click "Install".

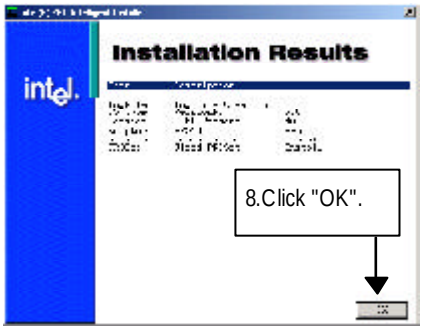
(5)


6. Starting installation.

(6)


intel.
5. Wizard Completed. Click "Finish".

(7)

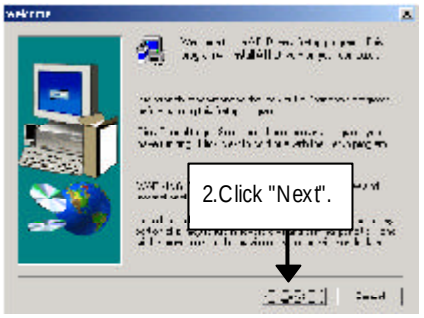

intel.
Installation Results
8.Click "OK".

(8)

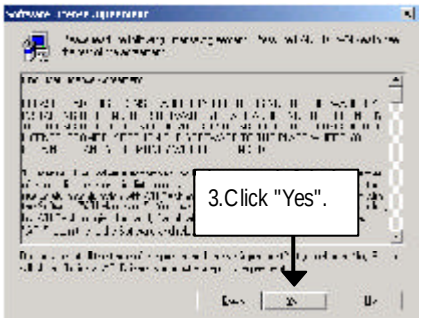
Appendix C: ATI-Rage XL VGA Driver Installation

Insert the driver CD-title that came with your motherboard into your CD-ROM driver, the driver CD-title will auto start and show a series of Setup Wizard dialog boxes. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

(1)



(2)



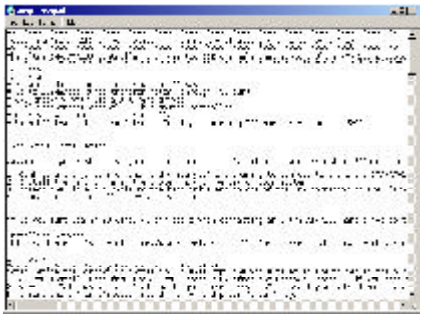
(3)

(4)

Appendix D: Promise ATA Driver 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 a series of Setup Wizard dialog boxes. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

(1)



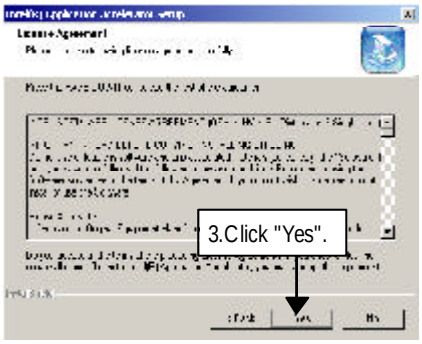
(2)

Appendix E: Intel® Application Accelerator Installation

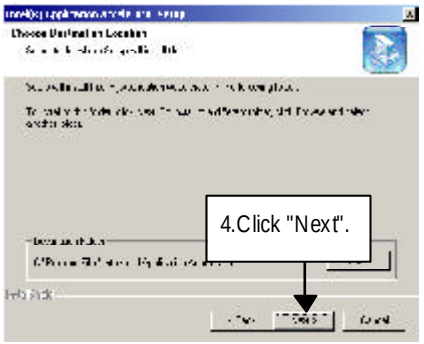
Insert the driver CD-title that came with your motherboard into your CD-ROM driver, the driver CD-title will auto start and show a series of Setup Wizard dialog boxes. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

(1)

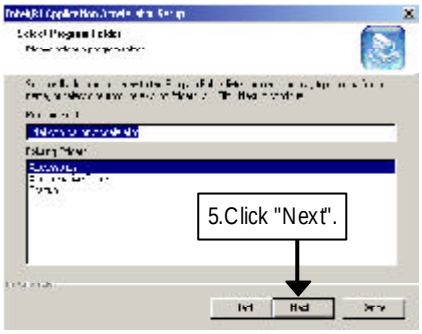
(2)



(3)



(4)



(5)

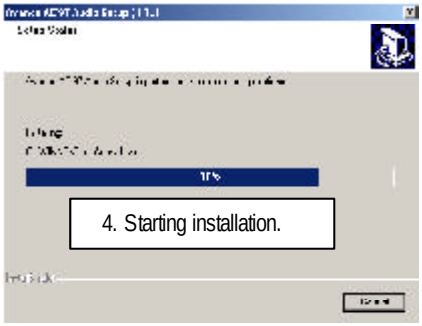
(6)

Appendix F: RealTek Audio Driver 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 a series of Setup Wizard dialog boxes. If not, please double click the CD-ROM device icon in "My computer", and execute the setup.exe.

(1)

(2)



(4)

(5)

Appendix G: Acronyms

Acronyms	Meaning
ACPI	Advanced Configuration and Power Interface
APM	Advanced Power Management
AGP	Accelerated Graphics Port
AMR	Audio Modem Riser
ACR	Advanced Communications Riser
BBS	BIOS Boot Specification
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
ISA	Industry Standard Architecture

to be continued.....

Acronyms	Meaning
LAN	Local Area Network
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

Technical Support/RMA Sheet

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

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

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

Problem Description: