

GA-5BXWL-RH
Xeon® 3000 Series Processor Motherboard

USER'S MANUAL

Intel® Core™2 Duo processor and Intel® Core™2 Quad processorMotherboard

Rev. 1001



* The WEEE marking on the product indicates this product must not be disposed of with user's other household waste and must be handed over to a designated collection point for the recycling of waste electrical and electronic equipment!!



* The WEEE marking applies only in European Union's member states.

Item Checklist

- | | |
|--|--|
| <input checked="" type="checkbox"/> The GA-5BXWL-RH motherboard | <input checked="" type="checkbox"/> Serial ATA cable x 4 |
| <input checked="" type="checkbox"/> IDE (ATA100) cable x 1 / Floppy cable x 1 | <input checked="" type="checkbox"/> I/O Shield Kit |
| <input checked="" type="checkbox"/> CD for motherboard driver & utility | <input checked="" type="checkbox"/> SATA Power cable x 4 |
| <input checked="" type="checkbox"/> GA-5BXWL-RH Quick Reference Guide | <input checked="" type="checkbox"/> USB+1394 cable 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.
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

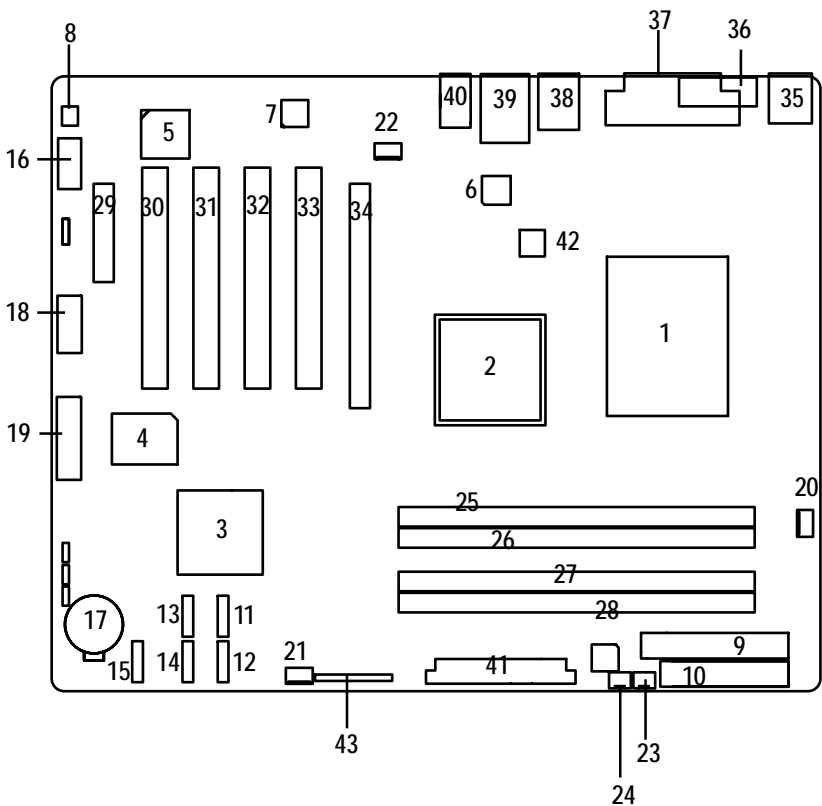
1.1 Features Summary

Form Factor	<ul style="list-style-type: none"> 12" x 9.6" ATX form factor, 6 layers PCB.
CPU	<ul style="list-style-type: none"> Supports single Intel® Xeon® processor Intel® Dual Core/Quad Core in LGA 775 socket Supports 1066/1333MHz FSB
Chipset	<ul style="list-style-type: none"> Intel® X38 MCH Chipset Intel® 82801IR ICH9 RAID
Memory	<ul style="list-style-type: none"> 4 x DDR2 DIMM sockets Supports up to 8GB 667/800 memory Dual Channel memory bus Unbuffered DDR 667/800
I/O Control	<ul style="list-style-type: none"> ITE IT8718F-S Super I/O
Expansion Slots	<ul style="list-style-type: none"> Supports 4 PCI slots 32-Bit/33MHz Supports 1 PCI-Express x16 slot Supports 1 PCI-Express x4 slot
SATA RAID Controller	<ul style="list-style-type: none"> Built in Intel® 82801IR ICH9 RAID with Software RAID 0,1,10, 5 Supports 5 SATA 3.0 Gb/s connectors
On-Board Graphic	<ul style="list-style-type: none"> Built in Intel® X38 MCH Chipset
On-Board Sound	<ul style="list-style-type: none"> Realtek® ALC 262 Chipset Support Jack-Sensing Line Out / 2 front speaker Line In / 2 rear speaker(by s/w switch) Mic In / center& subwoofer(by s/w switch) SPDIF Out /SPDIF In CD_In Surround Back speaker (by optional Surround-Kit) Compliant with Vista Premium
On-Board IEEE 1394	<ul style="list-style-type: none"> TI TSB43AB23 2 x 1394a box headers

On-Board LAN	<ul style="list-style-type: none">• Broadcom® BCM5786 GbE controller• Supports WOL, PXE
On-Board Peripherals	<ul style="list-style-type: none">• 1 x ATA 133 connector• 1 x Floppy connector• 2 x PS/2 connectors• 1 x Parallel port supports Normal/EPP/ECP mode• 1 x Serial port (COM)• 2 x IEEE 1394 connectors• 8 x USB 2.0 (4 x Rear, 4 x by cable)• 4 x Audio ports (1 x Line-out/ 1 x Line-in/ 1 x MIC/ 1 by cable)• 1 x LAN RJ45• 5 x SATA 3.0Gb/s connectors
Hardware Monitor	<ul style="list-style-type: none">• Enhanced features Voltage detection (+3.3V/+5V/+12V/Vbat/Vcore)• Temperature auto detection (CPU/VRM/chassis)• CPU shutdown when overheat• System Voltage Detect
BIOS	<ul style="list-style-type: none">• AWARD BIOS on 8MB SPI ROM
Additional Features	<ul style="list-style-type: none">• PS/2 Mouse wake up from S1 under Windows Operating System• External Modem wake up• Supports S1, S4, S5 under Windows Operating System• Wake on LAN (WOL)• Wake on Ring (WOR)• AC Recovery• Supports Console Redirection• Supports 4-pin Fan controller

1.2 GA-5BXWL-RH Motherboard Components

- | | |
|--|-------------------------------------|
| 1. CPU | 24. System fan cable connector |
| 2. Intel X38 MCH | 25. Channel 1 DDR1 socket |
| 3. Intel 82801IR ICH9 RAID | 26. Channel 2 DDR1 socket |
| 4. ITE IT8718F-S | 27. Channel 2 DDR2 socket |
| 5. IEEE 1394 controller | 28. Channel 2 DDR2 socket |
| 6. Broadcom BCM5786 | 29. PCI Express x4 slot |
| 7. Realtek ALC262 | 30. 32bit/33MHz PCI slot #5 |
| 8. Case open intrusion connector | 31. 32bit/33MHz PCI slot #4 |
| 9. IDE Connector | 32. 32bit/33MHz PCI slot #3 |
| 10. Floppy Connector | 33. 32bit/33MHz PCI slot #2 |
| 11. SATA1 cable connector | 34. PCI Express x16 slot |
| 12. SATA2 cable connector | 35. Keyboard Mouse port |
| 13. SATA3 cable connector | 36. COM port |
| 14. SATA4 cable connector | 37. Printer port |
| 15. SATA5 cable connector | 38. USB 2.0 port + IEEE1394 port |
| 16. Internal Audio cable connector | 39. USB 2.0 port + Gigabit LAN port |
| 17. Battery | 40. Audio port |
| 18. Internal USB cable connector | 41. 24-pin ATX power connector |
| 19. Front USB and IEEE 1394 cable connectors | 42. 4-pin ATX power connector |
| 20. CPU fan cable connector | 43. Front panel connector |
| 21. Front fan cable connector | |
| 22. Rear fan cable connector | |
| 23. Power supply fan cable connector | |



Chapter 2 Hardware Installation Process

2-1: Installing Processor and CPU Heat Sink



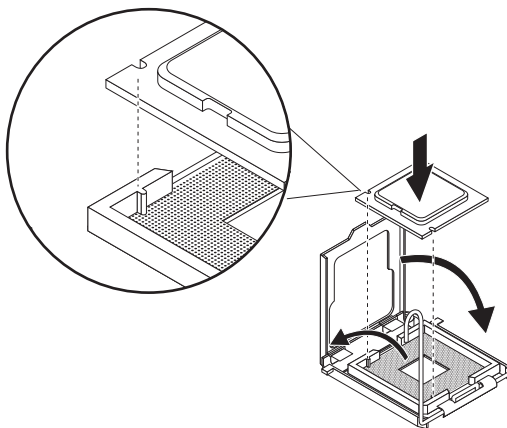
CAUTION

Before installing the processor and cooling fan, adhere to the following cautions:

1. The processor will overheat without the heatsink and/or fan, resulting in permanent irreparable damage.
2. Never force the processor into the socket.
3. Apply thermal grease on the processor before placing cooling fan.
4. Please make sure the CPU type is supported by the motherboard.
5. If you do not match the CPU socket Pin 1 and CPU cut edge well, it may damage the CPU. Please change the insert orientation.

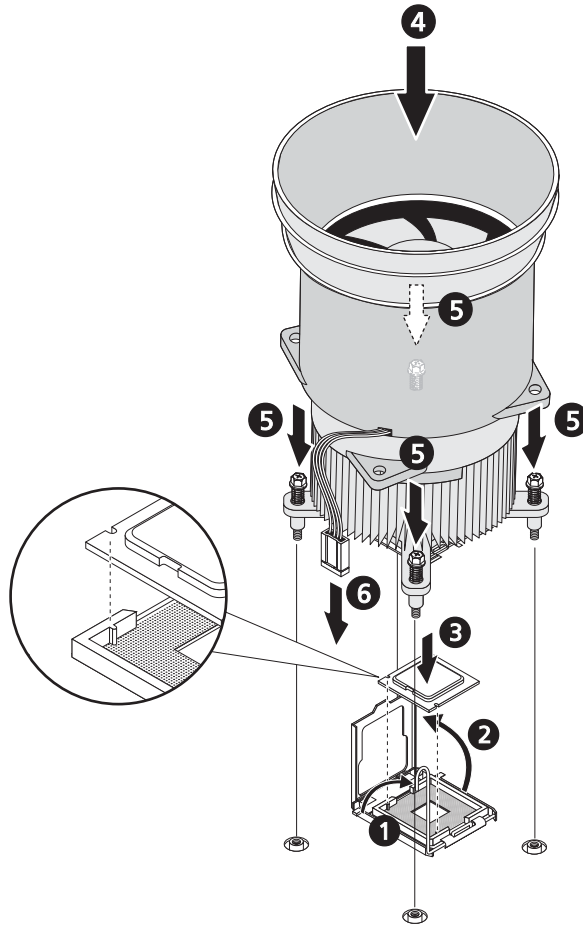
2-1-1: Installing CPU

- Step 1 Raise the metal locking lever on the socket.
- Step 2 Remove the plastic covering on the CPU socket.
- Step 3 Lift the metal cover.
- Step 4 Insert the CPU with the correct orientation. The CPU only fits in one orientation.
- Step 5 Once the CPU is properly placed, please replace the metal cover and push the metal lever back into locked position.



2-1-2: Installing Cooling Fan

- Step 1 Attach the heat sink clip to the processor socket.
- Step 2 Place the cooling fan on the heat sink.
- Step 3 Secure the cooling fan with screws.
- Step 4 Connect processor fan cable to the processor fan connector



2-2: Install Memory Modules

GA-5BXWL-RH has 4 dual inline memory module (DIMM) sockets. It supports Dual Channels Technology. The BIOS will automatically detects memory type and size during system boot. For detail DIMM installation, please refer to the following instructions.

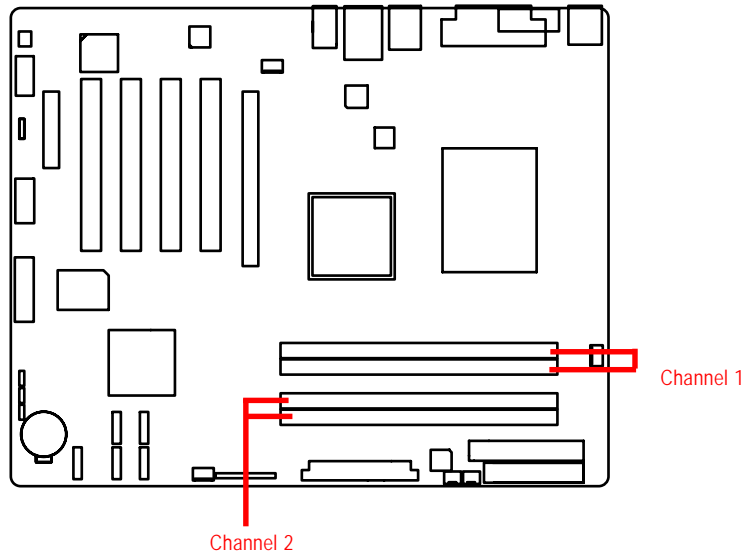
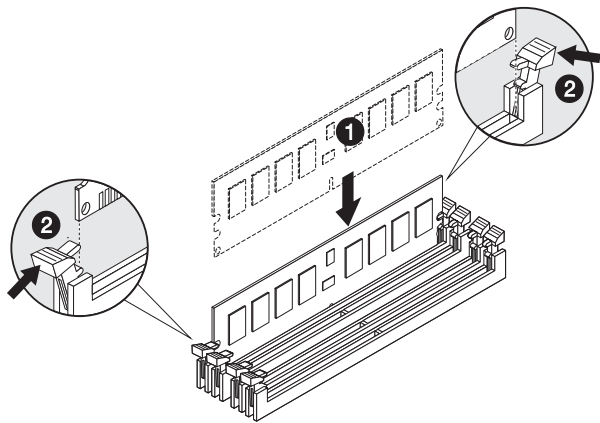


Table 1. Supported DIMM Module Type

Size	Organization	RAM Chips/DIMM
256MB	8MB x 8 x 4 bks	8
	16MB x 4 x 4bks	16
512MB	16MB x 8 x 4bks	8
	32MB x 4 x 4bks	16
1GB	32MB x 8 x 4bks	8
	64MB x 4 x 4bks	16

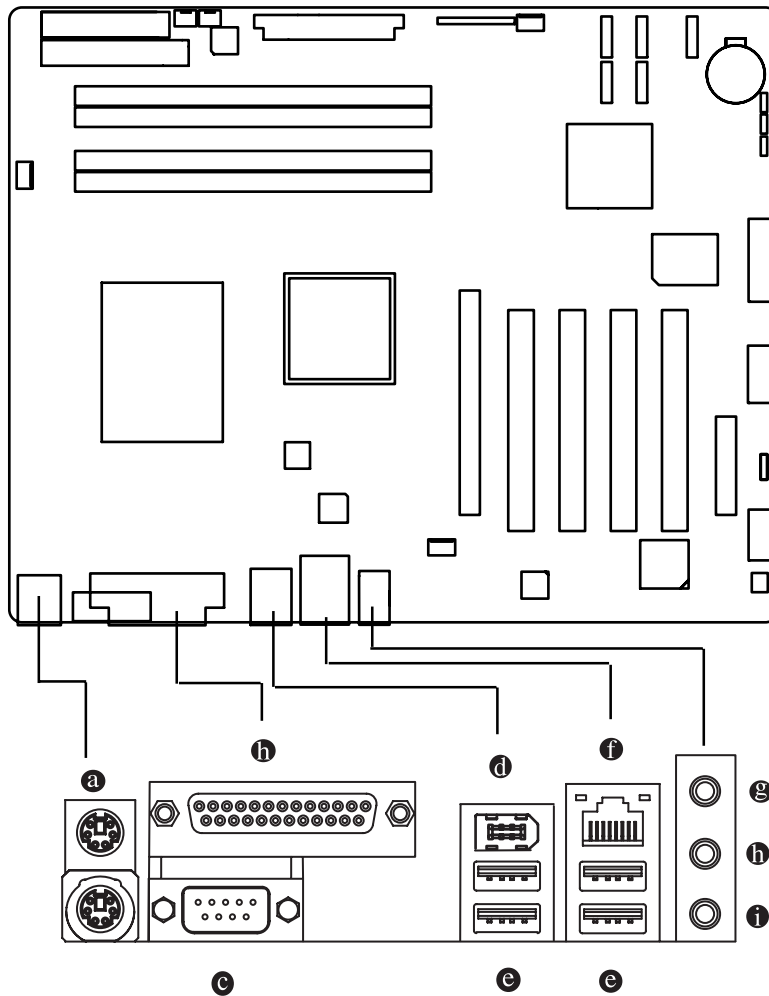
Installation Steps:

1. Unlock a DIMM socket by pressing the retaining clips outwards. Aling a DIMM on the socket such that the notch on the DIMM exactly match the notch in the socket.
2. Firmly insert the DIMM into the socket until the retaining clips snap back in place.
NOTE!! We recommended you to populate the same device size on each socket and the same DIMM size.
4. Reverse the installation steps if you want to remove the DIMM module.



2-3: Connect ribbon cables, cabinet wires, and power supply

2-3-1 : I/O Back Panel Introduction



a PS/2 Keyboard and PS/2 Mouse Connector

To install a PS/2 port keyboard and mouse, plug the mouse to the upper port (green) and the keyboard to the lower port (purple).

b Parallel Port

The parallel port allows connection of a printer, scanner and other peripheral devices.

c COM Port

Modem can be connected to COM port.

d IEEE1394 Port

Serial interface standard set by Institute of Electrical and Electronics Engineers, which has features with high speed, high bandwidth and hot plug

e USB Port

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 updated. For more information please contact your OS or device(s) vendors.

f LAN Port

The provided Internet connection is Gigabit Ethernet, providing data transfer speeds of 10/100/1000Mbps.

g Line In

The default Line In jack. Devices like CD-ROM, walkman etc. can be connected to Line In jack.

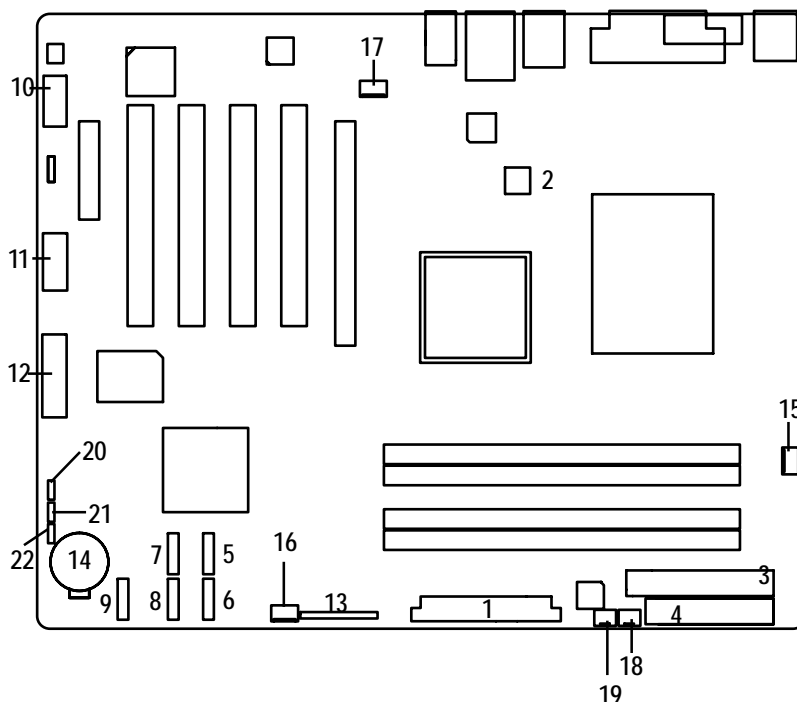
h Line Out (Front Speaker Out)

The default Line Out (Front Speaker Out) jack. Stereo speakers, earphone or front surround speakers can be connected to Line Out (Front Speaker Out) jack.

i MIC In

The default MIC In jack. Microphone must be connected to MIC In jack.

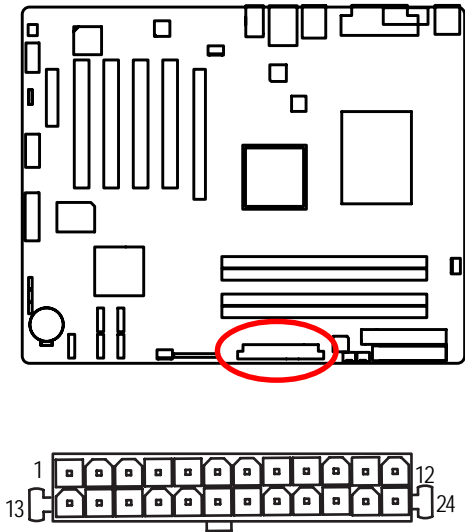
2-4: Connectors Introduction & Jumper Setting



- | | |
|--|--------------------|
| 1. ATX1 | 13. F_PANEL1 |
| 2. ATX_12V | 14. BAT1 (Battery) |
| 3. IDE1 (IDE cable connector) | 15. CPU_FAN |
| 4. FDD (Floppy cable connector) | 16. FRONT_FAN |
| 5. S_ATA1 (SATA cable connector) | 17. REAR_FAN |
| 6. S_ATA2 (SATA cable connector) | 18. PSU_FAN |
| 7. S_ATA3 (SATA cable connector) | 19. SYS_FAN |
| 8. S_ATA4 (SATA cable connector) | 20. JP2 |
| 9. S_ATA5 (SATA cable connector) | 21. JP3 |
| 10. FAUDIO_ACZ | 22.. JP1 |
| 11. F_USB2 (Internal USB cable connector) | |
| 12. F_USB1+1394 (Front 1394 cable connector) | |

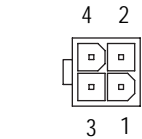
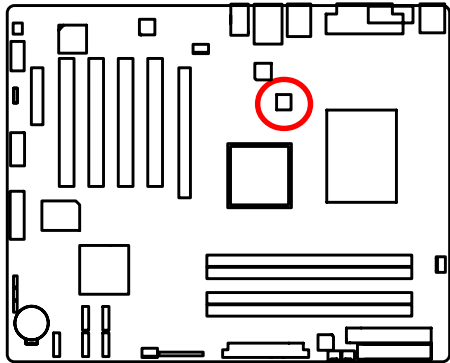
1) ATX1 (Auxiliary Power Connector)

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.



PIN No.	Definition
1	+3.3V
2	+3.3V
3	GND
4	+5V
5	GND
6	+5V
7	GND
8	POK
9	5VSB
10	+12V
11	+12V
12	+3.3V
13	+3.3V
14	-12V
15	GND
16	PSON
17	GND
18	GND
19	GND
20	-5V
21	+5V
22	+5V
23	+5V
24	GND

2) ATX2 (Auxiliary +12V Power Connector)

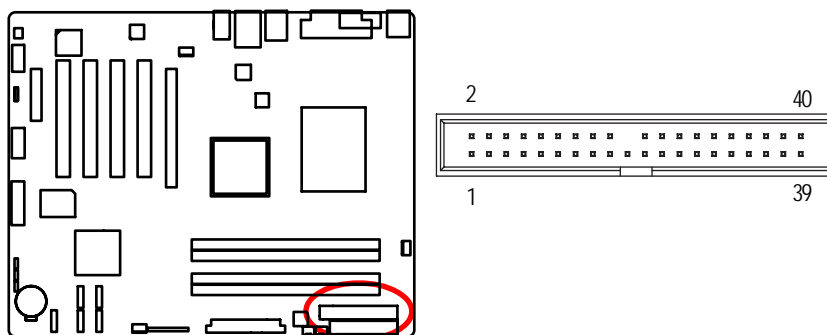


Pin No.	Definition
1	GND
2	GND
3	+12V
4	+12V

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

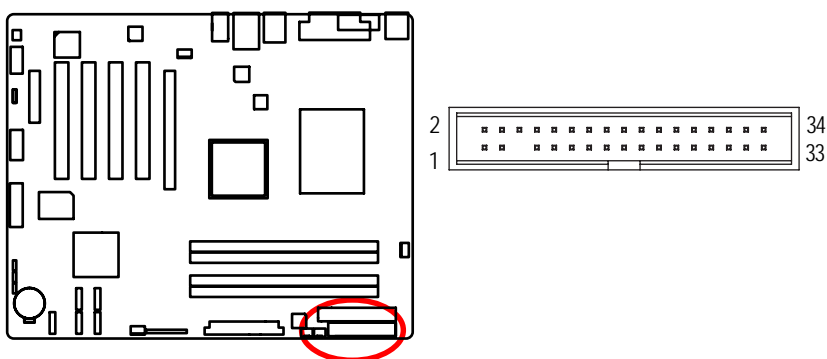
3) IDE (IDE Connector)

Please connect first harddisk to IDE1. The red stripe of the ribbon cable must be the same side with the Pin1.



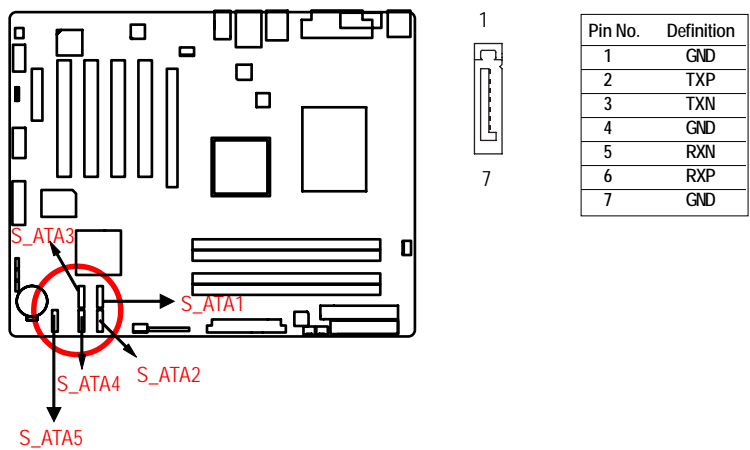
4) FDD (Floppy Connector)

Please connect the floppy drive ribbon cables to FDD. It supports 720K, 1.2M, 1.44M and 2.88Mbytes floppy disk types. The red stripe of the ribbon cable must be the same side with the Pin1.



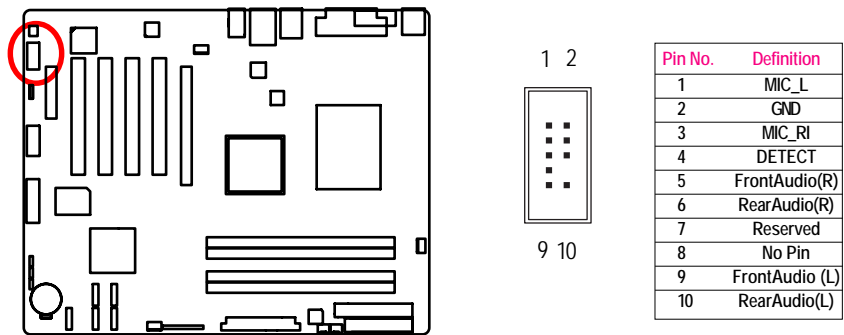
5/ 6/ 7/ 8/ 9) S_ATA 1~5 (Serial ATA cable connectors)

You can connect the Serial ATA device to this connector, it provides you high speed transfer rates (3.0Gb/s).



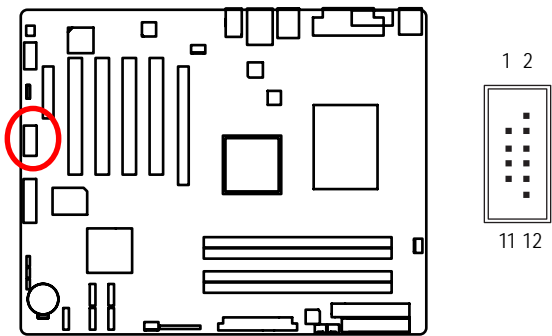
10) FAUDIO_ACZ (Front AUDIO cable connector)

If you want to use Front Audio connector, you must remove 5-6, 9-10 Jumper. In order to utilize the front audio header, your chassis must have front audio connector. Also please make sure the pin 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.



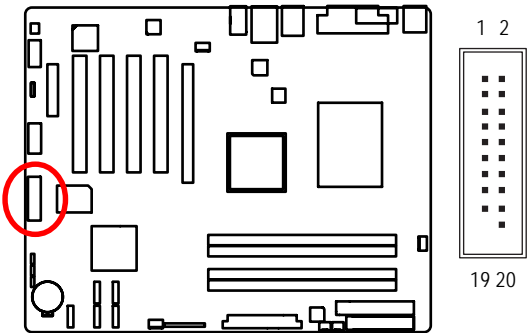
11) F_USB2 (Internal USB cable connector)

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



Pin No.	Definition
1	No Pin
2	Power
3	Power
4	Power
5	-USB6
6	-USB7
7	+USB6
8	+USB7
9	GND
10	GND
11	No Pin
12	NC

12) F_USB1+1394 (Front USB and IEEE 1394 cable connectors)

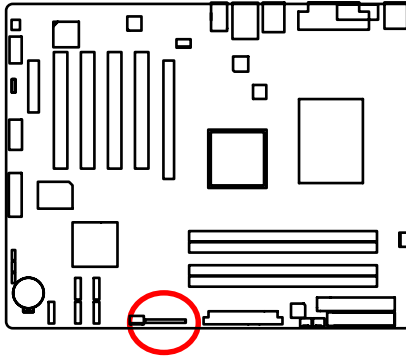


Pin No.	Definition
1	Power
2	Power
3	-USB4
4	-USB5
5	+USB4
6	+USB5
7	GND
8	GND
9	NC
10	NC
11	Power
12	Power
13	TPA1+
14	TPA1-
15	GND
16	GND
17	TPB1+
18	TPB1-
19	No Pin
20	NC

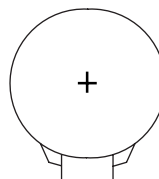
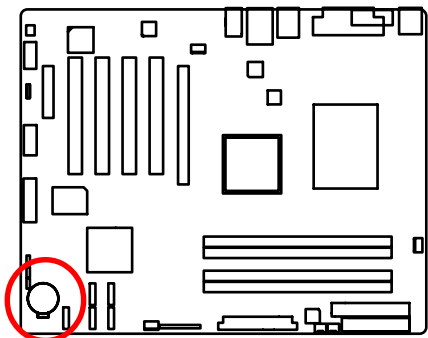
13) F_Panel (2X10 Pins Front Panel connector)

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.

NOTE!! Please note that the onboard front panel connector must attach with adapt cable to enable front panel function.



Pin No	Signal Name	Description
1	HDD+	Hard Disk LED anode (+)
2	No Pin	Pin removed
3	HDD-	Hard Disk LED cathode(-)
4	No Pin	Pin removed
5	RESET-	Reset button cathode(-)
6	PW+	Power button switch anode (+)
7	RESET+	Reset button anode (+)
8	PW-	Power button switch cathode(-)
9	No Pin	Pin removed
10	No Pin	Pin removed
11	No Pin	Pin removed
12	No Pin	Pin removed
13	No Pin	Pin removed
14	No Pin	Pin removed
15	MPD+	Message LED/Power LED anode (+)
16	No Pin	Pin removed
17	MPD-	Message LED/Power LED cathode(-)
18	No Pin	Pin removed
19	SLEEP LED	Sleep LED
20	No Pin	Pin removed

14) BAT1 (Battery)**CAUTION**

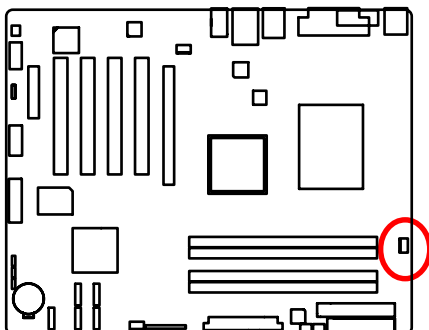
- ❖ Danger of explosion if battery is incorrectly replaced.
- ❖ Replace only with the same or equivalent type recommended by the manufacturer.
- ❖ Dispose of used batteries according to the manufacturer's instructions.

If you want to erase CMOS...

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

15) CPU_FAN (CPU fan cable connector)

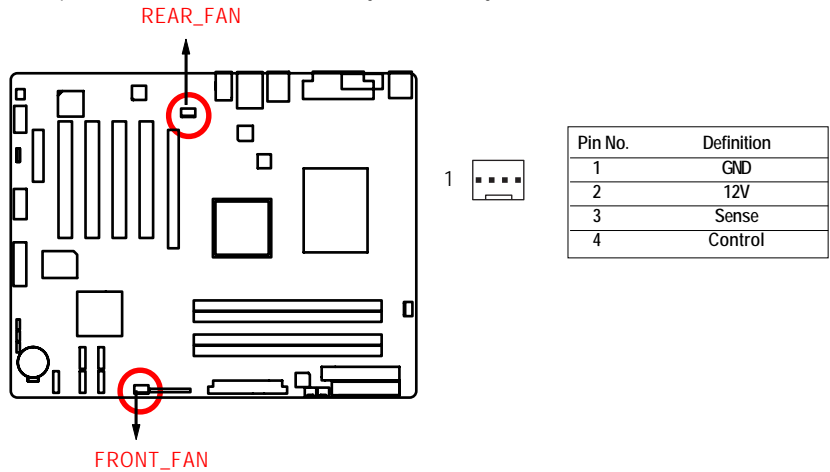
Please note, a proper installation of the CPU cooler is essential to prevent the CPU from running under abnormal condition or damaged by overheating. The CPU fan connector supports Max. current up to 1A.



Pin No.	Definition
1	GND
2	12V
3	Sense
4	Control

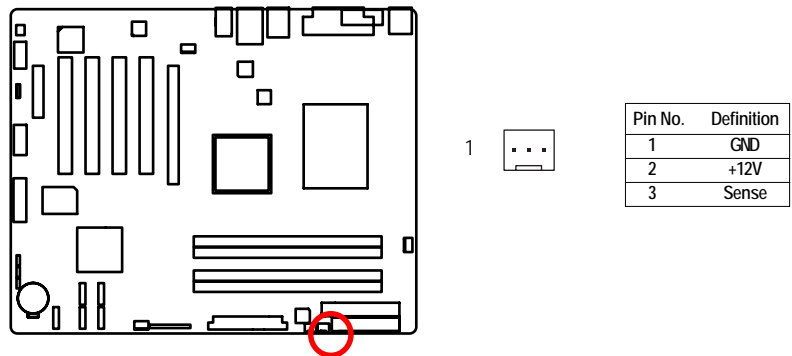
16/17) FRONT_FAN/REAR_FAN (Front Fan and Rear fan cable connectors)

This connector allows you to link with the cooling fan on the system case to lower the system temperature. These connectors are for system use only.



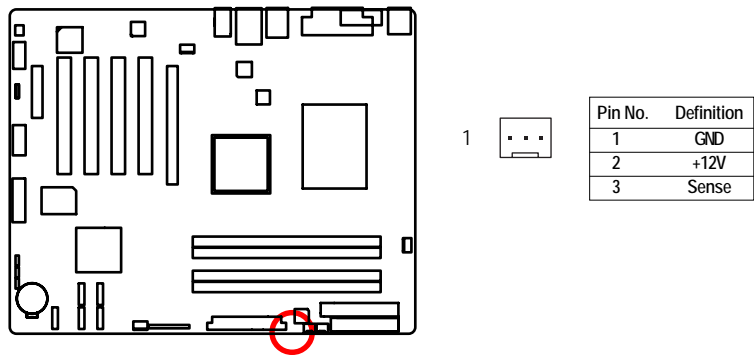
18) PSU_FAN (Power supply fan cable connector)

This connector allows you to link with the cooling fan on the system case to lower the system temperature.



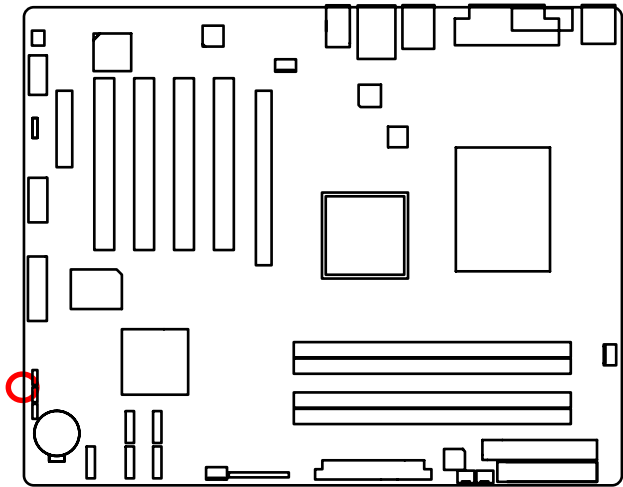
19) SYS_FAN (System Fan Connector)



This connector allows you to link with the cooling fan on the system case to lower the system temperature. These connectors are for system use only.



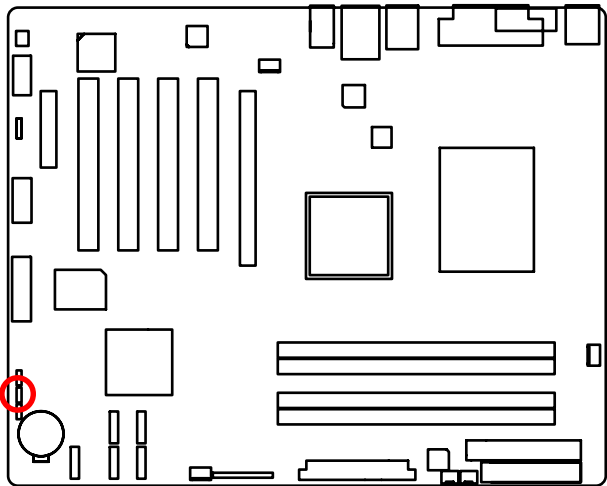
Pin No.	Definition
1	GND
2	+12V
3	Sense



20) JP2 (Skip password jumper)



- 1  1-2 Close: Normal operation (Default setting)
- 1  2-3 Close: Skip Supervisor Password in

21) JP3 (BIOS recovery jumper)

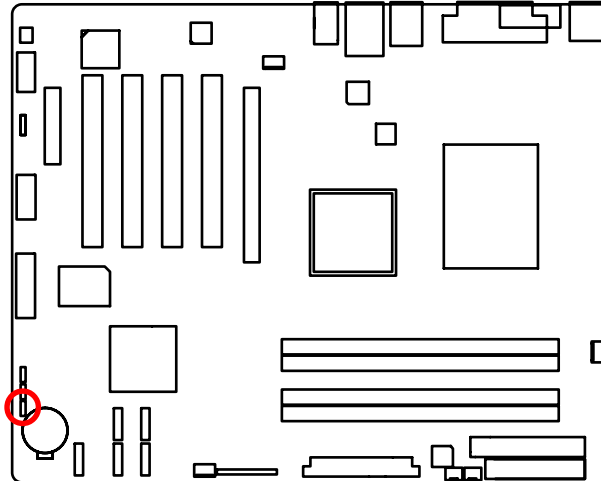




- 1  1-2 Close: Normal operation (Default setting)
- 1  2-3 Close: Enable BIOS Recovery mode

22) JP1 (Clear CMOS jumper)

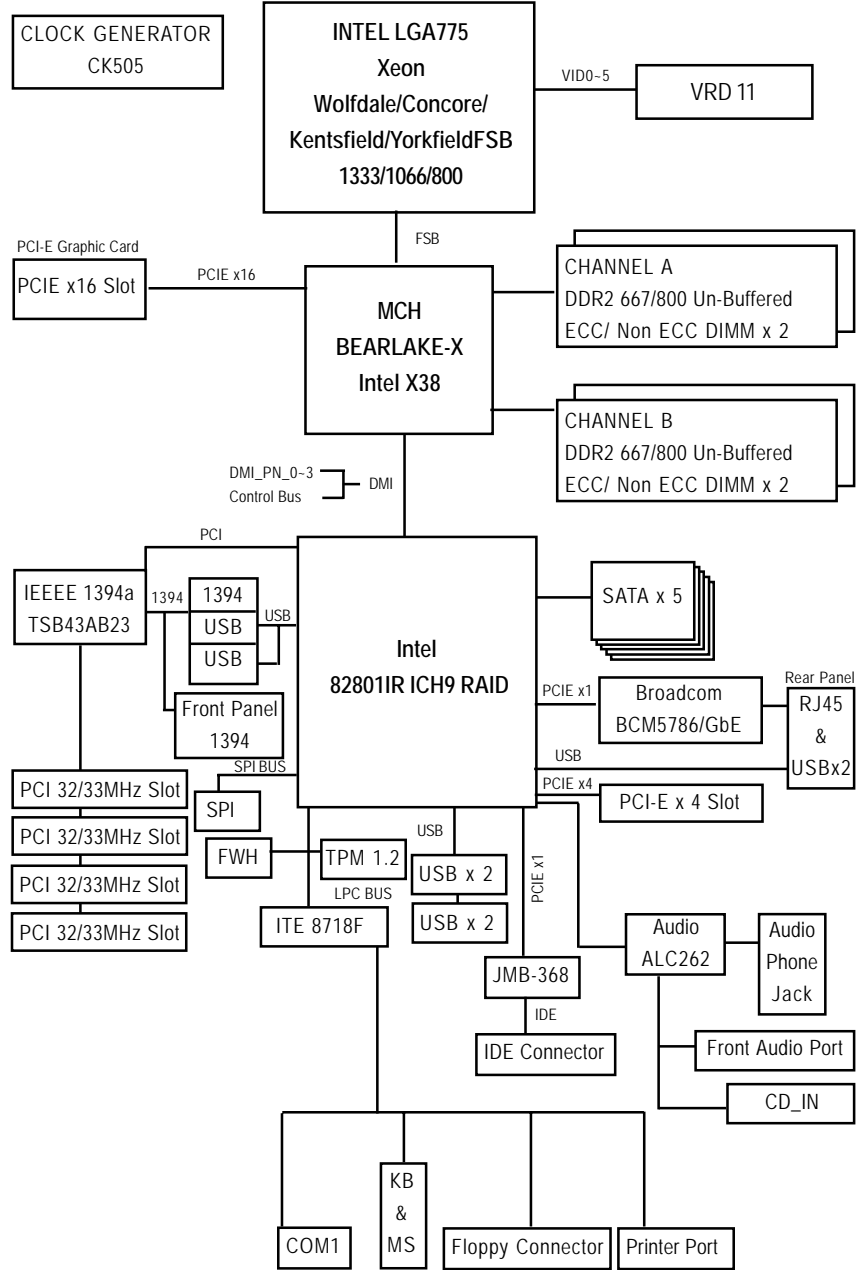
You may clear the CMOS data to restore its default values by this jumper.

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



- 1  1-2 Close: Normal operation (Default setting)
- 1  2-3 Close: Clear CMOS

2-5: Block Diagram



Chapter 5 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>	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

GETTINGHELP

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>.

- **Info**
Display BIOS version, CPU Type and Speed, and total memory populated
- **System**
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: onboard device enable/disable, power management)
- **Security**
Change, set, or disable password. It allows you to limit access to the system and Setup, or just to Setup.
- **PC Health**
This setup page displays the System auto detect Temperature, voltage, fan speed.
- **Exit**
Save CMOS value settings to CMOS and exit setup or abandon all CMOS value changes and exit setup.

Info

Once you enter Award BIOS 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.

Phoenix - AwardBIOS CMOS Setup Utility					
Info	Sysetm	Advanced	Security	PC Health	Exit
Product Name		GA-5BXWL-RH		Item Help	
Serial Number		F1			
BIOS Version		F1			
BIOS Date		01/30/2008			
Processor Type		IntelCPU			
Processor Speed		2.33GHz/1332MHz			
L1 Cache		32KB			
L2 Cache		6144KB			
Total Memory		511MB			
DIMM1		512MB/667MHz			
DIMM2		Not Installed			
DIMM3		Not Installed			
DIMM4		Not Installed			
Memory Channel		Single			
Onboard LAN Mac Adress		00:00:00:00:00:00			
UUID		0000000000000000			
		0000000000000000			
Configuration ID		0000000000000000			
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help					
F5: Previous Values			F7: Setup Defaults		

Figure 1: Info

System

Phoenix - AwardBIOS CMOS Setup Utility					
Info	Sysetm	Advanced	Security	PC Health	Exit
Date (mm:dd:yy)		2007/Feb/1 Thu		Item Help	
Time (hh:mm:ss)		15:1:47			
▶ IDE Channel 0 Master		[None]			
▶ IDE Channel 0 Slave		[None]			
▶ IDE Channel 1 Master		[None]			
▶ IDE Channel 1 Slave		[None]			
▶ IDE Channel 2 Master		[None]			
Drive A		[1.44M, 3.5 ^{1/2}]			
↑ ↓ → ← : Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F7: Setup Defaults					

Figure 2: System

🔗 Date

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

- Date The date, Monday to Sunday.
- Month The month, Jan. Through Dec.
- Day The day, from 1 to 31 (or the maximum allowed in the month)
- Year The year, from 1999 through 2098

🔗 Time

The times format is set in <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 Channel 0 Master, Slave / Channel 1 Master, Slave /Channel 2 Master / Channel 4 Master

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

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

IDE HDDAutoDetection

Press [Enter] to auto-detect the HDD's size, head, etc on this channel.

Access Mode

This option allows user to set hard drive parameters.

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

» Capacity	Displays the capacity of HDD
» Cylinder	Number of cylinders
» Heads	Number of heads
» Precmp	Write precomp
» Landind Zone	Landing zone
» Sectors	Number of sectors

☞ **DriveA**

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

- | | |
|-------------------------------|--|
| » None | No floppy drive installed |
| » 360K, 5 ^{1/4} in. | 5.25 inch PC-type standard drive; 360K byte capacity. |
| » 1.2M, 5 ^{1/4} in. | 5.25 inch AT-type high-density drive; 1.2M byte capacity
(3.5 inch when 3 Mode is Enabled). |
| » 720K, 3 ^{1/2} in. | 3.5 inch double-sided drive; 720K byte capacity |
| » 1.44M, 3 ^{1/2} in. | 3.5 inch double-sided drive; 1.44M byte capacity. |
| » 2.88M, 3 ^{1/2} in. | 3.5 inch double-sided drive; 2.88M byte capacity. |

Advanced

Phoenix - AwardBIOS CMOS Setup Utility					
Info	Sysetm	Advanced	Security	PC Health	Exit
<div>▶ Advanced BIOS Feature</div> <div>▶ Integrated Peripherals</div> <div>▶ Power Management Setup</div>				Item Help	
<div>↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help</div> <div>F5: Previous Values F7: Setup Defaults</div>					

Figure 3: Advanced

Advanced BIOS Feature

Phoenix - AwardBIOS CMOS Setup Utility		
Advanced		
Advanced BIOS Feature		Item Help
▶ Hard Disk Boot Priority		
Quick Power On Self Test	[Enabled]	
Full Screen LOGO Show	[Enabled]	
First Boot Device	[USB-FDD]	
Second Boot Device	[Hard Disk]	
Third Boot Device	[CD/DVD]	
Boot Menu	[Enabled]	
Boot Up Flppy Seek	[Enabled]	
Boot Num-Lock	[On]	
Init Display First	[PEG]	
Limit CPUID Max to 3	[Disabled]	
Execute Disable Bit	[Enabled]	
CPU EIST Function	[Enabled]	
Virtualizational Technology	[Disabled]	
Core Multi-Processing	[Enabled]	
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F7: Setup Defaults		

Figure 3-1: Advanced BIOS Features

🔓 **Hard Disk Boot Priority**

Press [Enter] to set the hard disk boot priority.

🔓 **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 Enables quick POST. (Default setting)
- ▶▶ Disabled Normal POST.

🔓 **Full Screen LOGO Show**

- ▶▶ Enabled Enables Full LOGO show when system boot. (Default setting)
- ▶▶ Disabled Disable Full LOGO show when system boot.

🔓 **First / Second/ Third Boot Device**

Select the first/second/third boot device

- ▶▶ Floppy Select your boot device priority by Floppy.
- ▶▶ Hard Disk Select your boot device priority by Hard Disk.
- ▶▶ CD/DVD Select your boot device priority by CD/DVD.
- ▶▶ USB-FDD Select your boot device priority by USB-FDD.
- ▶▶ USB-CDROM Select your boot device priority by USB-CDROM.
- ▶▶ LAN Select your boot device priority by LAN.
- ▶▶ Disabled Select your boot device priority by Disabled.

🔓 **Boot Menu**

Select the specified boot device priority.

- ▶▶ Enabled Enable the specified boot device. (Default setting)
- ▶▶ Disabled Disable the specified boot device.

🔓 **Boot Up Floppy Seek**

During POST, BIOS will determine the floppy disk drive installed is 40 or 80 tracks. 360K type is 40 tracks 720K, 1.2M and 1.44M 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 720K, 1.2M or 1.44M drive type as they are all 80 tracks. (Default setting)
 - » 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 360K.

☞ **Boot Up Num-Lock**

- » On Enable the Boot Up Num-Lock. (Default setting)
- » Off Disable this function.

☞ **Init Display First**

This feature allows you to select the first initiation of the monitor display from which card, when you install an AGP VGA card and a PCI VGA card on board.

- » PEG Set Init Display First to PCI Express Slot. (Default setting)
- » PCI Slot Set Init Display First to PCI Slot.

☞ **Limit CPU ID Max to 3**

- » Enabled Set Limit CPU ID Max value to be 3.
- » Disabled Disables this function. (Default setting)

☞ **Execute Disable Bit**

Execute Disable Bit allows the processor to classify areas in memory by where application code can execute and where it cannot. When a malicious worm attempts to insert code in the buffer, the processor disables code execution, preventing damage and worm propagation.

- » Enabled Enable Execute Disable Bit. (Default setting)
- » Disabled Disable this function.

☞ **CPU EIST Function**

- » Enabled EIST function Driver manages clock and VID to be serve the thermal, performance and power requirement. (Default setting)

» Disabled Disables this function.

Virtualization Technology

Intel(R) Virtualization Technology will allow a platform to run multiple operating systems and applications in independent partitions. With virtualization, one computer system can function as multiple "virtual" systems. With processor and I/O enhancements to Intel's various platforms, Intel Virtualization Technology can improve the performance and robustness of today's software-only virtual machine solutions.

» Enabled Enable Intel Virtualization Technology.

» Disabled Disable this function. (Default setting)

Core Multi-Processing

Determines whether the 2nd core is enabled.

» Enabled Enable 2nd core. (Default setting)

» Disabled Disables P2nd core.

Integrated Peripherals

Phoenix - AwardBIOS CMOS Setup Utility		
Advanced		
Integrated Peripherals		Item Help
SATA Mode	[IDE]	
LEGACY Mode Support	[Enabled]	
PATA Controller	[Enabled]	
Audio Controller	[Enabled]	
Onboard H/W 1394	[Enabled]	
Onboard H/W LAN	[Enabled]	
Onboard LAN Boot ROM	[Enabled]	
Onboard Serial port 1	[3F8/IRQ4]	
Onboard Parallel port	[378/IRQ7]	
Parallel Port Mode	[ECP]	
ECP Mode Use DMA	[3]	
USB Controller	[Enabled/All]	
USB 2.0 Controller	[Enabled]	
USB Keyboard Support	[Disabled]	
USB Mouse Support	[Disabled]	
USB Storage Support	[Enabled]	
***** USB Mass Storage Device Boot Setting *****		
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F7: Setup Defaults		

Figure 3-2: Integrated Peripherals

⚙ SATA Mode

- » IDE Disable both RAID/AHCI function. (Default setting)
- » AHCI Enable SATA as AHCI function.
- » RAID Enable SATA as RAID function.

⚙ LEGACY Mode Support

- » Enabled Enable LEGACY Mode Support. (Default setting)
- » Disabled Disable LEGACY Mode Support function.

⚙ PATA Controller

- » Enabled Enable onboard PATA controller. (Default setting)
- » Disabled Disable onboard PATA controller.

⚙ Audio Controller

- » Enabled Enable onboard audio controller. (Default setting)
- » Disabled Disable onboard audio controller.

⚙ Onboard H/W 1394

- » Enabled Enable onboard H/W 1394. (Default setting)
- » Disabled Disable onboard H/W 1394.

⚙ Onboard H/W LAN

- » Enabled Enable onboard LAN controller. (Default setting)
- » Disabled Disable onboard LAN controller.

⚙ Onboard LAN Boot ROM

- » Enabled Enable onboard LAN boot ROM. (Default setting)
- » Disabled Disable onboard LAN boot ROM.

🔓 Onboard Serial Port 1

- ▶▶ 3F8/IRQ4 Enable onboard Serial port 1 and set IO address to 3F8. (Default setting)
- ▶▶ 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 setting)
- ▶▶ 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. (Default setting)
- ▶▶ ECP+EPP Using Parallel port as ECP & EPP mode.

🔓 ECP Mode Use DMA

This option is only available if the setting for the Parallel Port Mode option is ECP. This option sets the DMA channel used by parallel port.

The options: 1,3. Default setting is 3.

🔓 USB Controller

- ▶▶ Enabled/All Enable all USB controllers. (Default setting)
- ▶▶ Rear Only Enable rear USB controller only.
- ▶▶ Disabled Disable all USB controller.

☞USB 2.0 Controller

This item provide the function for user to enable/disable EHCI controller only. This BIOS itself may / may not have high speed USB support built-in, the support will be automatically turn on when high speed device were attached.

- » Enabled Enable USB 2.0 Controller function. (Default setting)
- » Disabled Disable USB 2.0 Controller function.

☞USB Keyboard Support

- » Enabled Enable USB Keyboard support. (Default setting)
- » Disabled Disable USB Keyboard support.

☞USB Mouse Support

- » Enabled Enable USB Mouse Support. (Default setting)
- » Disabled Disable USB Mouse Support.

☞USB Storage Support

- » Enabled Enable legacy support of USB mass storage. (Default setting)
- » Disabled Disable egacy support of USB mass storage.

Figure 3-3: Power Management Setup

▶▶ Soft-Off	When AC-power back to the system, the system will be in "Off" state.
▶▶ Full-On	When AC-power back to the system, the system always in "On" state.
▶▶ Memory	When AC-power back to the system, the system will return to the Last state before AC-power off.
▶▶ Disabled	Disable this function. (Default setting)

▶▶ Enabled	Enable PME Event Wake Up function.
▶▶ Disabled	Dsiable PME Event Wake Up 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 setting)
- ▶▶ 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)

Figure 4: Security

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.

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

Select whether the password is required every time when the system boots or only when user enter the setup.

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. (Default setting) |
| » All, But Keyboard | The system boot will not stop for a keyboard error; 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. |

Chassis Opening Warning

Set this option to Enabled to active warning beep sound when the system chassis is opened.

- | | |
|------------|--|
| » Enabled | Enable chassis opening warning. |
| » Disabled | Disable this function. (Default setting) |

PC Health

Phoenix - AwardBIOS CMOS Setup Utility	
Info	Sysetm Advanced Security PC Health Exit
▶ DMI Event Log ▶ Temperature ▶ Voltage ▶ FAN	Item Help
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F7: Setup Defaults	

Figure 5: PC Health

☞ DMIEventLog

▶▶ Press [Enter] to view the event logging information.

☞ Temperature

▶▶ Display the current CPU and PECI temperature, motherboard front and rear temperature.

☞ Voltage: VCORE/ +5V/ +3.3V/ +12V/ VBAT

▶▶ Detect system's voltage status automatically.

☞ FAN(RPM)

▶▶ Display the current CPU, Front, Rear, System and Power FAN speed.

Figure 6: Exit

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

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

Type "N" will return to Setup Utility.

Type "Y" will abandon all data and quit without saving.
Type "N" will return to Setup Utility.

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