GA-7GEWH-RH Dual Xeon Processor Motherboard

USER'S MANUAL

Xeon™ Processor Motherboard Rev. 2001



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.

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Item Checklist

- ☑ The GA-7GEWH-RH motherboard
- ☑ Serial ATA cable x 6
- ☑ IDE (ATA100) cable x 1 / Floppy cable x 1
- ☑ I/O Shield Kit
- ☑ CD for motherboard driver & utility
- ☑ Power cable x 4
- ☑ GA-7GEWH-RH user's manual
- ✓ SAS cable x 2

^{*} The items listed above are for reference only, and are subject to change without notice.

Chapter 1 Introduction

1.1. Considerations Prior to Installation

Preparing Your Computer

The motherboard contains numerous delicate electronic circuits and components which can become damaged as a result of electrostatic discharge (ESD). Thus, prior to installation, please follow the instructions below:

- Please turn off the computer and unplug its power cord.
- 2. When handling the motherboard, avoid touching any metal leads or connectors.
- It is best to wear an electrostatic discharge (ESD) cuff when handling electronic components (CPU, RAM).
- 4. Prior to installing the electronic components, please have these items on top of an antistatic pad or within a electrostatic shielding container.
- Please verify that the power supply is switched off before unplugging the power supply connector from the motherboard.

Installation Notices

- Prior to installation, please do not remove the stickers on the motherboard. These stickers are required for warranty validation.
- 2. Prior to the installation of the motherboard or any hardware, please first carefully read the information in the provided manual.
- Before using the product, please verify that all cables and power connectors are connected.
- To prevent damage to the motherboard, please do not allow screws to come in contact with the motherboard circuit or its components.
- 5. Please make sure there are no leftover screws or metal components placed on the motherboard or within the computer casing.
- 6. Please do not place the computer system on an uneven surface.
- 7. Turning on the computer power during the installation process can lead to damage to system components as well as physical harm to the user.
- 8. If you are uncertain about any installation steps or have a problem related to the use of the product, please consult a certified computer technician.

Instances of Non-Warranty

- 1. Damage due to natural disaster, accident or human cause.
- 2. Damage as a result of violating the conditions recommended in the user manual.
- 3. Damage due to improper installation.
- 4. Damage due to use of uncertified components.
- 5. Damage due to use exceeding the permitted parameters.
- Product determined to be an unofficial Gigabyte product.

| Form Factor | 12" x 13" EATX size form factor, 8 layers PCB |
|----------------------|--|
| CPU | Supports Dual Intel® Xeon™ processors |
| | Xeon™ Dual Core in LGA 771 socket |
| | Supports 667/1066MHz FSB (Dempsey) |
| | Supports 1066/1333MHz FSB (Woodcrest) |
| | Enhanced Intel SpeedStep Technology (EIST) & Demand Based |
| | Switch (DBS) |
| | Support Intel Virtualization Technology (VT) |
| | L2 cache on-die per processor from 4M |
| Chipset | Intel® 5000X Chipset |
| | • Intel® 6321ESB |
| | Intel® 6702 PXH-V |
| Memory | 8 x 240-pin DIMM sockets |
| | Supports up to 32GB 533/667 memory |
| | 4 Channel memory bus |
| | Fully Buffered DIMM (FBD) 533/667MHz |
| | Support 512MB, 1GB, 2GB and 4GB memory |
| I/O Control | ITE Super I/O |
| Expansion Slots | • 1 PCI slots 32-Bit/33MHz (5V) |
| | 2 PCI-X slots 64-Bit/66~133MHz |
| | 1 PCI-Express x16 slot |
| | 1 PCI-Express x8 slot (in x16 socket) |
| SAS RAID Controller | LSI® SAS1068 SAS Controller |
| | • Supports 8 independant SAS 3.0 Gb/s with Host RAID 0,1,10 |
| SATA RAID Controller | Built in Intel® 6321ESB with SATA RAID 0,1,10 |
| | Supports 6 SATA connectors |
| On-Board Audio | RelteakALC883 |
| IEEE1394A | • TITSB43AB23 |
| On-Board LAN | Build in Intel® 6321ESB chipset supports dual Gigabit Ethernet |
| | ports |
| | Supports WOL, PXE |
| On-Board Peripherals | 1 ATA 100 connector |
| | 1 Floppyport supports 360K, 720K, 1.2M, 1.44M and |
| | 2.88M bytes. |
| | • 2 PS/2 connectors |
| | 1 Parallel port supports Normal/EPP/ECP mode |
| | |

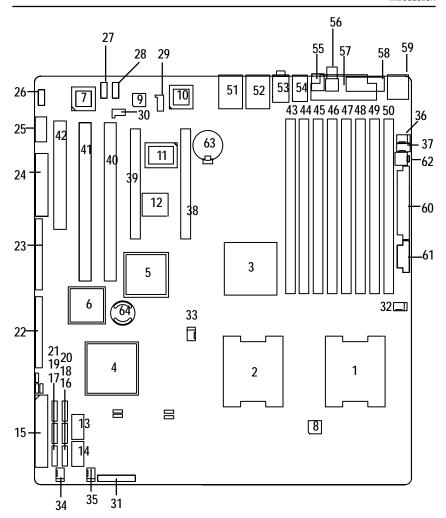
| Introduction |
|---|
| 2 Serial port (COM, 1 by cable) |
| 8 x USB 2.0 (4 by cable) |
| • 2 x LAN RJ45 |
| 6 x SATA connectors |
| Winbond 83792G controller |
| Enhanced features with CPU Vcore, 1.5V reference, |
| VCC3 (3.3V), VBAT3V, +5VSB, CPUA/B Temperature, and |
| System Temperature Values viewing |
| CPU/Power/System Fan Revolution Detect |
| CPU shutdown when overheat |
| System Voltage Detect |
| Support basic ASF remote transaction through CSA Bus with |
| hardware circuit |
| Phoenix BIOS on 8Mb flash RAM |
| Ehanced feature with GSMT Lite Utility |
| Supports S3, S4, S5 under Windows Operating System |
| Wake on LAN (WOL) |
| Wake on Ring (WOR) |
| AC Recovery |
| Supports Console Redirection |
| Supports 4-pin Fan controller |
| |

1.3. GA-7GEWH-RH Motherboard Component

| 1. | Primary CPU | 33. | CPU2 fan cable connector |
|-----|--------------------------|-----|-------------------------------|
| 2. | Secondary CPU | 34. | Front fan1 connector |
| 3. | Intel 5000X | 35. | Front fan2 cable connector |
| 4. | Intel 6321ESB | 36. | Rear fan1 cable connector |
| 5. | Intel 6702 PXH-V | 37. | Rear fan2 cable connector |
| 6. | LSI SAS1068 | 38. | PCI-E x16 Slot |
| 7. | TSB43AB23 | 39. | PCI-E x16 Slot (x8 bandwidth) |
| 8. | Winbond W83792G | 40. | PCI-X Slot (64bit/133MHz) |
| 9. | Relteak ALC883 | 41. | PCI-X Slot (64bit/100MHz) |
| 10. | Intel LAN Chip | 42. | PCI Slot(32bit/33MHz) |
| 11. | ITE 8718F-S | 43. | DIMMA1 |
| 12. | BIOS Flash | 44. | DIMMA2 |
| 13. | Front USB1 connector | 45. | DIMMB1 |
| 14. | Front USB2 connector | 46. | DIMMB2 |
| 15. | IDE cable connector | 47. | DIMMC1 |
| 16. | SATA0 cable connector | 48. | DIMMC2 |
| 17. | SATA 1cable connector | 49. | DIMMD1 |
| 18. | SATA2 cable connector | 50. | DIMMD2 |
| 19. | SATA3 cable connector | 51. | USB/LAN Ports |
| 20. | SATA4 cable connector | 52. | USB/LAN Ports |
| 21. | SATA5 cable connector | 53. | Audio Connectors |
| 22. | SAS cable connector | 54. | Audio Connectors |
| 23. | SAS cable connector | 55. | SPDIF out (Optical) |
| 24. | Floppy cable connector | 56. | SPDIF out (Coaxial) |
| 25. | COM2 Connector | 57. | Parallel Port |
| 26. | IEEE 1394A connector | 58. | Serial Port |
| 27. | IEEE 1394B connector | 59. | Keyboard/Mouse Connector |
| 28. | Front Audio connector | 60. | Auxiliary Power (ATX1) |
| 29. | SPDIF In connector | 61. | Auxiliary Power (ATX3) |
| 30. | CD In connector | 62. | Auxiliary Power (ATX2/+12V) |
| 31. | Front Panel connector | 63. | Battery |
| 32. | CPU1 fan cable connector | 64. | ibutton** |



** ibutton functions for LSI Software RAID 0,1,5,10



Chapter 2 Hardware Installation Process

2.1. Installing Processor and CPU Haet Sink

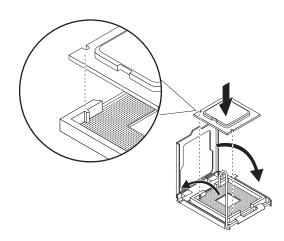


Before installing the processor and cooling fan, adhere to the following cautions:

- 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 will cause improper installation. Please change the insert orientation.

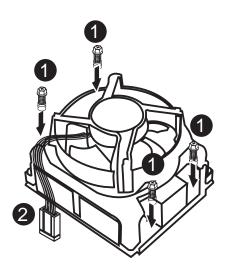
2.1.1. Installing CPU

- 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 Heat Sink

- 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 cooing fan with screws.
- Step 4 Connect processor fan can cable to the processor fan connector

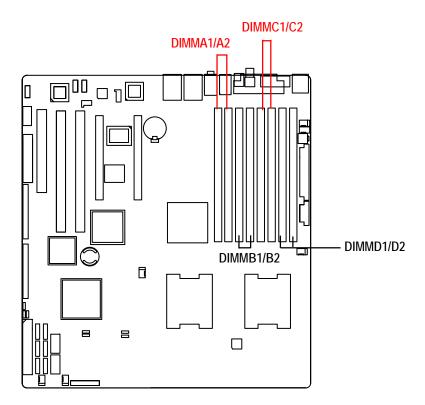


2.2. Installing memory modules



Before installing the processor and heatsink, adhere to the following warning: When DIMM LED is ON, do not install/remove DIMM from socket.

GA-7GEWH-RH has 8 dual inline memory module (DIMM) sokcets. It supports the 4 FB-DIMM Channels Technology. The BIOS will automatically detects memory type and size during system boot. For detail DIMM installation, please refer to the following instructions.

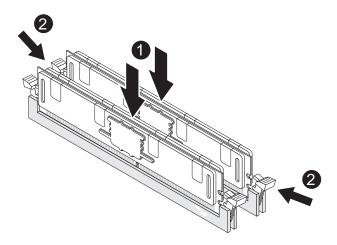


Installation Steps:

- Step 1. Insert the DIMM memory module vertically into the DIMM slot, and push it down.
- Step 2. Close the plastic clip at both edges of the DIMM slots to lock the DIMM module.

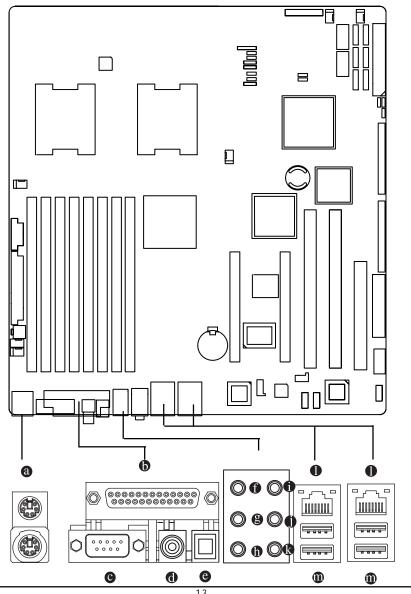
NOTE! DIMM must be populated in order starting from DIMM8 socket. For dual-channel operation, DIMMs must be installed in matched pairs.

Step 3. Reverse the installation steps when you wish to remove the DIMM module.



Connect ribbon cables, cabinet wires, and power supply 2.3.

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).

Parallel Port

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

© COAXIAL (SPDIF Out)

The SPDIF coaxial output port is capable for providing digital audio to external speakers or compressed AC3 data to an external Dolby Digital Decoder via a coaxial cable.

OPTICAL (SPDIF Out)

The SPDIF optical output port is capable for providing digital audio to external speakers or compressed AC3 data to an external Dolby Digital Decoder via an optical cable.

Serial Port

Modem can be connected to Serial port.

Line In

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

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.

MIC In

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

Surround Speaker Out (Rear Speaker Out)

The default Surround Speaker Out (Rear Speaker Out) jack. Rear surround speakers can be connected to Surround Speaker Out (Rear Speaker Out) jack.

Center/Subwoofer Speaker Out

The default Center/Subwoofer Speaker Out jack. Center/Subwoofer speakers can be connected to Center/Subwoofer Speaker Out jack.

Side Speaker Out

The default Side Speaker Out jack. Surround side speakers can be connected to Side Speaker Out jack.

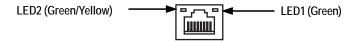
LAN Port

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

USB Port

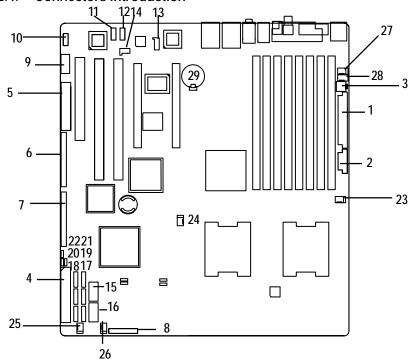
Before you connect your device(s) into USB connector(s), please make sure your device(s) such as USB keyboard, mouse, scanner, zip, speaker...etc. have a standard USB interface. Also make sure your OS supports USB controller. If your OS does not support USB controller, please contact OS vendor for possible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

LAN LED Description



| Name | Color | Condition | Description |
|------|--------|-----------|---|
| LED1 | Green | ON | LAN Link / no Access |
| | Green | BLINK | LAN Access |
| | | OFF | Idle |
| LED2 | | OFF | 10Mbps connection |
| | Green | BLINK | Port identification with 10 Mbps connection |
| | Green | ON | 100Mbps connection |
| | Green | BLINK | Port identification with 100Mbps connection |
| | Yellow | ON | 1Gbps connection |
| | Yellow | BLINK | Port identification with 1Gbps connection |
| | | | |

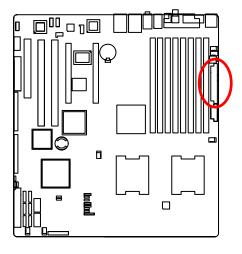
2.4. Connectors Introduction



- 1. ATX1
- 2. ATX3
- 3. ATX2 (ATX +12V)
- 4. IDE1 (IDE Connector)
- 5. FDD1 (Floppy Connector)
- 6. SAS1 (SAS Connector)
- 7. SAS2 (SAS Connector)
- 8. F_Panel (Front Panel Connector)
- 9. COM2
- 10. F_1 (1394A Connector)
- 11. F_2 (1394B Connector)
- 12. F_Audio (Front Audio Connector)
- 13. CD_IN
- 14. SPDIF_I1
- 15. F_USB1 (Front USB Connector)

- 16. F_USB2 (Front USB Connector)
- 17. SATA0 (SATA Connector)
- 18. SATA1 (SATA Connector)
- 19. SATA 2(SATA Connector)
- 20. SATA3 (SATA Connector)
- 21. SATA4 (SATA Connector)
- 22. SATA5 (SATA Connector)
- 23. CPU0_FAN (CPU 0 Fan Connector)
- 24. CPU1_FAN (CPU1 Fan Connector)
- 25. FAN_F1 (Front Fan1 Connector)
- 26. FAN_F2 (Front Fan2 Connector)
- 27. FAN_R1 (Rear Fan1 Connector)
- 28. FAN_R2 (Rear Fan2 Connector)
- 29. BAT1 (Battery)

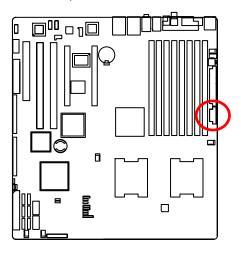
1) ATX1 (24-pin ATX Power Connector)

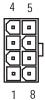


AC power cord should only be connected to your power supply unit after ATX power cable and other related devices are firmly connected to the mainboard.

| PIN No. | Definition |
|---------|------------|
| 2 | +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) ATX3 (8-pin ATX Power Connector)

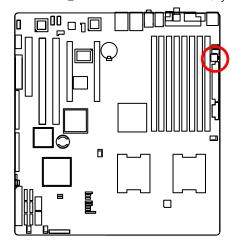




| Pin No. | Definition |
|---------|------------|
| 1 | GND |
| 2 | GND |
| 3 | GND |
| 4 | GND |
| 5 | P12V_CPU |
| 6 | P12V_CPU |
| 7 | P12V_CPU |
| - 8 | P12V CPU |

3) ATX2 (4-pin ATX +12V Power connector)

This connector (ATX_12V) supplies the CPU operation voltage (Vcore). If this "ATX_12V connector" is not connected, system cannot boot.

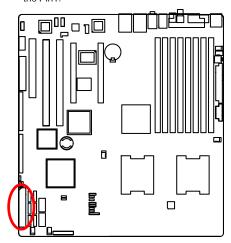


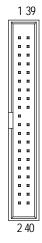
| _1_ | 3 | |
|-----|---|---|
| | | h |
| | | ۲ |
| 2 | 4 | |

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

4) IDE1 (IDE cable connector)

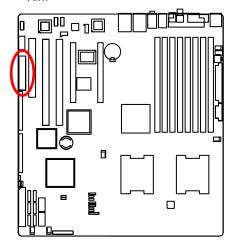
Please connect first harddisk to IDE1. The red stripe of the ribbon cable must be the same side with the Pin1.

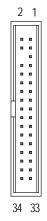




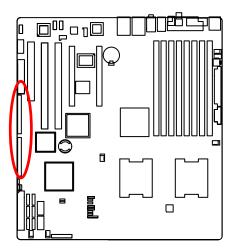
5) FDD1 (Floppy cable connector)

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.



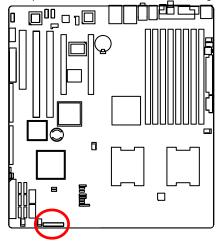


6/7) SAS1/SAS2 (SAS cable connectors)



8) F_Panel (2X12 Pins Front Panel connector)

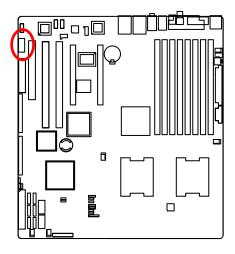
Please connect the power LED, PC speaker, reset switch and power switch of your chassis front panel to the F_PANEL connector according to the pin assignment above.

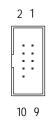




| Pin No. | Signal Name | Description |
|---------|-------------|-----------------------------------|
| 1. | PWLED+ | Power LED Signal anode (+) |
| 2. | 5VSB | P5VStand By Power |
| 3. | KEY | Pin Removed |
| 4. | ID_LED+ | ID LED Signal anode (+) |
| 5. | PWLED- | Power LED Signal cathode(-) |
| 6. | ID_LED- | ID LED Signal cathode(-) |
| 7. | HD+ | Hard Disk LED Signal anode (+) |
| 8. | F_SYSRDY | System Fan Fail LED Signal |
| 9. | HD- | Hard Disk LED Signal cathode(-) |
| 10. | F_SYSTATUS | System Status LED Signal |
| 11. | PWB+ | Power Button Signal anode (+) |
| 12. | L1_ACT | LAN1 access LED Signal |
| 13. | PWB+_GND | Power Button Ground |
| 14. | L1_LNK- | LAN1 linked LED Signal cathode(-) |
| 15. | RST_BTN- | Reset Button cathode(-) |
| 16. | SENSOR_SDA | SMBus Data |
| 17. | RST_BTN_GND | Reset Button Ground |
| 18. | SENSOR_SCL | SMBus Clock |
| 19. | ID_SW- | ID Switch Signal cathode(-) |
| 20. | CASE_OPEN- | Chassis intrusion Signal |
| 21. | ID_SWGND | ID Switch Ground |
| 22. | L2_ACT | LAN2 access LED Signal |
| 23. | NMI_SW- | NMI Switch cathode(-) |
| 24. | L2_LNK- | LAN2 linked LED Signal cathode(-) |

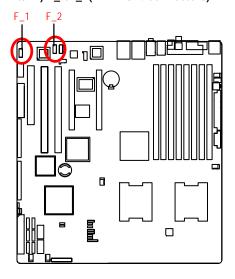
9) COM2





| Pin No. | Definition | |
|---------|------------|---|
| 1 | DCD- | |
| 2 | SIN2 | |
| 3 | SOUT2 | |
| 4 | DTR2- | |
| 5 | GND | |
| 6 | DSR2- | |
| 7 | RTS2- | |
| 8 | CTS2- | |
| 9 | RI2- | |
| 10 | NC | |
| | | _ |

10/11) F_1/F_2(IEEE 1394 connectors)

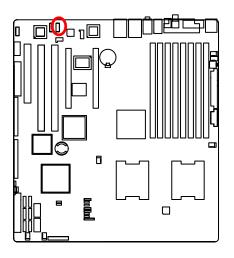




| Pin No. | Definition |
|---------|------------|
| 1 | FTPA1+ |
| 2 | FTPA1- |
| 3 | GND |
| 4 | GND |
| 5 | FTPB1+ |
| 6 | FTPB1- |
| 7 | BUSVCC0 |
| 8 | BUSVCC0 |
| 9 | No Pin |
| 10 | NC |

12) F_AUDIO (Front AUDIO Connector)

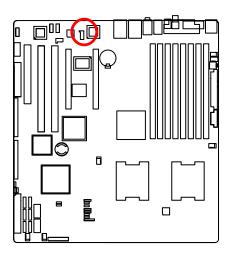
In order to utilize the front audio header, your chassis must have front audio connector. Also please make sure the pin assignment on the cable is the same as the pin assignment on the MB header. To find out if the chassis you are buying support front audio connector, please contact your dealer.



| Pin No. | Definition |
|---------|----------------|
| 1 | MIC |
| 2 | GND |
| 3 | REF |
| 4 | POWER |
| 5 | FrontAudio(R) |
| 6 | RearAudio(R) |
| 7 | Reserved |
| 8 | No Pin |
| 9 | FrontAudio (L) |
| 10 | RearAudio(L) |
| | |

13) CD_IN (CD IN,Blank)

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



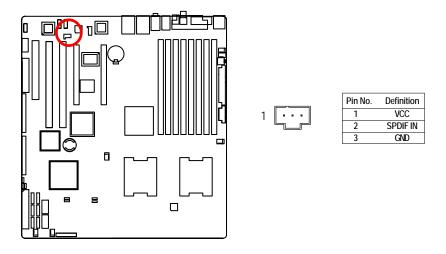


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| Pin No. | Definition |
|---------|------------|
| 1 | CD-L |
| 2 | GND |
| 3 | GND |
| 4 | CD_R |

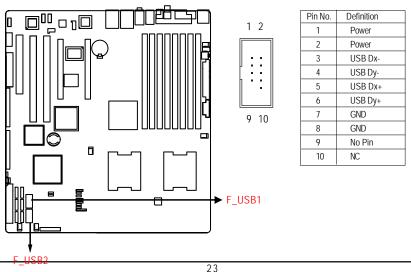
14) SPDIF_I1

Use this device only when your hardware system has digital output function.



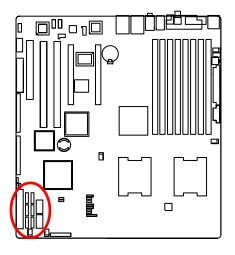
15/ 16) F_USB1/2 (Front USB Connectors)

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.



17/18/19/20/21/22) SATA 0~5 (Serial ATA cable connectors)

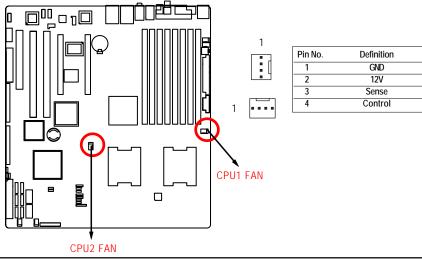
You can connect the Serial ATA device to this connector, it provides you high speed transfer rates (3.0Gb/sec).



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

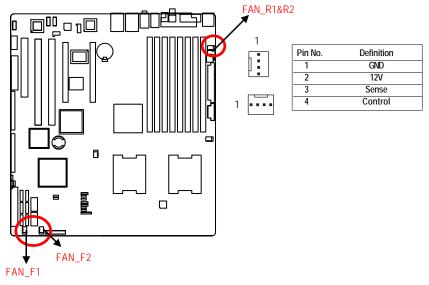
23/24) CPU1/2_FAN (CPU Fan Connectors)

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.

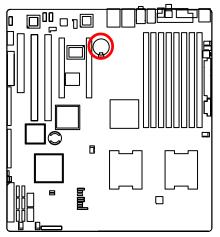


25/26/27/28) FAN_F1/F2/FAN_R1/R2 (System Front and Rear Fan Connectors)

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.



29) BAT1 (Battery)





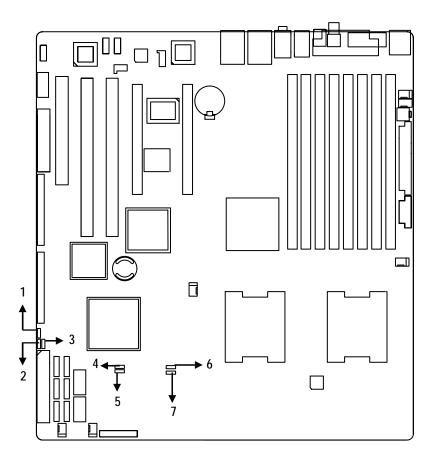
CAUTION

- 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.

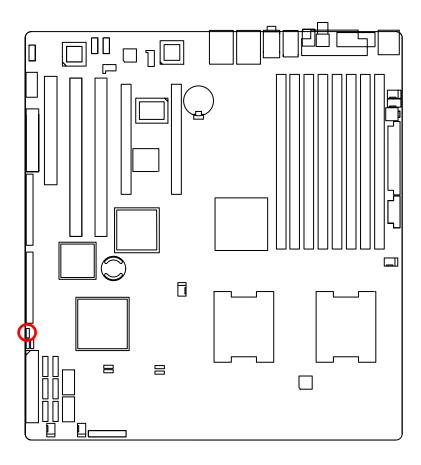
2.5. Jumper Setting

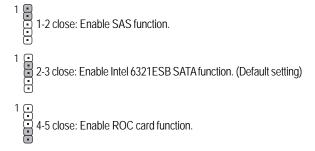


- 1. JP_IBUT1
- 2. JP1
- 3. EN_ZCR
- 4. CLR_CMOS1

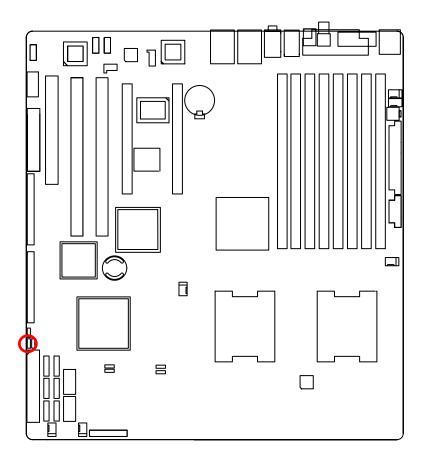
- 5. JP_REC1
- 6. JP_LAN1
- 7. JP_LAN2

1) JP_IBUT1 (ibutton Code Select Function)



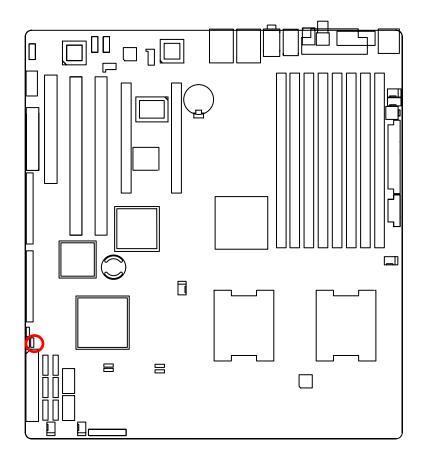


1) JP1 (SAS Mega RAID Function)



- ¹ a 1-2 close: Enable Mega RAID function
- 1 2-3 close: Disable Mega RAID function (Default seting)

3) EN_ZCR (Enable SAS ZCR Function)



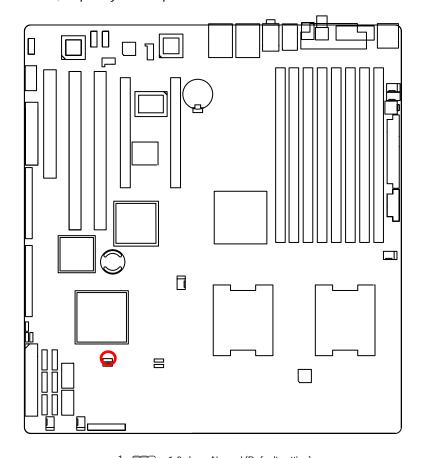
1 • 1-2 close: Disable SAS ZCR function (Default seting)

1 2-3 close: Enable SAS ZCR function

4) CLR_CMOS1 (Clear CMOS Function)

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

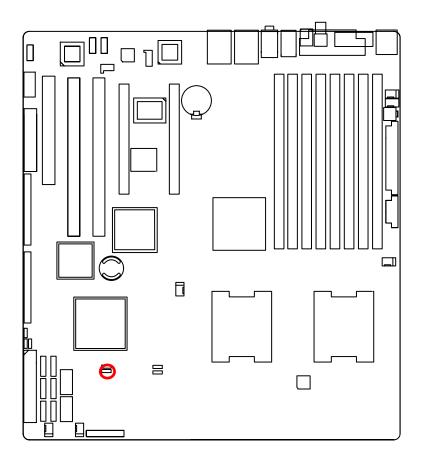
Default value doesn't include the "Shunter" to prevent from improper use this jumper. To clear CMOS, temporarily short 1-2 pin.



1 ••• 1-2 close: Normal (Default setting)

1 ••• 2-3 close: Clear CMOS

5) JP_REC1 (BIOS Recovery Function)



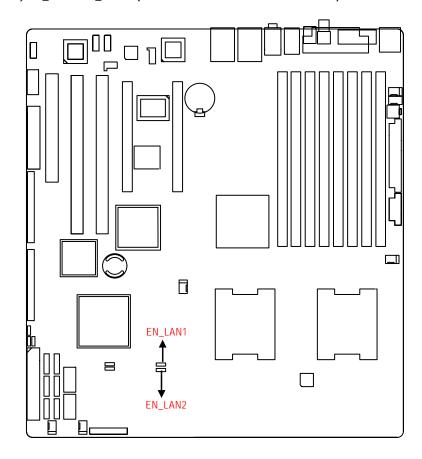
1 ••• 1-2 close: Enable BIOS Recovery function.

1 ••• 2-3 close: Normal. (Default setting)



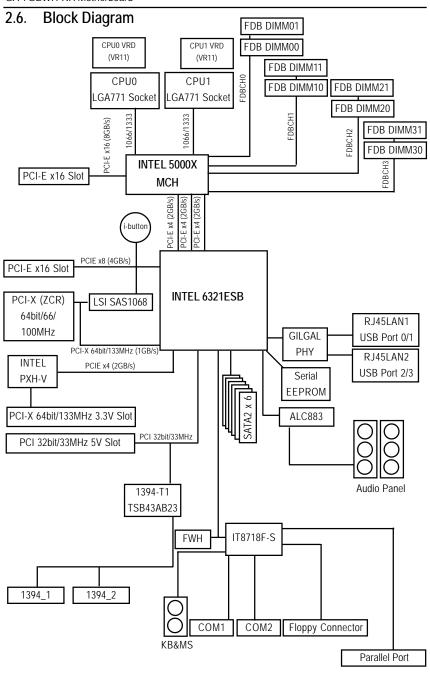
Please remove the jumper when system access recovery flopp disk.

6/7) EN_LAN1/EN_LAN2 (Enable Onboard LAN1/LAN2 Function)



1 •••• 1-2 close: Enable onboard LAN function. (Default setting)

1 ••• 2-3 close: Disable onboard LAN function.



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.

ENTERINGSETUP

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

CONTROLKEYS

| < 1>> | Move to previous item |
|---------------------|--|
| < \ > | Move to next item |
| < (> | Move to the item in the left hand |
| < > > | Move to the item in the right hand |
| <esc></esc> | Main Menu - Quit and not save changes into CMOS Status Page Setup Menu and |
| | Option Page Setup Menu - Exit current page and return to Main Menu |
| <+/PgUp> | Increase the numeric value or make changes |
| <-/PgDn> | Decrease the numeric value or make changes |
| <f1></f1> | General help, only for Status Page Setup Menu and Option Page Setup Menu |
| <f2></f2> | Reserved |
| <f3></f3> | Reserved |
| <f4></f4> | Reserved |
| <f6></f6> | Reserved |
| <f7></f7> | Reserved |
| <f8></f8> | Reserved |
| <f9></f9> | Load the Optimized Defaults |
| <f10></f10> | Save all the CMOS changes, only for Main Menu |
| | |

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>.

Main

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

Advanced

This setup page includes all the items of AMI special enhanced features. (ex: Auto detect fan and temperature status, automatically configure hard disk parameters.)

Security

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

Server

Server additional features enabled/disabled setup menus.

Boot

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

Exit

There are five options in this selection: Exit Saving Changes, Exit Discarding Changes, Load Optimal Defaults, Load Failsafe Defaults, and Discard Changes.

Main

Once you enter Phoenix 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.

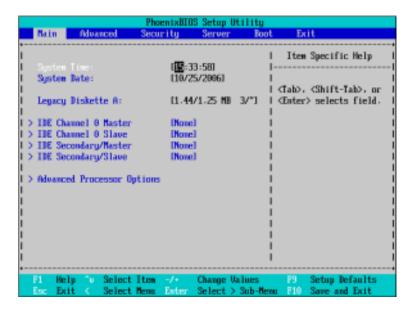


Figure 1: Main

▽System Time

The time is calculated based on the 24-hour military time clock. Set the System Time (HH:MM:SS)

▽System Date

Set the System Date. Note that the "Day" automatically changed after you set the date. (Weekend: DD: MM: YY) (YY: 1099~2099)

TIDE Primary Master, Slave / Secondary Master, Slave

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

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

If you select 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.

TYPE

1-39: Predefined types.

Users: Set parameters by User.

Auto: Set parameters automatically. (Default setting)

CD-ROM: Use for ATAPI CD-ROM drives or double click [Auto] to set all HDD parameters automatically.

ATAPI Removable: Removable disk drive is installed here.

Multi-Sector Transfer

This field displays the information of Multi-Sector Transfer Mode.

Disabled: The data transfer from and to the device occurs one sector at a time.

Auto: The data transfer from and to the device occurs multiple sectors at a time if the device supports it.

▶ LBA Mode This field shows if the device type in the specific IDE channel

support LBA Mode.

▶ 32-Bit I/O Enable this function to max imize the IDE data transfer rate.

Transfer Mode This field shows the information of Teansfer Mode.

▶ Ultra DMA Mode This filed displays the DMA mode of the device in the specific IDE

channel.

Advanced Processor Options

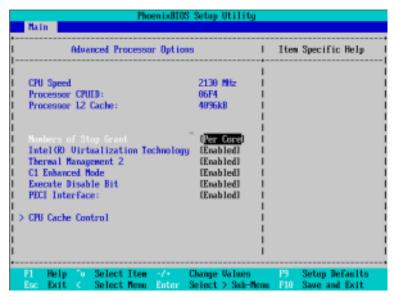


Figure 1-1: Advanced Processor Options

⇔Advanced Processor Option

This category includes the information of CPU Speed, Processor ID and Per Processor Core L2 Cache. And setup menu for Hyperthreading, Intel Virtualizational Technology, Thermal Management 2, C1 Enhanced Mode, Execute Disable Bit.

Setup menu options will be variable depends on the type of CPU.

⇔Processor Reset

Yes Select 'Yes' BIOS will clear historical processor status and reset all

processors on next boot.

▶No Disable Processor Reset function. (Default setting)

-Hyper Threading

▶► Enabled Enable Hyper-Threading Technology Feature when using Windows

XP and Linux 2.4x operating systems that are optimized for Hyper-

Threading technology. (Default setting)

▶▶Disabled Disable Hyper-Threading Technology when using other operating

systems.



NOTE: This option appears when using Dempsey CPU.

☞ Thermal Management2

Thermal Management 2 enhances the features of power reduction capability. When TM2 is enabled, it will reduce the frequency and VID which results in a saving of power consumption of processor.

▶► Enabled Enabled Thermal Management 2. (Default setting)

▶ Disabled Disables this function.



NOTE: This option appears when using Woodcrest CPU.

▽PECI Interface

The Platform Environmental Control Interface (PECI Interface) is designed specifically to convey system management information from the processor. It is a proprietary single wire bus between the processor and the chipset or other health monitoring device. Data from the Digital Thermal Sensors are processed and stored in a processor register (MSR) which is queried through the Platform Environment Control Interface (PECI).

▶ Enabled Enable PECI Interface

▶ Disabled Disable this function. (Default setting)



NOTE: This option appears when using Woodcrest CPU.

☐ Intel (R) 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 softwareonly virtual machine solutions.

▶►Enabled Enable Intel Virtualization Technology. (Default setting)

▶ Disabled Disable this function.

C1 Enhanced Mode

With enabling C1 Enhanced Mode, all loical processors in the physical processor have entered the C1 state, the processor will reduce the core clock frequency to system bus ratio and VID.

▶►Enabled Enable C1 Enhanced Mode.

▶ Disabled Disable C1 Enhanced Mode. (Default setting)

▽Execute Disable Bit

Enable Execute Disable Bit. **▶** Enabled

▶ Disabled Disable this function. (Default setting)

CPU Cache Control

TODCU Prefetcher

When the DCU detects the multiple loads from the same cache line done. The DCU

Prefetcherassumes the next line will be required. The next line is prefetched in to the L1 data cache

from memory or L2.

▶ Enabled Enabled DCU Prefetcher.

▶ Disabled Disables this function. (Default setting)

▽Hardware Prefetcher

The Hardware Prefetcher looks the streams of data. The data is prefetched into L2 from external memory. Disabling of this item may impact processor performance.

▶► Enabled Enabled Hardware Prefetcher. (Default setting)

▶Disabled Disables this function. ☐IP Prefetcher

It is an L1 instruction cache prefetcher. The IP Prefetcher looks for sequential load history to determine whether to prefetch the next expected data into the L1 instruction cache from memory or L2.

Enabled Enabled IP Prefetcher. (Default setting)

▶ Disabled Disables this function.

☞Adjacent Cache Line Prefetch

When enable this item, both cache lines that comprise a cache line pair when it determines data required is not currently in its cache.

▶ Enabled Adjacent Cache Line Prefetch. (Default setting)

▶ Disabled Disables this function.

Tirect Access Cache

Direct Access Cache is a system level protocol in a multi-processor system to improve I/O network performance.

▶▶Enabled Direct Access Cache.

▶ Disabled Disables this function. (Default setting)

Advanced

About This Section: Advanced

With this section, allowing user to configure your system for basic operation. User can change the memory configuration, chipset configuration, PCI configuration and hardware monitor control.

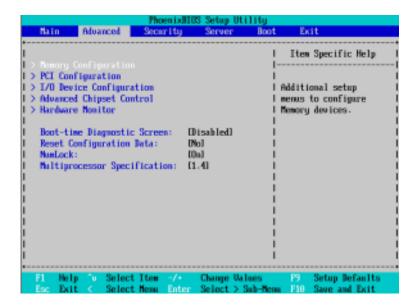


Figure 2: Advanced

Memory Configuration

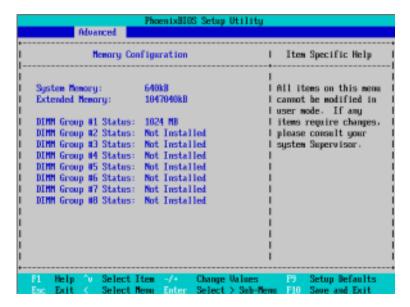


Figure 2-1: Memory Configuration

♡ System Memory/Extended Memory/DIMM Group 1~8 Status

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

PCI Configuration

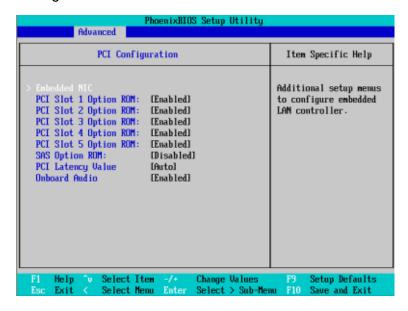


Figure 2-2: PCI Configuration

▽Embedded NIC

>> LAN 1 Option ROM Scan

▶ Enabled Enable onboard LAN1 device and initialize device expansion

ROM. (Default setting)

▶Disabled Disable this function.

▶► LAN2 Option ROM Scan

▶ Enabled Enable onboard LAN2 device and initialize device expansion

ROM. (Default setting)

▶Disabled Disable this function.

PCI Slot 1/2/3/4/5 Option ROM

▶► Enabled Enable this item to initialize device expansion ROM.

(Defualt setting)

▶ Disabled Disable this function.

⇔SAS Option ROM

▶ Enabled Enable this item to initialize device expansion ROM.

(Default setting)

▶ Disabled Disable this function.

▽PCI Latency Value

Configuration PCI latency time of PCI device.

▶ Options 32, 64, 128, Auto. Default setting is Auto.

○OnboardAudio

▶► Enabled Enable the onboard audio device. (Defualt setting)

▶ Disabled Disable this function.

I/O Device Configuration

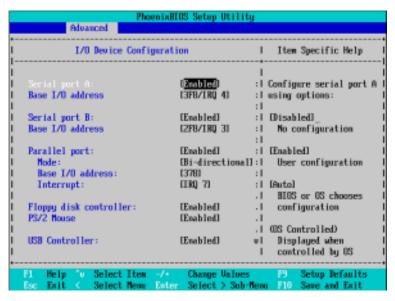


Figure 2-3: I/O Device Configuration

⇔Serial Port A

This allows users to configure serial prot A by using this option.

► Enabled Enable the configuration (Default setting)

▶ Disabled Disable the configuration.

▶ Base I/O Address/IRQ

▶ 3F8/IRQ4 Set IO address to 3F8. (Default setting)

▶≥2F8/IRQ3 Set IO address to 2F8.
 ▶⇒3E8/IRQ4 Set IO address to 3E8.
 ▶≥2E8/IRQ3 Set IO address to 2E8.

▽Serial Port B

This allows users to configure serial prot B by using this option.

► Enabled Enable the configuration (Default setting)

▶ Disabled Disable the configuration.

▶ Base I/O Address/IRQ

▶ 3F8/IRQ4 Set IO address to 3F8.

▶ 2F8/IRQ3 Set IO address to 2F8. (Default setting)

▶ 3E8/IRQ4 Set IO address to 3E8.▶ 2E8/IRQ3 Set IO address to 2E8.

▽Parallel Port

This allows users to configure parallel port by using this option.

▶► Enabled Enable the configuration. (Default setting)

▶ Disabled Disable the configuration.

▶ Mode

This option allows user to set Parallel Port transfer mode.

▶ Bi-directional Use this setting to support bi-directional transfers on the parallel

port. (Default setting)

▶ EPP Using Parallel port as Enhanced Parallel Port.

▶ ECP Using Parallel port as Extended Capabilities Port.

▶ Base I/O Address

▶ 378 Set IO address to 378. (Default setting)

▶ 278 Set IO address to 278.

▶ Iterrupt

▶ IRQ5 Set Interrupt as IRQ5.

▶ IRQ7 Set Interrupt as IRQ7. (Default setting)

▽Floppy disk controller

► Enabled Enable onboard floppy disk controller. (Default setting)

Disabled Disable this device.

⇔PS/2 Mouse

Set this option 'Enabled' to allow BIOS support for a PS/2 - type mouse.

▶ Enabled 'Enabled' forces the PS/2 mouse port to be enabled regardless if a

mouse is present. (Default setting)

▶Disabled 'Disabled' prevents any installed PS/2 mouse from functioning,

but frees up IRQ12.

USB Controller

This item allows users to enable or disable the USB device by setting item to the desired value.

➤ Enabled Enable USB controller. (Default setting)

▶ Disabled Disbale this function.

♥USB 2.0 Controller

This item allows users to enable or disable the USB 2.0 device by setting item to the desired value.

► Enable USB 2.0 controller.(Default setting)

▶ Disabled Disbale this function.

▽Legacy USB Support

This option allows user to function support for legacy USB.

▶ Enabled Enables support for legacy USB (Default setting)

▶ Disabled Disables support for legacy USB.

™Route Port 80h cycles to

Set route port 80h cycles to either PCI or LPC bus.

▶ PCI Set Route Port 80h I/O cycles to the PCI bus. (Default setting)

▶ LPC Set Route Port 80h I/O cycles to the LPC bus.

▽Parallel ATA

▶► Enabled Enable Parallel ATA. (Default setting)

Disabled Disable the device.

♡Serial ATA

▶ Enabled Enables on-board serial ATA function. (Default setting)

▶ Disabled Disables on-board serial ATA function.

Native Mode Operation

This option allows user to set the native mode for Serial ATA function.

▶Auto Auto detected. (Default setting)▶Serial ATA Set Native mode to Serial ATA.

SATA Controller Mode Option

Compatible Mode SATA and PATA drives are auto-detected and placed in

Legacy mode. (Default setting)

▶ Enhanced Mode SATA and PATA drives are auto-detected and placed in

Native mode.

Note: Pre-Win2000 operating system do not work in Enhanced mode.

Advanced Chipset Control

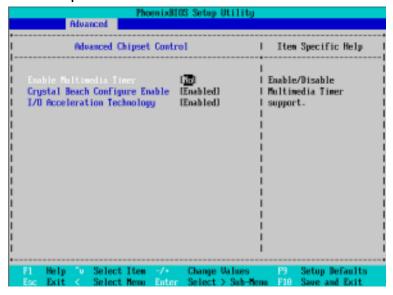


Figure 2-4: Advanced Chipset Control

©Enable Multimedia Timer

Yes Enable Multimedia Timer support.No Disable this function. (Default setting)

Crystal Beach Configure Enable

Enable Configuration/Memory mapped accesses to the Crystal Beach Configuration sapce located in Device 8, Fn0, and Fn1.

► Enabled Crystal Beach Configure function. (Default setting)

▶ Disabled Disable this function.

☐ I/O Acceleration Technology

It addresses all segments of the server I/O bottleneck problem using TCP/IP and without requiring any modification of existing or future applications.

▶ Enabled Enable I/O Acceleration Technology. (Default setting)

▶ Disabled Disable this function.

Hardware Monitor

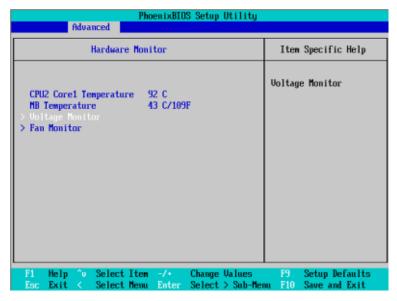


Figure 2-5: Hardware Monitor

○ CPU1/2 Core1/2 Temperature/ Motherboard Temperature

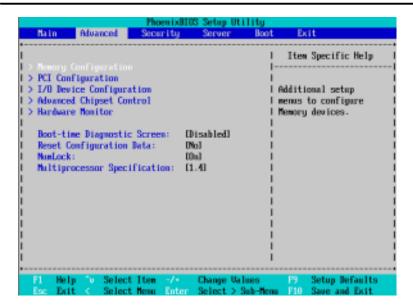
▶ Display the current CPU1/CPU2 Core1/2 temperature, and Motherboard temperature.

♡ Voltage Monitor: +3.3V, +5V, VCOREA, VCOREB, VBAT

Detect system's voltage status automatically.

FAN Monitor: CPU1/2 Fan/Fan R1/Fan R2/Fan F1/Fan F2 (RPM)

▶ Display the current CPU 1/CPU2 fan speed, front and rear system fan speed.



▽Boot -time Diagnostic

When this item is enabled, system will shows Diagnostic status when system boot.

► Enabled Enable Boot-time Diagnostic.

Disabled Disable this function. (Default setting)

▽Reset Configuration Data

▶▶Yes Reset all configuration data.

No Do not make any changes. (Default setting)

♡NumLock

This option allows user to select power-on state for NumLock.

▶ On Enable NumLock. (Default setting)

• Off Disable this function.

→ Multiprocessor Specification

This option allows user to configure the multiprocessor(MP) specification revision level. Some operating system will require 1.1 for compatibility reasons.

- ▶ 1.4 Support MPS Version 1.4 . (Default setting)
- ► 1.1 Support M PS Version 1.1.

Security

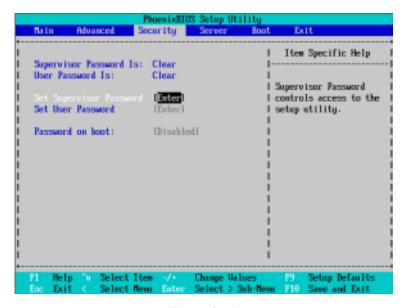


Figure 3: Security

⇔Set Supervisor Password

You can install and change this options for the setup menus. Type the password up to 6 characters in length and press <Enter>. The password typed now will clear any previously entered password from the CMOS memory. 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 specified password or press <Enter> key to disable this option.

▽Set User Password

You can only enter but do not have the right to change the options of the setup menus. 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 6 characters in length and press <Enter>. The password typed now will clear any previously entered password from the CMOS memory. 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 specified password.

○Password on boot

Password entering will be required when system on boot.

▶ Enabled Requries entering password when system on boot.

▶ Disabled Disable this function. (Default setting)

Server

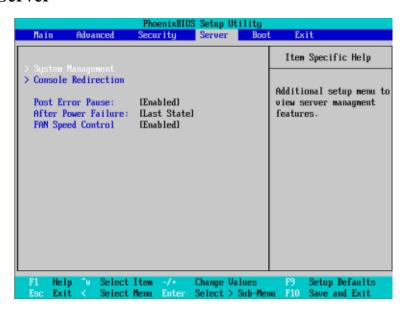


Figure 4: Server

Server Management

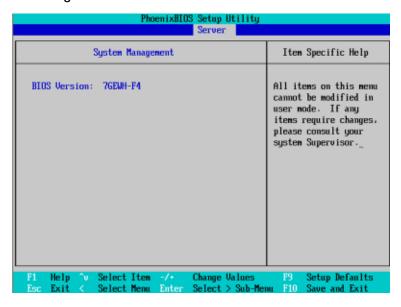


Figure 4-1: Server Managerment

▽Server Management

This category allows user to view the server management features. Including information of **BIOS Version**. Item in this menu cannot be modified in user's mode. If any items require changes, please consult your system supervisor.

Console Redirection

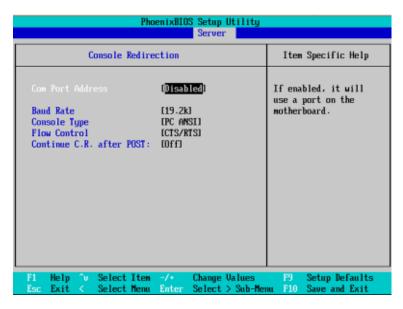


Figure 4-2: Console Redirection

COM Port Address

If this option is set to enabled, it will use a port on the motherboard.

▶On-board COMA▶On-board COMB▶DisabledUse COMB as he COM port address.▶Disabled Disable this function. (Default setting)

○Baud Rate

This option allows user to set the specified baud rate.

▶ Options 300, 1200, 2400, 9600, 19.2K, 38.4K, 57.6K, 115.2K.

∵Console Type

This option allows user to select the specified terminal type. This is defined by IEEE.

▶ Options VT100, VT100 8bit, PC-ANSI 7bit, VT100+, VT-UTF8.

▽Flow Control

This option provide user to enable the flow control function.

None Not supported.Not supported.Not supported.

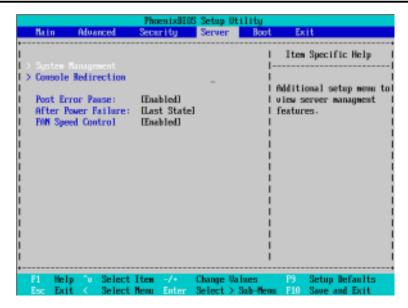
▶► CTS/RTS Hardware control. (Default setting)

♡ Continue C.R. after POST

This option allows user to enable console redirection after O.S has loaded.

▶▶On Enable console redirection after O.S has loaded.

▶► Off Disable this function. (Default setting)



▽Post Error Pause

If this item is set to enabled, the system will wai for user intervention on critical POST errors. If this item is disabled, the system will boot with no intervention if possible.

▶► Enabled Enable Post Error Pause. (Default setting)

▶ Disabled Disable this function.

∽After Power Failure

This option provides user to set the mode of operation if an AC / power loss occurs.

▶ Power On System power state when AC cord is re-plugged. (Default setting)

▶ Stay Off Do not power on system when AC power is back.

▶ Last State Set system to the last sate when AC power is removed. Do not power on

system when AC power is back.

☞FAN Speed Control

▶► Enabled Enable FAN Speed Control. (Default setting)

▶ Disabled Disable this function.

Boot

About This Section: Boot

The "Boot" menu allows user to select among four possible types of boot devices listed using the up and down arrow keys. By applying <+> and <Space> key, you can promote devices and by using the <-> key, you can demote devices. Promotion or demotion of devices alerts the priority that the system uses to search for boot device on system power on.

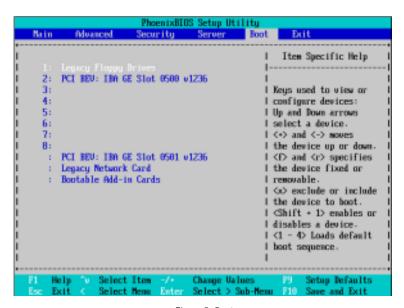


Figure 5: Boot

→Boot Priority Order

This field determines which type of device the system attempt to boot from after **PhoenixBIOS Post** completed. Specifies the boot sequence from the available devices. If the first device is not a bootable device, the system will seek for next available device.

Key used to view ot configure devices:

Up and Down arrows select a device.

- <+> and <-> moves the device up or down.
- <f> and <r> specifies the device fixed or removable.
- <x> exclude or include the device to boot.
- <1-4> Loads default boot secquence.

Exit

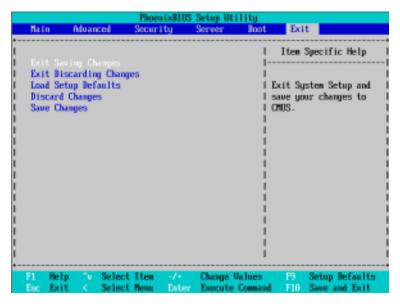


Figure 6: Exit

♦ About This Section: Exit

Once you have changed all of the set values in the BIOS setup, you should save your changes and exit BIOS setup program. Select "Exit" from the menu bar, to display the following sub-menu.

- > Exit Saving Changes
- Exit Discarding Changes
- ➤ Load Settup Default
- ➤ Discard Change
- Save Changes

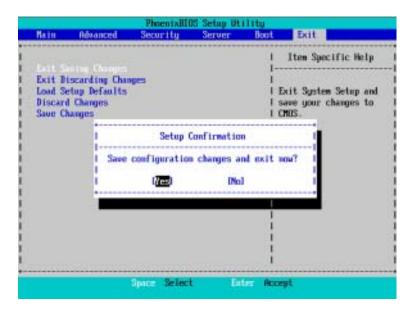
▽Exit Saving Changes

This option allows user to exit system setup with saving the changes.

Press < Enter > on this item to ask for the following confirmation message:

Pressing 'Y' to store all the present setting values tha user made in this time into CMOS.

Therefore, whenyou boot up your computer next time, the BIOS will re-configure your system according data in CMOS.



▽Exit Discarding Changes

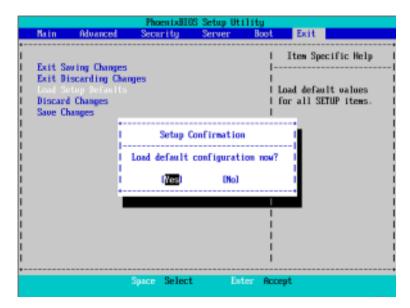
This option allows user to exit system setup without changing any previous settings values in CMOS. The previous selection remain in effect.

This will exit the Setup Utility and restart your compuetr when selecting this option.

-Load Settup Default

This option allows user to load default values for all setup items.

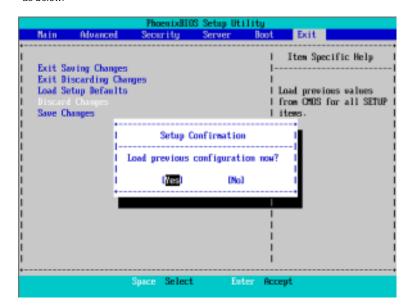
When you press <Enter> on this item, you will get a confirmation dialog box with a message as below:



▽Discard Changes

This option allows user to load previos values from CMOS for all setup item.

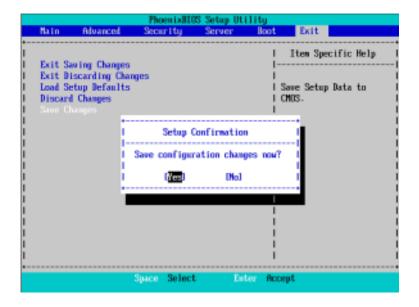
When you press <Enter> on this item, you will get a confirmation dialog box with a message as below:



▽Save Changes

This option allows user to save setup dat ato CMOS.

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



Press [Yes] to save setup data to CMOS.