GA-7TEWH1 Dual Xeon Processor Motherboard

USER'S Manual

Xeon® Processor Motherboard 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.

Table of Contents

| Item Checklist | 4 |
|---|----|
| Chapter 1 Introduction | 5 |
| 1.1. Considerations Prior to Installation | 5 |
| 1.2. Features Summary | 6 |
| 1.3. GA-7TEWH1 Motherboard Component | 8 |
| Chapter 2 Hardware Installation Process | |
| 2.1.Installing Processor and CPU Haet Sink | |
| 2.1.1. Installing CPU | |
| 2.1.2. Installing Heat Sink | |
| 2.2. Installing memory modules | 13 |
| 2.3. Connect ribbon cables, cabinet wires, and power supply | 17 |
| 2.3.1. I/O Back Panel Introduction | |
| 2.4. Connectors Introduction | 20 |
| 2.5. Jumper Setting | 29 |
| Chapter 3 BIOS Setup | 31 |
| Main | |
| Advanced | |
| Processor Configuration | 35 |
| Power Management | |
| Memory Configuration | 42 |
| Advanced Chipset Configuration | |
| PCI Configuration | |
| SATA Configuration | |
| I/O DeviceConfiguration | |
| Boot DeviceConfiguration | |
| Haradware Monitor | 56 |
| Power | 57 |
| Security | 59 |
| Server | 61 |

| | System Management | 62 |
|------|---------------------|----|
| | Console Redirection | 63 |
| Boot | | 65 |
| Fxit | | 66 |

Item Checklist

- ✓ The GA-7TEWH1 motherboard
- ☑ Serial ATA cable x 6
- ☑ I/O Shield Kit
- ☑ CD for motherboard driver & utility

* 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:

- 1. 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

- 1. 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.
- 3. 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.

1.2. Features Summary

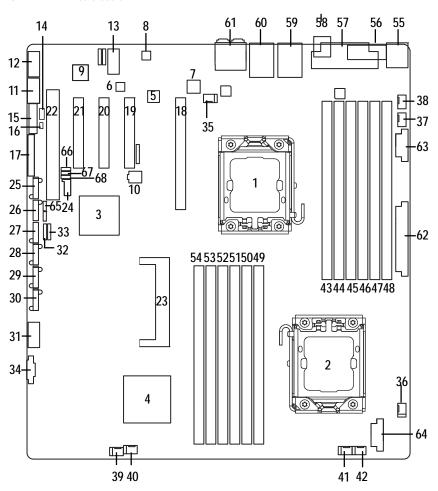
| Form Factor | • 12" x 13" EATX size form factor, 8 layers F | PCB |
|----------------------|--|----------------------|
| CPU | Supports Dual Intel® Xeon® Nehalem-EP 2 | S/Westmere-EP 2S |
| | processors | |
| | Xeon® Quad Core in LGA 1366 socket | |
| | • Supports QuickPath Interconnect up to 6.4G | T/s |
| | Enhanced Intel SpeedStep Technology (EIST) | (i) & Demand Based |
| | Switch (DBS) | |
| | • Support Intel Virtualization Technology (VT) | |
| Chipset | Intel® 5520 (Tylersburg-36D) Chipset | |
| | Intel® 82801JR (ICH10R) | |
| Memory | • 12 x 1.5V DDR3 DIMM sockets supporting | up to 96 GB |
| | of system memory | |
| | 3 channel memory architecture | |
| | Support 800/1066/1333 memory | |
| | Support ECC RDIMM/ UDIMM | |
| I/O Control | ITE IT8720F Super I/O | |
| Expansion Slots | • 1 PCI slots 32-Bit/33MHz (5V) | |
| | • 1 PCI-E x16 slot (Gen2 x16 bandwidth) | |
| | • 1 PCI-Express x8 slots (Gen2 at x8 bandw | idth) |
| | • 1 PCI-Express x8 slots (Gen2 at x8 bandw | idth) |
| | • 1 PCI-Express x8 slots (Gen 1 at x4 bandw | /idth) |
| | • 1 SO-DIMM for add-on SAS RAID card (op | tional device) |
| SATA RAID Controller | Intel® ICH10R SATA Controller | |
| | • Supports 6 independant SATA 3.0 Gb/s with | Software RAID 0,1, |
| | 5,10 | |
| On-Board Audio | Realtek® ALC889A HD Audio Codec | |
| IEEE1394A | • TITSB43AB23 | |
| On-Board LAN | • Intel® 82567LM and 82574L GbE controllers | support Gigabit |
| | Ethernet ports | |
| | • Supports QuickData DMA engine/TCP accel | eration/IA-optimized |
| | TCP stack/DCA(Direct Cache Access)/LL | I, MSI-X,RSS |
| Internal Connector | • 2 x 8-pin ATX power connector | |
| | • 1 x 24-pin ATX power connector | |
| | • 6 x SATA 3.0Gb/s connectors | |
| | • 1 x Serial connector (COM) | |
| | | |

| GA-7TEWH1 Motherboard | |
|-----------------------|---|
| | • 1 x IEEE 1394 connector |
| | 1 x USB 2.0 connector for additional 2 ports by cable |
| | 1 x front panel connecctor |
| | 1 x PSMI connecctor |
| | 6 x System fan cable connector |
| | 2 x CPU fan cable connectors |
| Rear Panel I/O | P/S 2 Keyboard and Mouse Connectors |
| | 1 x Serial port |
| | 1 x Parallel port supports Normal/EPP/ECP mode |
| | • 1 x IEEE 1394 port |
| | 4 x USB 2.0 dual-port connector |
| | • 2 x RJ45 LAN ports |
| | 6 x Audio ports (4 x Line-out/ 1 x Line-in/ 1 x MIC) |
| Hardware Monitor | 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 |
| BIOS | Phoenix BIOS on 16Mb flash RAM |
| Additional Features | Supports 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-7TEWH1 Motherboard Component

| 1.5. | O/ (/ I L WIII | i Motrici board Component |
|------|-----------------|--|
| No | Code | Description |
| 1. | CPU1 | Primary CPU |
| 2. | CPU2 | Secondary CPU |
| 3. | U60 | Intel ICH10R |
| 4. | U82 | Intel Tylersburg-36D IOH |
| 5. | U206 | Intel 82567LM GbE |
| 6. | U188 | Winbond W83792G |
| 7. | U207 | Intel 82574L GbE |
| 8. | AU1 | Realtek ALC 889A |
| 9. | U210 | TSB43AB23 1394 chipset |
| 10. | U34 | SPI BIOS Flash ROM |
| 11. | COM2 | COM2 connector |
| 12. | F_1394 | Front 1394 connector |
| 13. | AUDIO_ACZ1 | Front Audio connector |
| 14. | SPDIF_JP1 | SPDIF JP1 jumper |
| 15. | BAT | CMOS battery |
| 16. | CASE_OPEN | Case open intrusion |
| 17. | F_PANEL1 | Front panel connector |
| 18. | PCI-E1 | PCI-E x16 slo t(Gen2 at x16 bandwidth) |
| 19. | PCI-E2 | PCI-E x8 slot (Gen2 at x8 bandwidth) |
| 20. | PCI-E3 | PCI-E x8 slot (Gen2 at x8 bandwidth) |
| 21. | PCI-E4 | PCI-E x8 slot (Gen1 at x4 bandwidth) |
| 22. | PCI5 | PCI 32bit/33MHz slot |
| 23. | PCIE_SODIM | SO-DIMM for SAS RAID card |
| 24. | J3 | SMBus connector for B/P board |
| 25. | SATA5 | SATA5 data cable connector |
| 26. | SATA4 | SATA4 data cable connector |
| 27. | SATA3 | SATA3 data cable connector |
| 28. | SATA2 | SATA2 data cable connector |
| 29. | SATA1 | SATA1 data cable connector |
| 30. | SATA0 | SATA0 data cable connector |
| 31. | USB1 | Front USB connector |
| 32. | SGPIO_JP1 | SGPIO JP1 jumper |
| 33. | SGPIO_JP2 | SGPIO JP2 jumper |
| 34. | PSMI | SMBUS connector for power supply |
| 35. | FAN_CPU1 | CPU1 fan cable connector |
| 36. | FAN_CPU2 | CPU2 fan cable connector |

| GA-/IE | .vvH i iviotnerboar | a |
|--------|---------------------|--------------------------------------|
| No | Code | Description |
| 37. | FAN_SYS6 | System fan 6 cable connector |
| 38. | FAN_SYS5 | System fan 5 cable connector |
| 39. | FAN_SYS4 | System fan 4 cable connector |
| 40. | FAN_SYS3 | System fan 3 cable connector |
| 41. | FAN_SYS2 | System fan 2 cable connector |
| 42. | FAN_SYS1 | System fan 1 cable connector |
| 43. | DIMMA2 | Channel A slot2 (for primary CPU) |
| 44. | DIMMA1 | Channel A slot1 (for primary CPU) |
| 45. | DIMMB2 | Channel B slot2 (for primary CPU) |
| 46. | DIMMB1 | Channel B slot1 (for primary CPU) |
| 47. | DIMMC2 | Channel C slot2 (for primary CPU) |
| 48. | DIMMC1 | Channel C slot1 (for primary CPU) |
| 49. | DIMMD2 | Channel D slot 2 (for secondary CPU) |
| 50. | DIMMD1 | Channel D slot 1 (for secondary CPU) |
| 51. | DIMME2 | Channel E slot 2 (for secondary CPU) |
| 52. | DIMME1 | Channel E slot 1 (for secondary CPU) |
| 53. | DIMMF2 | Channel F slot 2 (for secondary CPU) |
| 54. | DIMMF1 | Channel F slot 1 (for secondary CPU) |
| 55. | KB_MS | PS/2 Keyboard/Mouse ports |
| 56. | COM1 | Serial port |
| 57. | LPT1 | Parallel port |
| 58. | 1394_1 | 1394a port |
| 59. | GLAN1 | Gigabit LAN port and USB ports |
| 60. | GLAN2 | Gigabit LAN port and USB ports |
| 61. | AUDIO1 | Audio ports |
| 62. | ATX | 24-pin Power connector |
| 63. | 12V_AUX2 | CPU2 8-pin Power connector |
| 64. | 12V_AUX1 | CPU1 8-pin Power connector |
| 65. | CLR_CMOS | Clear CMOS jumper |
| 66. | CLR_RTC | Clear RTC jumper |
| 67. | BIOS_RVCR | BIOS Recovery jumper |
| 68. | PASS_DIS | Password Disable jumper |



Chapter 2 Hardware Installation Process

2.1. Installing Processor and CPU Haet Sink

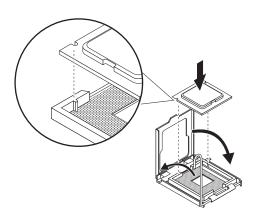


Before installing the processor and cooling fan, adhere to the following cautions:

- 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.

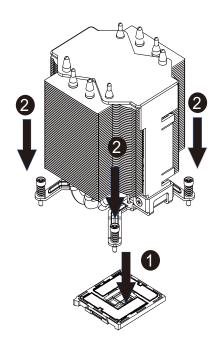
2.1.1. Installing CPU

- Step 1 Raise the metal locking lever on the socket.
- Step 2 Remove the plastic covering on the CPU socket.
- Step 3 Insert the CPU with the correct orientation. The CPU only fits in one orientation.
- Step 4 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 Secure the cooing fan with screws.
- Step 3 Connect processor fan can cable to the processor fanconnector



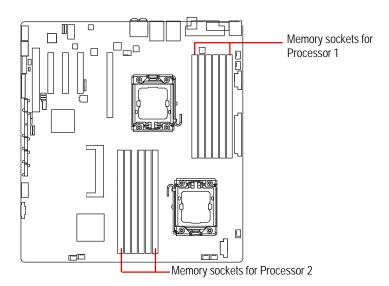
2.2. Installing memory modules



Before installing the memory modules, please comply with the following conditions:

- Please make sure that the memory is supported by the motherboard. It is recommended to use the memory with similar capacity, specifications and brand.
- 2. Before installing or removing memory modules, please make sure that the computer power is switched off to prevent hardware damage.
- Memory modules have a foolproof insertion design. A memory module can be installed in only one direction. If you are unable to insert the module, please switch the direction.

The motherboard supports DDR3 memory modules, whereby BIOS will automatically detect memory capacity and specifications. Memory modules are designed so that they can be inserted only in one direction. The memory capacity used can differ with each slot.

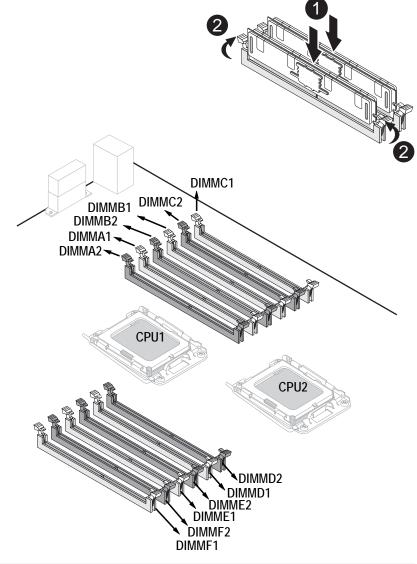


Installation Steps:

- 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 DIMMA1/D1 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.



U-DIMM Population Table

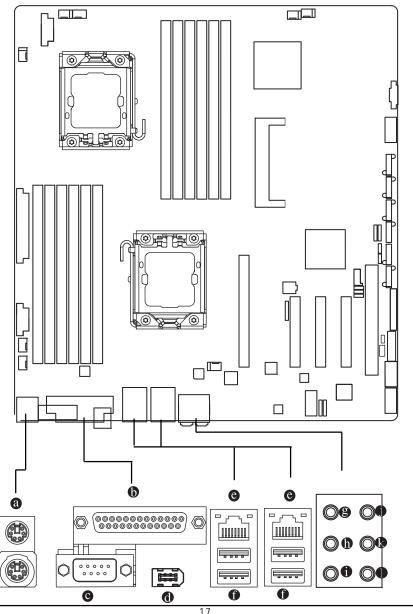
| Interleave Channel A | | annel A Channel B | | nel B | Channel C | | Total |
|----------------------|-----------|-------------------|-----------|-----------|-----------|-----------|--------|
| mode | DIMMA1/D1 | DIMMA2/D2 | DIMMB1/E1 | DIMMB2/E2 | DIMMC1/F1 | DIMMC2/F2 | Memory |
| | 1GB | | | | | | 1GB |
| Single Channel | 2GB | | | | | | 2GB |
| | 4GB | | | | | | 4GB |
| | 1GB | | 1GB | | | | 2GB |
| | 2GB | | 2GB | | | | 4GB |
| Dual | 4GB | | 4GB | | | | 8GB |
| Channel | 1GB | 1GB | 1GB | 1GB | | | 4GB |
| | 2GB | 2GB | 2GB | 2GB | | | 8GB |
| | 4GB | 4GB | 4GB | 4GB | | | 16GB |
| | 1GB | | 1GB | | 1GB | | 3GB |
| | 2GB | | 2GB | | 2GB | | 6GB |
| Three Channel | 4GB | | 4GB | | 4GB | | 16GB |
| | 1GB | 1GB | 1GB | 1GB | 1GB | 1GB | 6GB |
| | 2GB | 2GB | 2GB | 2GB | 2GB | 2GB | 12GB |
| | 4GB | 4GB | 4GB | 4GB | 4GB | 4GB | 24GB |

R-DIMM Population Table

| Interleave | Chan | nnel A | Char | nnel B | Chan | inel C | Total |
|-------------------|-----------|-----------|-----------|-----------|-----------|-----------|--------|
| mode | DIMMA1/D1 | DIMMA2/D2 | DIMMB1/E1 | DIMMB2/E2 | DIMMC1/F1 | DIMMC2/F2 | Memory |
| | 1GB | | | | | | 1GB |
| Single Channel | 2GB | | | | | | 2GB |
| | 4GB | | | | | | 4GB |
| | 8GB | | | | | | 8GB |
| | 1GB | | 1GB | | | | 2GB |
| | 2GB | | 2GB | | | | 4GB |
| | 4GB | | 4GB | | | | 8GB |
| Dual | 8GB | | 8GB | | | | 16GB |
| Channel | 1GB | 1GB | 1GB | 1GB | | | 4GB |
| | 2GB | 2GB | 2GB | 2GB | | | 8GB |
| | 4GB | 4GB | 4GB | 4GB | | | 16GB |
| | 8GB | 8GB | 8GB | 8GB | | | 32GB |
| | 1GB | | 1GB | | 1GB | | 3GB |
| | 2GB | | 2GB | | 2GB | | 6GB |
| | 4GB | | 4GB | | 4GB | | 12GB |
| Three | 8GB | | 8GB | | 8GB | | 24GB |
| Channel | 1GB | 1GB | 1GB | 1GB | 1GB | 1GB | 6GB |
| | 2GB | 2GB | 2GB | 2GB | 2GB | 2GB | 12GB |
| | 4GB | 4GB | 4GB | 4GB | 4GB | 4GB | 24GB |
| | 8GB | 8GB | 8GB | 8GB | 8GB | 8GB | 48GB |

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).

Parallel Port / Serial Port

This connector supports 1 standard 1 Parallel port. Device like printer can be connected to Parallel port.

Serial Port

Connects to serial-based mouse or data processing devices.

(1) IEEE1394 Port

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

Gigabit LAN Ports

The LAN port provides Internet connection of Gigabit Ethernet with 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.

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.

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

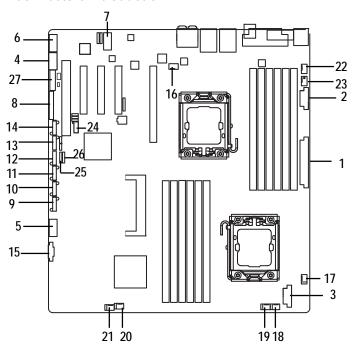
The default Side Speaker Out jack. Surround side speakers can be connected to Side Speaker Out jack.

LAN LED Description



| Name | Color | Condition | Description |
|------|--------|--|---|
| LED1 | Green | ON | LAN Link / no Access |
| | Green | BLINK | LAN Access |
| | | OFF | Idle |
| LED2 | | OFF | 10Mbps connection |
| | Green | Green BLINK Port identification with 10 Mbp: | |
| | 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. ATX
- 2. 12V_AUX1
- 3. 12V_AUX2
- 4. COM2
- 5. USB1 (Front USB cable connector)
- 6. F_1394
- 7. FAUDIO_ACZ
- 8. F_PANEL
- 9. SATA0 (SATA data cable connector)
- 10. SATA1 (SATA data cable connector)
- 11. SATA2 (SATA data cable connector)
- 12. SATA3 (SATA data cable connector)
- 13. SATA4 (SATA data cable connector
- 14. SATA5 (SATA data cable connector

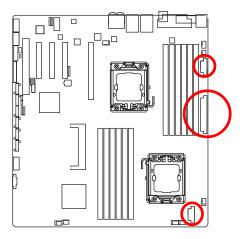
- 15. PSMI
- 16. FAN_CPU1 (CPU1 fan cable connector)
- 17. FAN_CPU2 (CPU2 fan cable connector)
- 18. SYS_FAN1 (System fan connector)
- 19. SYS_FAN2 (System fan connector)
- 20. SYS_FAN3 (System fan connector)
- 21. SYS_FAN4 (System fan connector)
- 22. SYS_FAN5 (System fan connector)
- 23. SYS_FAN6 (System fan connector)
- 24. J3
- 25. SGPIO_JP1
- 26. SGPIO_JP12
- 27. BAT

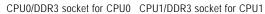
1/2/3) ATX/12V_AUX1/12V_AUX2 (24-pin/8-pin ATX power connectors)

With the use of the power connector, the power supply can supply enough stable power to all the components on the motherboard. Before connecting the power connector, please make sure that all components and devices are properly installed. Align the power connector with its proper location on the motherboard and connect tightly.

The ATX_12V power connector mainly supplies power to the CPU. If the ATX_12V power connector is not connected, the system will not start.

Caution! Please use a power supply that is able to support the system voltage requirements. It is recommended that a power supply that can withstand high power consumption be used (350W or greater). If a power supply is used that does not provide the required power, the result can lead to an unstable system or a system that is unable to start. If you use a power supply that provides a 24-pin ATX power connector, please remove the small cover on the power connector on the motherboard before plugging in the power cord; otherwise, please do not remove it.

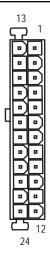






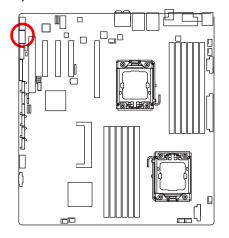
| Pin No. | Definition | | | |
|---------|----------------|--|--|--|
| 1 | GND | | | |
| 2 | GND | | | |
| 3 | GND | | | |
| 4 | GND | | | |
| 5 | P12V_CPU0 | | | |
| 6 | P12V_CPU0 | | | |
| 7 | P12V_DDR3_CPU0 | | | |
| - 8 | P12V_DDR3_CPU0 | | | |

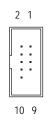
| Pin No. | Definition | | | |
|---------|----------------|--|--|--|
| 1 | GND | | | |
| 2 | GND | | | |
| 3 | GND | | | |
| 4 | GND | | | |
| 5 | P12V_CPU1 | | | |
| 6 | P12V_CPU1 | | | |
| 7 | P12V_DDR3_CPU1 | | | |
| 8 | P12V_DDR3_CPU1 | | | |
| | | | | |



| Pin No. | Definition | Pin No. | Definition |
|---------|---------------------------|---------|---------------------------|
| 1 | 3.3V | 13 | 3.3V |
| 2 | 3.3V | 14 | -12V |
| 3 | GND | 15 | GND |
| 4 | +5V | 16 | PS_ON(soft On/Off) |
| 5 | GND | 17 | GND |
| 6 | +5V | 18 | GND |
| 7 | GND | 19 | GND |
| 8 | Power Good | 20 | -5V |
| 9 | 5V SB(stand by +5V) | 21 | +5V |
| 10 | +12V | 22 | +5V |
| 11 | +12V(Only for 24-pin ATX) | 23 | +5V (Only for 24-pin ATX) |
| 12 | 3.3V(Only for 24-pin ATX) | 24 | GND(Only for 24-pin ATX) |

4) COM2

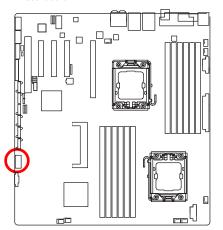


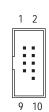


| Pin No. | Definition | |
|---------|------------|---|
| 1 | DCD- | |
| 2 | SIN2 | |
| 3 | SOUT2 | |
| 4 | DTR2- | |
| 5 | GND | |
| 6 | DSR2- | |
| 7 | RTS2- | |
| 8 | CTS2- | |
| 9 | RI2- | |
| 10 | NC | |
| | | _ |

5) USB1 (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.

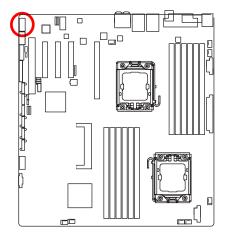




| D' N | D.C.W |
|---------|------------|
| Pin No. | Definition |
| 1 | 5V power |
| 2 | 5V power |
| 3 | -FUSB4 |
| 4 | -FUSB5 |
| 5 | +FUSB4 |
| 6 | +FUSB5 |
| 7 | GND |
| 8 | GND |
| 9 | NC |
| 10 | NC |

Definition
FTPA1+
FTPA1GND
GND
FTPB1+
FTPB1BUSVCC0
BUSVCC0
No Pin
NC

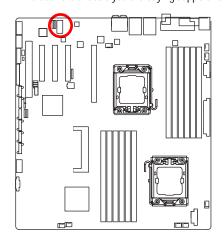
6) F_1394(IEEE 1394 connector)



| | Pin N |
|--------------|--------|
| | 1 |
| 2 | 2 |
| 2 | 3 4 |
| ⋾ | 4 |
| | 5 6 |
| $\vec{\Box}$ | 6 |
| 10 | 7 |
| | 8 |
| | 9 |
| | 10 |

7) FAUDIO_ACZ1 (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.

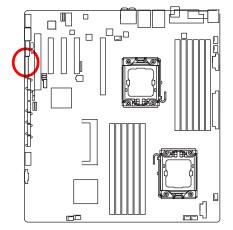


| | 10 | 19 |
|---|----|----|
| (| | ₃ |
| (| | ₃ |
| (| | ₃ |
| (| | |
| (| • | ➂ |
| | 2 | 1 |

| 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) |

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.

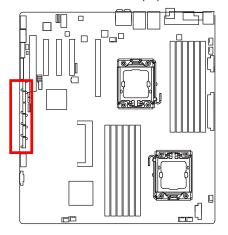




| Pin No. | Signal Name | Description |
|---------|---------------------|---------------------------------------|
| 1. | Power LED + | Power LED Signal anode (+) |
| 2. | 5V standby | P5V Stand By Power |
| 3. | Pin reomoved | Pin removed |
| 4. | ID LED+ | ID LED Signal anode (+) |
| 5. | Power LED - | Power LED Signal cathode(-) |
| 6. | ID LED - | ID LED Signal cathode(-) |
| 7. | HD status LED+ | Hard Disk LED Signal anode (+) |
| 8. | System ready LED+ | System Fan Fail LED Signal anode (+) |
| 9. | HD status LED- | Hard Disk LED Signal cathode(-) |
| 10. | System ready LED- | System Fan Fail LED Signal cathode(-) |
| 11. | Power on switch | Power button |
| 12. | LAN1 active LED (-) | LAN1 active LED Signal cathode(-) |
| 13. | GND | Ground |
| 14. | LAN1 active LED (+) | LAN1 active LED Signal anode (+) |
| 15. | Reset switch | Reset button Signal |
| 16. | SMBUS data | SMBusData |
| 17. | GND | Ground |
| 18. | SMBUS clock | SMBusClock |
| 19. | ID LED switch | ID Switch Signal |
| 20. | CASEOPEN | Chassis intrusion Signal |
| 21. | GND | Ground |
| 22. | LAN2 active LED (-) | LAN2 active LED Signal cathode(-) |
| 23. | NMI switch | NMI switch Signal |
| 24. | LAN2 active LED (+) | LAN2 active LED Signal anode (+) |

9/ 10/ 11/ 12/ 13/ 14) SATA 0~5 (Serial ATA cable connectors)

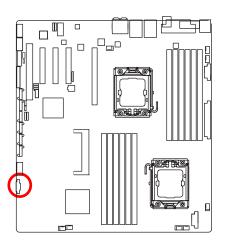
SATA 3Gb/s can provide up to 300MB/s stransfer rate. Please refer to the BIOS setting for the SATA 3Gb/s and install the proper driver in order to work properly.





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

15) PSMI (SMBUS connector for power supply)





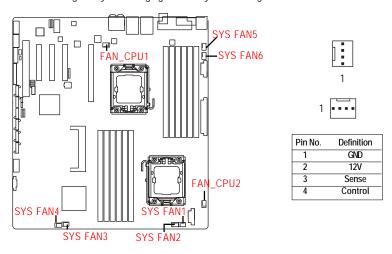
| Pin No. | Definition |
|---------|-------------|
| 1 | SMBus Clock |
| 2 | SMBUS Data |
| 3 | SMBUS Alert |
| 4 | GND |
| 5 | 3.3V |

16~23) FAN_CPU1/2 / SYS_FAN1/2/3/4/5/6 (CPU fan / System fan cable connectors)

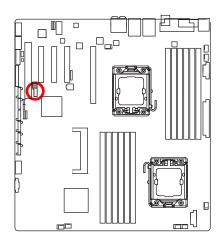
The cooler fan power connector supplies a +12V power voltage via a 3-pin/4-pin(CPU_FAN) power connector and possesses a foolproof connection design.

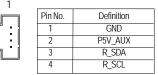
Most coolers are designed with color-coded power connector wires. A red power connector wire indicates a positive connection and requires a +12V power voltage. The black connector wire is the ground wire (GND).

Remember to connect the CPU/system fan cable to the CPU_FAN/SYS_FAN connector to prevent CPU damage or system hanging caused by overheating.



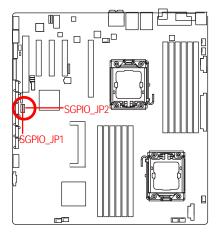
24) J3 (SMBus connector for B/P board)





25/26) SGPIO_JP1/SGPIO_JP2 (ICH10 SGPIO connector)

SGPIO is stands for Serial General Purpose Input/Output which is a 4-signal (or 4-wire) bus used between a Host Bus Adapter (HBA) and a backplane. Out of the 4 signals, 3 are driven by the HBA and 1 is driven by the backplane. Typically, the HBA is a storage controller located inside a server, desktop, rack or workstation computer that interfaces with Hard disk drives (HDDs) to store and retrieve data.



SGPIO_JP1

| Pin No. | Definition |
|---------|-----------------|
| 1 | GND |
| 2 | NC |
| 3 | ICH_SATA_SDATA0 |
| 4 | ICH_SATA_SLOAD |
| 5 | ICH_SATA_SCLOCK |

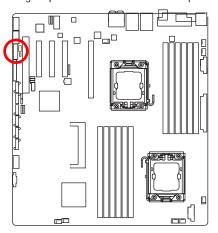
SGPIOJP2

| Pin No. | Definition |
|---------|-----------------|
| 1 | GND |
| 2 | NC |
| 3 | ICH_SATA_SDATA1 |
| 4 | ICH_SATA_SLOAD |
| 5 | ICH_SATA_SCLOCK |

27) BAT (Battery)

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.

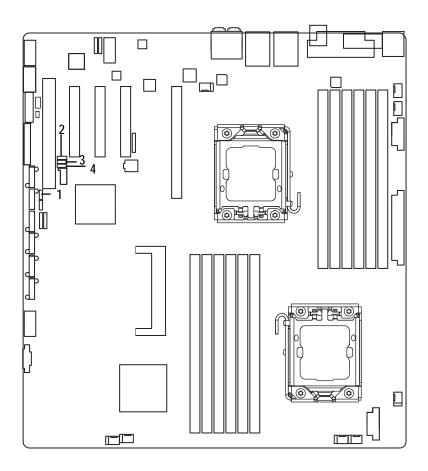




CAUTION

- 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.

2.5. Jumper Setting



1) CLR_CMOS (Clear CMOS jumper)

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 2-3 pin.

1 -2 close: Normal operation (Default setting)

1 2-3 close: Clear CMOS

2) CLR_RTC (Clear RTC jumper)

1 1-2 close: Normal operation. (Default setting)

2-3 close: Clear RTC status

3) BIOS_RVCR (BIOS Revocery jumper)

1 1-2 close: Normal operation. (Default setting)

1 2-3 close: Enable BIOS Recovery function.

4) PASS_DIS (Skip Supervisor password jumper)

1 1-2 Close: Normal operation. (Default setting)

2-3 Close: Clear Supervisor Password in BIOS setup menu.

Chapter 3 BIOS Setup

BIOS (Basic Input and Output System) includes a CMOS SETUP utility which allows user to configure required settings or to activate certain system features.

The CMOS SETUP saves the configuration in the CMOS SRAM of the motherboard. When the power is turned off, the battery on the motherboard supplies the necessary power to the CMOS SRAM.

ENTERINGSETUP

When the power is turned on, press the <F2> button during the BIOS POST (Power-On Self Test) will take you to the CMOS SETUP screen. You can enter the BIOS setup screen by pressing "Ctrl + F1".

CONTROLKEYS

| <u><</u> ↑> | 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>.

Select the **Load Setup Defaults** item in the BIOS Exit Setup menu when somehow the system is not stable as usual. This action makes the system reset to the default settings for stability.

Main

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

Advanced

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

Power

This setup page includes all the items of Green function features.

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.

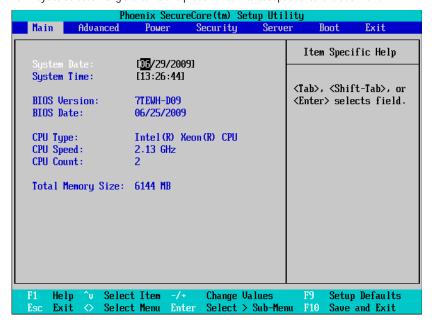


Figure 1: Main

System Date

Set the System Date. Note that the "Day" automatically changed after you set the date.

System Time

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

□ CPU Type/CPU Speed/ CPU Count

This category includes the information of CPU type, Speed ,and number of CPU count.

Total Memory

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

Advanced

About This Section: Advanced

With this section, allowing user to configure your system for advanced operation. User can set the Processor configuration, Memory configuration, Advanced chipset control, PCI configuration, SATA configuration, I/O Device configuration, Boot configuration, and Hardware monitor.

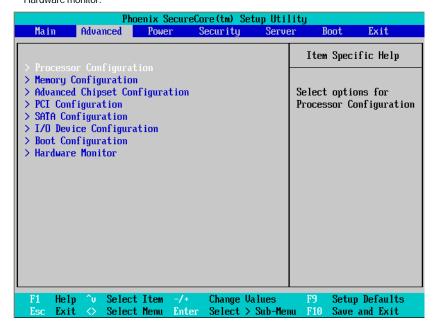
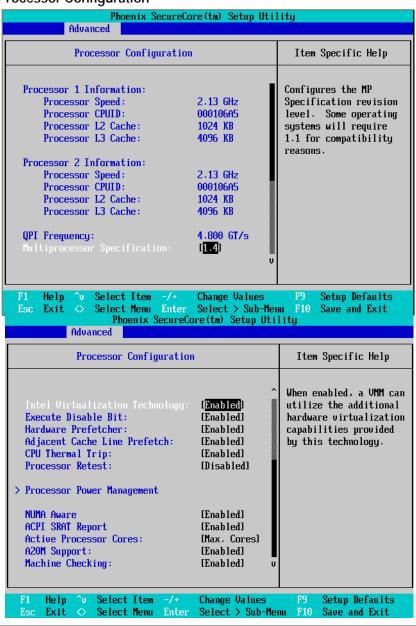
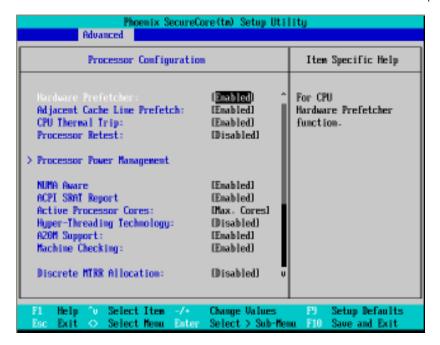


Figure 2: Advanced

Processor Configuration





Processor Configuration

This category includes the information of CPU Speed, Processor ID ,Processor L2 / L3 Cache, and QPI Frequency. And setup sub-menu for CPU Power Management.

Please note that setup menu options will be variable depends on the type of CPU.

▽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.

☐ 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 software-only virtual machine solutions.

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

▶ Disabled Disable this function.

▽Execute Disable Bit

▶► Enabled Enable Execute Disable Bit. (Default setting)

▶Disabled Disable this function.

⇔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.

○ 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.

CPU Thermal Trip

▶►Enabled Enable CPU Thermal Trip. (Default setting)

▶ Disabled Disable CPU Thermal Trip.

Processor Retest

▶ Enabled Enable Processor Retest.

▶ Disabled Disable Processor Retest. (Default setting)

♡ NUMAAware

▶►Enabled Enable NUMA Aware. (Default setting)

▶ Disabled Disable NUMA Aware.

○ ACPI SRAT Report

▶► Enabled Enable ACPI SRAT Report. (Default setting)

▶ Disabled Disable ACPI SRAT Report.

→ Active Processor Cores

▶ Options One Core, Two cores, Max Cores. Default setting is Max Cores.

Threading Technology

▶►Enabled Enable Intel Hyper Threading Technology.

▶ Disabled Disable Intel Hyper Threading Technology. (Default setting)

○ A20M Support

▶►Enabled Enable A20M Support. (Default setting)

▶ Disabled Disable A20M Support.

→ Machine Checking

▶► Enabled Enable Machine Checking. (Default setting)

▶Disabled Disable Machine Checking.

☞ Discrete MTRR Allocation

▶► Enabled Enable Discrete MTRR Allocation.

▶ Disabled Discrete MTRR Allocation. (Default setting)

Thermal Management

▶► Enabled Enable Thermal Management. (Default setting)

▶ Disabled Disable Thermal Management.

Power Management

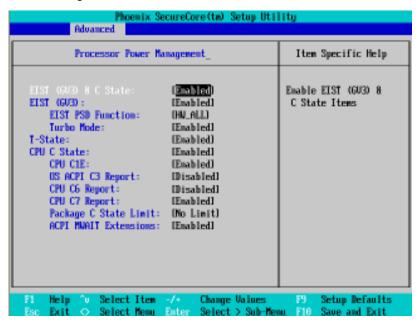


Figure 2-1-1: Power Management

○ EIST (GV3) & C State

▶ Enabled Enable EIST (GV3) and C State items. (Default setting)

▶ Disabled Disable EIST (GV3) and C State items.

○ EIST(GV3)

► Enabled Enable EIST (GV3. (Default setting)

▶ Disabled Disable EIST (GV3).

EIST PSD Function

▶ HW_ALL mode, the rpocessor hardware is responsible for coordinating

the P-state among logical processors dependencies. The OS is responsible for keeping the P-state request up to date on all logical processors.

(Default setting)

BIOS Setup

▶ SW_ALL In SW_ALL mode, the OS Power Manager is responsible for coordinating

the P-state among loical processors with dependencies and must initiate the

transition on all of those Logical Processors.

▶ SW_ANY In SW_ANY mode, the OS Power Manager is responsible for corrdinating

the P-state among logical processors with dependencies and may initiate

the transition on any of those Logical Processors.

Turbo Mode

Turbo Mode automatically allows processor cores to run faster than marked frequency if the physical processor is operating below power, temperature and current specification limits.

Turbo Mode can be engaged with SMT (Simultanceous Multi Threading) enabled and 1 to 4 cores active and is not limited to only a single core or logical processor.

➤ Enabled Turbo Mode. (Default setting)

▶ Disabled Disable Turbo Mode.

T State

▶ Enabled Enable CPU T-State. (Default setting)

▶ Disabled Disable T-State.

CPU C State

► Enabled Enable ACPI C-State (C0, C1/C1E, C3, C6 and C7). (Default setting)

▶ Disabled Disable C-State.

⇔ CPUC1E

➤ Enabled Enable CPU C1E. (Default setting)

▶ Disabled Disable CPU C1E.

○ OSACPI C3 Report

Desire state for the Nehalem core C3 state include in the CST as ACPI C3

state.

▶ C2 Desire state for the Nehalem core C2 state include in the CST as ACPI C2

state.

▶ Disabled Disable OS ACPI C3 Report. (Default setting)

CPU C6 Report

▶ Enabled Desire state for the Nehalem core C6 state include in the CST as ACPI C3

state.

▶ Disabled Disable CPU C6 Report. (Default setting)

CPU C7 Report

▶ Enabled Desire state for the Nehalem core C7 state include in the CST as ACPI C3

state. (Default setting)

▶ Disabled Disable CPU C7 Report.

☞ Package C State Limit

Desired state for the C-State package limit.

▶ Options C0, C1 State, C3 State, C6 State, C7 State, No Limit. The default setting

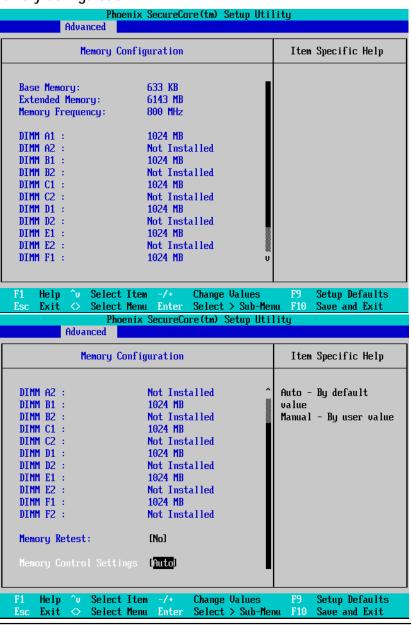
is No Limit.

\bigcirc ACPI MWAIT extensions

▶ Enabled CST using MWAIT extension is enabled for OSPM use.

▶ Disabled Disable ACPI MWAIT extensions.

Memory Configuration



♡ Base Memory/Extended Memory/DIMM Status

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

▽ Memory Reset

▶ Yes Select 'Yes', system will clear the memory error status. Save the

changes and restart system. After rebooting system, the Memory

Reset item will set to 'No' automatically.

No No chnages. (Default setting)

☞ Memory Control Settings

► Manual Select 'Manual" will pops up sub-menu for configuration.

➤ Auto Auto configuration. (Default setting)

Advanced Chipset Configuration

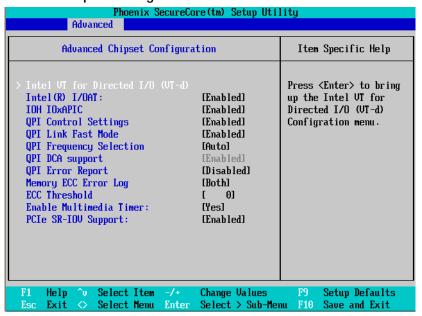


Figure 2-3: Advanced Chipset Configuration

| Phoenix SecureCore(tm) Setup Utility Advanced | | |
|---|--|---|
| Intel UT for Directed I/O (UT-d) | | Item Specific Help |
| Intel UT for Directed I/O (UT-d) Interrupt Remapping Coherency Support ATS PassThrough DMA UT-d for Port 1 UT-d for Port 2 UT-d for Port 3 UT-d for Port 4 UT-d for Port 5 UT-d for Port 6 UT-d for Port 6 UT-d for Port 8 UT-d for Port 9 | [Enabled] [Enabled] [Disabled] [Enabled] | Enable/Disable Intel Virtualization Technology for Directed I/O (VT-d) by reporting the I/O device assigment to VMM through DMAR ACPI Tables. |
| F1 Help ^v Select Item -/+ Esc Exit ◇ Select Menu Enter | • | |

Figure 2-3-1: Intel VT for Directed I/O (VT-d)

☐ Intel VT for Directed I/O (VT-d)

Interrupt Remapping

▶Enabled Enable Interrupt Remapping. (Default setting)

▶Disabled Disable Interrupt Remapping.

Coherency Support

▶ Enabled Enable Coherency Support.

▶Disabled Disable Coherency Support. (Default setting)

TATS

▶Enabled Enable ATS. (Default setting)

▶Disabled Disable ATS.

PassThrough DMA

▶Enabled Enable PassThrough DMA. (Default setting)

▶Disabled Disable PassThrough DMA.

♥ VT-d for Port1~Port 10

▶Enabled Enable VT-d support for Port 1~Port 10 ports through ATSR structures in

ACPI Tables. (Default setting)

▶Disabled Disable VT-d for Port1~Port 10.

Advanced Chipset Control Main Menu Options

☐ Intel (R) I/OAT

▶Enabled Enable configuration mapped accesses to the I/OAT configuration sapce.

(Default setting)

▶Disabled Disable I/OAT.

♡ IOHIOxAPIC

▶Enabled Enable IOH IOxAPIC function (Default setting)

▶Disabled Disable I/OAT.

OPI Control Settings

▶Enabled Enable QPI Control settings. (Default setting)

▶Disabled QPI Control settings.

OPI Link Fast Mode

▶ Enabled Enable QPI Link Fast Mode. (Default setting)

▶Disabled Disable QPI Link Fast Mode.

☞ QPI Frequency Selection

▶ Identify the desire value of QPI frequency. Option available: Auto, 4.800GT, 5.866GT. Default setting is Auto.

☞ QPIDCASupport

▶Enabled Enable QPI DCA Support. (Default setting)

▶Disabled Disable QPI DCA Support.

C QPI Error Report

▶Enabled Enable QPI Error Report.

▶Disabled Disable QPI Error Report. (Default setting)

☞ Memory ECC Error Log

▶ Identify the the memory ecc error log. Option available: Disable, Correctable Error, Uncorrectable Error, and Both. The default setting is Both.

© ECC Threshold

▶ Use the "+" and "-" keys to adjust the desire value of ECC Threshold.

Timer Enable Multimedia Timer

▶Yes Enable Multimedia Timer support. (Default setting)

▶No Disable this function.

PCIe SR-IOV Support

▶ Enabled Enable PCIe SR-IOV Support. (Default setting)

▶Disabled Disable this function.

PCI Configuration

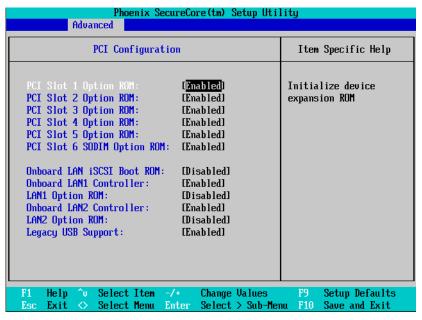


Figure 2-4: PCI Configuration

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

▶ Enabled Enable this item to initialize device expansion ROM.

(Defualt setting)

▶ Disabled Disable this function.

PCI Slot 6 SODIMM Option ROM

▶ Enabled Enable this item to initialize device expansion ROM.

(Defualt setting)

TO Onboard LAN iSCSI Boot ROM

▶ Enabled Enable Onboard LAN iSCSI Boot ROM.▶ Disabled Disable this function. (Defualt setting)

▶ Disabled Disable this function.

♡ Onboard LAN1 Controller

► Enabled Enable Onboard LAN controller. (Defualt setting)

▶ Disabled Disable this function.

□ LAN1Option ROM Scan

► Enabled Enable onboard LAN1 device and initialize device expansion

ROM.

▶ Disabled Disable this function. (Default setting)

♡ Onboard LAN2 Controller

➤ Enabled Enable Onboard LAN controller. (Defualt setting)

▶ Disabled Disable this function.

□ LAN2Option ROM Scan

► Enabled Enable onboard LAN2 device and initialize device expansion

ROM.

▶ Disabled Disable this function. (Default setting)

☞ 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.

SATA Configuration

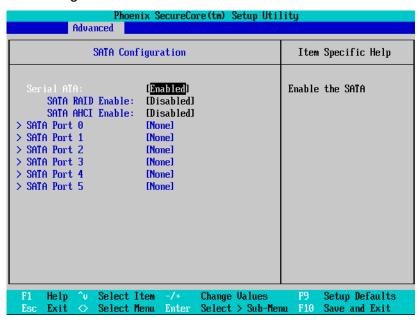


Figure 2-5: SATA Configuration

▽Serial ATA

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

▶ Disabled Disables on-board serial ATA function.

SATA RAID Enable

▶ Enabled Enabled SATA RAID function.▶ Disabled Disable this function. (Default setting)

SATA AHCI Enable

▶ Enabled Set this item to enable SATA AHCI function for WinXP-SP1+IAA

driver supports AHCI mode.

▶ Disabled Disabled this function. (Default setting)

⇒ SATA Port 0/1/2/3/4/5

The category identifies the types of Serial SATA hard disk from drive 0 to 5 that has been installed in the computer. System 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.

Hard drive information should be labled on the outside device casing. Enter the appropriate option based on this information.

▶ 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.

I/O DeviceConfiguration

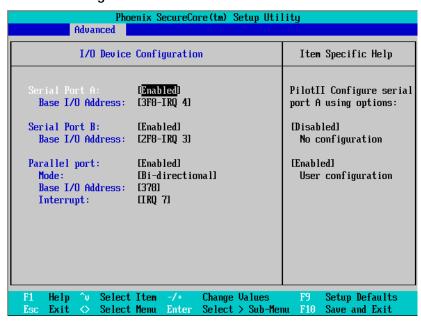


Figure 2-6: I/O Device Configuration

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/IRQ4.(Default setting)

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

∽ 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/IRQ4.

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

▶3E8/IRQ7 Set IO address to 3E8/IRQ7.▶2E8/IRQ35 Set IO address to 2E8/IRQ5.

▽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)

Boot DeviceConfiguration

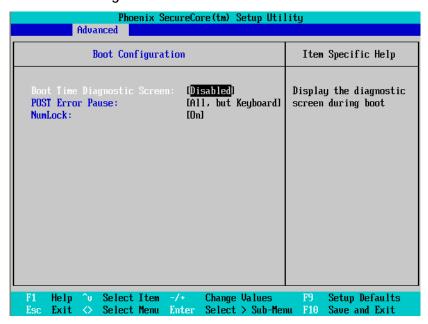


Figure 2-7: Boot Configuration

♡ 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)

Post Error Pause

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

▶ All Error Whenever the BIOS detects a non-fatal error the system will be

stopped.

No Error The system boot will not stop for any error that may be detected

and you will be prompted.

► All, But Keyboard The system boot will not stop for a keyboard error; it will stop for all

other errors. (Default setting)

♡NumLock

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

▶On Enable NumLock. (Default setting)

▶ Off Disable this function.

Haradware Monitor

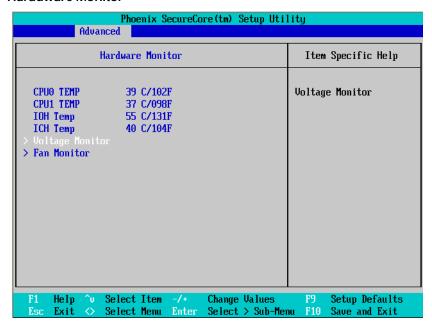


Figure 2-8: Hardware Monitor

○ CPU0/1 Temperature/ IOH Temperature/ ICH Temperature

▶ Display the current CPU1/CPU2 temperature, and northbridge/ south bridge chipset temperature.

▽ Voltage Monitor: P_VCCP0/P_VCCP1/P_1V1_IOH/P12V/P5V/P3V3/P1V5_ICH

▶ Detect system's voltage status automatically.

Fan Monitor: CPU1/2 Fan/ System Fan 1/2/3/4/5/6

→ Display the current CPU 1/CPU2 fan speed, system fan 1/2/3/4/5/6 speed.

Power

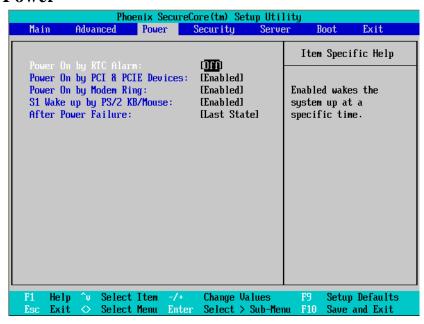


Figure 3: Power

Power On by RTC Alarm

You can set item to Enabled and key in Date/Time to power on system.

▶On Enable alarm function to POWER ON system. (Default setting)

▶ Off Disable this function. (Default setting)

If Resume On Time is set to On status:

▶ RTC Alarm control select: Manual/Auto

▶ Time (0~23): (0~59): (0~59)

Power On PCI & PCIE Devices

▶Enabled Enable Power On PCI & PCIe Devices. (Default setting)

▶ Disabled Disable this function.

Resume On Modem Ring

▶On Enable Resume on Modem Ring. (Default setting)

➤ Off Disable Resume on Modem Ring.

▽S1 Wake up by PS/2 KB/Mouse

▶ Enabled Enable S1 Wake up by PS/2 KB/Mouse. (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.▶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. (Default setting)

Security

About This Section: Security

In this section, user can set either supervisor or user passwords, or both for different level of password securities. In addition, user also can set the virus protection for boot sector.

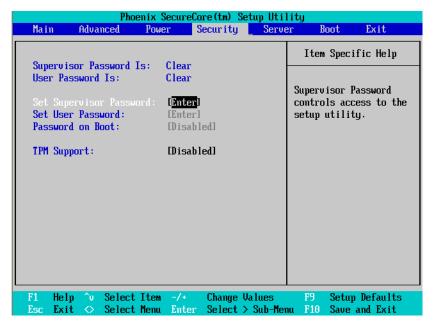


Figure 4: Security

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)

TPM Support

TPM, stands for Trusted Platform Module. A Trusted Platform Module provides function for secure generation of cryptographic keys, the ability to limit the use of cryptographic keys, as well as a hardware pseudo-random number generator.

➤ Enabled Enable TPM Support.

▶ Disabled Disable this function. (Default setting)

Server

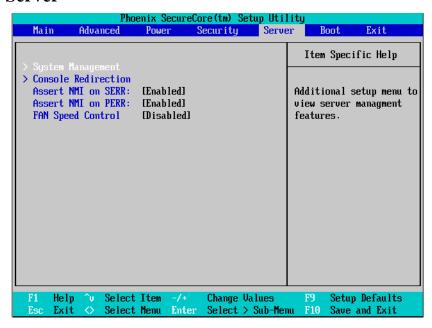


Figure 5: Server

▽Assert NMI on SERR

If thisoption is set to enabled, PCI bus system error (SERR) is enabled and is routed to NMI.

▶ Enabled Enable Assert NMI on SERR. (Default setting)

▶ Disabled Disable this function.

○Assert NMI on PERR

▶ Enabled Enable Assert NMI on PERR. (Default setting)

▶ Disabled Disable this function.

▽Fan Speed Control

▶ Enabled Enable Fan speed control.

▶ Disabled Disable this function. (Default setting)

System Management

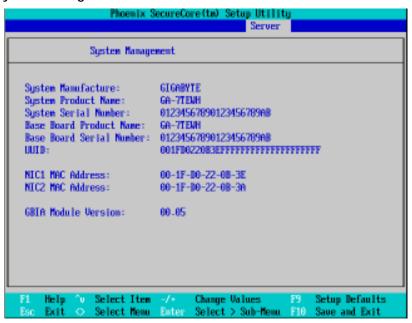


Figure 5-1: System Management

▽ Server Management

This category allows user to view the server management features. Including information of Motherboard Hardware information and software information.

Console Redirection

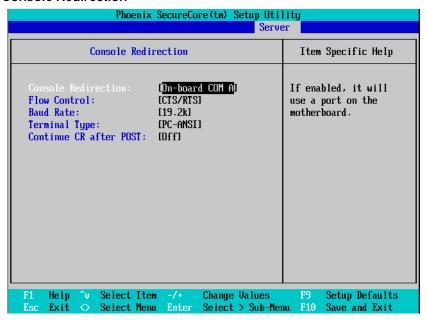


Figure 5-2: Console Redirection

○ Console Redirection

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

▶On-board COM A Use Serial Port A as the COM port address.▶On-board COM B Use Serial Port B as the COM port address.

▶ Disabled Disable this function. (Default setting)

▽Flow Control

This option provide user to enable the flow control function.

None Not supported.Not supported.Not supported.Software control.

▶ CTS/RTS Hardware control. (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.

\bigcirc Terminal 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, ASCII.

○ 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)

Boot

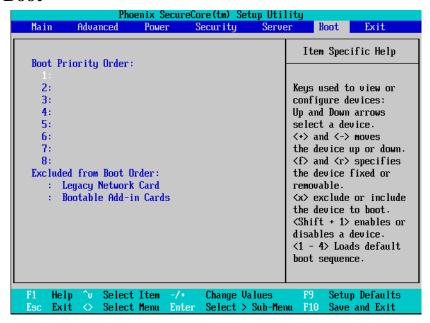


Figure 6: Boot

→ 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 or 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.
- <Shift + 1> Enable or disable a device.
- <1-4> Loads default boot secquence.

Exit

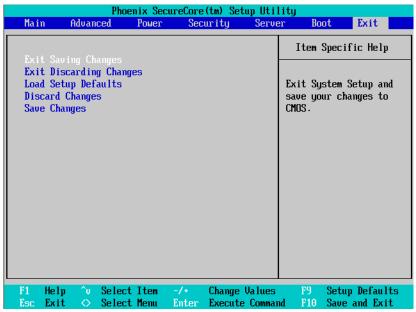


Figure 7: Exit

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

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 that 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 anyprevious 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

if you highlight this item and press Enter, a dialog box asks if you want to install optimal settings for all the items in the Setup utility. Press the Y key to indicate Yes, and then press Enter to install the optimal settings.

▽Discard Changes

Select this item and press Enter to discard any changes you have made without leaving the setup utility.

▽ Save Changes

This option allows user to save setup dat ato CMOS.

Press [Yes] to save setup data to CMOS.