

GA-7TCSV4

LGA1366 socket motherboard for Intel® Xeon® series processors

User's Manual

Rev. 1001

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Documentation Classifications

In order to assist in the use of this product, GIGABYTE provides the following types of documentations:

- For quick set-up of the product, read the Quick Installation Guide included with the product.
- For detailed product information, carefully read the User's Manual.

For product-related information, check on our website at:

<http://www.gigabyte.com>

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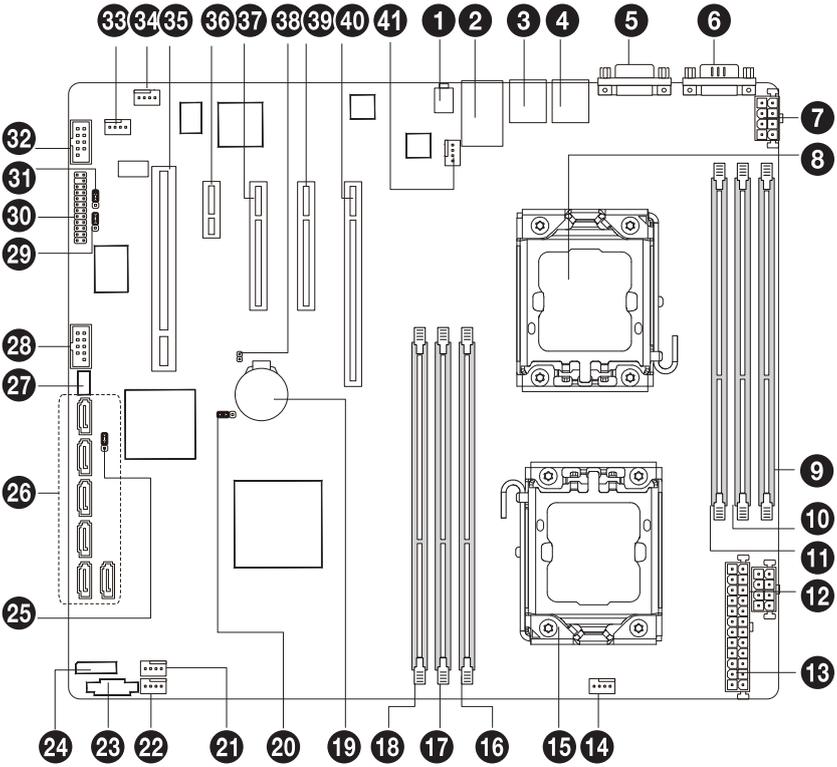
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Box Contents

- GA-7TCSV4 motherboard
- Driver CD
- Two SATA cables
- I/O Shield

- The box contents above are for reference only and the actual items shall depend on the product package you obtain. The box contents are subject to change without notice.
- The motherboard image is for reference only.

GA-7TCSV4 Motherboard Layout



Item	Code	Description
1	ID_SW	ID switch
2	GBE1_2	RJ45 LAN ports
3	USB1	USB ports
4	USB2	USB ports
5	VGA1	VGA port
6	COM1	Serial port
7	SSI_2X4P1	8 pin power connector
8	CPU1	Intel LGA1366 socket (Secondary CPU)
9	DDR_P1C2D0	Channel C slot 0 (for secondary CPU)
10	DDR_P1C1D0	Channel B slot 0 (for secondary CPU)
11	DDR_P1C0D0	Channel A slot 0 (for secondary CPU)
12	SSI_2X4P2	8 pin power connector
13	ATX_12V1	24 pin power connector
14	CPU_FAN1	CPU1 fan cable connector
15	CPU0	Intel LGA1366 socket (Primary CPU)
16	DDR_P0C0D0	Channel A slot 0 (for primary CPU)
17	DDR_P0C1D0	Channel B slot 0 (for primary CPU)
18	DDR_P0C2D0	Channel C slot 0 (for primary CPU)
19	BAT	CMOS battery
20	CLR_CMOS	Clear CMOS jumper
21	SYS_FAN1	System fan cable connector
22	SYS_FAN2	System fan cable connector
23	PSMI1	PM Bus connector
24	HDDBPB1	HDD back plane LED connector
25	PASS_DIS	Password clear jumper
26	SATA0~5	SATA cable connectors
27	SGPIO2	SGPIO connector
28	F_USB1	Front USB connector
29	BIOS_RVCR	BIOS recovery jumper
30	F_PANEL1	Front panel connector
31	CLR_RTC	Clear RTC jumper
32	COM2	Serial cable connector
33	SYS_FAN4	System fan cable connector
34	SYS_FAN3	System fan cable connector
35	PCI_2	PCI slot 2
36	PCI_E_3	PCI-E slot 3 (x1 slot)
37	PCI-E_4	PCI-E slot 4 (x8 slot)
38	CASE_OPEN	Chassis intrusion jumper
39	PCI-E_5	PCI-E slot 5 (x8 slot)
40	PCI-E_6	PCI-E slot 6 (x16 slot)
41	CPU_FAN2	CPU fan cable connector

Chapter 1 Hardware Installation

1-1 Installation Precautions

The motherboard contains numerous delicate electronic circuits and components which can become damaged as a result of electrostatic discharge (ESD). Prior to installation, carefully read the user's manual and follow these procedures:

- Prior to installation, do not remove or break motherboard S/N (Serial Number) sticker or warranty sticker provided by your dealer. These stickers are required for warranty validation.
- Always remove the AC power by unplugging the power cord from the power outlet before installing or removing the motherboard or other hardware components.
- When connecting hardware components to the internal connectors on the motherboard, make sure they are connected tightly and securely.
- When handling the motherboard, avoid touching any metal leads or connectors.
- It is best to wear an electrostatic discharge (ESD) wrist strap when handling electronic components such as a motherboard, CPU or memory. If you do not have an ESD wrist strap, keep your hands dry and first touch a metal object to eliminate static electricity.
- Prior to installing the motherboard, please have it on top of an antistatic pad or within an electrostatic shielding container.
- Before unplugging the power supply cable from the motherboard, make sure the power supply has been turned off.
- Before turning on the power, make sure the power supply voltage has been set according to the local voltage standard.
- Before using the product, please verify that all cables and power connectors of your hardware components are connected.
- To prevent damage to the motherboard, do not allow screws to come in contact with the motherboard circuit or its components.
- Make sure there are no leftover screws or metal components placed on the motherboard or within the computer casing.
- Do not place the computer system on an uneven surface.
- Do not place the computer system in a high-temperature environment.
- Turning on the computer power during the installation process can lead to damage to system components as well as physical harm to the user.
- 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.

1-2 Product Specifications

	CPU	<ul style="list-style-type: none"> ◆ Support for Dual Intel® Xeon® Nehalem-EP 2S /Westmere processors in 1366 socket ◆ Intel® Xeon® Quad Core in LGA 1366 socket ◆ Supports QuickPath Interconnect up to 6.4GT/s ◆ Enhanced Intel SpeedStep Technology (EIST) & Demand BasedSwitch (DBS) ◆ Support Intel Virtualization Technology (VT)
	Chipset	<ul style="list-style-type: none"> ◆ Intel® 5500 (Tylersburg-24D) Chipset ◆ Intel® 82801JR (ICH10R)
	Memory	<ul style="list-style-type: none"> ◆ 6 x 1.5V DDR3 DIMM sockets supporting up to 48 GB of system memory <ul style="list-style-type: none"> * Due to Windows 32-bit operating system limitation, when more than 4 GB of physical memory is installed, the actual memory size displayed will be less than 4 GB. ◆ 6 x 1.35V DDR3L DIMM sockets supporting up to 48 GB of system memory ◆ 3 channel memory architecture ◆ Support for 800/1066/1333 memory modules ◆ Support for ECC RDIMM/ UDIMM memory modules
	LAN	<ul style="list-style-type: none"> ◆ 2 x Intel® 82574L supports 10/100/1000 Mbps
	Expansion Slots	<ul style="list-style-type: none"> ◆ 1 x PCI Express x16 slot, running at x16 (PCI-E_6) <ul style="list-style-type: none"> * For optimum performance, if only one PCI Express graphics card is to be installed, be sure to install it in the PCIEX16 slot. ◆ 1 x PCI Express x8 slot, running at x4 (PCI-E_5) ◆ 1 x PCI Express x8 slot, running at x4 (PCI-E_4) ◆ 1 x PCI Express x1 slot, running at x1 (PCI-E_3) ◆ 1 x PCI slot 32-Bit/33MHz (PCI_2)
	Onboard Graphics	<ul style="list-style-type: none"> ◆ ASPEED AST1300 supports 128MB VRAM
	Storage Interface	<ul style="list-style-type: none"> ◆ Intel® ICH10R controller ◆ 6 x SATA 3Gb/s connectors ◆ Support for Intel IRST SATA RAID 0, RAID 1, RAID 5, RAID 10
	USB	<ul style="list-style-type: none"> ◆ Up to 6 USB 2.0/1.1 ports (4 on the back panel, 2 via the USB brackets connected to the internal USB headers)
	Internal Connectors	<ul style="list-style-type: none"> ◆ 1 x 24-pin ATX main power connector ◆ 2 x 8-pin ATX 12V power connector ◆ 6 x SATA 3Gb/s connectors ◆ 1 x PSMI header ◆ 2 x CPU fan header ◆ 4 x System fan header ◆ 1 x front panel header ◆ 2 x USB 2.0/1.1 headers ◆ 1 x Serial port header ◆ 1 x SPGIO header

	Rear Panel I/O	<ul style="list-style-type: none"> ◆ 4 x USB 2.0/1.1 ports ◆ 2 x RJ-45 port ◆ 1 x COM port ◆ 1 x VGA port ◆ 1 x ID Switch button
	I/O Controller	<ul style="list-style-type: none"> ◆ iTE IT8720F Super I/O chip
	Hardware Monitor	<ul style="list-style-type: none"> ◆ System voltage detection ◆ CPU/System temperature detection ◆ CPU/System fan speed detection ◆ CPU/System fan speed control <ul style="list-style-type: none"> * Whether the CPU/system fan speed control function is supported will depend on the CPU/system cooler you install.
	BIOS	<ul style="list-style-type: none"> ◆ 1 x 16 Mbit flash ◆ Phoenix BIOS
	Form Factor	<ul style="list-style-type: none"> ◆ CEB Form Factor; 12 inch x 10.5 inch, 8 layers PCB

* GIGABYTE reserves the right to make any changes to the product specifications and product-related information without prior notice.

1-3 Installing the CPU and CPU Cooler

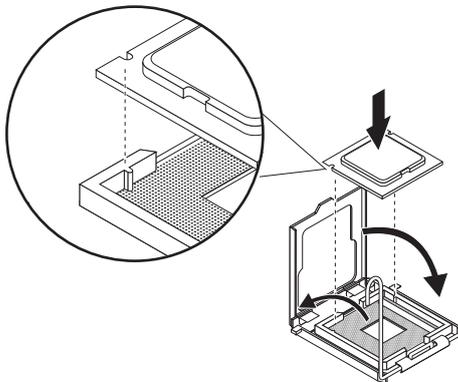


Read the following guidelines before you begin to install the CPU:

- Make sure that the motherboard supports the CPU.
(Go to GIGABYTE's website for the latest CPU support list.)
- Always turn off the computer and unplug the power cord from the power outlet before installing the CPU to prevent hardware damage.
- Locate the pin one of the CPU. The CPU cannot be inserted if oriented incorrectly. (Or you may locate the notches on both sides of the CPU and alignment keys on the CPU socket.)
- Apply an even and thin layer of thermal grease on the surface of the CPU.
- Do not turn on the computer if the CPU cooler is not installed, otherwise overheating and damage of the CPU may occur.
- Set the CPU host frequency in accordance with the CPU specifications. It is not recommended that the system bus frequency be set beyond hardware specifications since it does not meet the standard requirements for the peripherals. If you wish to set the frequency beyond the standard specifications, please do so according to your hardware specifications including the CPU, graphics card, memory, hard drive, etc.

1-3-1 Installing the 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. Please replace the metal cover and push the metal lever back into locked position.



1-4 Installing the Memory



Read the following guidelines before you begin to install the memory:

- Make sure that the motherboard supports the memory. It is recommended that memory of the same capacity, brand, speed, and chips be used.
(Go to GIGABYTE's website for the latest supported memory speeds and memory modules.)
- Always turn off the computer and unplug the power cord from the power outlet before installing the memory to prevent hardware damage.
- Memory modules have a foolproof design. A memory module can be installed in only one direction. If you are unable to insert the memory, switch the direction.

1-4-1 Dual Channel Memory Configuration

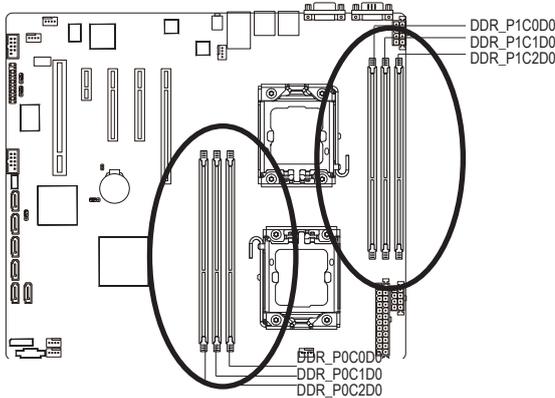
This motherboard provides four DDR3 memory sockets and supports Dual Channel Technology. After the memory is installed, the BIOS will automatically detect the specifications and capacity of the memory. Enabling Dual Channel memory mode will double the original memory bandwidth.

The four DDR3 memory sockets are divided into two channels and each channel has two memory sockets as following:

Channel A: DDR_P0C0D0, DDR_P1C0D0

Channel B: DDR_P0C1D0, DDR_P1C1D0

Channel C: DDR_P0C2D0, DDR_P1C2D0



R-DIMM	Channel A	Channel B	Channel C
	P0C0D0 P1C0D0	P0C1D0 P1C1D0	P0C2D0 P1C2D0
	Single-Rank	Single-Rank	Single-Rank
	Dual-Rank	Dual-Rank	Dual-Rank
	Quad-Rank	Quad-Rank	Quad-Rank

U-DIMM	Channel A	Channel B	Channel C
	P0C0D0 P1C0D0	P0C1D0 P1C1D0	P0C2D0 P1C2D0
	Single-Rank	Single-Rank	Single-Rank
	Dual-Rank	Dual-Rank	Dual-Rank

Due to CPU limitations, read the following guidelines before installing the memory in Dual Channel mode.

1. Dual Channel mode cannot be enabled if only one DDR3 memory module is installed.
2. When enabling Dual Channel mode with two or four memory modules, it is recommended that memory of the same capacity, brand, speed, and chips be used for optimum performance.

1-4-2 Installing a Memory



Before installing a memory module, make sure to turn off the computer and unplug the power cord from the power outlet to prevent damage to the memory module.

Be sure to install DDR3 DIMMs on this motherboard.

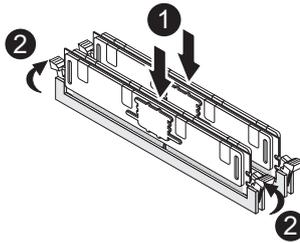
Installation Step:

Step 1. Insert the DIMM memory module vertically into the DIMM slot, and push it down.

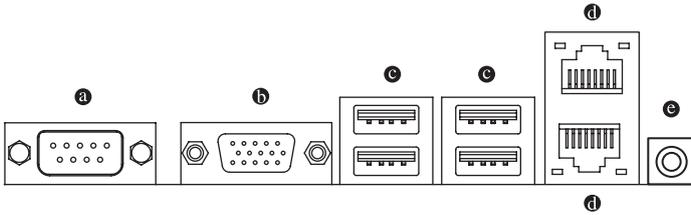
Step 2. Close the plastic clip at both edges of the DIMM slots to lock the DIMM module.

Note: 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.



1-5 Back Panel Connectors



a Serial Port

Connects to serial-based mouse or data processing devices.

b Video Port

The video in port allows connect to video in, which can also apply to video loop thru function.

c USB 2.0/1.1 Port

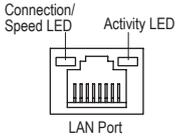
The USB port supports the USB 2.0/1.1 specification. Use this port for USB devices such as a USB keyboard/mouse, USB printer, USB flash drive and etc.

d RJ-45 LAN Port

The Gigabit Ethernet LAN port provides Internet connection at up to 1 Gbps data rate. The following describes the states of the LAN port LEDs.

e ID Switch Button

This button provide the selected unit identification function.



Connection/Speed LED:

State	Description
Orange	1 Gbps data rate
Green	100 Mbps data rate
Off	10 Mbps data rate

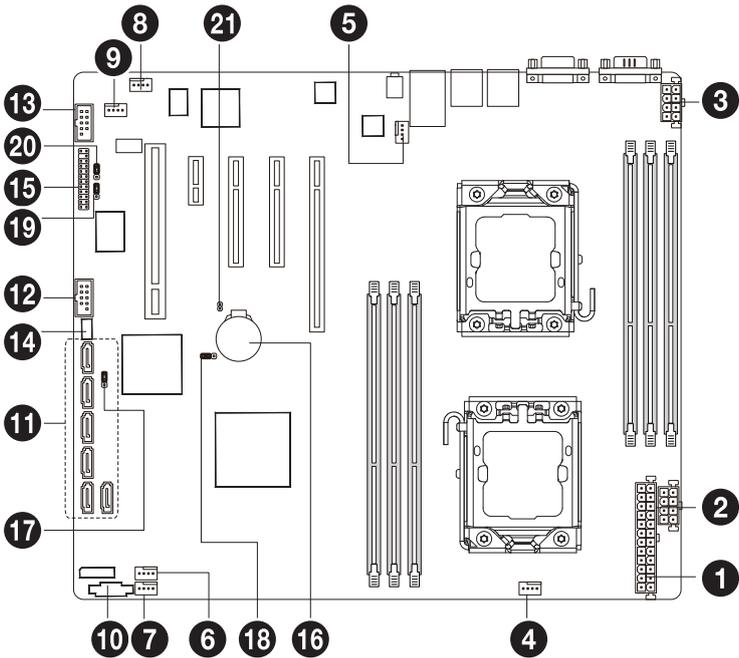
Activity LED:

State	Description
Blinking	Data transmission or receiving is occurring
On	No data transmission



- When removing the cable connected to a back panel connector, first remove the cable from your device and then remove it from the motherboard.
- When removing the cable, pull it straight out from the connector. Do not rock it side to side to prevent an electrical short inside the cable connector.

1-6 Internal Connectors



1) ATX_12V1	12) F_USB1
2) SSI_2X4P2	13) COM2
3) SSI_2X4P1	14) SGPIO2
4) CPU_FAN1 (for primary CPU)	15) F_PANEL1
5) CPU_FAN2 (for secondary CPU)	16) BAT
6) SYS_FAN1 (System Fan)	17) PASS_DIS
7) SYS_FAN2 (System Fan)	18) CLR_CMOS
8) SYS_FAN3 (System Fan)	19) BIOS_RVCR
9) SYS_FAN4 (System Fan)	20) CLR_RTC
10) PSM1	21) CASE_OPEN
11) SATA0/1/2/3/4/5	



Read the following guidelines before connecting external devices:

- First make sure your devices are compliant with the connectors you wish to connect.
- Before installing the devices, be sure to turn off the devices and your computer. Unplug the power cord from the power outlet to prevent damage to the devices.
- After installing the device and before turning on the computer, make sure the device cable has been securely attached to the connector on the motherboard.

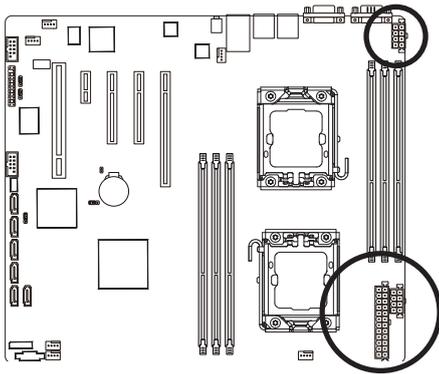
1/2/3) ATX_12V1/SSI_2X4P1/SSI_2X4P1

(2x4 12V Power Connector and 2x12 Main Power Connector)

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, first make sure the power supply is turned off and all devices are properly installed. The power connector possesses a foolproof design. Connect the power supply cable to the power connector in the correct orientation. The 12V power connector mainly supplies power to the CPU. If the 12V power connector is not connected, the computer will not start.



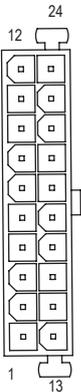
To meet expansion requirements, it is recommended that a power supply that can withstand high power consumption be used (500W or greater). If a power supply is used that does not provide the required power, the result can lead to an unstable or unbootable system.



SSI_2X4P1	
Pin No.	Definition
1	GND
2	GND
3	GND
4	GND
5	P12V_DDR3_CPU1
6	P12V_DDR3_CPU1
7	P12V_CPU1
8	P12V_CPU1

SSI_2X4P2	
Pin No.	Definition
1	GND
2	GND
3	GND
4	GND
5	P12V_DDR3_CPU0
6	P12V_DDR3_CPU0
7	P12V_CPU0
8	P12V_CPU0

ATX_12V1



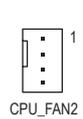
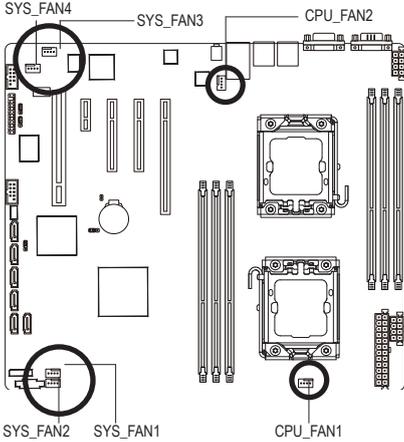
ATX_12V1

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	5VSB (stand by +5V)	21	+5V
10	+12V	22	+5V
11	+12V (Only for 2x12-pin ATX)	23	+5V (Only for 2x12-pin ATX)
12	3.3V (Only for 2x12-pin ATX)	24	GND (Only for 2x12-pin ATX)

4/5/6/7/8/9) CPU_FAN1/CPU_FAN2/SYS_FAN1/SYS_FAN2/SYS_FAN3/SYS_FAN4

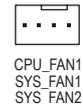
(CPU Fan/System Fan Headers)

The motherboard has a 4-pin CPU fan header (CPU_FAN1/2), a 4-pin (FAN4) system fan headers. Most fan headers possess a foolproof insertion design. When connecting a fan cable, be sure to connect it in the correct orientation (the black connector wire is the ground wire). The motherboard supports CPU fan speed control, which requires the use of a CPU fan with fan speed control design. For optimum heat dissipation, it is recommended that a system fan be installed inside the chassis.



CPU_FAN1/CPU_FAN2:

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



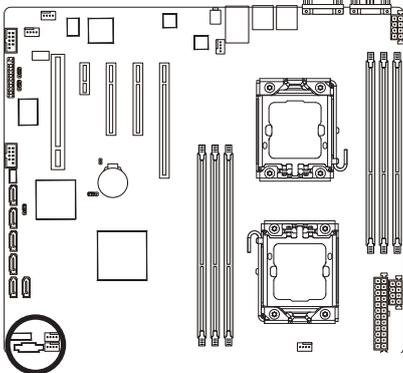
SYS_FAN1/2/3/4 (System Fan)

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



- Be sure to connect fan cables to the fan headers to prevent your CPU and system from overheating. Overheating may result in damage to the CPU or the system may hang.
- These fan headers are not configuration jumper blocks. Do not place a jumper cap on the headers.

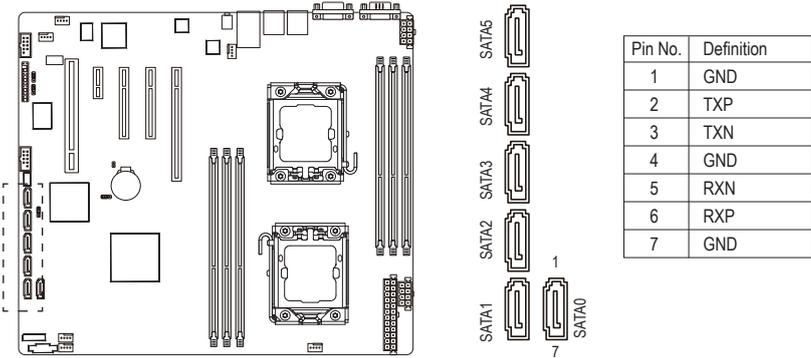
10) PSM11 (Power management connector)



Pin No.	Definition
1	SMB CLK
2	SMB DATA
3	SMB Alert
4	GND Sense
5	3.3V Sense

11) SATA0/1/2/3/4/5 (SATA 3Gb/s Connectors)

The SATA connectors conform to SATA 3Gb/s standard and are compatible with SATA 1.5Gb/s standard. Each SATA connector supports a single SATA device.

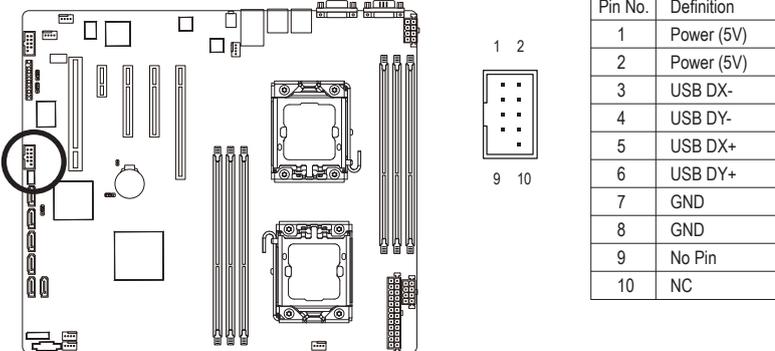


- A RAID 0 or RAID 1 configuration requires at least two hard drives. If more than two hard drives are configured, the total number of hard drives must be an even number.
- A RAID 5 configuration requires at least three hard drives. (The total number of hard drives does not have to be an even number.)
- A RAID 10 configuration requires four hard drives.

(Note) When a RAID configuration is built across the SATA 3Gb/s channels, the system performance of the RAID configuration may vary depends on the devices are connected.

12) F_USB1 (USB Headers)

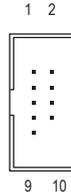
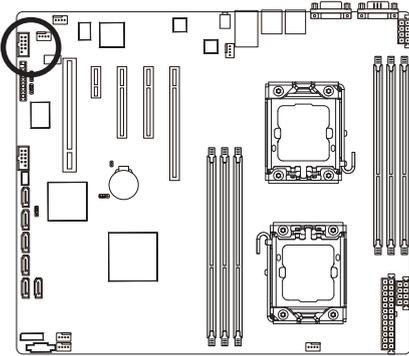
The headers conform to USB 2.0/1.1 specification. Each USB header can provide two USB ports via an optional USB bracket. For purchasing the optional USB bracket, please contact the local dealer.



When the system is in S4/S5 mode, only the USB ports routed to the F_USB1 header can support the ON/OFF Charge function.

13) COM2 (Serial Port Header)

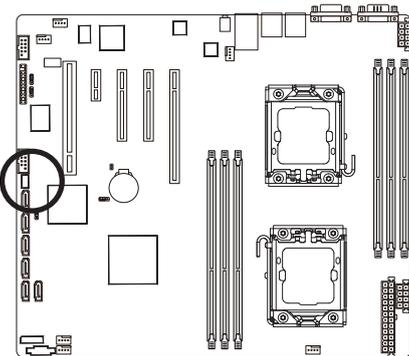
The COM header can provide one serial port via an optional COM port cable. For purchasing the optional COM port cable, please contact the local dealer.



Pin No.	Definition
1	NDCD-
2	NDSR-
3	NSIN
4	NRTS-
5	NSOUT
6	NCTS-
7	NDTR-
8	NRI-
9	GND
10	No Pin

14) SGPIO2 (SGPIO Header)

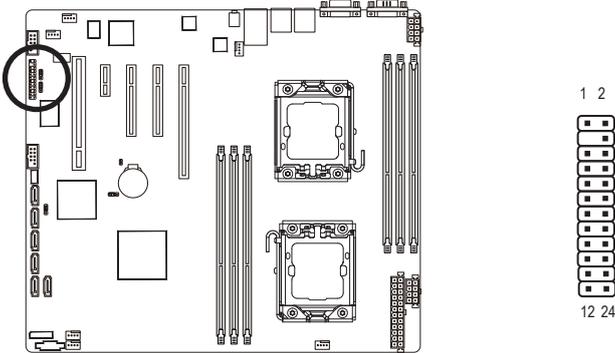
SGPIO is stands for Serial General Purpose Input/Output which is a 4-signal (or 4-wire) bus used between a Host Bus Adapter (HBA) and a backplane. Out of the 4 signals, 3 are driven by the HBA and 1 is driven by the backplane. Typically, the HBA is a storage controller located inside a server, desktop,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



Pin No.	Definition
1	NC
2	SATA_SDATA0
3	GND
4	SATA_SDATA1
5	SATA_SLOAD0
6	GND
7	SATA_SCLOCK
8	No Pin

15) F_PANEL1 (Front Panel Header)

Connect the power switch, reset switch, speaker, chassis intrusion switch/sensor and system status indicator on the chassis to this header according to the pin assignments below. Note the positive and negative pins before connecting the cables.



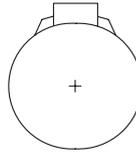
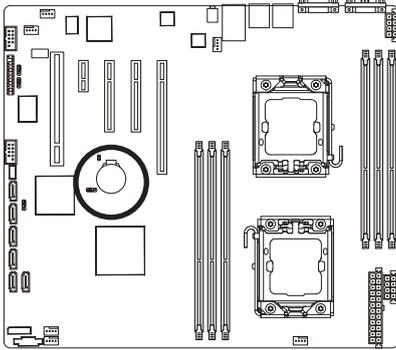
Pin No.	Signal Name	Definition
1	PWLED+	Power LED Signal anode (+)
2	5VSB	5V Standby Power
3	NC	No Pin
4	ID_LED+	ID LED Signal anode (+)
5	PWLED-	Power LED Signal cathode(-)
6	ID_LED-	ID LED Signal cathode(-)
7	HD+	Hard Disk LED Signal anode (+)
8	F_SYSRDY	System Front board LED Signal
9	HD- (GND)	Ground
10	SYS_STATUS-	System Status LED Signal cathode(-)
11	PWB+	Power Button Signal anode (+)
12	L1_ACT	LAN1 active LED Signal
13	PWB+_GND	Ground
14	L1_LINK-	LAN1 Link LED Signal cathode(-)
15	RST_BTN+	Reset button Signal anode (+)
16	SENSOR_SDA	SMBus Data Signal
17	RST_BTN_GND	Ground
18	SENSOR_SCL	SMBus Clock Signal
19	ID_SW+	ID Switch Signal anode (+)
20	CASE_OPEN-	Chassis intrusion Signal cathode(-)
21	ID_SW (GND)	Ground
22	L2_ACT	LAN2 active LED Signal
23	NMI_SW-	NMI switch Signal cathode(-)
24	L2_LINK-	LAN2 Link LED Signal cathode(-)



The front panel design may differ by chassis. A front panel module mainly consists of power switch, reset switch, power LED, hard drive activity LED, speaker and etc. When connecting your chassis front panel module to this header, make sure the wire assignments and the pin assignments are matched correctly.

16) BAT (Battery)

The battery provides power to keep the values (such as BIOS configurations, date, and time information) in the CMOS when the computer is turned off. Replace the battery when the battery voltage drops to a low level, or the CMOS values may not be accurate or may be lost.



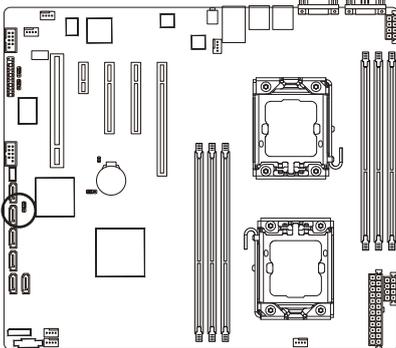
You may clear the CMOS values by removing the battery:

1. Turn off your computer and unplug the power cord.
2. Gently remove the battery from the battery holder and wait for one minute. (Or use a metal object like a screwdriver to touch the positive and negative terminals of the battery holder, making them short for 5 seconds.)
3. Replace the battery.
4. Plug in the power cord and restart your computer.



- Always turn off your computer and unplug the power cord before replacing the battery.
- Replace the battery with an equivalent one. Danger of explosion if the battery is replaced with an incorrect model.
- Contact the place of purchase or local dealer if you are not able to replace the battery by yourself or uncertain about the battery model.
- When installing the battery, note the orientation of the positive side (+) and the negative side (-) of the battery (the positive side should face up).
- Used batteries must be handled in accordance with local environmental regulations.

17) PASS_DIS (Skip Supervisor Password Jumper)



1



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

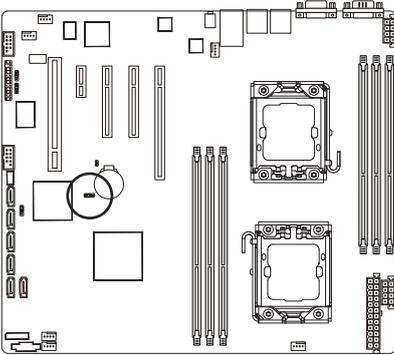
1



2-3 Close: Skip supervisor password.

18) CLR_CMOS (Clearing CMOS Jumper)

Use this jumper to clear the CMOS values (e.g. date information and BIOS configurations) and reset the CMOS values to factory defaults. To clear the CMOS values, place a jumper cap on the two pins to temporarily short the two pins or use a metal object like a screwdriver to touch the two pins for a few seconds.



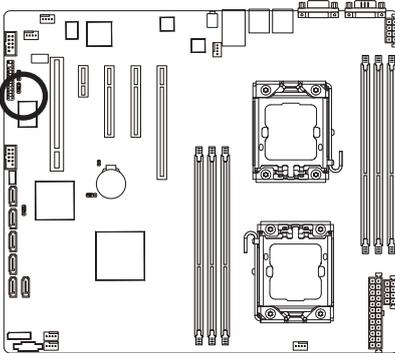
1  1-2 Close: Normal operation (Default setting)

1  2-3 Close: Clear CMOS data



- Always turn off your computer and unplug the power cord from the power outlet before clearing the CMOS values.
- After clearing the CMOS values and before turning on your computer, be sure to remove the jumper cap from the jumper. Failure to do so may cause damage to the motherboard.
- After system restart, go to BIOS Setup Exit menu and load factory defaults (select **Load Setup Default**) or manually configure the BIOS settings (refer to Chapter 2, "BIOS Setup," for BIOS configurations).

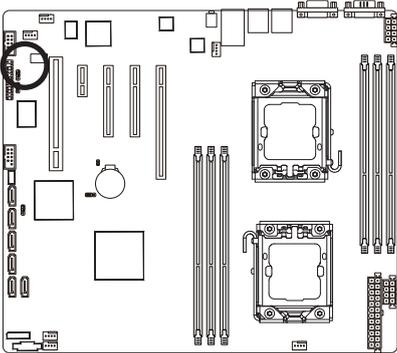
19) BIOS_RVCR (BIOS Recovery Jumper)



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

1  2-3 Close: BIOS recovery mode.

20) CLR_RTC (Clearing RTC Jumper)



1



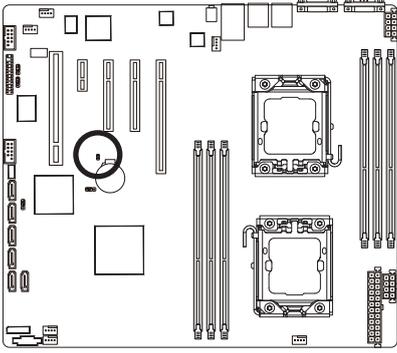
1-2 Close: Normal operation. (Default setting)

1



2-3 Close: Clear RTC status.

21) CASE_OPEN (Chassis intrusion Jumper)



Open: Normal operation (Default setting)



Close: Enable chassis intrusion alter.

Chapter 2 BIOS Setup

BIOS (Basic Input and Output System) records hardware parameters of the system in the NVRAM on the motherboard. Its major functions include conducting the Power-On Self-Test (POST) during system startup, saving system parameters and loading operating system, etc. BIOS includes a BIOS Setup program that allows the user to modify basic system configuration settings or to activate certain system features.

To access the BIOS Setup program, press the <F2> key during the POST when the power is turned on. To see more advanced BIOS Setup menu options, you can press <Ctrl> + <F1> in the main menu of the BIOS Setup program.



- BIOS flashing is potentially risky, if you do not encounter problems of using the current BIOS version, it is recommended that you don't flash the BIOS. To flash the BIOS, do it with caution. Inadequate BIOS flashing may result in system malfunction.
- It is recommended that you not alter the default settings (unless you need to) to prevent system instability or other unexpected results. Inadequately altering the settings may result in system's failure to boot. If this occurs, try to clear the CMOS values and reset the board to default values. (Refer to the "Load Optimized Defaults" section in this chapter or introductions of the battery/clearing CMOS jumper in Chapter 1 for how to clear the CMOS values.)

BIOS Setup Program Function Keys

<↑><↓><←><→>	Move the selection bar to select an item
<Enter>	Execute command or enter the submenu
<Esc>	Main Menu: Exit the BIOS Setup program Submenus: Exit current submenu
<Page Up>	Increase the numeric value or make changes
<Page Down>	Decrease the numeric value or make changes
<F1>	Show descriptions of the function keys
<F3>	Load previous value
<F9>	Load Optimized Defaults
<F10>	Save all the changes and exit the BIOS Setup program

■ **Main**

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

■ **Advanced**

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

(ex: Automatically configure hard disk parameters.)

■ **Power**

Use this menu to configure all the power-saving functions.

■ **Security**

Change, set, or disable supervisor and user password. Configuration supervisor password allows you to restrict access to the system and BIOS Setup.

A supervisor password allows you to make changes in BIOS Setup.

A user password only allows you to view the BIOS settings but not to make changes.

■ **Server**

Server additional features enabled/disabled setup menus.

■ **Boot**

This setup page provides items for configuration of boot sequence.

■ **Exit**

Save all the changes made in the BIOS Setup program to the NVRAM and exit BIOS Setup. (Pressing <F10> can also carry out this task.)

Abandon all changes and the previous settings remain in effect. Pressing <Y> to the confirmation message will exit BIOS Setup. (Pressing <Esc> can also carry out this task.)

2-1 The Main Menu

Once you enter the BIOS Setup program, the Main Menu (as shown below) appears on the screen. Use arrow keys to move among the items and press <Enter> to accept or enter other sub-menu.

Main Menu Help

The on-screen description of a highlighted setup option is displayed on the bottom line of the Main Menu.

Submenu Help

While in a submenu, press <F1> to display a help screen (General Help) of function keys available for the menu. Press <Esc> to exit the help screen. Help for each item is in the Item Help block on the right side of the submenu.



- If you do not find the settings you want in the Main Menu or a submenu, press <F1> to access more advanced options.
- When the system is not stable as usual, select the **Load Setup Default** item to set your system to its defaults.
- The BIOS Setup menus described in this chapter are for reference only and may differ by BIOS version.

Phoenix SecureCore™ Setup Utility						
Main	Advanced	Power	Security	Server	Boot	Exit
System Date: [07/26/2011]						Item Specific Help ----- <Tab>, <Shift-Tab>, or <Enter> selects field.
System Time: [14:23:12]						
BIOS Version: 7TCS04-F3						
BIOS Date: 07/22/2011						
CPU Type: Intel(R) Xeon(R) CPU						
X5670 @ 2.93GHz						
CPU Count: 2						
Total Memory Size: 2046 MB						

F1	Help	^v	Select Item	-/+	Change Values	
Esc	Exit	<	Select Menu	Enter	Select > Sub-Menu	F10 Save and Exit

☞ **System Date**

Set the date following the weekday-month-day- year format.

☞ **System Time**

Set the system time following the hour-minute- second format.

☞ **BIOS Version**

Display version number of the BIOS setup utility.

☞ **BIOS Date**

Displays the date when the BIOS setup utility was created.

☞ **Processor Information:**

CPU Type / CPU Count

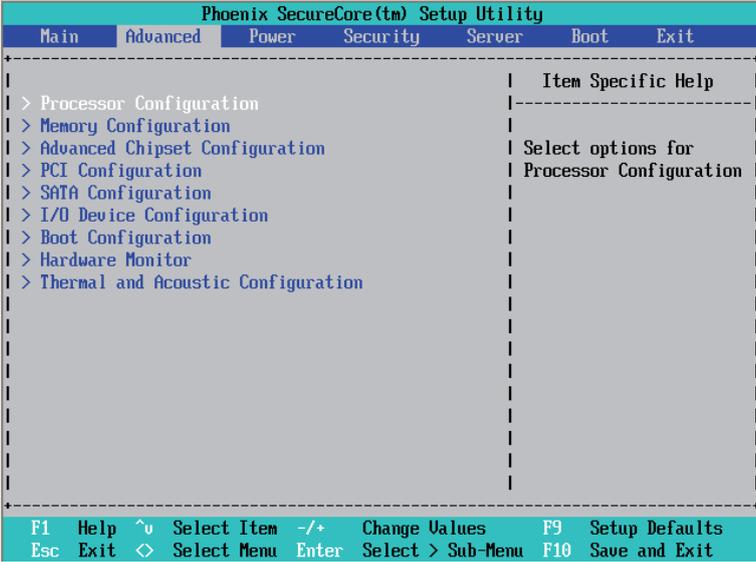
Displays the technical specifications for the installed processor.

☞ **Total Memory Size**

Determines how much total memory is present during the POST.

2-2 Advanced Menu

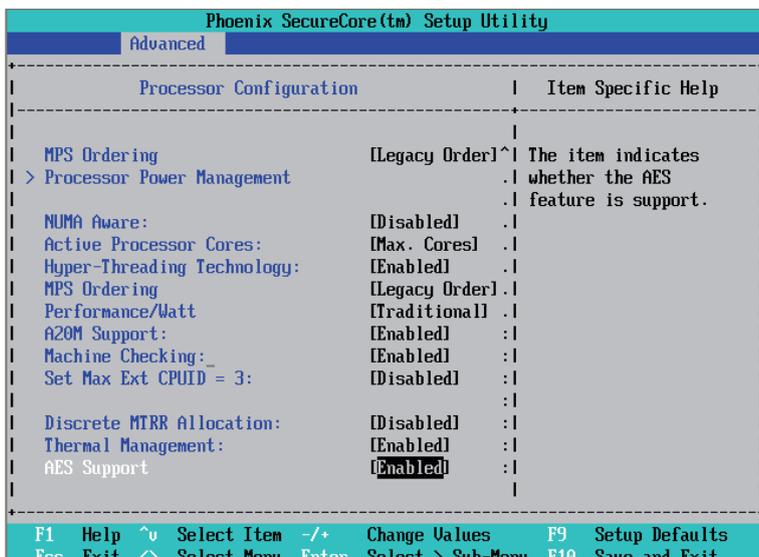
The Advanced menu display submenu options for configuring the function of various hardware components. Select a submenu item, then press Enter to access the related submenu screen.



2-2-1 Processor Configuration

Phoenix SecureCore (tm) Setup Utility			
Advanced			
Processor Configuration		Item Specific Help	
Processor 0 Information:			
Processor Speed:	2.93 GHz	Configures the MP	
Processor CPUID:	000206C1	Specification revision	
Processor L2 Cache:	1536 KB	level. Some operating	
Processor L3 Cache:	12288 KB	systems will require	
		1.1 for compatibility	
		reasons.	
Processor 1 Information:			
Processor Speed:	2.93 GHz		
Processor CPUID:	000206C1		
Processor L2 Cache:	1536 KB		
Processor L3 Cache:	12288 KB		
QPI Frequency:	6.400 GT/s		
CPU MCU revision is	0x00000006		
Multiprocessor Specification:	[1.4]	v	
F1	Help ^v	Select Item -/+	Change Values F9 Setup Defaults
Esc	Exit <	Select Menu Enter	Select > Sub-Menu F10 Save and Exit

Phoenix SecureCore (tm) Setup Utility			
Advanced			
Processor Configuration		Item Specific Help	
Intel Virtualization Technology:		[Enabled]	^ When enabled, a UMM can
Execute Disable Bit:		[Enabled]	utilize the additional
Hardware Prefetcher:		[Enabled]	hardware virtualization
Adjacent Cache Line Prefetch:		[Enabled]	capabilities provided
			by this technology.
MPS Ordering		[Legacy Order]	
> Processor Power Management			
NUMA Aware:		[Disabled]	
Active Processor Cores:		[Max. Cores]	
Hyper-Threading Technology:		[Enabled]	
MPS Ordering		[Legacy Order]	
Performance/Watt		[Traditionall]	
a20M Support:		[Enabled]	
Machine Checking:		[Enabled]	v
F1	Help ^v	Select Item -/+	Change Values F9 Setup Defaults
Esc	Exit <	Select Menu Enter	Select > Sub-Menu F10 Save and Exit



Processor Information

CPU Speed

The processor speed is the speed at which a microprocessor executes instructions. Clock speeds are expressed in megahertz (MHz), with 1 MHz being equal to 1 million cycles per second. The faster the clock, the more instructions the CPU can execute per second.

CPUID

Displays Processor ID information.

Processor L2 Cache

Display the information of L2 Cache per Core.

Processor L3 Cache

Display the information of total L3 Cache per socket.

QPI Frequency

Display Processor QPI information.

CPU MCU revision

Display CPU MCU revision.

Multiprocessor Specification

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

Options available: 1.1/1.4. Default setting is 1.4.

Intel Virtualization Technology

Select whether to enable the Intel Virtualization Technology function. VT allows a single platform to run multiple operating systems in independent partitions.

Options available: Enabled/Disabled. Default setting is Enabled.

☞ **Execute Disable Bit**

When this item enabled, the processor prevents the execution of code in data-only memory pages. This provides some protection against buffer overflow attacks.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ **Hardware Prefetcher**

Select whether to enable the speculative prefetch unit of the processor.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ **Adjacent Cache Line Prefetch**

When enabled, cache lines are fetched in pairs. When disabled, only the required cache line is fetched.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ **MPS Ordering**

The legacy ordering should be used for Windows 2000 or earlier operating systems. The modern ordering should be used for Windows XP or a later operating systems.

Options available: Legacy Order/Modern Order. Default setting is **Legacy Order**.

☞ **NUMA Aware**

Enable/disable NUMA Aware function.

Options available: Enabled/Disabled. Default setting is **Enabled**

☞ **Active Processor Cores** ^(Note)

Allows you to determine whether to enable all CPU cores.

Options available: All/1/2/3. Default setting is **All**.

☞ **Hyper Threading Technology**

The Hyper Threading Technology allows a single processor to execute two or more separate threads concurrently. When hyper-threading is enabled, multi-threaded software applications can execute their threads, thereby improving performance.

Options available: Enabled/Disabled. Default setting is **Enabled**.

Options available: All/1/2/3. Default setting is **All**.

☞ **Performance/Watt**

TBD

Options available: Traditional. Default setting is **Traditional**.

☞ **AS20M Support**

Enable/disable AS20M Support function.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ **Machine Checking**

Enable/disable Machine checking function.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ **Set Max Ext CPUID=3**

When enable this item, the processor will limit the maximum CPUID input value to 03h, even if processor supports a higher CPUID input value.

Options available: Enabled/Disabled. Default setting is **Disabled**.

☞ **Discrete MTRR Allocation**

Enable/Disable Discrete MTRR Allocation.

Options available: Enabled/Disabled. Default setting is **Disabled**.

☞ **Thermal Management**

Enable/Disable processor thermal management function .

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ **AES Support**

Enable/Disable Advanced Encryption Standard (AES) support .

Options available: Enabled/Disabled. Default setting is **Enabled**.

(Note) This item is present only if you install a CPU that supports this feature. For more information about Intel CPUs' unique features, please visit Intel's website.

2-2-1-1 Processor Power Management

Phoenix SecureCore (tm) Setup Utility		
Advanced		
Processor Power Management		Item Specific Help
EIST (GV3) & C State:	[Enabled]	Enable EIST (GV3) & C State Items
EIST (GV3):	[Enabled]	
EIST PSD Function:	[HW_ALL]	
Turbo Mode:	[Enabled]	
T-State:	[Enabled]	
CPU C State:	[Enabled]	
CPU C1E:	[Enabled]	
OS ACPI C3 Report:	[C2]	
CPU C6 Report:	[Enabled]	
Package C State Limit:	[No Limit]	
ACPI MWAIT Extensions:	[Enabled]	
F1 Help ^v Select Item -/+ Change Values F9 Setup Defaults Esc Exit < Select Menu Enter Select > Sub-Menu F10 Save and Exit		

☞ EIST (GV3) & C State

Conventional Enhanced Intel SpeedStep Technology (EIST) switches both voltage and frequency in tandem between high and low levels in response to processor load.

This allows user to configure EIST (GV3) & C State.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ EIST (GV3)

Enable/Disable EIST (GV3).

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ EIST PSD Function

In HW_ALL mode, the processor 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.

In SW_ALL mode, the OS Power Manager is responsible for coordinating the P-state among logical processors with dependencies and must initiate the transition on all of those Logical Processors.

In SW_ANY mode, the OS Power Manager is responsible for coordinating the P-state among logical processors with dependencies and may initiate the transition on any of those Logical Processors.

Options available: HW_ALL/SW_ALL/SW_ANY. Default setting is **HW_ALL**.

☞ Turbo Mode

When this feature is enabled, the processor can dynamically overclock one or two of its four processing cores to improve performance with applications that are not multi-threaded or optimized for quad-core processors.

Options available: Enabled/Disabled. Default setting is **Enabled**

☞ T State

Enable/Disable T State support .

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ **CPU C1E (CPU Enhanced Halt)** ^(Note)

Enables or disables Intel CPU Enhanced Halt (C1E) function, a CPU power-saving function in system halt state. When enabled, the CPU core frequency and voltage will be reduced during system halt state to decrease power consumption.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ **OS ACPI C3 Report**

Configure the state for the processor core C3 state.

Options available: C2/C3/Disabled. Default setting is **C2**.

☞ **CPU C6 Support** ^(Note)

Allows you to determine whether to let the CPU enter C6 mode in system halt state. When enabled, the CPU core frequency and voltage will be reduced during system halt state to decrease power consumption. The C6 state is a more enhanced power-saving state than C1. **Auto** lets the BIOS automatically configure this setting.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ **Package C State Limit**

Configure state for the C-State package limit.

Options available: C0/C1/C6/C7/No Limit. Default setting is **No Limit**.

☞ **ACPI MWAIT Extensions**

When this item enabled, CST using MWAIT extension is enabled for OSPM use.

Options available: Enabled/Disabled. Default setting is **Enabled**.

2-2-2 Memory Configuration

Phoenix SecureCore (tm) Setup Utility			
Advanced			
Memory Configuration		Item Specific Help	
Base Memory:	633 KB	:	Clears the memory error status.
Extended Memory:	2046 MB	:	
Memory Frequency:	1333 MHz	:	
DDR_P0C0D0 :	2048 MB	:	
DDR_P0C1D0 :	Not Installed	:	
DDR_P0C2D0 :	Not Installed	:	
DDR_P1C0D0 :	Not Installed	:	
DDR_P1C1D0 :	Not Installed	:	
DDR_P1C2D0 :	Not Installed	:	
Memory Retest:	[No]	:	
Memory Control Settings	[Manual]	:	
Memory RAS Mode:	[Independent]	:	
F1 Help	^v Select Item	-/+ Change Values	F9 Setup Defaults
Esc Exit	< Select Menu	Enter Select > Sub-Menu	F10 Save and Exit

Base Memory/ Extended Memory/ Memory Frequency

Total size of system memory detected during POST.

DIMM Group:

DDR_P0C0D0/DDR_P0C1D0/DDR_P0C2D0/DDR_P1C0D0/DDR_P1C1D0/DDR_P1C2D0

Status

The size of memory installed on each of the DDR3 slots.

Memory Reset

Select whether to delete the historical memory data log. System memory will be retested on the next boot-up.

Options available: Yes/No. Default setting is **No**.

Memory Control Setting

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

Options available: Manual/Auto. Default setting is **Auto**.

2-2-3 Advanced Chipset Configuration

Phoenix SecureCore(tm) Setup Utility		
Advanced		
Advanced Chipset Configuration	Item Specific Help	
> Intel VT for Directed I/O		Press <Enter> to bring up the Intel VT for Directed I/O (VT-d) Configuration menu.
Compatible Revision ID (CRID)	[Disabled]	
Intel(R) I/OAT:	[Enabled]	
IOH IOxAPIC:	[Enabled]	
QPI Control Setting:	[Enabled]	
QPI Link Fast Mode:	[Enabled]	
QPI Frequency Selection:	[Auto]	
QPI Isoch-Support:	[Disabled]	
QPI DCA Support:	[Enabled]	
QPI Scramble Selection:	[Disabled]	
QPI Error Report:	[Disabled]	
Memory ECC Error Log:	[Both]	
ECC Threshold:	[0]	
Uncorrectable Pass to OS:	[Enabled]	
Enable Multimedia Timer:	[Yes]	
F1 Help ^v Select Item -/+ Change Values F9 Setup Defaults Esc Exit <> Select Menu Enter Select > Sub-Menu F10 Save and Exit		

Phoenix SecureCore(tm) Setup Utility		
Advanced		
Intel VT for Directed I/O	Item Specific Help	
Intel VT for Directed I/O (VT-d):	[Enabled]	: Enable/Disable Intel
Interrupt Remapping:	[Disabled]	: Virtualization
Coherency Support:	[Disabled]	: Technology for
ATS:	[Enabled]	: Directed I/O (VT-d)
PassThrough DMA:	[Enabled]	: by reporting the I/O
		: device assigment
VT-d for Port 1:	[Enabled]	: to UMM through
VT-d for Port 2:	[Enabled]	: DMAR ACPI Tables.
VT-d for Port 3:	[Enabled]	:
VT-d for Port 4:	[Enabled]	:
VT-d for Port 5:	[Enabled]	:
VT-d for Port 6:	[Enabled]	:
VT-d for Port 7:	[Enabled]	:
VT-d for Port 8:	[Enabled]	:
VT-d for Port 9:	[Enabled]	v
F1 Help ^v Select Item -/+ Change Values F9 Setup Defaults Esc Exit <> Select Menu Enter Select > Sub-Menu F10 Save and Exit		

- ☞ **Intel VT for Directed I/O**
- ☞ **Interrupt Remapping**
Enable/ Disable Interrupt Remapping.
Options available: Enabled/Disabled. Default setting is **Disabled**.
- ☞ **Coherency Support**
Enable/ Disable Coherency Support.
Options available: Enabled/Disabled. Default setting is **Disabled**.
- ☞ **ATS**
Enable/ Disable ATS Support.
Options available: Enabled/Disabled. Default setting is **Enabled**.
- ☞ **PassThrough DMA**
Enable/ Disable PassThrough DMA.
Options available: Enabled/Disabled. Default setting is **Enabled**.
- ☞ **VT-d for Port1~Port 10**
Enable/ Disable VT-d support for Port 1~Port 10 ports through ATSR structures in ACPI Tables.
Options available: Enabled/Disabled. Default setting is **Enabled**.
- ☞ **Compatible Revision ID (CRID)**
Enable/Disable Compatible Revision ID (CRID).
Options available: Enabled/Disabled. Default setting is **Disabled**.
- ☞ **Intel (R) I/OAT**
Enable/Disable configuration mapped accesses to the I/OAT configuration space.
Options available: Enabled/Disabled. Default setting is **Enabled**.
- ☞ **IOH IOxPAIC**
Enable/Disable IOH IOxPAIC function.
Options available: Enabled/Disabled. Default setting is **Enabled**.
- ☞ **QPI Control Setting**
Enable/Disable QPI Control Setting.
Options available: Enabled/Disabled. Default setting is **Enabled**.
- ☞ **QPI Link Fast Mode**
Enable/Disable QPI Link Fast Mode.
Options available: Enabled/Disabled. Default setting is **Enabled**.
- ☞ **QPI Frequency Selection**
Identify the desired value of QPI frequency.
Options available: Auto/4.800GT/5.866GT. Default setting is **Auto**.
- ☞ **QPI Isoch-Support**
Enable/Disable QPI Isoch-Support.
Options available: Enabled/Disabled. Default setting is **Disabled**.
- ☞ **QPI DCA Support**
Enable/Disable QPI DCA Support.
Options available: Enabled/Disabled. Default setting is **Disabled**.

☞ **QPI Scramble Selection**

Enable/Disable QPI Scramble Selection.

Options available: Enabled/Disabled. Default setting is **Disabled**.

☞ **QPI Error Report**

Enable/Disable QPI Error Report.

Options available: Enabled/Disabled. Default setting is **Disabled**.

☞ **Memory ECC Error Log**

Identify the the memory ecc error log.

Disable/Correctable Error/Uncorrectable Error/Both. Default setting is **Both**.

☞ **ECC Threshold**

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

☞ **UnCorrectable Pass to OS**

Enable/Disable UnCorrectable Pass to OS.

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ **Enable Multimedia Timer**

Enable/Disable Multimedia Timer support.

Options available: Yes/No. Default setting is **Yes**.

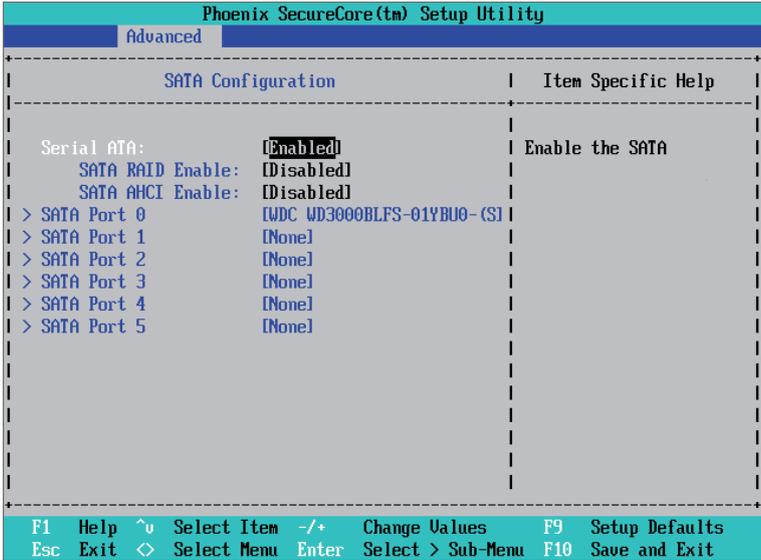
2-2-4 PCI Configuration

Phoenix SecureCore (tm) Setup Utility		
Advanced		
PCI Configuration		Item Specific Help
PCI Slot 1 Option ROM:	[Enabled]	Initialize device expansion ROM
PCI Slot 2 Option ROM:	[Enabled]	
PCI Slot 3 Option ROM:	[Enabled]	
PCI Slot 4 Option ROM:	[Enabled]	
PCI Slot 5 Option ROM:	[Enabled]	
PCI Slot 1 Option ROM:	[Enabled]	
Onboard LAN iSCSI Boot ROM:	[Disabled]	
Onboard LAN1 Controller:	[Enabled]	
LAN1 Option ROM:	[Disabled]	
Onboard LAN2 Controller:	[Enabled]	
LAN2 Option ROM:	[Disabled]	
Legacy USB Support:	[Enabled]	

F1 Help ^v Select Item -/+ Change Values F9 Setup Defaults
 Esc Exit <> Select Menu Enter Select > Sub-Menu F10 Save and Exit

- ☞ **PCI Slot 1/2/3/4/5 Option ROM**
 When enabled, This setting will initialize the device expansion ROM for the related PCI-E slot.
 Options available: Enabled/Disabled. Default setting is **Enabled**.
- ☞ **PCI Slot 1/ Option ROM**
 When enabled, This setting will initialize the device expansion ROM for the related PCI slot.
 Options available: Enabled/Disabled. Default setting is **Enabled**.
- ☞ **Onboard LAN iSCSI Boot ROM**
 Enable/Disable Onboard LAN iSCSI Boot ROM.
 Options available: Enabled/Disabled. Default setting is **Disabled**.
- ☞ **Onboard LAN1/2 Controller**
 Enable/Disable Onboard LAN controller .
 Options available: Enabled/Disabled. Default setting is **Enabled**.
- ☞ **LAN1/2 Option ROM**
 Enable/Disable onboard LAN1 device and initialize device expansion ROM.
 Options available: Enabled/Disabled. Default setting is **Disabled**.

2-2-5 SATA Configuration



Serial ATA

Enable/Disable on-board serial ATA function.

Options available: Enabled/Disabled. Default setting is **Enabled**.

SATA RAID Mode

Enable/Disable SATA RAID Mode. When enabled, the SATA controller enables both its RAID and AHCI functions. You will be allowed access to the RAID setup utility at boot time.

Options available: Enabled/Disabled. Default setting is **Disabled**.

SATA AHCI Mode

Enable/Disable SATA AHCI Mode. When enabled, the SATA controller enables its AHCI functionality. Then the RAID function is disabled and cannot be accessed to the RAID setup utility at boot time.

Options available: Enabled/Disabled. Default setting is **Disabled**.

SATA Port 0/1/2/3/4/5

Press [Enter] to view the installed HDD devices.

2-2-6 I/O Device Configuration

Phoenix SecureCore (tm) Setup Utility		
Advanced		
I/O Device Configuration	Item Specific Help	
Serial Port A:	[Enabled]	PilotII Configure serial port A using options:
Base I/O Address:	[3F8-IRQ 4]	
Serial Port B:	[Enabled]	[Disabled]
Base I/O Address:	[2F8-IRQ 3]	No configuration
		[Enabled]
		User configuration
F1 Help ^u Select Item -/+ Change Values F9 Setup Defaults		
Esc Exit < Select Menu Enter Select > Sub-Menu F10 Save and Exit		

Serial Port A/B

When enabled allows you to configure the serial port settings. When set to Disabled, displays no configuration for the serial port.

Options available: Enabled/Disabled. Default setting is **Enabled**.

Base I/O Address/IRQ

Configure Serial Port A/B base I/O address and IRQ.

Option available: 3F8/IRQ4/2F8/IRQ3/3E8/IRQ4/2E8/IRQ3.

Default setting for Serial Port A is 3F8/IRQ4.

Default setting for Serial Port B is 2F8/IRQ3.

2-2-7 Boot Configuration

Phoenix SecureCore™ Setup Utility	
Advanced	
Boot Configuration	Item Specific Help
Boot Time Diagnostic Screen: Enabled POST Error Pause: All, but Keyboard NumLock: On	Display the diagnostic screen during boot
F1 Help ^u Select Item -/+ Change Values F9 Setup Defaults Esc Exit < Select Menu Enter Select > Sub-Menu F10 Save and Exit	

☞ Boot -time Diagnostic

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

Options available: Enabled/Disabled. Default setting is **Enabled**.

☞ Post Error Pause

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

Options available: All Error/No Error/All, But Keyboard. Default setting is **All, But Keyboard**.

☞ NumLock

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

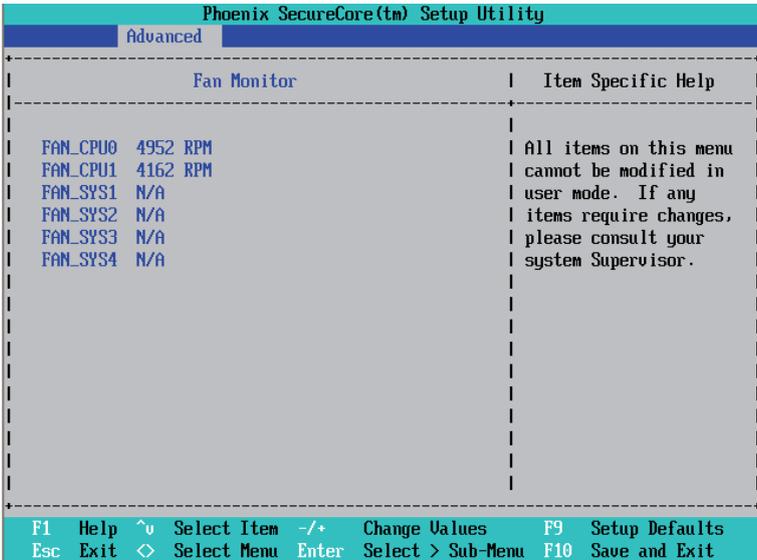
Options available: On/Off. Default setting is **On**.

2-2-8 Hardware Monitor

Press Enter to view the Hardware Monitor screen which displays a real-time record of the CPU/system temperature, fan speed, and voltage. Items on this window are non-configurable.

Phoenix SecureCore (tm) Setup Utility			
Advanced			
Hardware Monitor		Item Specific Help	
CPU0 TEMP	56 C	Voltage Monitor	
CPU1 TEMP	53 C		
IOH Temp	46 C/114F		
ICH Temp	47 C/116F		
> Voltage Monitor			
> Fan Monitor			
F1 Help ^v Select Item +/- Change Values F9 Setup Defaults			
Esc Exit <> Select Menu Enter Select > Sub-Menu F10 Save and Exit			

Phoenix SecureCore (tm) Setup Utility			
Advanced			
Voltage Monitor		Item Specific Help	
P_UCCP1	1.126 V	All items on this menu cannot be modified in user mode. If any items require changes, please consult your system Supervisor.	
P_UCCP2	1.108 V		
P_1V8_IOH	1.786 V		
P12V	12.080 V		
P5V	5.142 V		
P_1V26	1.278 V		
P_1V538	1.544 V		
P_3V3	3.283 V		
P_1V5_DDR3_CPU0	1.549 V		
P_1V5_DDR3_CPU1	1.551 V		
F1 Help ^v Select Item +/- Change Values F9 Setup Defaults			
Esc Exit <> Select Menu Enter Select > Sub-Menu F10 Save and Exit			



☞ **Current CPU0/CPU1/IOH/ICH Temperature**

Displays current CPU0/CPU1/IOH/ICH temperature.

☞ **Current Voltage(V): P_VCCP1/P_VCCP2/P_1V8_IOH/P12V/P5V/P1V26/P_1V538/P_3V3/P_1V5_DDR3_CPU0/P_1V5_DDR3_CPU1**

Displays the current CPU and system voltages.

☞ **Current CPU1 Fan/CPU2 Fan/System Fan 1/2/3/4 Speed (RPM)**

Displays current CPU/System fan speed.

2-2-9 Thermal and Acoustic Configuration

Phoenix SecureCore(tm) Setup Utility		
Advanced		
Thermal and Acoustic Configuration	Item Specific Help	
Open-loop Thermal Throttle:	[Enabled]	Enable/Disable
Temperature Chassis inlet:	[35]	Open-loop Thermal
Temperature Rise:	[10]	Throttle
Air Speed to the DIMMs:	[1500]	
System Altitude:	[0]	
Pitch between DIMMs:	[400]	
Close-loop Thermal Throttle:	[Enabled]	
Temperature Hysteresis:	[1]	
Temperature Guardband:	[3]	
Temperature Chassis inlet:	[35]	
Temperature Rise:	[10]	
Air Speed to the DIMMs:	[1500]	
System Altitude:	[0]	
Pitch between DIMMs:	[400]	
F1 Help ^v Select Item -/+ Change Values F9 Setup Defaults		
Esc Exit <> Select Menu Enter Select > Sub-Menu F10 Save and Exit		

Open loop Thermal Throttle

Enable/Disable Open loop Thermal Throttle.

Options available: Enabled/Disabled. Default setting is **Enabled**.

Temperature Chassis inlete

This item is user defined. Use numeric key to adjust desired value.

Temperature Rise

This item is user defined. Use numeric key to adjust desired value.

Air speed to the DIMMs

This item is user defined. Use numeric key to adjust desired value.

System Altitude

This item is user defined. Use numeric key to adjust desired value.

Pitch between DIMMs

This item is user defined. Use numeric key to adjust desired value.

Close loop Thermal Throttle

This item is user defined. Use numeric key to adjust desired value.

Enable/Disable Open loop Thermal Throttle.

Options available: Enabled/Disabled. Default setting is **Enabled**.

Temperature Hysteresis

This item is user defined. Use numeric key to adjust desired value.

Temperature Guardband

This item is user defined. Use numeric key to adjust desired value.

Temperature Chassis inlet

This item is user defined. Use numeric key to adjust desired value.

☞ **Temperature Rise**

This item is user defined. Use numeric key to adjust desired value.

☞ **Air speed to the DIMMs**

This item is user defined. Use numeric key to adjust desired value.

☞ **System Altitude**

This item is user defined. Use numeric key to adjust desired value.

☞ **Pitch between DIMMs**

This item is user defined. Use numeric key to adjust desired value.

2-3 Power Menu

Phoenix SecureCore (tm) Setup Utility						
Main	Advanced	Power	Security	Server	Boot	Exit
Power On by RTC Alarm:		[Off]	Item Specific Help			
Power On by PCI & PCIE Devices:		[Enabled]	-----			
Support WOL from AC lost:		[Disabled]	Enabled wakes the			
After Power Failure:		[Last State]	system up at a			
			specific time.			

F1	Help	^u	Select Item	-/+	Change Values	F9 Setup Defaults
Esc	Exit	<	Select Menu	Enter	Select > Sub-Menu	F10 Save and Exit

☞ Power On by RTC Alarm

Select whether to wake up the system when an RTC alarm is detected.
Options available: On/Off. Default setting is **Off**.

☞ Power On by PCI & PCIE Devices

Select whether to wake up the system when PCI or PCI Express devices are detected.
Options available: Enabled/Disabled. Default setting is **Disabled**.

☞ Support WOL from AC lost

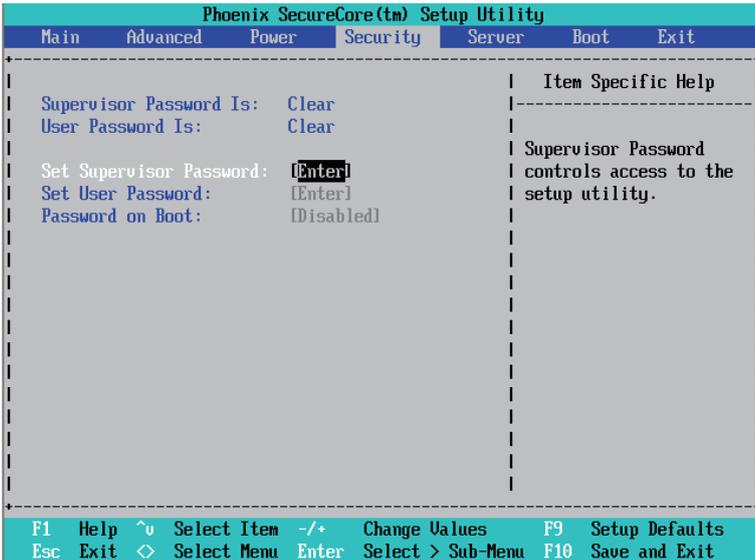
Determines whether to enable WOL function when the system shutdown occurs.
Options available: Enabled/Disabled. Default setting is **Disabled**.

☞ After Power Failure

Defines the power state to resume to after a system shutdown that is due to an interruption in AC power. When set to Last State, the system will return to the active power state prior to shutdown. When set to Stay Off, the system remains off after power shutdown.
Options available: Last State/Stay Off/Power On. Default setting is **Last State**.

2-4 Security Menu

The Security menu allows you to safeguard and protect the system from unauthorized use by setting up access passwords.



There are two types of passwords that you can set:

- **Supervisor Password**
Entering this password will allow the user to access and change all settings in the Setup Utility.
- **User Password**
Entering this password will restrict a user's access to the Setup menus. To enable or disable this field, a Administrator Password must first be set. A user can only access and modify the System Time, System Date, and Set User Password fields.

Supervisor Password Status

This parameter indicates whether a Administrator Password has been assigned.

User Password Status

This parameter indicates whether a user password has been assigned.

To clear the password, press <Enter> on the password item and when requested for the password, press <Enter> again. The message "PASSWORD DISABLED" will appear, indicating the password has been cancelled.

Set Supervisor Password

Press Enter to configure the Supervisor password.

Set User Password

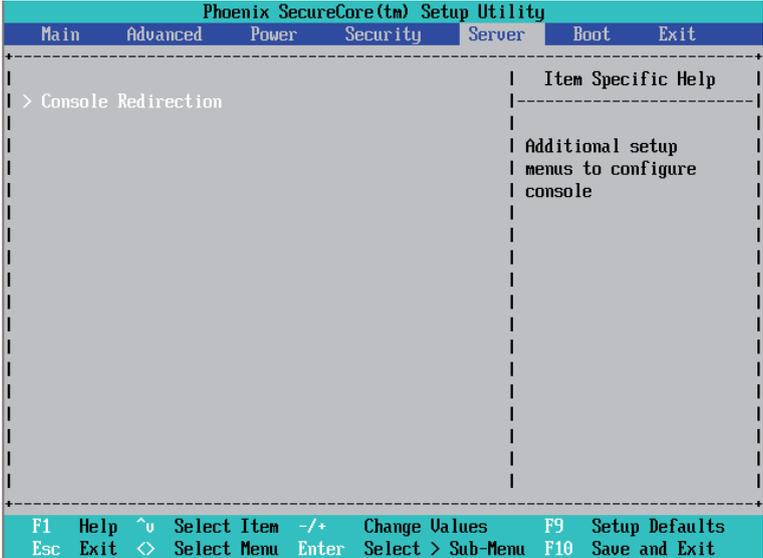
Press Enter to configure the user password.

Password on Boot

Password entering will be required when system on boot.

Options available: Enabled/Disabled. Default setting is **Disabled**.

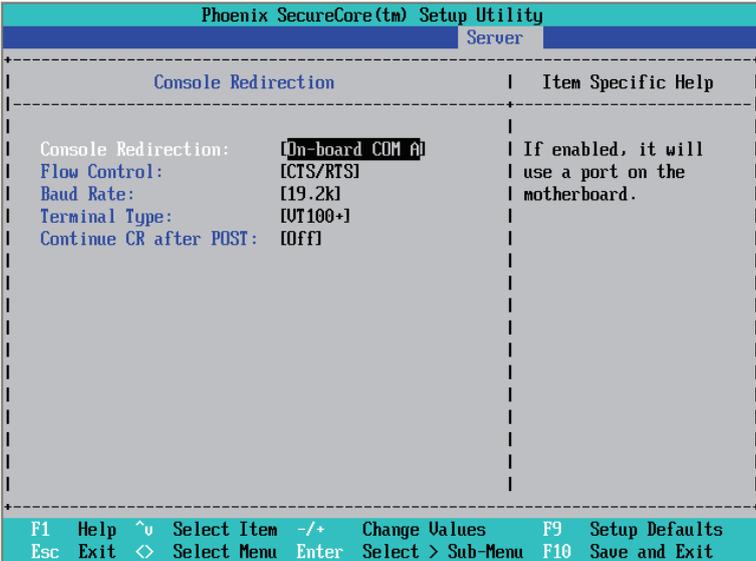
2-5 Server Menu



Console Redirection

Press [Enter] will prompt the sub-menu for console redirection.

2-5-1 Console Redirection



☞ Console Redirection ^(Note)

Select whether to enable console redirection. Console redirection enables users to manage the system from a remote location.

Options available: Serial Port A/Serial Port B/Disabled. Default setting is **Disabled**.

☞ Flow Control

Flow control can prevent data loss from buffer overflow. When sending data, if the receiving buffers are full, a 'stop' signal can be sent to stop the data flow. Once the buffers are empty, a 'start' signal can be sent to re-start the flow. Hardware flow control uses two wires to send start/stop signals.

Options available: None/XON/OFF/CTS/RTS.

☞ Baud Rate

Select the baud rate for console redirection.

Options available: 9600/19200/57600/115200.

☞ Terminal Type

Select a terminal type to be used for console redirection.

Options available: VT100/VT100+/ANSI /VT-UTF8.

☞ Continue C.R. after POST

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

Options available: On/Off. Default setting is **Off**.

(Note) Advanced items prompt when this item is defined.

2-6 Boot Menu

The Boot menu allows you to set the drive priority during system boot-up. BIOS setup will display an error message if the drive(s) specified is not bootable.



By default, the server searches for boot devices in the following sequence:

1. Hard drive.
2. UEFI device.
3. Optical disc drive.
4. Removable device.
5. Network 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.

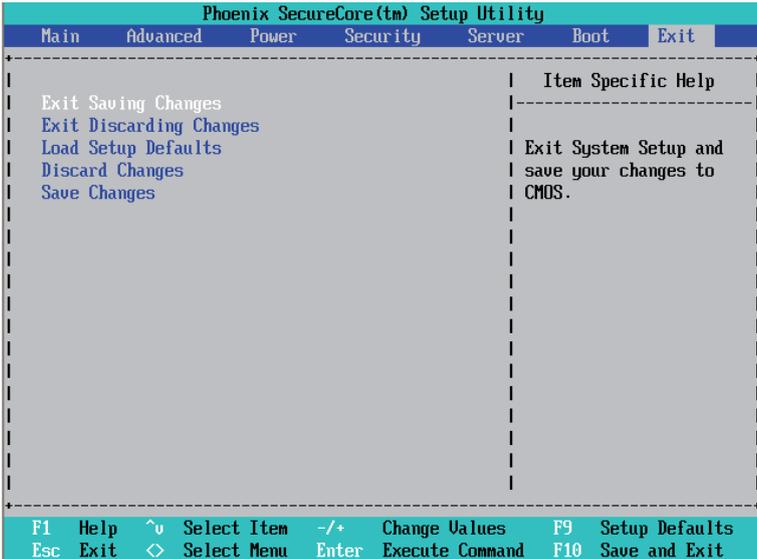
<x> exclude or include the device to boot.

<Shift + 1> Enable or disable a device.

<1-4> Loads default boot sequence.

2-7 Exit Menu

The Exit menu displays the various options to quit from the BIOS setup. Highlight any of the exit options then press **Enter**.



Exit Saving Changes

Saves changes made and close the BIOS setup.

Options available: Yes/No.

Exit Discarding Changes

Discards changes made and close the BIOS setup.

Options available: Yes/No.

Load Setup Default

Loads the default settings for all BIOS setup parameters. Setup Defaults are quite demanding in terms of resources consumption. If you are using low-speed memory chips or other kinds of low-performance components and you choose to load these settings, the system might not function properly.

Options available: Yes/No.

Discard Changes

Discards all changes made in the BIOS setup.

Options available: Yes/No.

Save Changes

Saves changes made in the BIOS setup.

Options available: Yes/No.