

GS-SR295D

Rack Mount Server

System Installation Guide

Dual Xeon™(Nocona)Processor Motherboard

Rev. 1.0

25A080-095D0-F00

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Safety, Care and Regulatory Information

⚡ Important safety information

Read and follow all instructions marked on the product and in the documentation before you operate your system. Retain all safety and operating instructions for future use.

- * The product should be operated only from the type of power source indicated on the rating label.
- * If your computer has a voltage selector switch, make sure that the switch is in the proper position for your area. The voltage selector switch is set at the factory to the correct voltage.
- * The plug-socket combination must be accessible at all times because it serves as the main disconnecting device.
- * All product shipped with a three-wire electrical grounding-type plug only fits into a grounding-type power outlet. This is a safety feature. The equipment grounding should be in accordance with local and national electrical codes. The equipment operates safely when it is used in accordance with its marked electrical ratings and product usage instructions
- * Do not use this product near water or a heat source.
- * Set up the product on a stable work surface or so as to ensure stability of the system.
- * Openings in the case are provided for ventilation. Do not block or cover these openings. Make sure you provide adequate space around the system for ventilation when you set up your work area. Never insert objects of any kind into the ventilation openings.
- * To avoid electrical shock, always unplug all power cables and modem cables from the wall outlets before removing covers.
- * Allow the product to cool before removing covers or touching internal components.

⚡ Precaution for Product with Laser Devices

Observe the following precautions for laser devices:

- * Do not open the CD-ROM drive, make adjustments, or perform procedures on a laser device other than those specified in the product's documentation.
- * Only authorized service technicians should repair laser devices.

⚡ Precaution for Product with Modems, Telecommunications, or Local Area Network Options

Observe the following guidelines when working with options:

- * Do not connect or use a modem or telephone during a lightning storm. There may be a risk of electrical shock from lightning.

- * To reduce the risk of fire, use only No. 26 AWG or larger telecommunications line cord.
- * Do not plug a modem or telephone cable into the network interface controller (NIC) receptacle.
- * Disconnect the modem cable before opening a product enclosure, touching or installing internal components, or touching an uninsulated modem cable or jack.
- * Do not use a telephone line to report a gas leak while you are in the vicinity of the leak.

NOTICE: The Load Number (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device, to prevent overloading. The termination on a loop may consist of any combination of devices subject only to the requirement that the sum of the Load Numbers of all the devices does not exceed 100.

/ for European users only /



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.



Server Warnings and Cautions



WARNING: To reduce the risk of electric shock or damage to the equipment:

- Disconnect power from the system by unplugging all power cords from the power supplies.
- Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
- Plug the power cord into a grounded (earthed) electric outlet that is easily accessible at all times.
- Unplug the power cord from the power supply to disconnect power to the equipment.
- Do not route the power cord where it can be walked on or pinched by items placed against it. Pay particular attention to the plug, electric outlet, and the point where the cord extends from the server.



WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.



CAUTION: The computer is designed to be electrically grounded (earthed). To ensure proper operation, plug the AC power cord into a properly grounded AC outlet only.

Introduction

Welcome to Gigabyte GS-SR295D Rack mount Server System Installation Guide. The guide provides instructions for configuration hardware for the GS-SR295D to your system.

This installation guide will assist you in installing all the essential components for the sever system. For your protection, please read and undertand all of the safety and operating instructions regarding your Gigabyte Server and retain for future reference. The procedures in this guidebook assume that your are a system or network administrator experienced in installing similar hardware.

Contents Packages

When opening the package, please ensure the system components are not damaged during the shipping. Using the following checklist to verify the contents. If any component is missing or damaged in the system, please contact your vendor immediatly.

- | | |
|---|--|
| <input checked="" type="checkbox"/> Chassis | <input checked="" type="checkbox"/> Silm type CD-ROM drive (Installed) |
| <input checked="" type="checkbox"/> The GA-9ILDR1-RH Motherboard(Installed) | <input checked="" type="checkbox"/> Silm type Floppy drive (Installed) |
| <input checked="" type="checkbox"/> Two CPU Heat Sinks | <input checked="" type="checkbox"/> Driver CD for motherboard driver & utility |
| <input checked="" type="checkbox"/> GS-SR295D System Installation Guide | <input checked="" type="checkbox"/> Power Supply (Installed) |
| <input checked="" type="checkbox"/> Hard Disk Drive Trays x 8 | |

Chapter 1 Features Summary

Motherboard	<ul style="list-style-type: none"> GA-9ILDR1
Processor Supported	<ul style="list-style-type: none"> Dual socket 604 for Intel® Xeon(Nocona) processor supports 3.6 GB and upper Intel® Xeon (Nocona) CPUs supports 800 MHz FSB 2nd cache depend on CPU
Chipset	<ul style="list-style-type: none"> Intel E7520 Chipset ICH5R I/O Controller Hub Intel 6700 PXH
System Memory:	
Memory Capacity	<ul style="list-style-type: none"> 8 x 240-pin DDRII DIMM Sockets Supports 16GB DRAM for DDRII 400
Memory Type	<ul style="list-style-type: none"> Supports ECC Registered DIMM DDRII 400
Memory Voltage	<ul style="list-style-type: none"> 1.8V only
Error Correction:	<ul style="list-style-type: none"> Single-bit Errors Correction, Multiple-bit Errors Detection
Expansion Slot	<ul style="list-style-type: none"> 1 x full-height/full-length 64bit/133MHz PCI-X slot 1 x PCI-E x8 Slot
Drive Bay:	
Hard Disk Drives:	<ul style="list-style-type: none"> 8 x Hot-Swap SCSI HDDs
Floppy Drive	<ul style="list-style-type: none"> 1 slim type Floppy
Slim Type CDROM	<ul style="list-style-type: none"> 1 slim type CD-ROM
Cooling Fans:	<ul style="list-style-type: none"> 3 X System Fan
Integrated LANs:	
Controller	<ul style="list-style-type: none"> Dual Broadcom® BCM5721 PCI-E I/F Gigabit Ethernet Controller
Advanced Software Function	<ul style="list-style-type: none"> Adapter Fault Tolerance Adaptive Load Balancing Fast Ethernet Channel Wake On LAN

Integrated Graphics:

- | | |
|-----------------|-------------------------------|
| Controller | • ATI® RAGE-XL VGA Controller |
| Graphics Memory | • 8MB SDRAM |

Integrated Super I/O:

- | | |
|----------------|--|
| Serial Ports | • 1 x Serial Port COM1 (Rear I/O-Shield) |
| Keyboard/Mouse | • 1 x PS/2 Keyboard Port (Rear I/O-Shield) |
| | • 1 x PS/2 Mouse Port (Rear I/O-Shield) |
| USB 2.0 | • 2 x USB ports (Rear I/O-Shield) |
| | • 2 x USB Port (Front Panel) |
| VGA Connector | • 1 x VGA connector (Rear I/O-Shield) |
| LAN Ports | • 2 x RJ45 LAN ports (Rear I/O-Shield) |

System BIOS:

- | | |
|------------------|--|
| BIOS Type | • AWARD BIOS, Multi-boot BBS 1.0 Compliant
4Mb Flash Memory |
| Special Features | • ACPI 1.1, DMI, PXE, Plug and Play,
A/C Power Recovery |

Server Management Functions

- | | |
|-------------------|--|
| BMC Chip | • NS IPMI 1.5 controller |
| Failure Detection | • IPMI 1.5 specification of Server management |
| Event Logging | • 32KB Nonvolatile Memory to Log System Failure Events |
| Remote Management | • Follow the IPMI 1.5 specification of Server management |

Environment

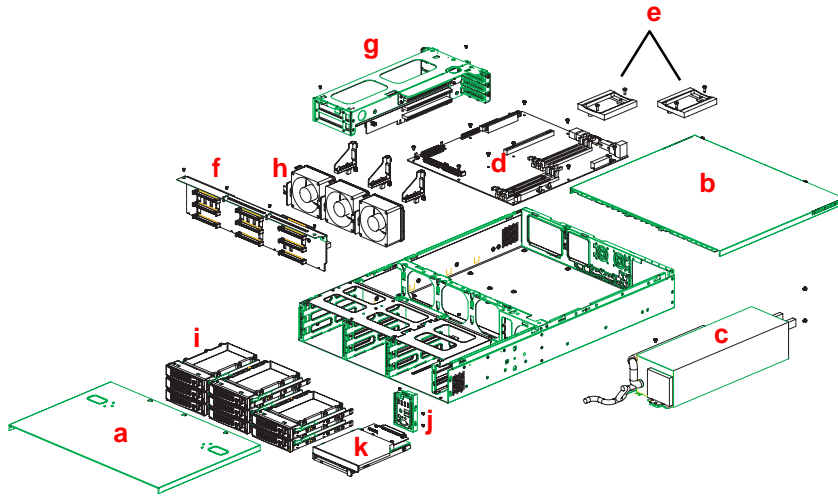
- | | |
|---------------------|--|
| Ambient Temperature | • Operating Temperature: 5°C to 35°C |
| | • Non-operating Temperature: 0°C to 50°C |
| Relative Humidity | • 10-85% operating Humidity at 30° C |

-
- | | |
|---------------------------|----------|
| Safety Regulations | • CE, UL |
|---------------------------|----------|

Electrical Power Supply:

- | | |
|--------------------------|------------------------|
| AC Voltage and Frequency | • 100V/240V; 47Hz/63Hz |
| DC Power Supply | • 550W |
-

Chapter 2 System Overview



a.	Chassis front cover	g.	Riser card bracket
b.	Chassis rear cover	h.	System Fans x 3
c.	Single/Redundant Power supply	i.	SCSI HDD Trays x 8
d.	GA-9ILD1R1 Motherboard	j.	Front LEDs & Power Button
e.	Dual Sockets 604	k.	CD-ROM & Floppy Drives
f.	Backplane board		

Chapter 3 System Hardware Installation



CAUTION

Please observe the safety information in chapter "Important Safety Information"

Do not expose the server to extreme environmental conditions. Protect it from dust, humidity, and heat.

Step 2-1: Chassis Removal

Front Cover:

Step 1 Push down the two buttons located at two sides of the chassis.

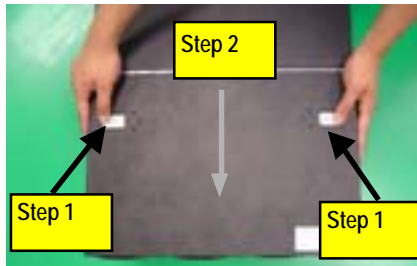
Step 2 Slide toward to remove the front cover.

Rear Cover:

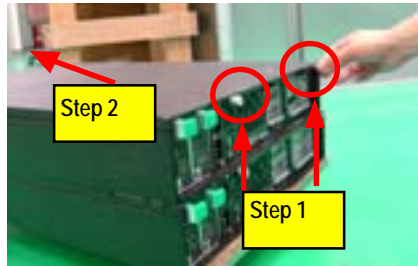
Step 1 Remove the two thumbscrews from back side of the system.

Step 2 Slide it toward to remove the rear cover.

Front Cover:



Rear Cover:



Note: Before installing CPU, you must remove the FAN duct. For FAN duct removal, please see Sub-section 2-7 "FAN Duct Removal and Installation" for detail instruction.

Step 2-2: CPU Installation

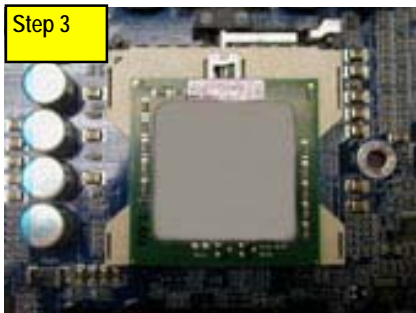
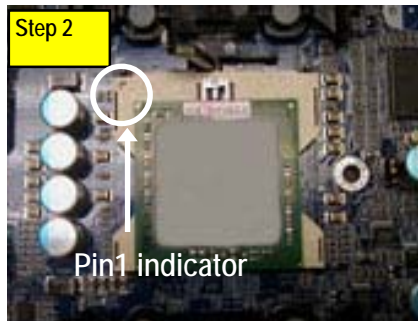
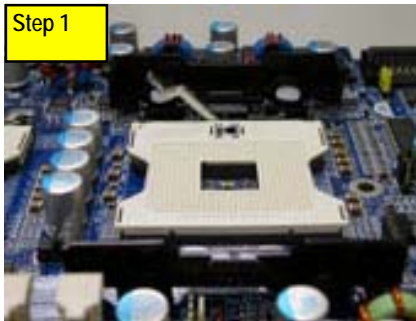


Please make sure the CPU type and speed that are supported by the motherboard.

Step 1. Rise the lever bar on the socket.

Step 2. Aligning the pins of the processor with the socket, insert the processor into the socket.

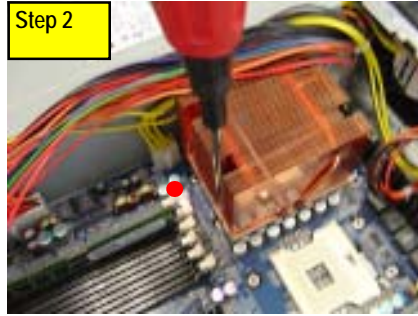
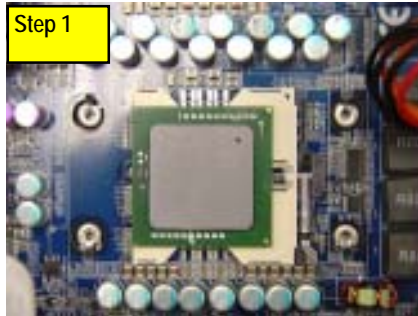
Step 3. Close the lever completely.



Step 2-3: CPU Heat Sink Installation

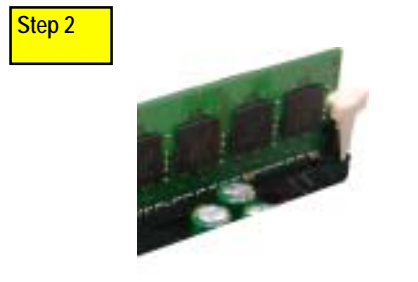
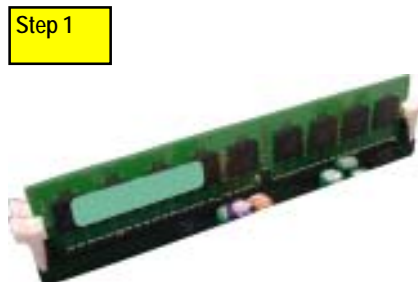
Step 1 Make sure the heat sink matches exactly the four holes on the motherboard.

Step 2 Attach the heat sink to the processor socket. Lock the heat sink to the motherboard with four screws.



Step 2-4: Memory Installation

1. Unlock a DIMM socket by pressing the retaining clips outwards.
2. Align a DIMM on the socket such that the notches on the DIMM exactly match the notches in the socket. Please note that DIMM must be populated in order starting at the nearest slot from the ATX power.
3. Firmly insert the DIMM into the socket until the retaining clips snap back in place.
4. When installing the DIMM into the DIMM socket, we recommend to populate one DIMM in Channel A module and one in Channel B module for best performance.
Please note that each logical DIMM must be made of two identical DIMMs having the same device size on each and the same DIMM size. Please populate DIMM module start from DDR7 and DDR6.



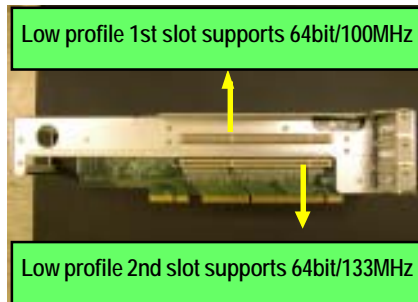
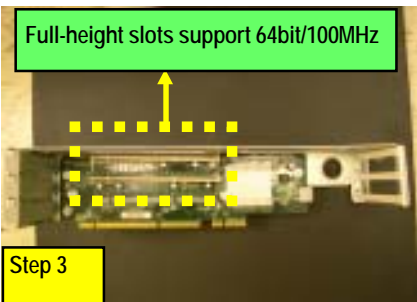
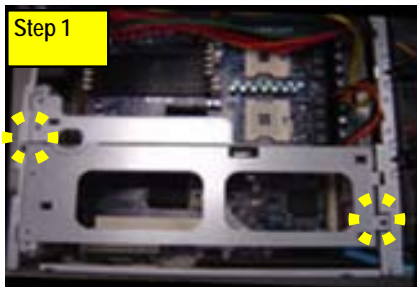
Step 2-5: PCI Expansion Card Installation

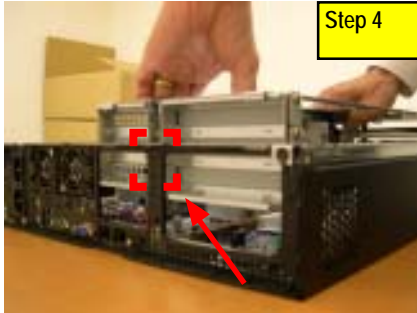
GS-SR295 provides expansion riser slots for four peripheral cards, two full-height 64bit/100MHz PCI-X slots and one low profile with 64bit/100MHz and one low profile 64bit/133MHz PCI slots. To install the peripheral, please go through the following steps.

- Step 1 Loosen the screws to remove the riser bracket.
- Step 2 Detach the riser bracket with both hands.
- Step 3 Installing the PCI Riser card. Align the expansion card with the guide groove. Slide the expansion board into the slot until the board firmly seats. Repeat **Step 2 & 3** to install remaining add-on cards.

Note: When you install ZCR card, the second full-heightfull-length slot can not work properly.

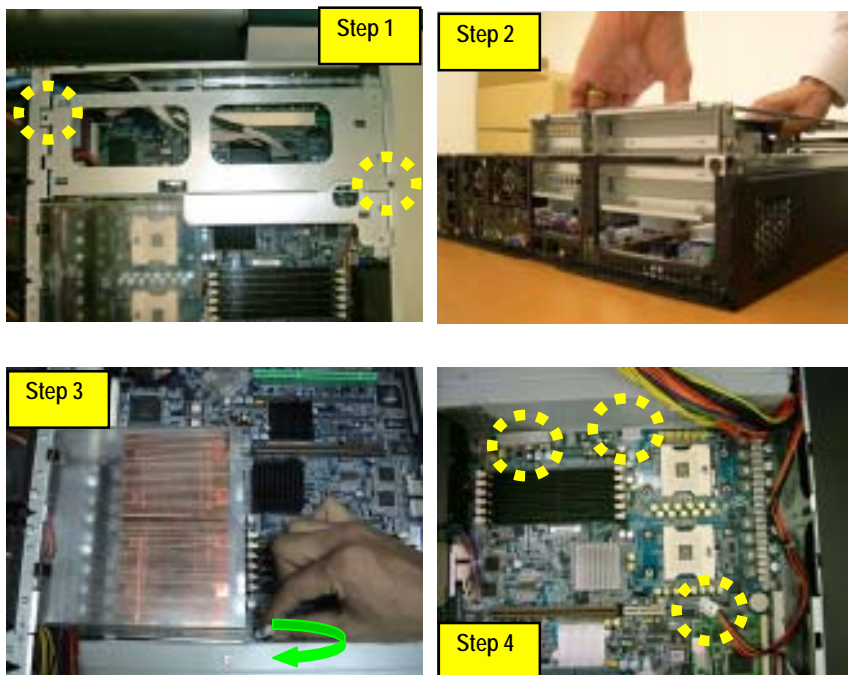
- Step 4 Replace the riser bracket into the system module (see the arrow direction mark), and push down vertically.
- Step 5 Reverse Step 1 & 2 to secure the riser bracket firmly. Installation completed.

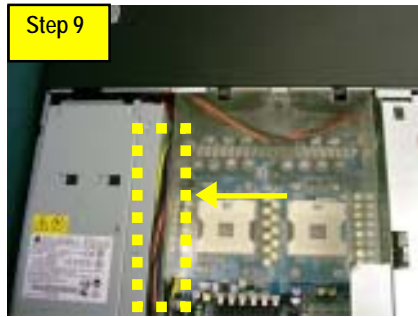
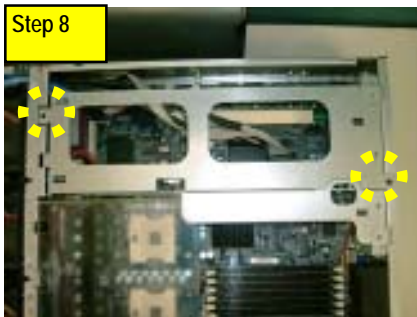
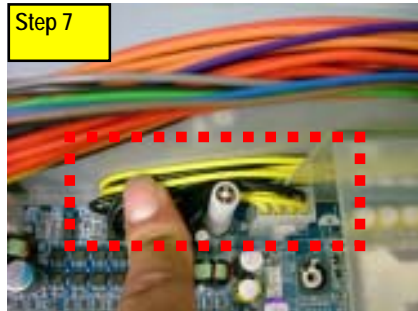
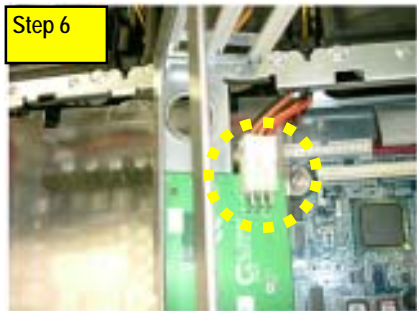
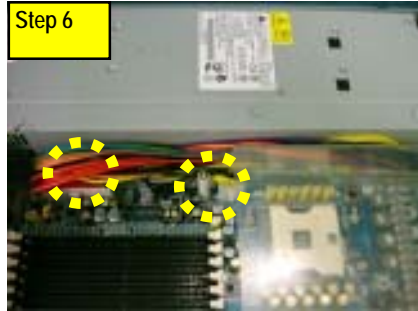
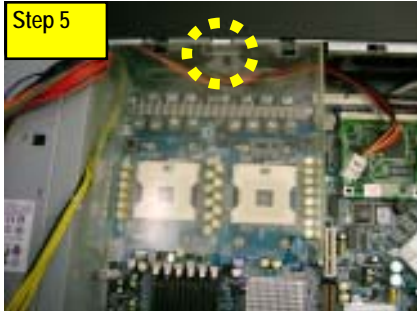




Step 2-6: FAN Duct Removal and Installation

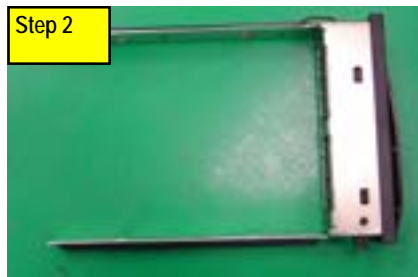
- Step 1 Remove two screws on the riser bracket.
- Step 2 Detach the riser bracket with both hands.
- Step 3 To remove the FAN duct, just pull up the screw-holder and unscrew thumbscrews to remove the FAN duct.
- Step 4 Unplug the power connectors.
- Step 5 Attach Fan duct to the system. Note that the fan duct must align to the emplacement point.
- Step 6 Connctect the power connectors.
- Step 7 Adjust cables between power supply and thumb-screws.
- Step 8 Replace the riser bracket and secure the screws to locked position.
- Step 9 Adjust the cables.





Step 2-7: Hard Disk Drive Installation

- Step 1 Push the hard disk drive trail button.
- Step 2 Pull out the trail and remove the trail from the chassis.
- Step 3 Insert the hard disk into the trail.
- Step 4 Secure each hard disk drive with 4 screws.
- Step 5 After securing the hard disk drive with the screws, hold the hard drive handle at open position, place the tray into chassis and push the hard disk drive tray handle to the locked position.



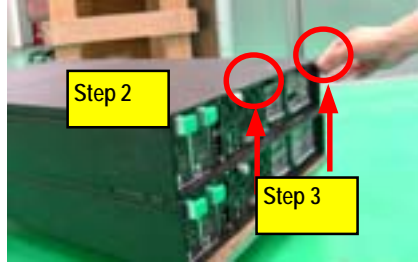
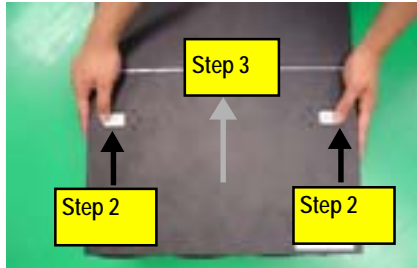
Step 2-8: Reinstall Chassis Cover

Front Cover:

- Step 1 Insert the front edge from 15 degree.
- Step 2 Close the cover in un-lock position.
- Step 3 Slide it toward to screw lock position.

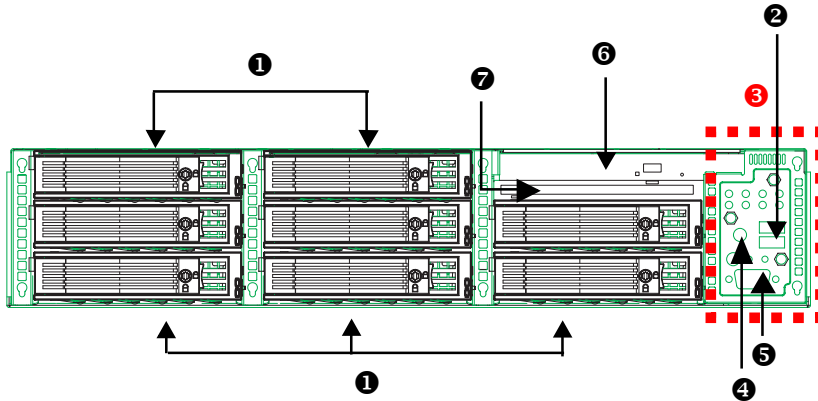
Rear Cover:

- Step 1 Close the cover in un-lock position.
- Step 2 Slide it to lock position.
- Step 3 Attach the two thumbscrews to the back of chassis. Secure the screw to lock position.



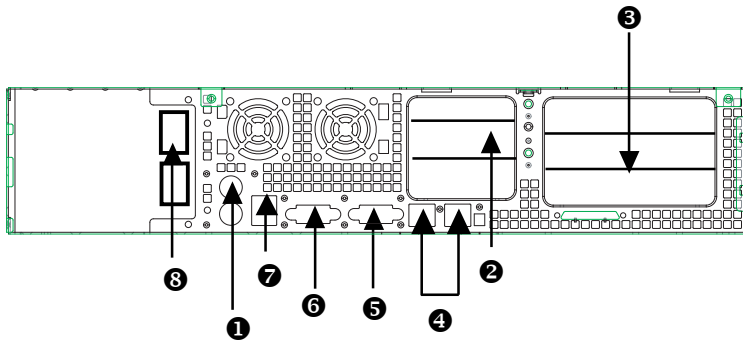
Chapter 3 Appearance of GS-SR295D

3-1: Front View of GS-SR295D



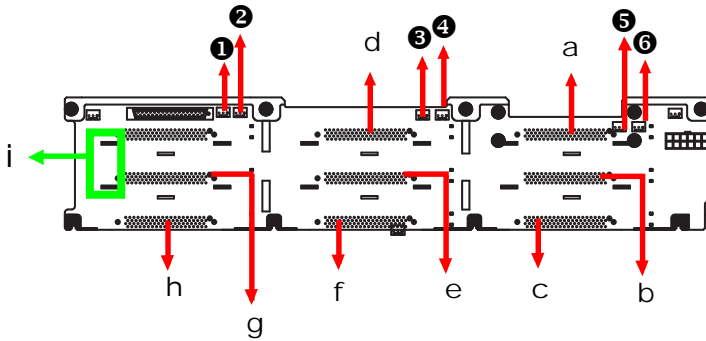
❶	8 Hot-Swap SCSI HDDs
❷	USB Connectors
❸	Front LED
❹	Power Button
❺	Front COM port
❻	CD-ROM Drive
❼	Floppy Drive

3-2: Rear View of GS-SR295D



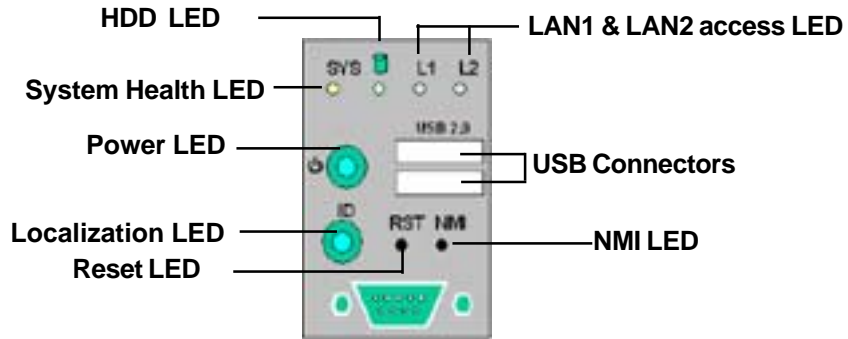
❶	PS/2 Keyboard & Mouse Connector
❷	Low Profile PCI-X Riser Slot
❸	Full-Height / Full- Length Riser Slot
❹	LAN 1 / 2 Ports
❺	VGA Port
❻	COM Port
❼	USB Connectors
❽	Power Connector

3-3: SCSI Backplane Layout and Description



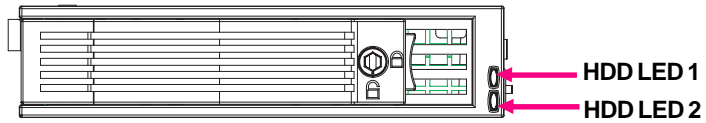
a	SCA_1	i	Power
b	SCA_2	x	FAN 1
c	SCA_3	y	FAN 2
d	SCA_4	z	FAN 3
e	SCA_5	{	FAN 4
f	SCA_6		FAN 5
g	SCA_7	}	FAN 6
h	SCA_8		

3-4: Switch and LED Indicators Description









	Acting	Color	Status
Power LED	On	Green	Power On
	On	Amber	Power cable is plugged in
	Off	N/A	No power
SYS Health LED	On	Amber (Please check with GSMT User's Manual)	System is ready but degraded: some CPU Fault, Critical PowerModules Failure, Critical FANs Failure, Voltage (Power Supply), critical Temperature and Voltage
		Green	Normal operating
	Off	N/A	No power
LAN1&2 LED	On	Green	LAN online
	Off	N/A	LAN offline
	Blink	Green	LAN active
ID (Localization LED)	On	Blue	Identified by users
	Off	N/A	N/A

3-5: HDD LED Indicators Description



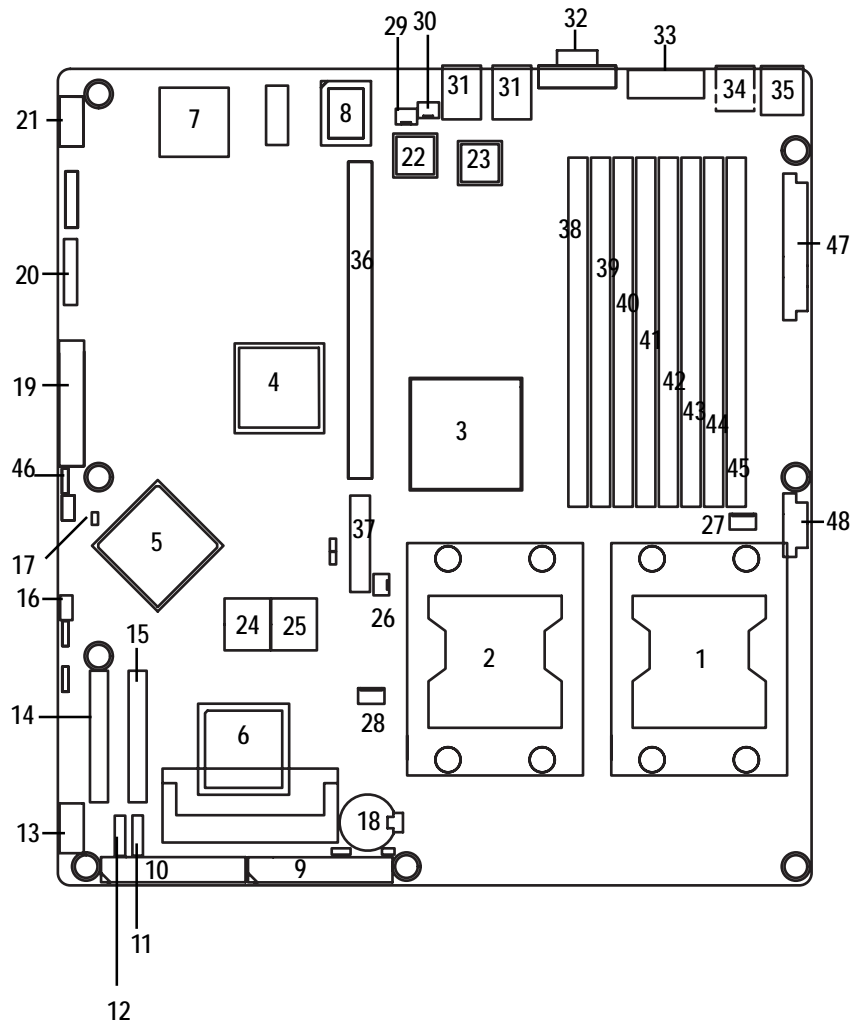
	Acting	Color	Status
HDD LED 1	Off	N/A	HDD power off
HDD LED 1	On	Green	HDD power on
HDD LED 2	Off	N/A	HDD non-active
HDD LED 2	Blink	Green	HDD active

3-6 : Connector Icon Description

Suggest Icon	Description
	Keyboard
	VGA
	Mouse
	LAN
	Serial Port
	USB

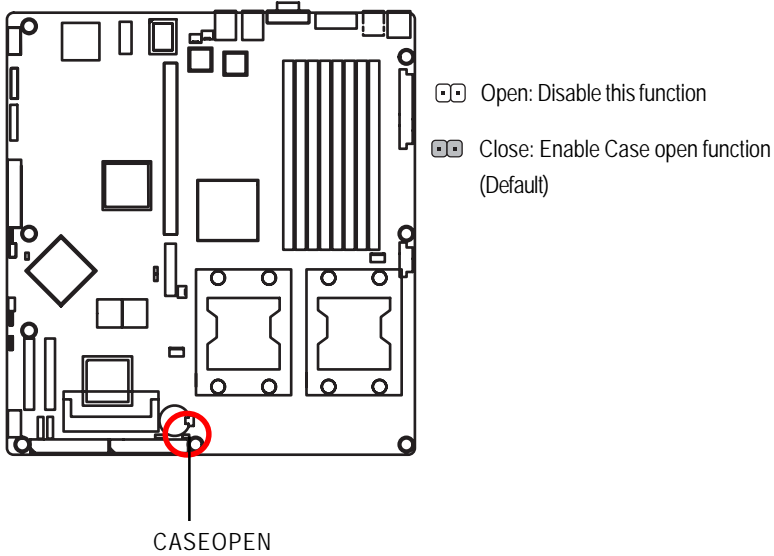
Chapter 4 Motherboard Layout & Jumper Setting

4-1: GA-9ILDR1 Motherboard Layout



1. CPU0 (Install First)	27. CPU_FAN0 (CPU FAN)
2. CPU1	28. CPU_FAN1 (CPU FAN)
3. Intel E7520	29. SYS_FAN1 (System FAN)
4. Intel 6700 PXH	30. SYS_FAN2 (System FAN)
5. LSI 1030 (SCSI Controller)	31. LAN1/2
6. ICH5R	32. VGA
7. ATI Rage_XL	33. COM
8. ITE IT8712F	34. USB
9. IDE2	35. Keyboard and Mouse
10. IDE1	36. PCI-X slot (Supports 64bit/133MHz)
11. SATA0	37. PCI-E x 8 slot
12. SATA1	38. DDR1
13. USB2	39. DDR2
14. SCSI2 (SCSI connector)	40. DDR3
15. SCSI1 (SCSI connector)	41. DDR4
16. IPMB1	42. DDR5
17. RI (Ring Input)	43. DDR6
18. BT1 (Battery)	44. DDR7
19. FD1 (Floppy connector)	45. DDR8
20. 295_FP (Front Panel)	46. WOL (Wake on LAN)
21. COM1	47. ATX1 (SSI power connector)
22. Broadcom BCM5721	48. ATX2 (SSI power connector)
23. Broadcom BCM5721	
24. BIOS	
25. SCSI BIOS	
26. PXH_FAN	

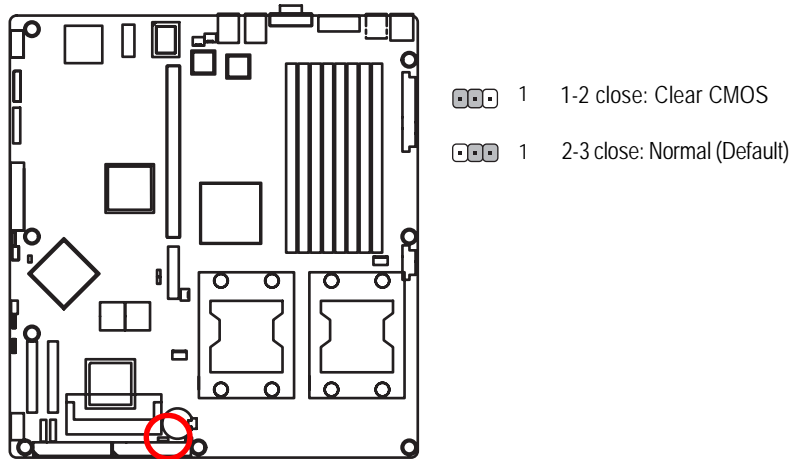
CASEOPEN (Case Open Function)



CLR_CMOS (Clear CMOS Function)

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

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



Chapter 5 BIOS Setup

BIOS Setup is an overview of the BIOS Setup Program. The program that allows users to modify the basic system configuration. This type of information is stored in battery-backed CMOS RAM so that it retains the Setup information when the power is turned off.

ENTERING SETUP

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

CONTROL KEYS

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

GETTINGHELP

Main Menu

The on-line description of the highlighted setup function is displayed at the bottom of the screen.

Status Page Setup Menu / Option Page Setup Menu

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc>.

- **Main**
This setup page includes all the items in standard compatible BIOS.
- **Advanced**
This setup page includes all the items of AWARD special enhanced features.
(ex: onboard device enable/disable, power management)
- **Boot**
This setup page include all the items of first boot function features.
- **PC Health Status**
This setup page displays the System auto detect Temperature, voltage, fan speed.
- **Security**
Change, set, or disable password. It allows you to limit access to the system and Setup, or just to Setup.
- **Clk/Voltage**
This setup page is control CPU's clock and frequency ratio.
- **Defaults**
Load Optimized Defaults option and loads preset system parameter values to set the system in its highest performance configurations.
- **Exit**
Save CMOS value settings to CMOS and exit setup or abandon all CMOS value changes and exit setup.

Main

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

Phoenix-Award WorkstationBIOS CMOS Setup Utility							
Main	Advanced	Boot	Security	PC Health	Clk/Voltage	Defaults	Exit
Date (mm:dd:yy)			Wed. Oct. 11 2006		Item Help		
Time (hh:mm:ss)			23:1:52				
▶ IDE Channel 0 Master			[None]				
▶ IDE Channel 0 Slave			[None]				
▶ IDE Channel 1 Master			[None]				
▶ IDE Channel 1 Slave			[None]				
▶ IDE Channel 2 Master			[CD-540E]				
▶ IDE Channel 3 Master			[CD-540E]				
Drive A			[1.44M, 3.5 ^{1/2}]				
▶ System Information			[Press Enter]				
Model Name			GS-SR295D				
BIOS Version			E5				
BIOS Date			2006/10/11				
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F7: Optimized Defaults F8: Q-Flash							

Figure 1: Main

☞ Date

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

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

Note that Model Name, BIOS Version, and BIOS Date items cannot be modified, display only

☞ **Time**

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

☞ **IDE Channel 0 Master, Slave / Channel 1 Master, Slave**

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

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

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

☞ **IDE HDDAutoDetection**

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

☞ **Access Mode**

This option allows user to set hard drive parameters.

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

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

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

☞ Drive A

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

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

☞ System Information

This category includes the information of current system processor type, speed, total memory and onboard LAN MAC address.

Advanced

Phoenix-Award WorkstationBIOS CMOS Setup Utility							
Main	Advanced	Boot	Security	PC Health	Clk/Voltage	Defaults	Exit
▶ Advanced BIOS Feature					Item Help		
▶ Advanced Chipset							
▶ Integrated Peripherals							
▶ Power Management Setup							
↑↓ → ← : Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help							
F5: Previous Values F7: Optimized Defaults F8: Q-Flash							

Figure 2: Advanced

Advanced BIOS Feature

Phoenix-Award WorkstationBIOS CMOS Setup Utility		
Advanced		
Advanced BIOS Features		Item Help
DRAM Data Integrity Mode	ECC	
CPU L1 & 2 Cache	Enabled	
Quick Power On Self Test	[Enabled]	
Boot Up Floppy Seek	[Disabled]	
▶ CPU Features		
Gate A20 Option	[Fast]	
APIC Mode	Enabled	
Init Display First	[PCIEx]	
MPS Version Control For OS	[1.4]	
DMI Event Log	[Enabled]	
Clear All Event Log	[No]	
View DIM Event Log	[Enter]	
Mark DIM Event Log	[Enter]	
Event Log Capacity	Space Available	
Event Log Vaildty	Vaild	
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F7: Optimized Defaults F8: Q-Flash		

Figure 2-1: Advanced BIOS Features

☞ **DRAMData Integrity Mode**

If you are using a Non-ECC DRAM, the mode should to set to Non-ECC and the function is disabled.

- ▶▶ ECC Set DRAM mode at ECC.
- ▶▶ Non-ECC Set DRAM mode at Non-ECC.

☞ **Quick Power On Self Test**

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

- ▶▶ Enabled Enables quick POST.(Default value)
- ▶▶ Disabled Normal POST.

☞ **Boot Up Floppy Seek**

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

- ▶▶ Enabled BIOS searches for floppy disk drive to determine it is 40 or 80 tracks. Note that BIOS can not tell from 720K, 1.2M or 1.44M drive type as they are all 80 tracks. (Default value)
- ▶▶ Disabled BIOS will not search for the type of floppy disk drive by track number. Note that there will not be any warning message if the drive installed is 360K.

☞ **CPU Features**

☞ **Delay Prior to Thermal**

- ▶▶ Options 4 Min, 8 Min, 16 Min, 32 Min. Default value is 4 Min.

☞ **Thermal Management**

Thermal Monitor 1: Thermal Monitor 1 uses a highly accurate on die temperature sensing circuit in the CPU that has the ability to act quickly upon any thermal issues (~50ns).

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

- ▶▶ Thermal Monitor1 Select Thermal Monitor1 as method of power consumption of processor. (Default value)
- ▶▶ Thermal Monitor2 Select Thermal Monitor2 as method of power consumption of processor.

☞ **XD Memory Protect**

When this item set to disabled, system will forces the XD feature flag to always run 0.

- ▶▶ Enabled Enable XD Memory Protect. (Default value)
- ▶▶ Disabled Disable this function.

☞ **CPU Hyper Threading**

- ▶▶ Enabled Enables Hyper-Threading Technology Feature when using Windows XP and Linux 2.4x operating systems that are optimized for Hyper-Threading technology. (Default value)
- ▶▶ Disabled Disables Hyper-Threading Technology when using other operating systems.

☞ **Limit CPUIDMaxVal**

- ▶▶ Enabled Set Limit CPUID MaxVal to be 3.
- ▶▶ Disabled Disables this function. (Default value)

NOTE: If you are using Windows XP operating system, please set this item to disabled.

☞ **Gate A20 Option**

This feature determines how Gate A20 is used to address memory above 1MB.

- ▶▶ Fast Motherboard chipset controls the operation of Gate A20. (Default value)
- ▶▶ Normal A pin in the keyboard controller controls Gate A20.

NOTE: Setting Gate A20 to Fast improves memory access speed and thus, overall system speed, especially with OS/2 and Windows.

☞ **DMIEvent Log**

- ▶▶ Enabled When this item is set to enable, all system errors will be logged to BIOS event log. (Default vaule)
- ▶▶ Disabled Error will not be logged to the BIOS event log.

☞ **Clear All Event Log**

- ▶ Enabled Setting to enabled, system will clear all event log after rebooting system.
- ▶ Disabled Disable this function.

☞ **View DMI Event Log**

Press [Enter] to view the contents of the DMI Event Log.

☞ **Mark DMI Event as Read**

Press [Enter] to mark all DMI event log as read.

Advanced Chipset Feature

Phoenix-Award WorkstationBIOS CMOS Setup Utility	
Advanced	
Advanced Chipset Feature	Item Help
Memory RAS Feature [Standard]	
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F7: Optimized Defaults F8: Q-Flash	

Figure 2-2:Advanced Chipset Feature

Memory RAS Feature Control

Select specified features for DIMMs.

Options: Sparing or Memory Mirroring.

Integrated Peripherals

Phoenix-Award Workstation BIOS CMOS Setup Utility	
Advanced	
Integrated Peripherals	Item Help
<ul style="list-style-type: none">▶ OnChip IDE Device▶ OnBoard Device▶ Super I/O Device	
↑ ↓ → ← : Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F7: Optimized Defaults F8: Q-Flash	

Figure 2-3: Integrated Peripherals

OnChip IDE Device

Phoenix-Award WorkstationBIOS CMOS Setup Utility		
Advanced		
OnChip IDE Device		Item Help
IDE HDD Block Mode	[Enabled]	
IDE DMA transfer access	[Enabled]	
OnChip Primary PCI IDE	[Enabled]	
IDE Primary Master PIO	[Auto]	
IDE Primary Slave PIO	[Auto]	
IDE Primary Master UDMA	[Auto]	
IDE Primary Slave UDMA	[Auto]	
OnChip Secondary PCI IDE	[Enabled]	
IDE Secondary Master PIO	[Auto]	
IDE Secondary Slave PIO	[Auto]	
IDE Secondary Master UDMA	[Auto]	
IDE Secondary Slave UDMA	[Auto]	
*** On-Chip Serial ATA ***		
x On-Chip Serial ATA	[Enabled Mode]	
x Serial ATA Port 0 Mode	[SATA0 Master]	
Serial ATA Port 1 Mode	SATA1 Master	
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F7: Optimized Defaults F8: Q-Flash		

Figure 2-3-1: OnChip IDE Device

☞ IDE HDD Block Mode

If your IDE hard drive supports block mode, select [Enabled] for automatic detection of the optimal number of block read/writes per sector the drive can support.

- ▶▶ Enabled Hard Drive supports Block Mode.
- ▶▶ Disabled Disable this function.

☞ IDE DMA Transfer Access

- ▶▶ Enabled Enable IDE DMA transfer access. (Default value)
- ▶▶ Disabled Disable this function.

☞ OnChip Primary PCIIDE

- ▶▶ Enabled Enable the function of On-chip primary PCI IDE. (Default value)
- ▶▶ Disabled Disable this function.

☞ IDE Primary Master PIO

- ▶▶ Auto Auto detect the IDE primary master PIO. (Default value)
- ▶▶ Mode 0 Select Mode 0 as IDE primary master PIO.
- ▶▶ Mode 1 Select Mode 1 as IDE primary master PIO.
- ▶▶ Mode 2 Select Mode 2 as IDE primary master PIO.
- ▶▶ Mode 3 Select Mode 3 as IDE primary master PIO.
- ▶▶ Mode 4 Select Mode 4 as IDE primary master PIO.

☞ IDE Primary Slave PIO

- ▶▶ Auto Auto detect the IDE primary slave PIO. (Default value)
- ▶▶ Mode 0 Select Mode 0 as IDE primary slave PIO.
- ▶▶ Mode 1 Select Mode 1 as IDE primary slave PIO.
- ▶▶ Mode 2 Select Mode 2 as IDE primary slave PIO.
- ▶▶ Mode 3 Select Mode 3 as IDE primary slave PIO.
- ▶▶ Mode 4 Select Mode 4 as IDE primary slave PIO.

☞ IDE Primary UDMA

- ▶▶ Auto Auto detect the IDE Primary Ultra DMA in the specified IDE channel. (Default value)
- ▶▶ Disabled Disable this function.

☞ IDE Primary Slave UDMA

- ▶▶ Auto Auto detect the IDE Primary Slave Ultra DMA in the specified IDE channel. (Default value)
- ▶▶ Disabled Disable this function.

☞ OnChip Secondary PCIIDE

- ▶▶ Enabled Enabled the function of Oc-chip secondary PCI IDE. (Default value)
- ▶▶ Disabled Disable this function.

☞ IDE Secondary Master PIO

- ▶▶ Auto Auto detect the IDE secondary master PIO. (Default value)
- ▶▶ Mode 0 Select Mode 0 as IDE secondary master PIO.
- ▶▶ Mode 1 Select Mode 1 as IDE secondary master PIO.
- ▶▶ Mode 2 Select Mode 2 as IDE secondary master PIO.
- ▶▶ Mode 3 Select Mode 3 as IDE secondary master PIO.
- ▶▶ Mode 4 Select Mode 4 as IDE secondary master PIO.

☞ IDE Secondary Slave PIO

- ▶▶ Auto Auto detect the IDE secondary slave PIO. (Default value)
- ▶▶ Mode 0 Select Mode 0 as IDE secondary slave PIO.
- ▶▶ Mode 1 Select Mode 1 as IDE secondary slave PIO.
- ▶▶ Mode 2 Select Mode 2 as IDE secondary slave PIO.
- ▶▶ Mode 3 Select Mode 3 as IDE secondary slave PIO.
- ▶▶ Mode 4 Select Mode 4 as IDE secondary slave PIO.

☞ IDE Secondary Master UDMA

- ▶▶ Auto Auto detect the IDE Primary Master Ultra DMA in the specified IDE channel. (Default value)
- ▶▶ Disabled Disable this function.

☞ IDE Secondary Slave UDMA

- ▶▶ Auto Auto detect the IDE Primary Slave Ultra DMA in the specified IDE channel. (Default value)
- ▶▶ Disabled Disable this function.

☞ On-Chip Serial ATA Setting

▶ On-Chip Serial ATA

- ▶▶ Auto Auto arrange by BIOS.
- ▶▶ Combined Mode PATA and SATA are combined. Max. of 2 IDE drives in each channel.
- ▶▶ Enhanced Mode Enable both SATA and PATA. Max. of 6 IDE drives are supported. (Default value)
- ▶▶ SATA Only SATA is operating in legacy mode.
- ▶▶ Disabled Disable this function.

▶ Serial ATA Port 0 Mode

- ▶▶ Primary Master Set Serial ATA Port 0 as Primary Master. (Default)
- ▶▶ Primary Slave Set Serial ATA Port 0 as Primary Slave.
- ▶▶ SecondaryMaster Set Serial ATA Port 0 as Secondary Master.
- ▶▶ Secondary Slave Set Serial ATA Port 0 as Secondary Slave.
- ▶▶ SATA0 Master Set Serial ATA Port 0 as SATA0 Master.
- ▶▶ SATA1 Master Set Serial ATA Port 0 as SATA1 Master.

▶ Serial ATA Port 1 Mode

- ▶▶ Primary Slave Set Serial ATA Port 1 as Primary Slave. (Default)
- ▶▶ Primary Slave Set Serial ATA Port 1 as Primary Slave.
- ▶▶ SecondaryMaster Set Serial ATA Port 1 as Secondary Master.
- ▶▶ Secondary Slave Set Serial ATA Port 1 as Secondary Slave.
- ▶▶ SATA0 Master Set Serial ATA Port 1 as SATA0 Master.
- ▶▶ SATA1 Master Set Serial ATA Port 1 as SATA1 Master.

Onboard Device

Phoenix-Award WorkstationBIOS CMOS Setup Utility		
Advanced		
Onboard Device		Item Help
USB Controller	[Enabled]	
USB 2.0 Controller	[Enabled]	
USB Keyboard Support (KBD)	[Disabled]	
USB Mouse Support (MS)	[Disabled]	
Onboard H/W LAN	[Enabled]	
Onboard LAN Boot ROM	[Enabled]	
Onboard SCSI Controller	[Enabled]	
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F7: Optimized Defaults F8: Q-Flash		

Figure 2-3-2: Onboard Device

☞ USB Controller

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

☞ USB 2.0 Controller

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

- ▶▶ Enabled Enable USB 2.0 Controller function. (Default value)
- ▶▶ Disabled Disable USB 2.0 Controller function.

☞ **USB Keyboard Support**

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

☞ **USB Mouse Support**

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

☞ **Onboard H/W LAN**

- ▶▶ Enabled Enable onboard H/W LAN. (Default value)
- ▶▶ Disabled Disable this function.

☞ **Onboard LAN Boot ROM**

- Decide whether to invoke the boot ROM of the onboard chip.
- ▶▶ Enabled Invoke the boot ROM of the onboard chip.
 - ▶▶ Disabled Disable this function. (Default value)

☞ **Onboard H/W SCSI Controller**

- ▶▶ Enabled Enable onboard H/W SCSI controller. (Default value)
- ▶▶ Disabled Disable this function.

Super I/O Device

Phoenix-Award WorkstationBIOS CMOS Setup Utility	
Advanced	
Super I/O Device	Item Help
Onboard FDC Controller	[Enabled]
Onboard Serial Port 1	[3F8/IRQ4]
Onboard Serial Port 2	[2F8/IRQ3]
↑↓ → ← : Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F7: Optimized Defaults F8: Q-Flash	

Figure 2-3-3: Super I/O Device

☞ Onboard FDC Controller

- ☞ Enabled Select "enabled" to active Onboard Floppy Controller. (Default value)
- ☞ Disabled Disable this function.

☞ Onboard Serial Port 1

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

☞ Onboard Serial Port 2

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

Power Management Setup

Phoenix-Award Workstation BIOS CMOS Setup Utility		
Advanced		
Power Management Setup		Item Help
ACPI Function	[Enabled]	
Soft Off by PWR-BTTN	[Instant-Off]	
PME Event Wake Up	[Disabled]	
PWRON After PWR-Fail	[Off]	
Resume By Alarm	[Disabled]	
x Date (of Month) Alarm	0	
x Time (hh: mm: ss)	0:0:0	
↑ ↓ → ← : Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F7: Optimized Defaults F8: Q-Flash		

Figure 2-4: Power Management Setup

☞ **ACPI Function**

- ▶▶ Enabled Enable ACPI function. (Default Value)
- ▶▶ Disabled Disable this function.

☞ **Soft-off by PWR-BTTN**

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

☞ **PME Event Wake Up**

- ▶▶ Enabled Enable PME Event wake up function. (Default value)
- ▶▶ Disabled Disable PME event wake up function.

☞ Resume by Alarm

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

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

If RTC Alarm Lead To Power On is Enabled.

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

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

Boot

Phoenix-Award WorkstationBIOS CMOS Setup Utility							
Main	Advanced	Boot	Security	PC Health	Clk/Voltage	Defaults	Exit
▶ Hard Disk Boot Priority					Item Help		
First Boot Device				[Floppy]			
Second Boot Device				[Hard Disk]			
Third Boot Device				[CD-ROM]			
Boot Other Device				[Enabled]			
Boot Num-Lock				[On]			
Console Redirection				[Disabled]			
x Baud Rate				19200			
Agent connect via				NULL			
Agent wait time (min)				1			
Agent after boot				[Disabled]			
↑↓→← : Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F7: Optimized Defaults F8: Q-Flash							

Figure 3: Boot

🔗 Hard Disk Boot Priority

These three fields determines which type of device the system attempt to boot from after **BIOS 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.

☞ First / Second/ Third Boot Device

Select the first/second/third boot device

- ▶▶ Floppy Select your boot device priority by Floppy.
- ▶▶ LS120 Select your boot device priority by LS120.
- ▶▶ Hard Disk Select your boot device priority by Hard Disk.
- ▶▶ CDROM Select your boot device priority by CDROM.
- ▶▶ ZIP100 Select your boot device priority by ZIP100.
- ▶▶ USB-FDD Select your boot device priority by USB-FDD.
- ▶▶ USB-ZIP Select your boot device priority by USB-ZIP.
- ▶▶ USB-CDROM Select your boot device priority by USB-CDROM.
- ▶▶ LAN Select your boot device priority by LAN.
- ▶▶ Disabled Select your boot device priority by Disabled.

☞ Boot Other Device

Select the specified boot device priority.

- ▶▶ Enabled Enable the specified boot device.
- ▶▶ Disabled Disable the specified boot device.

☞ Boot Up Num-Lock

- ▶▶ On Enable the Boot Up Num-Lock
- ▶▶ Off Disable this function.

☞ Console Redirection

- ▶▶ Enabled Attempt the redirect console via COM port.
- ▶▶ Disabled Attempt to redirect console when keyboard absent. (Default vaule)

☞ **Baud Rate**

Enable the specified of C. R Port Baud Rate.

- ▶▶ 300 Enable the specific baud rate at 300.
- ▶▶ 1200 Enable the specific baud rate at 1200.
- ▶▶ 9600 Enable the specific baud rate at 9600.
- ▶▶ 19200 Enable the specific baud rate at 19.2K. (Default value)
- ▶▶ 38400 Enable the specific baud rate at 38.4K.
- ▶▶ 57600 Enable the specific baud rate at 57.6K.
- ▶▶ 115200 Enable the specific baud rate at 115.2K.

☞ **Agent wait time**

Timeout wait for connection

- ▶▶ Option: 1 (Default value), 2, 4, 8

☞ **Agent after boot**

- ▶▶ Enabled Enable this option to keep Agent running after OS boot.
- ▶▶ Disabled Disable this function. (Default value)

Security

Phoenix-Award Workstation BIOS CMOS Setup Utility							
Main	Advanced	Boot	Security	PC Health	Clk/Voltage	Defaults	Exit
Set Supervisor Password				Item Help			
Set User Password							
Password Check				[Setup]			
↑↓ → ← : Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F7: Optimized Defaults F8: Q-Flash							

Figure 4: Security

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

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

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

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

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

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

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

☞ Password Check

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

PC Health

Phoenix-Award WorkstationBIOS CMOS Setup Utility								
Main	Advanced	Boot	Security	PC Health	Clk/Voltage	Defaults	Exit	
▶ Temperature ▶ Voltage ▶ FAN Halt On [All, But Keyboard] Health Warning Switch [Disabled] x SYS FAN1 Warning Switch Disabled x SYS FAN2 Warning Switch Disabled					Item Help			
↓ → ← : Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F7: Optimized Defaults F8: Q-Flash								

Figure 5: PC Health

☞ Temperature

▶▶ Display the current CPU0/1 temperature, Backboard 1,2,3 temperature.

☞ Voltage: CPU 0/1 VCORE/ +12V/ +1.2V/ +1.5V/ +3.3V/ +5V/ +1.8V/ -12V/ STB +3.3V/ 5VSB/ VBAT

▶▶ Detect system's voltage status automatically.

☞ FAN(RPM)

▶▶ Display the current Backboard 1/2,3 FAN speed.

☞ Halt On

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

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

☞ Health Warning Switch

- ▶▶ Enabled System will check if CPU0/1 temperature are over than 80°C. Also check when CPU or system FANs are not plugged in properly or stop. If any error occurs, system will issue a warning beep.
- ▶▶ Disabled Disable this function.

CLK / Voltage

Phoenix-Award WorkstationBIOS CMOS Setup Utility							
Main	Advanced	Boot	Security	PC Health	Clk/Voltage	Defaults	Exit
CPU Clock Ratio				[19X]	Item Help		
Auto Detect DIMM/PCI CLK				[Enabled]			
Spread Spectrum				[Disabled]			
↑↓ → ← : Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F7: Optimized Defaults F8: Q-Flash							

Figure 6: Clk/Voltage

☞ CPU Clock Ratio

This option will not be shown or not be available if you are using a CPU with the locked ratio.

- ▶▶ 14X~19X It depends on CPU Clock Ratio.

☞ Auto Detect DIMM/PCI Clk

- ▶▶ Enabled Disable PCI slot clock if no PCI device is plugged into corresponding PCI slot. (Default value)
- ▶▶ Dsiabled Enable all PCI slot clocks even no PCI device is plugged into any PCI slot.

☞ Spread Spectrum

When the motherboard's clock generator pulses, the extreme values (spikes) of the pulses creates EMI (Electromagnetic Interference). The Spead Spectrum function reduces the EMI generated by modulating the pulses so that the spikes of the pulses are reduced to flatter curves. It does so by varying the frequency so that it doesn't use any particular frequency for more than a moment. This reduces interference problems with other electronics in the area.

- ▶▶ Enabled Enable specific spread spectrum.
- ▶▶ Dsiabled Disable this function. (Default value)

Defaults

Phoenix-Award WorkstationBIOS CMOS Setup Utility							
Main	Advanced	Boot	Security	PC Health	Clk/Voltage	Defaults	Exit
Load Optimized Defaults						Item Help	
↑↓→←: Move Enter: Select +/-/PU/PD: Value F10: Save ESC: Exit F1: General Help F5: Previous Values F7: Optimized Defaults F8: Q-Flash							

Figure 7: Defaults

⚙️ Load Optimized Defaults

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



Exit

Phoenix-Award Workstation BIOS CMOS Setup Utility							
Main	Advanced	Boot	Security	PC Health	Clk/Voltage	Defaults	Exit
Save & Exit Setup					Item Help		
Save & Turn Off							
Exit Without Saving							
↑↓→←: Move		Enter: Select		+/-/PU/PD: Value	F10: Save	ESC: Exit	F1: General Help
			F5: Previous Values	F6: Fail-Safe Defaults	F7: Optimized Defaults		

Figure 8: Exit

☞ Save & Exit Setup

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

Type "N" will return to Setup Utility.

☞ Save & Turn Off

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

Type "N" will return to Setup Utility.

☞ Exit Without Saving

Type "Y" will abandon all data and quit without saving.

Type "N" will return to Setup Utility.

Chapter 7 SCSI BIOS and Configuration Utility

Overview

A SCSI BIOS is the bootable ROM code that manages SCSI hardware resources. The LSI SCSI BIOS integrates with a standard system BIOS to extend the standard disk service routine that is provided through INT13h. During the boot time initialization, the SCSI BIOS determines if the system BIOS has already installed other hard disks, such as an IDE drive. If so, the SCSI BIOS maps any SCSI drives it finds behind the already-installed drive(s). Otherwise, the SCSI BIOS installs drives starting with the system boot drive and the system boots from a drive controlled by the SCSI BIOS.

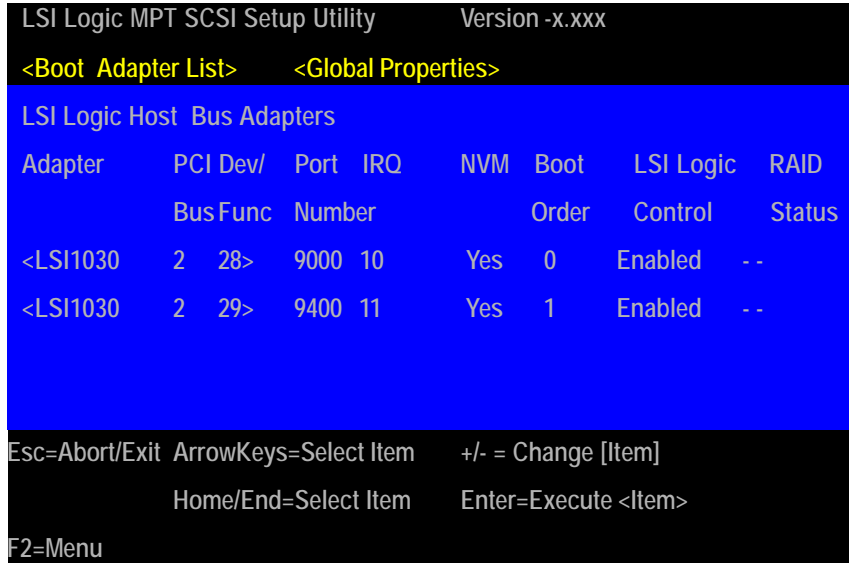
ENTERING SETUP

Power ON the computer and press Ctrl+C immediately will allow you to enter Setup.

7-1. Main Menu

When invoked, the Configuration Utility (CU) first displays the Main Menu, which contains a scrolling list of up to 256 LSI Logic PCI to SCSI host adapters and information about each of them. Use the **arrow keys** to select an adapter. Press **Enter** to view and modify the properties of the selected adapter, and to gain access to the attached devices. The CU can only access adapters with LSI Logic Control enabled. After selecting an adapter and pressing **Enter**, the CU scans the adapter's SCSI bus and then displays the Adapter Properties screen.

The Main Menu contains two selections: Boot Adapter List and Global Properties. The Boot Adapter List allows selection and ordering of boot adapters. The Global Properties allows changes to global settings.



Main Menu Field Description

Field	Description
Adapter	Indicates the specific family of LSI Logic Host Adapters.
PCI Bus	Indicates the PCI Bus number assigned by the system BIOS to an adapter. The PCI Bus number can be between 0x00 and 0xFF.
Dev/Func	Indicates the PCI Device and PCI Function assigned by the system BIOS to an adapter. Bits [2:0] of this 8-bit value designate the PCI Function. Bits [7:3] designate the PCI Device.
Port Number	Indicates the I/O Port Number that communicates with an adapter. The system BIOS assigns this number.
IRQ	Indicates the Interrupt Request Line for the adapter. The system BIOS assigns this value.
NVM	Indicates whether an adapter has nonvolatile memory. The possible values are es or No.
Boot Order	Indicates the relative boot order of an adapter. The BIOS traverses up to four adapters in the specified order in search of bootable media. The possible values are 0, 1, 2, or 3. The Boot Adapter List Menu modifies this item.
LSI Logic Control	Indicates whether an adapter is eligible for LSI Logic software control or is reserved for control by non-LSI Logic software.

7-1-1. Boot Adapter List

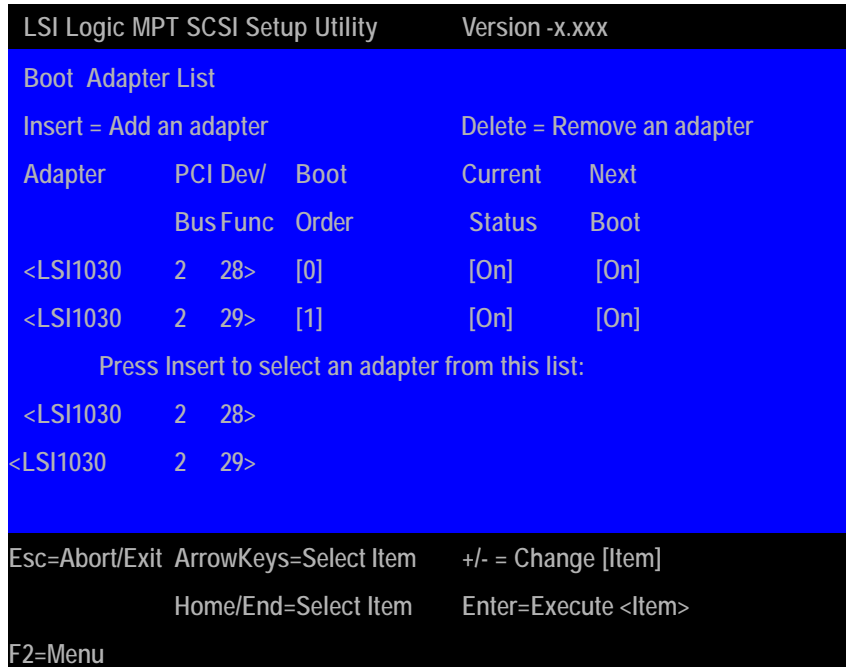


Figure 7-1-1: Boot Adapter List

The Boot Adapter List Menu specifies the adapter boot order when more than one OS adapter is present. The CU can designate up to four adapters as bootable. To access the Boot Adapter Menu, select <Boot Adapter List> on the Main Menu and press enter. The CU then displays the Boot Adapter List Menu.


To add an adapter to the boot list, press Insert while on the Boot Adapter List. This locates the cursor on the adapter select list. Use the arrow keys to select an adapter and press Enter to add it to the end of Boot Adapter List. To remove an adapter from the boot list, select the adapter and press Delete. Select the adapter and press the "-" key to decrease the adapter's relative order in the boot list, or press the "+" key to increase the adapter's relative order in the boot list.

Boot Adpater List Menu Field Description

Field	Description
Adapter	Indicates the specific family of LSI Logic Host Adapters.
PCI Bus	Indicates the PCI Bus number assigned by the system BIOS to an adapter. The PCI Bus number can be between 0x00 and 0xFF.
Dev/Func	Indicates the PCI Device and PCI Function assigned by the system BIOS to an adapter. Bits [2:0] of this 8-bit value designate the PCI Function. Bits [7:3] designate the PCI Device.
Boot Order	Indicates the relative boot order of an adapter. The BIOS traverses up to four adapters in the specified order in search of bootable media. The possible values are 0, 1, 2, or 3. The Boot Adapter List Menu modifies this item.
Current Status	Indicates if an adapter in the boot list was enabled during the most recent boot. The Fusion-MPT SCSI BIOS ignores disabled adapters and their attached devices, but these adapters and devices are visible to the CU.
Next Boot	Specifies whether to enable an adapter upon the next boot.

7-1-2. Global Properties

The Global Properties Menu allows configuration of the Display and Video modes, as well as a pause if the CU displays an alert message. To access the Global Properties Menu, select <Global Properties> in the Main Menu and press Enter. The system then displays the on Global Properties Menu.



LSI Logic MPT SCSI Setup Utility	Version -x.xxx
Global Properties	
Pause When Boot Alert Displayed	[Yes]
Boot Information Display Mode	[Verbose]
Negotiate with devices	[Supported]
Video Mode	[Color]
Support Interrupt	[Hook interrupt, the Default]
<Restore Defaults>	

Figure 7-1-2: Global Properties

Global Properties Menu Field Description

Field	Description
Pause When Boot Alert Displayed	This option specifies whether or not the CU pauses for user acknowledgement after displaying an alert message during boot. To continue after displaying a message, specify 'No'. To wait for the user to press any key after displaying a message, specify 'Yes'.
Boot Information Display Mode	This option specifies the information display mode of the BIOS. It controls how much adapter and device information the system displays during boot. You can set the Display Mode to either 'Terse' or 'Verbose'. Specify the Terse mode to display the minimum amount of information. Specify the Verbose mode to display detailed information.
Negotiate with Devices	This option sets the default value for synchronous and wide negotiations with specified devices. Options are: All, None, or Supported.
Video Mode	This option specifies the default video mode for the CU. You can set the Video Mode to either 'Color' or 'Monochrome'. The monochrome setting enhances readability on a monochrome monitor.
Support Interrupt	This option allows the ability to stop the system from hanging on INT40.
<Restore Defaults>	Pressing Enter obtains default settings.

7-1-3. Adapter Properties Menu

The Adapter Properties Menu allows you to view and modify adapter settings. It also provides access to an adapter's device settings. To access the Adapter Properties Menu, select the adapter on the Main Menu and press enter. The CU then displays the Adapter Properties Menu for the selected adapter.

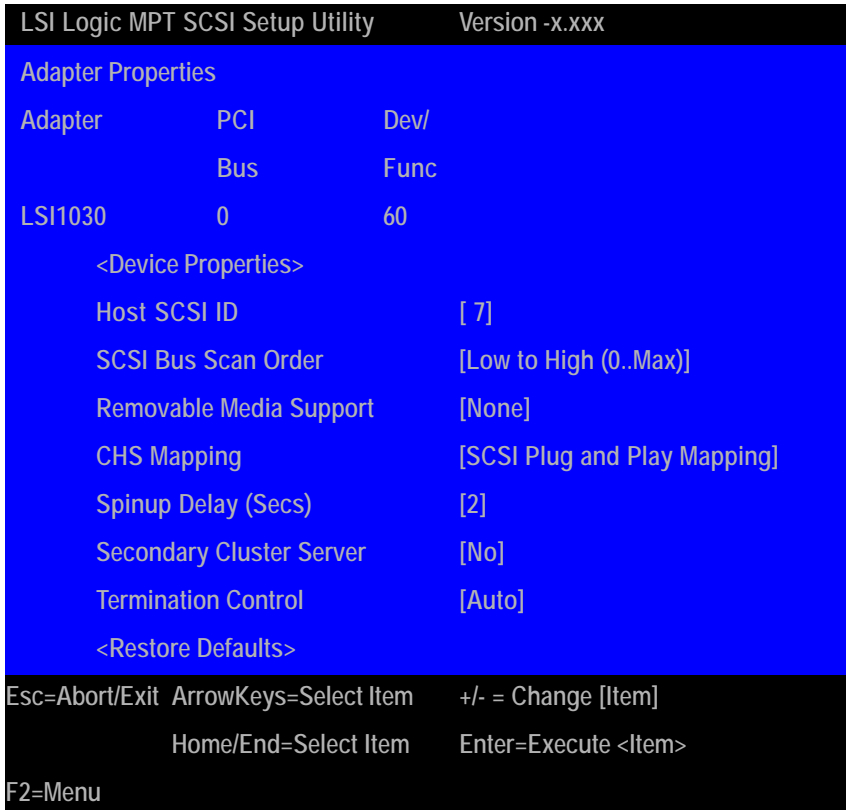


Figure 7-1-3: Adapter Properties

Adapter Properties Menu Field Description

Field	Description
<Device Properties>	Press Enter to view and modify device properties.
<Mirroring Properties>	Press Enter to view and modify the mirroring properties. The CU grays-out this field if the Integrated Mirroring feature is currently unavailable. This could result from using firmware that does not support the IM feature or having an incompatible setup.
<Synchronize Mirror>	If a mirrored volume currently exists, press enter to Whole resynchronize the volume. The CU greys-out this field if the current firmware in use does not support the IM feature or if the existing mirrored volume does not need resynchronization.
Host SCSI ID	This field indicates the SCSI identifier of an adapter. LSI Logic recommends setting this field to the highest priority SCSI identifier, which is SCSI ID 7.
SCSI Bus Scan Order	This field indicates the order in which to scan SCSI identifiers on an adapter. Changing this item affects drive letter assignments if more than one device is attached to an adapter and might create a conflict with an operating system that automatically assigns drive order.
Removable Media Support	This field specifies the removable media support option for an adapter. There are three possible settings: None, Boot Drive Only, and With Media Installed. 'None' indicates there is no removable media support, whether the drive is selected as first (BBS), or is the first in the scan order (non-BBS). 'Boot Drive Only' provides removable media support for a removable hard drive if it is first in the scan order. 'With Media Installed' provides removable media regardless of the drive ordering.

Adapter Properties Menu Field Description (Cont.)

Field	Description
CHS Mapping	<p>This field defines the Cylinder Head Sector (CHS) values mapping method. CHS Mapping allows two settings: 'SCSI Plug and Play Mapping' (Default value) and 'Alternate CHS Mapping'. SCSI Plug and Play Mapping automatically determines the most efficient and compatible mapping. Alternate CHS Mapping utilizes an alternate method that might be required if a device is moved between adapters from different vendors.</p> <p>These options have no effect after the FDISK command partitions the disk. To change the CHS Mapping on a partitioned disk, use the FDISK command to delete all partitions and reboot the system to clear the memory. Be certain that the correct disk is the target of an FDISK command.</p>
Spinup Delay	<p>This field indicates the number of seconds to wait between spin-ups of devices attached to an adapter. Staggered spin-ups balance the electrical current load on the system during boot. The default value is 2 seconds, with choices between 1 and 10 seconds.</p>
Secondary Cluster Server	<p>The options for this field are 'Yes' or 'No' (Default). Setting this field to Yes indicates that the Fusion-MPT adapter shares devices with another adapter, and prevents the MPT SCSI BIOS from issuing SCSI Bus resets. This is a requirement for the Microsoft Cluster Server.</p>
Termination Control	<p>This field indicates if an adapter has automatic termination control. The options for this field are 'Auto' or 'Off'. 'Auto' indicates that the adapter automatically determines to enable or disable its termination. 'Off' indicates that termination at the adapter is off and that other devices at the ends of the SCSI bus must terminate the bus. If Auto is grayed out, it means that termination is not programmable.</p>
Restore Defaults	<p>To obtain default settings, press Enter.</p>

7-2. Exiting the SCSI Setup Utility

Because some changes only take effect after the system reboots, it is important to exit the configuration utility properly. To exit, press Esc and respond to the verification prompts. Some changes might be lost if you reboot before properly exiting the Configuration Utilities.

Chapter 8 Appendix

8-1: Acronyms

Acronyms	Meaning
ACPI	Advanced Configuration and Power Interface
APM	Advanced Power Management
AGP	Accelerated Graphics Port
AMR	Audio Modem Riser
ACR	Advanced Communications Riser
BBS	BIOS Boot Specification
BIOS	Basic Input / Output System
CPU	Central Processing Unit
CMOS	Complementary Metal Oxide Semiconductor
CRIMM	Continuity RIMM
CNR	Communication and Networking Riser
DMA	Direct Memory Access
DMI	Desktop Management Interface
DIMM	Dual Inline Memory Module
DRM	Dual Retention Mechanism
DRAM	Dynamic Random Access Memory
DDR	Double Data Rate
ECP	Extended Capabilities Port
ESCD	Extended System Configuration Data
ECC	Error Checking and Correcting
EMC	Electromagnetic Compatibility
EPP	Enhanced Parallel Port
ESD	Electrostatic Discharge
FDD	Floppy Disk Device
FSB	Front Side Bus
HDD	Hard Disk Device
IDE	Integrated Dual Channel Enhanced
IRQ	Interrupt Request

GS-SR295D Rack mount Server

Acronyms	Meaning
I/O	Input / Output
IOAPIC	Input Output Advanced Programmable Input Controller
ISA	Industry Standard Architecture
LAN	Local Area Network
LBA	Logical Block Addressing
LED	Light Emitting Diode
MHz	Megahertz
MIDI	Musical Instrument Digital Interface
MTH	Memory Translator Hub
MPT	Memory Protocol Translator
NIC	Network Interface Card
OS	Operating System
OEM	Original Equipment Manufacturer
PAC	PCI A.G.P. Controller
POST	Power-On Self Test
PCI	Peripheral Component Interconnect
RIMM	Rambus in-line Memory Module
SCI	Special Circumstance Instructions
SECC	Single Edge Contact Cartridge
SRAM	Static Random Access Memory
SMP	Symmetric Multi-Processing
SMI	System Management Interrupt
USB	Universal Serial Bus
VID	Voltage ID
ZCR	Zero Channel RAID
