GS-R12P4S

LGA1366 socket motherboard for Intel® Xeon® series processors

Service Guide

Rev. 1.0

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Documentation Classifications

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

- For guick set-up of the product, read the Quick Installation Guide included with the product.
- For detailed product information, carefully read the Serice Guide.

For product-related information, check on our website at: http://www.gigabyte.com

Preface

Before using this information and the product it supports, please read the following general information.

- 1. This Service Guide provides you with all technical information relating to the BASIC CON-FIGURATION decided for GIGABYTE's "global" product offering. To better fit local market-requirements and enhance product competitiveness, your regional office MAY have decided toextend the functionality of a machine (e.g. add-on card, modem, or extra memory capability). These LOCALIZED FEATURES will NOT be covered in this generic service guide. In suchcases, please contact your regional offices or the responsible personnel/channel to provide youwith further technical details.
- 2. Please note WHEN ORDERING SPARE PARTS, you should check the most up-to-date informationavailable on your regional web or channel. For whatever reason, if a part number change is made,it will not be noted in the printed Service Guide. For GIGABYTE-AUTHORIZED SERVICEPROVIDERS, your GIGABYTE office may have a DIFFERENT part number code to thosegiven in the FRU list of this printed Service Guide. You MUST use the list provided by yourregional GIGABYTE office to order FRU parts for repair and service of customer machines.

Table of Contents

Box Conte	ents		6			
Safety, Ca	ire an	Regulatory Information	7			
Chapter 1	Chapter 1 Hardware Installation					
	1-1	Installation Precautions	10			
	1-2	Product Specifications	11			
Chapter 2	Syst	m Hardware Installation	13			
	2-1 Removing Chassis Cover					
	2-2	Installing the CPU	15			
	2-3	Installing the Heat Sink	16			
	2-4	Installing the Memory	17			
	2-	-1 Dual Channel Memory Configuration	n17			
	2-	-2 Installing a Memory	18			
	2-5	Installing the PCI Expansion Card	19			
	2-6	Installing the Hard Disk Drive	20			
	2-7	Removing and Installing the Fan Du	ıct21			
	2-8	Replacing the FAN Assemblly	22			
	2-10	Replacing the Power Supply	23			
Chapter 3	Syst	m Appearance	24			
	3-1	Front View	24			
	3-2	Rear View	24			
	3-3	Front Panel LED and Buttons	25			
	3-4	Rear System LAN LEDs	27			
	3-5	Hard Disk Drive LEDs	28			
Chapter 4	Moth	erboard Components	29			
	4-1	GA-7PCSL1 Motherboard Compone	ents29			
	4-2	Jumper Setting	32			
Chapter 5	BIOS	Setup	33			
	5-1	The Main Menu	35			
	5-2	Advanced Menu	37			
	5-	-1 PCI Configuration	38			
	5-	. • ,	39			
	-	_	40			
	5-	2-3-1 CPU Power Management Configura	ation43			

5-2	-4	Runtime Error Logging45				
5-2	-5	SATA Configuration	.46			
5-2	-6	SAS Configuration	.47			
5-2	-7	Super IO Configuration	.48			
5-2	-8	Serial Port Console Redirection	.50			
}	Chip	oset Menu	53			
5-3	-1	North Bridge Configuration	.54			
5-3	-1-1	IOH Configuration	.56			
5-3	-1-2	DIMM Information	.58			
5-3	-2	South Bridge Configuration	.59			
	Sec	urity Menu	61			
)	Sen	ver Management Menu	62			
5-5	-1	System Information	.63			
5-5	-2	BMC LAN Configuration	.64			
5-5	-3	System Event Log	.65			
6	Воо	t Option Menu	66			
-7 Boot Manager						
}	Exit Menu					
)	BIO	S Beep Codes	70			
		·				
5-9		DXE Beep Codes				
0	0 BIOS Recovery Instruction					
	5-2· 5-2· 5-2· 5-3· 5-3· 5-3· 5-5· 5-5· 5-5· 5-5· 5-5	5-3-1 5-3-1-1 5-3-1-2 5-3-2 Sec 5-5-1 5-5-2 5-5-3 Boo Boo Billo 5-9-1 5-9-2	5-2-5 SATA Configuration			

Box Contents

- ☑ GS-R12T4S
- ✓ Driver CD

- 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.

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 foryour 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
 poweroutlet. 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
 youprovide adequate space around the system for ventilation when you set up your work area. Never
 insertobjects of any kind into the ventilation openings.
- To avoid electrical shock, always unplug all power cables and modem cables from the wall outletsbefore 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, ot Local AreaNetwork Options

Observe the following precautions for laser devices:

- Do not connect or use a modem or telephone during a lightning storm. There may be a risk of electricalshock 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 internalcomponents, 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.

Federal Communications Commission (FCC) Statement Warning

This is a class A product. In a domestic environment this product may cause radiointerferenceln which case the user may be required to take adequate measures.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection againstharmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Properly shielded and grounded cables and connectors must be used in order to meet FCC emission-limits. Neither the provider nor the manufacturer are responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes ormodifications to this equipment. Unauthorized changes or modifications could void the user's authority tooperate the equipment. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Canadian Department of Communications Compliance Statement

This digital apparatus does not exceed the Class A limits for radio noise emissions from digitalapparatus as set out in the radio interference regulations of Industry Canada.Le present appareil numerique n'emet pas de bruits radioelectriques depassant les limites applicables auxappareils numeriques de Classe A prescrites dans le reglement sur le brouillage radioelectrique edicte parIndustrie Canada.

Class A equipment

This device has been tested and found to comply with the limits for a class A digital device pursuantPart 15 of the FCC Rules. These limits are designed to provide reasonable protection againstharmful interference when the equipment is operated in a commercial environment. This equipmentgenerate, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communication. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at personal expence.

However, there is no guarantee that interference will not occur in a particular installation. If thisdevice does cause harmful interference to radio or television reception, which can be determined bytuning the device off and on, the user is encouraged to try to correct the interference by on or more ofthe following measures:

- Reorient or relocate the receiving antenna
- · Increase the separation between the device and receiver
- Connect the device into an outlet on a circuit different from that to which the receiver isconnected Consult
 the dealer or an experienced radio/television technician for help.

WEEE Symbol Statement



The symbol shown below is on the product or on its packaging, which indicates that this product must not be disposed of with other waste. Instead, the device should be taken to the waste collection centers for activation of the treatment, collection, recycling and disposal procedure. The separate collection and recycling of your waste equipment at the time of disposal will help to conserve natural resources and ensure that it is recycled in a manner that protects human health

and the environment. For more information about where you can drop off your waste equipment for recycling, please contact your local government office, your household waste disposal service or where you purchased the product for details of environmentally safe recycling.

- When your electrical or electronic equipment is no longer useful to you, "take it back" to your local or regional waste collection administration for recycling.
- If you need further assistance in recycling, reusing in your "end of life" product, you may contact us at the
 Customer Care number listed in your product's user's manual and we will be glad to help you with your
 effort.



Battery Warning: Incorrectly installing a battery or using incompatible battery may increase be the risk of ifre explosion. Replace the battery only with the same or equivalent type.

- · Do not disassemble, crush, punchture batteries.
- Do not store or place your battery pack next to or in a heat source such as a fire, heatgenerating
 appliance, can or exhaust vent. Heating battery cells to temperatures above 65°C (149°F) can
 cause explosion or fire.
- Do not attempt to open or service batteries. Do not dispose of batteries in a fire or with household waste

Chapter 1 Hardware Installation

1-1 Installation Precautions

The motherboard/system contain numerous delicate electronic circuits and components which can become damaged as a result of electrostatic discharge (ESD). Prior to installation, carefully read the service guide 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	 Support for Dual Intel® Xeon® Sandy-bridge-EN 2S processors in 1356 socket Intel® Xeon® Quad Core in LGA 1356 socket Supports QuickPath Interconnect up to 8GT/s Enhanced Intel SpeedStep Technology (EIST) & Demand BasedSwitch (DBS) Enhanced Intel SpeedStep Technology (EIST) Support Intel Virtualization Technology (VT)
Chipset	◆ Intel® C600 (Patsburg) Chipset
Memory	8 x 1.5V DDR3 DIMM sockets supporting up to 64 GB of systemmemory * 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. 8 x 1.35V DDR3L DIMM sockets supporting up to 32 GB of system memory 3 channel memory architecture Support for 800/1066/1333/1600 memory modules Support for ECC RDIMM/ UDIMM memory modules
LAN LAN	2 x Intel® 82574L supports 10/100/1000 Mbps
Expansion Slot	 1 x PCI Express x16 slot, running at x16 (PCIE_1) 1 x PCI slot 32-Bit/33MHz (PCI_1)
Onboard Graphics	◆ ASPEED® AST2300 supports 16MB VRAM
Mass Storage	 4 x 3.5" Hot-Swap SATA HDDs Support for Intel IRST SATA RAID 0, RAID 1, RAID 5, RAID 10
System Fans	◆ 4 x 40x40x28mm 16000rpm
USB	 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	1 x 24-pin ATX main power connector
Connectors	2 x 8-pin ATX 12V power connector
	 4 x SATA 3Gb/s connectors (SAS0~3)
	2 x mini SAS 3Gb/s connectors
	2 x SATA 6Gb/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	◆ 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
Front Panel I/O	2 x USB 2.0/1.1 ports
Front Panel	1 x Power button/LED
LED/Buttons	◆ 1 x NMI button
	1 x ID Switch button/LED
	1 x Reset button
	◆ 2 x LAN LED
	1 x System status LED
	1 x HDD status LED
1/0 0 1 11	AODEEDS AOTOSSO DAGO LA
I/O Controller	ASPEED® AST2300 BMC chip
Hardware	System voltage detection
Monitor	CPU/System temperature detection
	CPU/System fan speed detection
	CPU/System fan speed control
BIOS	◆ 1 x 64 Mbit flash
	◆ AMI BIOS
Environment	
Ambient	Operating Temperature: 5°C to 35°C
Temperature	Non-operating Temperature: 0°C to 50°C
·	· · · ·
Relative	◆ 10-80% operating Humidity at 30°C
Humidity	,
System	• 430Wx43.5Hx710D (mm)
Dimension	
Electrical	Fixed 1U PSU 500W 100-240VAC at 80% efficiency
Power Supply	

 $^{^{\}star}$ GIGABYTE reserves the right to make any changes to the product specifications and product-related information without prior notice.

Chapter 2 System Hardware Installation



Pre-installation Instructions

Perform the steps below before you open the server or before you remove or replaceany component.

- · Back up all important system and data files before performing any hardwareconfiguration.
- · Turn off the system and all the peripherals connected to it.
- 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.

2-1 Removing Chassis Cover

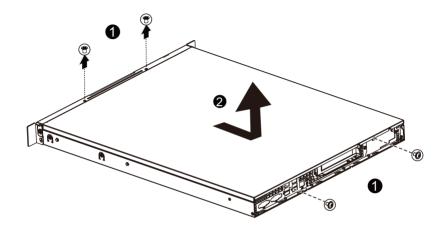


Before you remove or install the system cover

· Make sure the system is not turned on or connected to AC power.

Follow these instructions to remove the system cover:

- 1. Loosen and remove the screws securing the front chaasis cover.
- 2. Slide the cover horizontally to the back and remove the cover in the direction of the arrow.



2-2 Installing the CPU



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

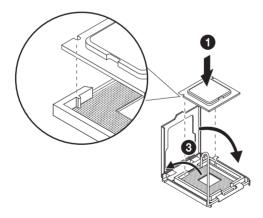
- Make sure that the motherboard supports the CPU.
- Always turn off the computer and unplug the power cord from the power outlet before installing the CPU to prevent hardware damage.
- Unplug all cables from the power outlets.
- Disconnect all telecommunication cables from their ports.
- · Place the system unit on a flat and stable surface.
- · Open the system according to the instructions.

WARNING!

Failure to properly turn off the server before you start installing components may cause serious damage. Do not attempt the procedures described in the following sections unless you are a qualified service technician.

Follow these instructions to install the CPU:

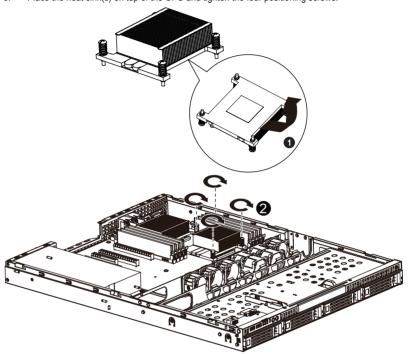
- 1. Raise the metal locking lever on the socket.
- Push down the indentation located at the side of the back chassis and slide toward to remove the back chassis cover.



2-3 Installing the Heat Sink

Follow these instructions to install the heat sinks:

- 1. Apply thermal compound evenly on the top of the CPU.
- 2. Remove the protective cover from the underside of the heat sink.
- 3. Place the heat sink(s) on top of the CPU and tighten the four positioning screws.



CPU0 and CPU1 use the different CPU heat sinks. Please see the following table for installing the correct CPU heat sink.

CPU0	CPU1
P/N: 25ST1-363200-T4R	P/N: 25ST1-363201-T4R

2-4 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.
- 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.

2-4-1 Dual Channel Memory Configuration

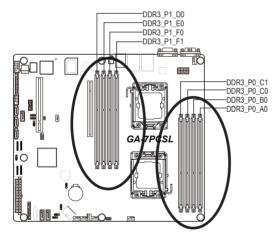
This motherboard provides four DDR3 memory sockets and supports Dual Channel Technology. After the memory is installed, the BIOS will automatically detect the specifications and capacity of the memory. Enabling Dual Channel memory mode will double the original memory bandwidth.

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

Channel A: DDR3_P0_A0, DDR3_P1_D0

Channel B: DDR3 P0 B0, DDR3 P1 E0

Channel C: DDR3_P0_C0, DDR3_P0_C1, DDR3_P1_F0, DDR3_P1_F1



U-DIMM	Channel A	Channel B	Channel C
		DDR3_P0_B0 DDR3_P1_E0	
	Single-Rank	Single-Rank	Single-Rank
	Dual-Rank	Dual-Rank	Dual-Rank

R-DIMM	Channel A	Channel B	Channel C
	DDR3_P0_A0 DDR3_P1_D0	DDR3_P0_B0 DDR3_P1_E0	
	Single-Rank	Single-Rank	Single-Rank
	Dual-Rank	Dual-Rank	Dual-Rank
	Quad-Rank	Quad-Rank	Quad-Rank

Due to CPU limitation, read the following guidelines before installing the memory in Dual or 3 Channel mode **Dual Channel--**

- 1. Dual Channel mode cannot be enabled if only one DDR3 memory module is installed.
- When enabling Dual Channel mode with two or four modules, it is recommended that memory of th same capacity, brand, speed, and chips be used. When enabling Dual Channel mode with two memory modules, be sure to install them in the DDR3_P0_C0 and DDR3_P0_C1 sockets for primary CPU; install DDR3_P1_F0 and DDR3_P1_F1 for secondary CPU.

3 Channel--

- 1. 3 Channel mode cannot be enabled if only one or two DDR3 memory modules are installed.
- When enabling 3 Channel mode with three, four or six modules, it is recommended that memory of the same capacity, brand, speed, and chips be used. When enabling 3 Channel mode with three

memory modules, be sure to install them in the DDR3_P0_A0, DDR3_P0_B0 and DDR3_P0_C0 sockets for primary CPU; install DDR3_P1_D0, DDR3_P1_E0 DDR3_P1_F0 for secondary CPU. When enabling 3 Channel mode with four memory modules, be sure to install them in the DDR3_P0_A0, DDR3_P0_B0, DDR3_P0_C0, and and DDR3_P0_C1 sockets for primary CPU; install DDR3_P1_D0, DDR3_P1_E0, DDR3_P1_F0, and DDR3_P1_F1 for secondary CPU

2-4-2 Installing a Memory

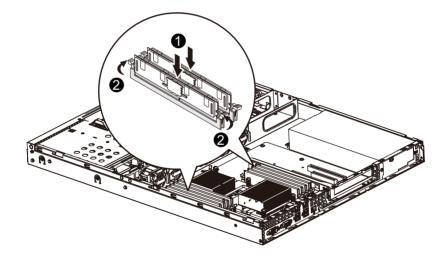


Before installing a memory module, make sure to turn off the computer and unplug the power cord from the power outlet to prevent damage to the memory module.

Be sure to install DDR3 DIMMs on this motherboard.

Follow these instructions to install the Memory:

- 1. Insert the DIMM memory module vertically into the DIMM slot, and push it down.
- 2. Close the plastic clip at both edges of the DIMM slots to lock the DIMM module.
- 3. Reverse the installation steps when you wish to remove the DIMM module.



2-5 Installing the PCI Expansion Card



Voltages can be present within the server whenever an AC power source is connected. This
voltage is present even when the main power switch is in the off position. Ensure that the
system is powered-down and all power sources have been disconnected from the server prior to
installing a PCI card.

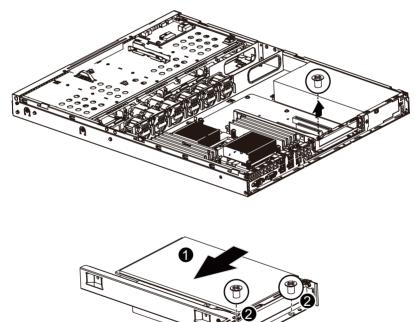
Failure to observe these warnings could result in personal injury or damage to equipment.



The PCI riser assembly does not include a riser card or any cabling as standard. To install a PCI
card, a riser card must be installed.

Follow these instructions to PCI Expansion card:

- 1. Loosen the riser bracket screw and lift the riser bracket slightly. Loosen the riser bracket screws.
- Loosen the PCI bracket screw.
- Orient the PCI card with the riser guide slot and push in the direction of the arrow until the PCI card sits in the PCI card connector. Secure the PCI card with the screw.



2-6 Installing the Hard Disk Drive

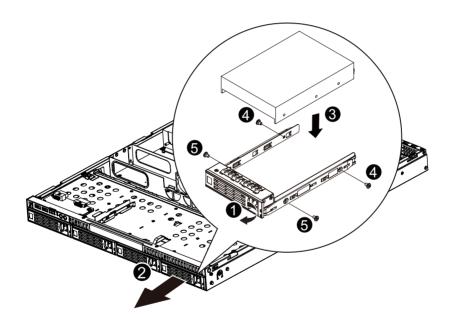


Read the following guidelines before you begin to install the Hard disk drive:

- · Take note of the drive tray orientation before sliding it out.
- · The tray will not fit back into the bay if inserted incorrectly.
- Make sure that the HDD is connected to the HDD connector on the backplane.

Follow these instructions to Hard disk drive:

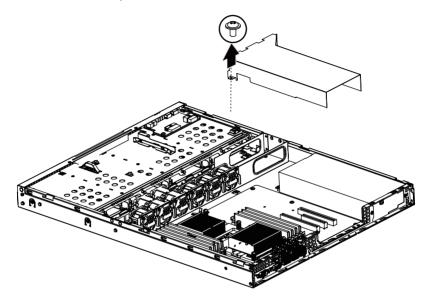
- 1. Press the release button.
- 2. Pull the locking lever to remove the HDD tray.
- 3. Slide hard disk into blank.
- 4. Secure the hard drive to the tray with four (4) screws as shown. Do not over tighten thescrews. Slide the blank into the bay until it locks into place.



2-7 Removing and Installing the Fan Duct

Follow these instructions to remove/install the fan duct:

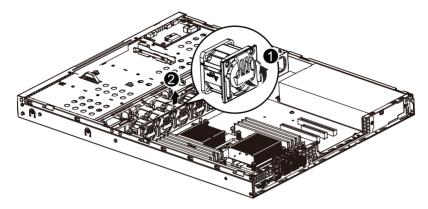
- 1. Loosen and remove the screws securing the fan duct.
- 2. Lift up to remove the fan duct
- To install the fan duct, align the fan duct with the guiding groove. Push down the fan duct into chassis until its firmly seats



2-8 Replacing the FAN Assembly

Follow these instructions to replace the fan assembly:

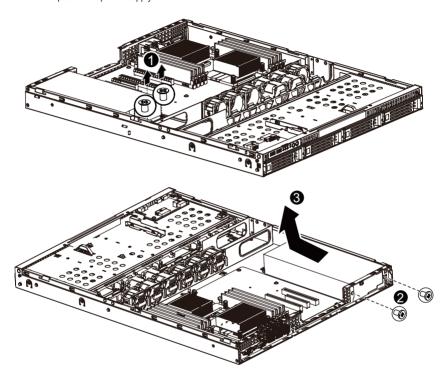
- 1. Remove the fan assemble pulling the rear edge in the direction of the arrow.
- 2. Lift up the fan assembly from the chassis.
- 3. Reverse the previous steps to install the replacement fan assembly.



2-10 Replacing the Power Supply

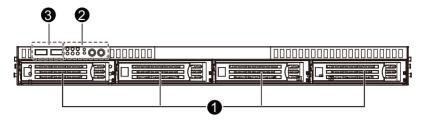
Follow these instructions to replace the power supply:

- 1. Disconnect the three power cables.
- 2. Remove the thress screws securing on the power supply.
- 3. Lift the power supply out of the chassis in the direction of the arrow.
- Insert the replacement power supply firmly into the chassis. Connect the AC power cord to the replacement power supply



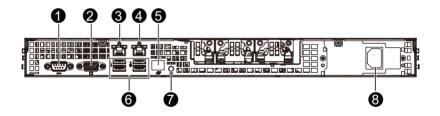
Chapter 3 System Appearance

3-1 Front View



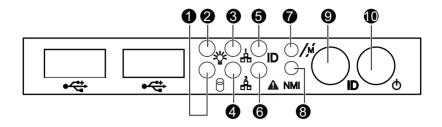
No.	Decription
1.	HDD bays
2.	Front Panel LEDs and buttons
3.	Front USB 2.0 ports

3-2 Rear View



No.	Decription
1.	Serial port
2.	VGA port
3.	RJ-45 LAN port (LAN2)
4.	RJ-45 LAN port (LAN1)
5.	Server management LAN port
6.	USB 2.0 ports
7.	ID switch button
8.	Power module

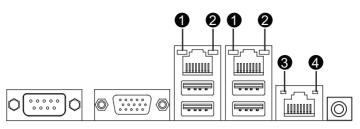
3-3 Front Panel LED and Buttons



No.	Name	Color	Status	Description
1	HDD Status LED	Green	Blink	HDD access
		N/A	Off	Idle
		Green	On	System has power applied to itor ACPI S0 state
		Green	Blink	System is in ACPI S1 state (sleep mode)
2	Power LED	N/A	Off	System is not powered on or in
				ACPI S5 state (power off)
				System is in ACPI S4 state (hlbernate mode)
		Green	On	Link between system and network
3	LAN1 LED			access
3	LED	Green	Blink	000000
		N/A	Off	No access
		Green	On	Link between system and network
	LAN2 LED LED			
4		Green	Blink	access
		N/A	Off	No access
5	ID LED	Blue	On	System identification is active
5	וט נבט	N/A	Off	System identification is disabled
		Green	On	Running or normal peration
		Green	Blink	System dedraged due to CPU or DIMM error
6	System	N/A	Off	System not ready
O	Status LED			May indicate the following:
				POST errorNMI error
				Processor or terminator missing
7	Reset button			3
8	NMI button			
				25 - Hardware Installation

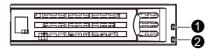
No.	Name	Color	Status	Description
9	ID button			
40	10 Power button -		On	System is powered on.
10			Off	System is powered off.

3-4 Rear System LAN LEDs



No.	Name	Color	Status	Description
	0	Orange	On	Linking at 1 Gbps data rate
1	Connection/ Speed LED	Green	On	Linking at 100 Mbps data rate
	Opocu LLD	N/A	Off	Linking at 10 Mbps data rate
2.	A -4::.:t I ED	Green	Blink	Data transmission or receiving is occurring
	Activity LED	Green	On	No data transmission
	Connection/	Green	On	Linking at 100 Mbps data rate
3.	Speed LED	Green	Blink	Linking at 10 Mbps or 100 Mbps data rate
	Opoda LLB	N/A	Off	Linking at 10 Mbps data rate
4.	Activity LED	Green	Blink	Data transmission or receiving is occurring
4.	ACTIVITY LED	Green	On	No data transmission

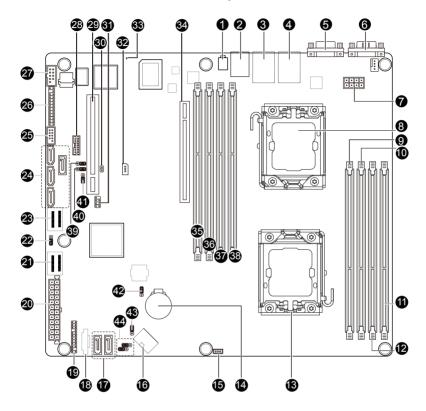
3-5 Hard Disk Drive LEDs



No	Description	SATA HDD LEDs	
		Green	Red
1	HDD Access	Blink (4Hz)	Off
	HDD Locate	On	Off
2	HDD Failure	Off	On
	HDD Removed	Off	On
	HDD connected and rebuilding data	On	Blink (1Hz)

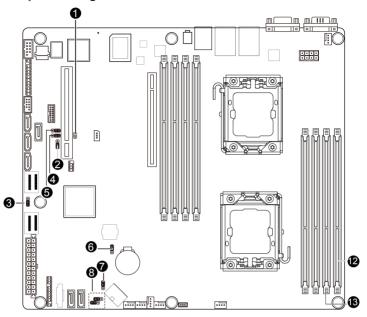
Chapter 4 Motherboard Components

4-1 GA-7PCSL1 Motherboard Components



Item	Code	Description
nem 1	ID SW	Description ID switch
2	MLAN	KVM Server Management 10/100 LAN Port
3	USB_LANB1	LAN1 port (top) / USB ports (bottom)
4	USB LANB2	LAN2 port (top) / USB ports (bottom)
5	VGA 1	VGA port
6	COM1	Serial port
7	P12V_AUX2	8 pin power connector
8	CPU1	Intel LGA1356 socket (Secondary CPU)
9	DDR3_P0_C1	Channel C slot 0 (for primary CPU)
10	DDR3_P0_C0	Channel C slot 0 (for primary CPU)
11	DDR3_P0_A0	Channel A slot 0 (for primary CPU)
12	DDR3_P0_B0	Channel B slot 0 (for primary CPU)
13	CPU0	Intel LGA1356 socket (Primary CPU)
14	BAT	CMOS battery
15	SKU_KEY1	PBG A SKU Select connector
16	P12V_AUX1	8 pin power connector
17	SATA0/1	SATA 6Gb/s connectors
18	PMbus_CN_1	PM Bus connector
19	BP_1	HDD back plane connector
20	ATX1	24-pin power connector
21	MINISAS_2	Mini SAS connector (SATA 3.0Gb/s signal)
22	SSB_ME2	ME enable/disable jumper
23	MINISAS_1	Mini SAS connector
24	SAS0~3	SAS connectors
25	F_USB1	Front USB connector
26	FP_1	Front panel connector
27	COM2	Serial cable connector
28	TPM_MEZZ1	TPM connector
29	PCI_1	PCI slot (32bit/33MHz)
30	JP5	Chassis intrusion jumper
31	SCU_SGPIO	SCU SGPIO connector
32	IPMB	IPMB connector
33	BMC_LED1	BMC Firmware Readiness LED
34	PCIE_1	PCI-E slot 1 (x16 slot)
35	DDR3_P1_D0	Channel A slot 1 (for secondary CPU)
36	DDR3_P1_E0	Channel B slot 1 (for secondary CPU)
37	DDR3_P1_F0	Channel C slot 1 (for secondary CPU)
38	DDR3_P1_F1	Channel C slot 1 (for secondary CPU)
39	PASSWORD	Clear password jumper
40	BIOS_RVCR	BIOS recovery jumper
41	SSB_ME1	ME enable/disable jumper
42	CLR_CMOS	Clear CMOS jumper
43	BIOS_WP	BIOS write protect jumper
44	SATA_DOM0/SATA_DOM1	SATA0/1 port DOM support jumper

4-2 Jumper Setting



No.	Jumper Code	Jumper Setting
1.	JP5 (Case Open	1-2 Open: Normal operation (Default setting)
	Intrusion Jumper)	1-2 Close: Enable chassis intrusion alert.
2.	SSB_ME1	1-2 Close: Normal operation. (Default setting)
	(ME enable/ disable Jumper)	2-3 Close: Disable ME function.
	SSB_ME2	1-2 Close: Normal operation. (Default setting)
3.	(ME enable/ disable Jumper)	2-3 Close: Disable ME function.
4.	BIOS_RVCR	1-2 Close: Normal operation (Default setting)
4.	(BIOS Recovery Jumper)	2-3 Close: BIOS recovery mode.
	PASSWORD	1-2 Close: Normal operation (Default setting)
5.	(Skip Supervisor Password Jumper)	2-3 Close: Skip supervisor password.
6.	CLR_CMOS	1-2 Close: Normal operation (Default setting)
	(Clearing CMOS Jumper)	2-3 Close: Clear CMOS data
7.	BIOS_WP	1-2 Close: Normal operation (Default setting)
	(BIOS Write Protect Jumper)	2-3 Close: Enable BIOS wrote protect function.
8.	SATA_DOM0/1 (SATA DOM Jumper)	1-2 Close: Use SATA DOM.
0.		2-3 Close: Normal mode. (Default setting)

- 31 -

Chapter 5 BIOS Setup

BIOS (Basic Input and Output System) records hardware parameters of the system in the EFI 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. When the power is turned off, the battery on the motherboard supplies the necessary power to the CMOS to keep the configuration values in the CMOS.

To access the BIOS Setup program, press the <F2> key during the POST when the power is turned on.



- 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 the screen	
<↑><↓>	Move the selection bar to select an item	
<enter></enter>	Execute command or enter the submenu	
<esc></esc>	Main Menu: Exit the BIOS Setup program	
	Submenus: Exit current submenu	
<f1></f1>	Show descriptions of general help	
<f3></f3>	Restore the previous BIOS settings for the current submenus	
<f9></f9>	Load the Optimized BIOS default settings for the current submenus	
<f10></f10>	<f10> Save all the changes and exit the BIOS Setup program</f10>	

BIOS Setup

■ 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: Auto detect fan and temperature status, automatically configure hard disk parameters.)

■ Chipset

This setup page includes all the submenu options for configuring the function of North Bridge and South Bridge.

(ex: Auto detect fan and temperature status, automatically configure hard disk parameters.)

■ 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 Management

Server additional features enabled/disabled setup menus.

■ Boot Options

This setup page provides items for configuration of boot sequence.

■ Boot Manager

This setup page provides configuration of boot up devices.

■ Exit

Save all the changes made in the BIOS Setup program to the CMOS 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.)

5-1 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

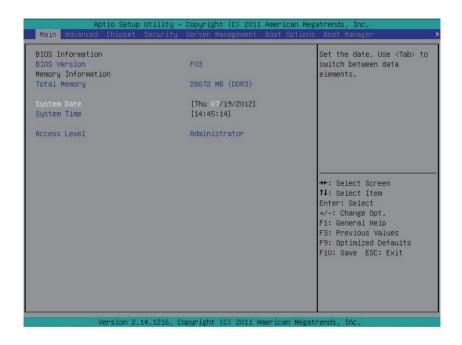
The on-screen description of a highlighted setup option is displayed on the bottom line of the Main Menu.

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.



- When the system is not stable as usual, select the **Load Default Values** 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.



→ BIOS Version

Display version number of the BIOS setup utility.

→ Memory

Determines how much total memory is present during the POST.

→ System Date

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

☐ System Time

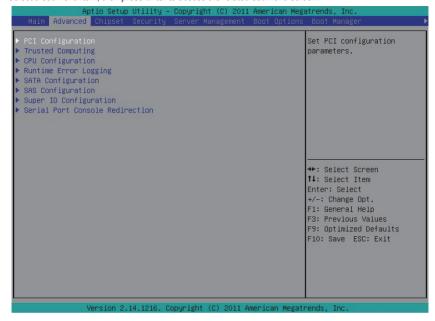
Set the system time following the hour-minute- second format.

→ Access Level

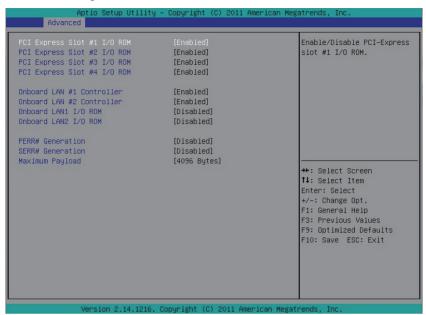
Display the current accessing level information.

5-2 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.



5-2-1 PCI Configuration



→ PCI Express Slot 1/2/3/4 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**.

→ 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.

PERR Generation

When this item is set to enabled, PCI bus parity error (PERR) is generated and is routed to NMI. Options available: Enabled/Disabled. Default setting is **Disabled**.

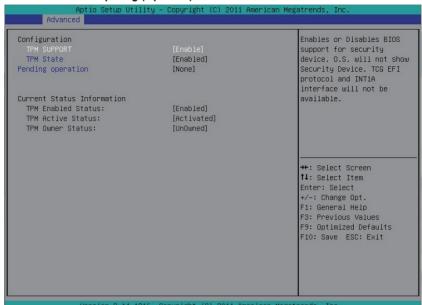
SERR Generation

When this item is set to enabled, PCI bus system error (SERR) is generated and is routed to NMI. Options available: Enabled/Disabled. Default setting is **Disabled**.

→ Maximum Playload

Set maximum playlooad for PCI Express Device or allow system BIOS to select the value. Options available: Auto/128 Bytes/256 Bytes/512 Bytes/1024 Bytes/2048 Bytes/4096 Bytes. Default setting is **4096 Bytes**.

5-2-2 Trusted Computing (Optioanl)



→ TPM Support

Select Enabled to activate TPM support feature.

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

→ TPM State

Select Enabled to activate TPM State function.

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

Pending Operation

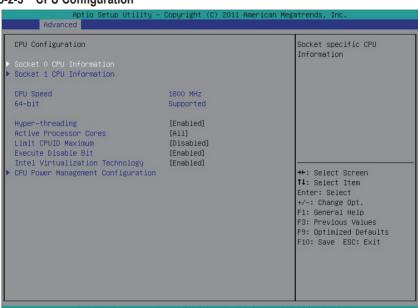
Determine the action when operation is pending.

Options available: None. Default setting is None.

☐ Current Status Information

Display current TPM status information.

5-2-3 CPU Configuration



Aptio Setup Utility - Copyright (C) 2011 American Megatrends, Inc. Socket O CPU Information Genuine Intel(R) CPU @ 1.80GHz CPIL Signature Microcode Patch 8000020€ Max CPU Speed 1800 MHz 1200 MHz Min CPU Speed Processor Cores Intel HT Technology Supported Supported Intel VT-x Technology L1 Data Cache 32 KB x 8 I 1 Code Cache 32 kB x 8 L2 Cache 256 kB x 8 ↔: Select Screen ↑↓: Select Item L3 Cache 20480 KB Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values F9: Optimized Defaults F10: Save ESC: Exit Version 2.14.1216. Copyright (C) 2011 American Megatrends.

Advanced Socket 1 CPU Information Genuine Intel(R) CPU @ 1.80GHz CPU Signature Microcode Patch Max CPU Speed 1800 MHz 1200 MHz Min CPU Speed Processor Cores Supported Supported Intel HT Technology Intel VT-x Technology 32 kB x 8 L1 Data Cache 32 kB x 8 L1 Code Cache L2 Cache 256 KB x 8 →+: Select Screen ↑↓: Select Item L3 Cache Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values F9: Optimized Defaults F10: Save ESC: Exit

→ Socket 0/1 Information

□ CPU Signature

Displays the processor ID information.

Microcode Patch

Display Microcode patch.

Max CPU Speed

Display the maximum processor speed.

Min CPU Speed

Display the minimum processor speed.

Processor Cores

Display the information of the processor core.

Intel HT Technology

Display Intel Hyper Threading Technology function support information.

Display Intel Virtualization Technology function support information.

Cache Information

Display the information of L1 Data Cache.

☐ L1 Code Cache

Display the information of L1 Code Cache.

□ 12 Cache

Display the information of L2 Cache per Core.

→ L3 Cache

Display the information of total L3 Cache per socket.

→ CPU Speed

Display the current installed CPU speed.

→ 64-bit

Display the supported information of installed CPU.

→ Hyper-threading

The Intel 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.

When enabled, the processor will limit the maximum COUID input values to 03h when queried, even if the processor supports a higher CPUID input value.

When disabled, the processor will return the actual maximum CPUID input value of the processor when queried.

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

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

When disabled, the processor will not restrict code execution in any memory area. This makes the processor more vulnerable to buffer overflow attacks.

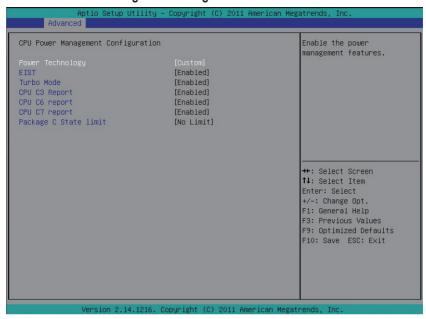
Options available: Enabled/Disabled. Default setting is Enabled.

→ 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**.

5-2-3-1 CPU Power Management Configuration



→ CPU Management

→ Power Technology

Configure the power management features.

Options available: Disable/Energy Efficient/Custom. Default setting is Custom.

□ EIST (Enhanced Intel SpeedStep Technology)

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

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

→ 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.

→ CPU C3/C6 Report (Note)

Allows you to determine whether to let the CPU enter C3/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 C3/C6 state is a more enhanced power-saving state than C1.

Options available for C3 Report: ACPI C2/ACPI C3/Disabled. Default setting is Disabled.

Options available for C6 Report: Enabled/Disabled. Default setting is **Enabled**.

→ CPU C7 Report (Note)

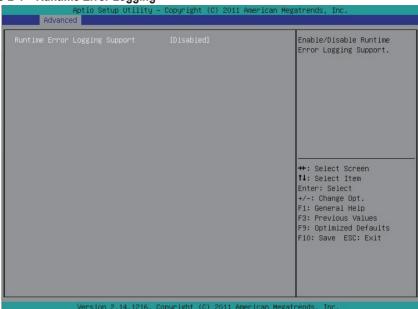
Allows you to enable or disable the CPU C7 (ACPI C3) report. Options available: Enabled/Disabled. Default setting is **Enabled**.

Configure state for the C-State package limit.

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

(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.

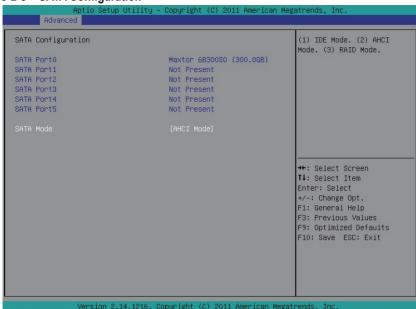
5-2-4 Runtime Error Logging



Enable/Disable Runtime error logging support.

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

5-2-5 SATA Configuration



→ SATA Port 0/1/2/3/4/5 (Note)

Press [Enter] to view the installed HDD devices.

→ SATA Mode

Select the on chip SATA type.

IDE Mode: When set to IDE, the SATA controller disables its RAID and AHCI functions and runs in the IDE emulation mode. This is not allowed to access RAID setup utility.

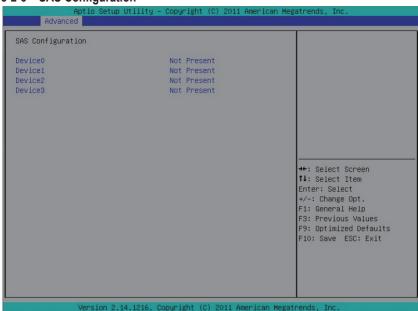
RAID Mode: When set to RAID, the SATA controllerenables both its RAID and AHCI functions. You will be allows access the RAID setup utility at boot time.

AHCI Mode: When set to AHCI, the SATA controller enables its AHCI functionality. Then the RAID function is disabled and cannot be access the RAID setup utility at boot time.

Options available: IDE/RAID/AHCI/Disabled. Default setting is AHCI Mode.

(Note) This item is will not appear when the SATA mode is set of RAID mode.

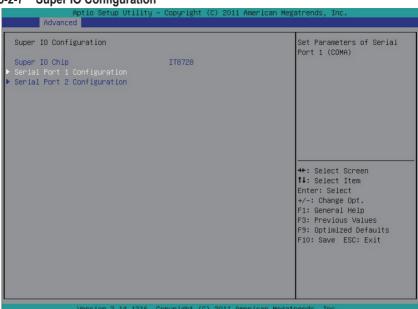
5-2-6 SAS Configuration



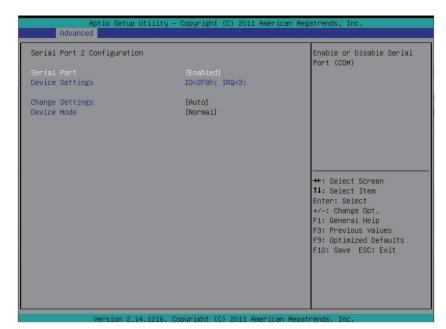
→ Device 0/1/2/3 (Note)

Press [Enter] to view the installed HDD devices.

5-2-7 Super IO Configuration



Aptio Setup Ut Advanced	ility – Copyright (C) 2011 Ameri	can Megatrends, Inc.
Serial Port 1 Configuration		Enable or Disable Serial Port (COM)
Serial Port		7 61 7 (6611)
Device Settings	IO=3F8h; IRQ=4;	
Device Settings	10-3/0//, 1/(2-4)	
Change Settings	[Auto]	
Device Mode	[Normal]	
Device Houe	[NOI:IIId1]	
		M . 0-11 0
		++: Select Screen
		↑↓: Select Item
		Enter: Select
		+/-: Change Opt.
		F1: General Help
		F3: Previous Values
		F9: Optimized Defaults
		F10: Save ESC: Exit



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.

Device Settings

Displays the Serial Port 1/2 base I/O addressand IRQ.

Change Settings

Change Serial Port 1/2 device settings. When set to Auto allows the server's BIOS or OS to select a configuration.

Options available: Auto/IO=3F8; IRQ=4/IO=3F8h; IRQ=3,4,5,6,7,10,11,12/

IO=2F8h; IRQ=3.4.5.6.7.10.11.12 /IO=3E8h; IRQ=3.4.5.6.7.10.11.12/IO=2E8h; IRQ=3.4.5.6.7.10.11.12.

5-2-8 Serial Port Console Redirection

Aptio Setup Utility – Copyright (C) 2011 American Megatrends, Inc. The settings specify how the host computer and the COM1 remote computer (which the Console Redirection [Enabled] user is using) will exchange data. Both computers should have the [Disabled] Console Redirection same or compatible ▶ Console Redirection Settings settings. Serial Port for Out-of-Band Management/ Windows Emergency Management Services (EMS) Console Redirection [Disabled] ▶ Console Redirection Settings ++: Select Screen BMC SOL Serial Port Switch [Disabled] ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values F9: Optimized Defaults F10: Save ESC: Exit

Version 2.14.1216, Copyright (C) 2011 American Megatrends, Inc.

Getup Utility – Copyright (C) 2011 American Megatrends, Inc. Emulation: ANSI: Extended Console Redirection Settings ASCII char set. VT100: ASCII char set. VT100+: Terminal Type Bits per second Extends VT100 to support color, function keys, etc. Data Bits VT-UTF8: Uses UTF8 [8] [None] encoding to map Unicode Parity Stop Bits chars onto 1 or more bytes. Flow Control [None] VT-UTF8 Combo Key Support [Enabled] [Disabled] Recorder Mode [Disabled] Resolution 100x31 Legacy OS Redirection Resolution [80x24] →+: Select Screen ↑↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F3: Previous Values F9: Optimized Defaults F10: Save ESC: Exit

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

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

☐ Terminal Type

Select a terminal type to be used for console redirection.

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

→ Bits per second

Select the baud rate for console redirection.

Options available: 9600/19200/57600/115200.

Data Bits

Select the data bits for console redirection

Options available: 7/8.

→ Parity

A parity bit can be sent with the data bits to detect some transmission errors.

Even: parity bi is 0 if the num of 1's in the data bits is even.

Odd: parity bit is0if num of 1's the data bits is odd.

Mark: parity bit is always 1. Space: Parity bit is always 0.

Mark and Space Parity do not allow for error detection.

Options available: None/Even/Odd/Mark/Space.

Stop Bits

Stop bits indicate the end of a serial data packet. (A start bit indicates the beginning). The standard setting is 1 stop bit. Communication with slow devices may require more than 1 stop bit.

Options available: 1/2.

→ 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/Hardware RTS/CTS.

Enable/Disable VT-UTF8 Combo Key Support.

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

□ Recorder Mode

When this mode enabled, only text will be send. This is to capture Terminal data.

Options available: Enabled/Disabled.

→ Resolution 100x31

Enables or disables extended terminal resolution.

Options available: Enabled/Disabled.

Legacy OS Redirection Resolution

On Legacy OS, the number of Rows and Columns supported redirection.

Options available: 80x24/80X25.

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

Serial Port for Out-of-Bnad Management/Windows Emerency Service (EMS)

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

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

Console Redirection Settings

Press [Enter] to enter advanced meun for console redirection settings.

→ Out-of-Bnad Mgmt Port

Microsoft Windows Emerency Management Service (EMS) allows for remote management of a Windows Server OS through a serial port.

Options available: COM1

→ BMC SOL Serial Port Switch

Enabled: COM1 Switch to AST2300 SOL UART. Disabled: COM1 Switch to IT8728 SOL UART1.

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

5-3 Chipset Menu

The Chipset menu display submenu options for configuring the function of North Bridge and South Bridge. Select a submenu item, then press Enter to access the related submenu screen.



5-3-1 North Bridge Configuration



☐ Compatibility RID

Enable/Disable Compatibility RID function.

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

Total Memory

Determines how much total memory is present during the POST.

Current Memory Mode

Displays the cuurent memory mode. Memory mode can be determined in **Memory Mode** item.

Current Memory Speed

Displays the cuurent memory speed.

→ Memory Mode

Determine the memory mode.

When set to Indendent mode, all DIMMs are available to the operation system.

When set to Mirroring mode, the motherboard maintains two identical (redundant) copies of all data in memory.

When set to Lockstep mode, the motherboard uses two areas of memory to run the same set of operations in parallel.

When set to Sparing mode, a preset threshold of coorectable errors is used to trigger fail-over.

The spare memory is put online and used as active memory in place of the failed memory.

Options available: Indendent /Mirroring/ Lockstep/Sparing.

→ Numa

Enable/Disable Non Uniform Memory Access (NUMA) function.

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

DIMM Voltage

Configure the DIMM voltage.

Options available: Auto/ Force 1.5v/Force 1.35v. Default setting is Auto.

☐ Enforce DIMM

To enforce POR function. When disabled, the system will enforce 1600MHz LRDIMM.

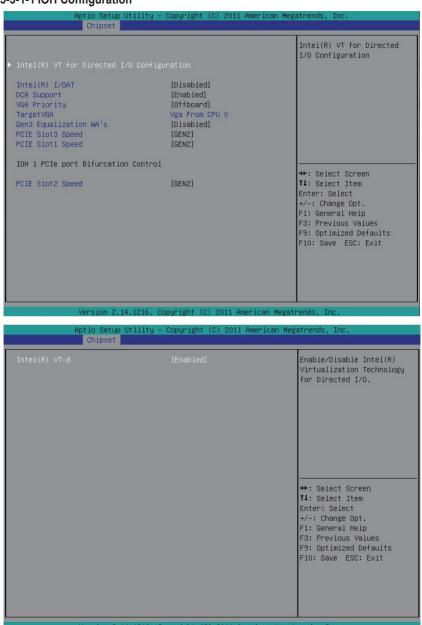
Options available: Enforce EN/Stretch EN/Enforce DIS. Default setting is Enforce EN.

☐ To clear ECC Flag.

When DDR3 Channel is maskoff after ECC multibit errors, it is required to clear ECC flag to make masked off channels be available

Options available: None/To clear ECC Flag when save and exit. Default setting is None.

5-3-1-1 IOH Configuration



→ IOH Configuration

Intel(R) VT for Directed I/O Configuration

☐ Intel(R) I/OAT

Enable/Disable Intel OAT Technology function.

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

→ DCA Support

Enable/Disable Direct Cache Access Support function.

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

→ VGA Priority

Define the display device priority.

Options available: Onboard/Offboard. Default setting is Offboard.

→ Target VGA

Displays the information of Target VGA.

Gen3 Equalization WA's

Enable/Disable the support for Gen3 Equalization Workaround.

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

→ PCIE Slot1 Speed

Select PCIe slot 1 speed.

Options available: GEN1/GEN2/GEN3. Default setting is GEN2.

→ PCIE Slot3 Speed

Select PCIe slot 3 speed.

Options available: GEN1/GEN2/GEN3. Default setting is GEN2.

→ IOH 1 PCIe port Bifurcation Control

→ PCIE Slot2 Speed

Select PCIe slot 2 speed.

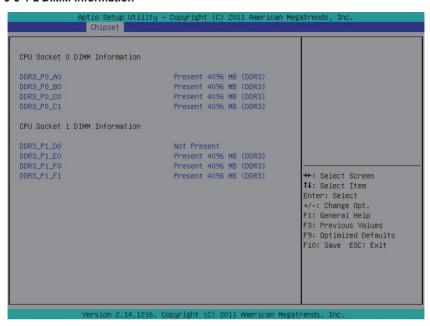
Options available: GEN1/GEN2/GEN3. Default setting is GEN2.

☐ Intel(R) VT-d

Enable/Disable Intel VT-d Technology function.

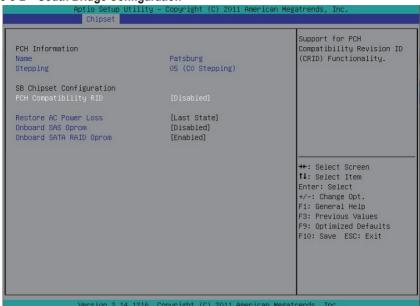
Options available: Enabled/Disabled. Default setting is Disabled.

5-3-1-2 DIMM Information



- → DIMM Information:
- DIMM Group: CPU Socket 0/1 DIMM Information CPU Socket 0: DDR_3_P0_A0/DDR_3_P0_b0/DDR_3_P0_c0/DDR_3_P0_C1 Status CPU Socket 1: DDR_3_P1_D0/DDR_3_P1_E0/DDR_3_P1_F0/DDR_3_P1_F1 Status The size of memory installed on each of the DDR3 slots.

5-3-2 South Bridge Configuration



→ PCH Information:

→ Name/Stepping Information

Displays the name and stepping information of the south bridge.

□ SB Chipset Configuration □

→ PCH Compatibility RID

Enable/Disable PCH Compatibility RID support.

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

Defines the power state to resume to after a sys- tem 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. The default setting depends on the BMC setting.

Deep Power off Mode

Enable/Disable Deep Power off Mode.

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

→ SCU devices

Enable/Disable Patsburg SCU devices.

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

(Note) When the power policy is controlled by BMC, please wait for 15-20seconds for BMC to save the last power state.

○ Onboard SAS oprom

Enable/Disable onboard SAS option ROM.
Options available: Enabled/Disabled. Default setting is **Disabled**.

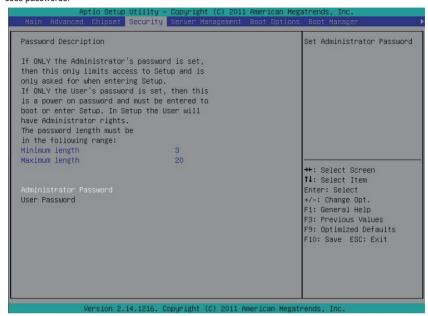
Onboard SATA RAID oprom

Enable/Disable onboard SATA RAID option ROM.

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

5-4 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:

Administrator 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.

Administrator Password Status

This parameter indicates whether a Administrator Password has been assigned.

→ User Password Status

This parameter indicates whether a user pass- word 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.

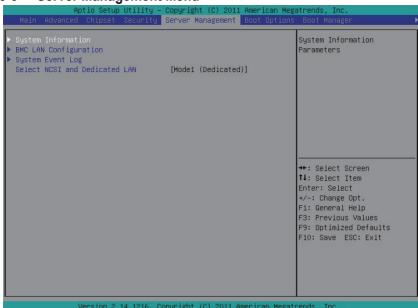
→ Set Administrator Password

Press Enter to configure the Administrator password.

Set User Password

Press Enter to configure the user password.

5-5 Server Management Menu



System Information

Displays basic system ID information, as well as BIOS version. Press Enter to access the related submenu.

→ BMC LAN Configuration

BMC LAN Configuration. Press Enter to access the related submenu.

System Event Log

Press Enter to access the related system event log.

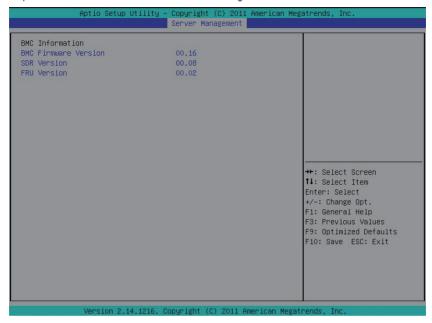
□ Select NCSI and Dedicated LAN

Switch NCSI and dedicated LAN and send KCS command.

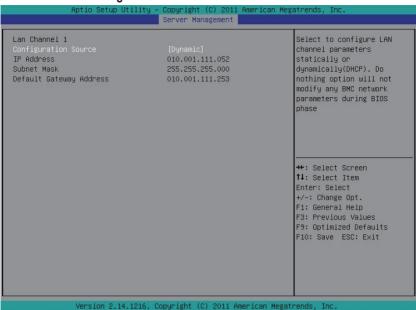
Options available: Mode2(NSCI)/ Mode1 (Dedicated).

5-5-1 System Information

The System Management submenu is a simple display page for basic system ID information, as well as System product information. Items on this window are non-configurable.



5-5-2 BMC LAN Configuration



□ Configuration Source

Select to configure LAN channel parameters statically or dynamically (DHCP). Do nothing option willnot modify any BMC network parameters during BIOS phase.

Options available: Static/Dynamic/Do Nothing.

→ IP Address

Display IP Address information.

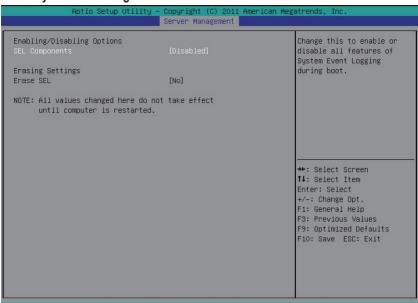
Display Subnet Mask information.

Please note that the IP address must be in three digitals, for example, 192.168.000.001.

Default Gateway Address

Display Default Gateway Address information.

5-5-3 System Event Log



/5. ... A //

→ SEL Components

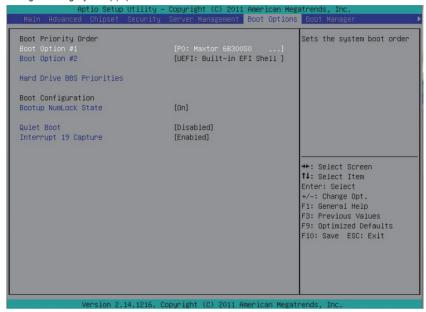
Enable/Disable all features fo system event logging during system boot. Options available: Enabled/Disabled.

Erasing Settings

Choose this option for erasing Smbios Event Log is done prior to any logging activation during reset. Options available: Yes/No.

5-6 Boot Option Menu

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



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

- 1. UEFI device.
- 2. Hard drive.

Bootup NumLock State

Enable or Disable Bootup NumLock function.

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

Quiet Boot

Enables or disables showing the logo during POST.

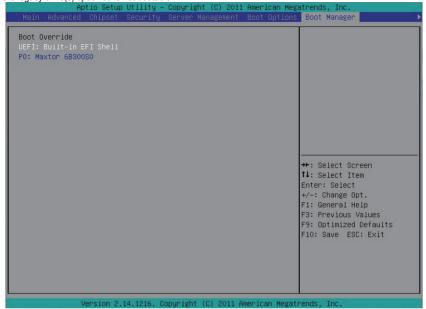
Options available: Enabled/Disabled. Default setting is Disabled.

Interrupt 19 is the software interrupt that handles the boot disk function. When enabled, this BIOS feature allows the ROM BIOS of those host adaptors to "capture" Interrupt 19 during the boot process so that drives attached to these adaptors can function as bootable disks.

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

5-7 Boot Manager

The Boot manager menu allows you to specify the boot-up drive. BIOS setup will display an error message if the legacy drive(s) specified is not bootable.

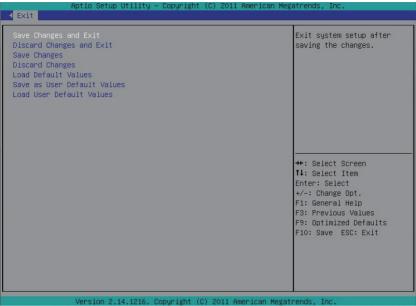


→ UEFI: Built-in EFI Shell

Press Enter to configure the device as the boot-up drive.

5-8 Exit Menu

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



Saves changes made and close the BIOS setup.

Options available: Yes/No.

Discard Changes and Exit

Discards changes made and close the BIOS setup.

Options available: Yes/No.

→ Save Changes

Saves changes made in the BIOS setup.

Options available: Yes/No.

Discard Changes

Discards all changes made in the BIOS setup.

Options available: Yes/No.

→ Load Default Values

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.

Saves as user default and close the BIOS setup.

Options available: Yes/No.

□ Load User Default Values

Loads the user default settings for all BIOS setup parameters.

Options available: Yes/No.

5-9 BIOS Beep Codes

5-9-1 PEI Beep Codes

# of Beeps	Description
1	Memory not Installed.
1	Memory was installed twice (InstallPeiMemory routine in PEI Core called twice)
2	Recovery started
3	DXEIPL was not found
3	DXE Core Firmware Volume was not found
4	Recovery failed
4	S3 Resume failed
7	Reset PPI is not available

5-9-2 DXE Beep Codes

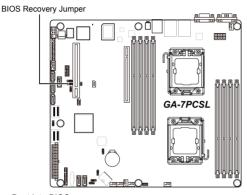
# of Beeps	Description
1	Invalid password
4	Some of the Architectural Protocols are not available
5	No Console Output Devices are found
5	No Console Input Devices are found
6	Flash update is failed
7	Reset protocol is not available
8	Platform PCI resource requirements cannot be met

5-10 BIOS Recovery Instruction

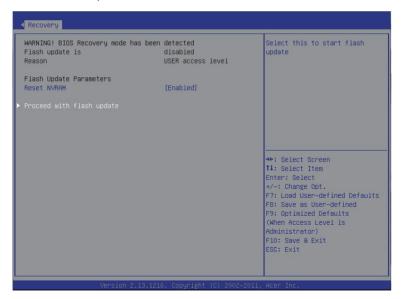
The system has an embedded recovery technique. In the event that the BIOS becomes corrupt the boot block can be used to restore the BIOS to a working state. To restore your BIOS, please follow the instructions listed below:

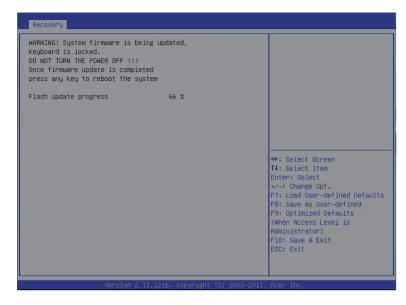
Recovery Instruction:

- 1. Change xxx.ROM to amiboot.rom.
- 2. Copy amiboot.rom and AFUDOS.exe to USB diskette.
- 3. Setting BIOS Recovery jump to enabled status.



- 4. Boot into BIOS recovery.
- 5. Run Proceed with flash update.





6. BIOS update.

