

GS-R12T4S

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 quick set-up of the product, read the Quick Installation Guide included with the product.
- For detailed product information, carefully read the Service 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 CONFIGURATION decided for GIGABYTE's "global" product offering. To better fit local market requirements and enhance product competitiveness, your regional office MAY have decided to extend 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 such cases, please contact your regional offices or the responsible personnel/channel to provide you with further technical details.
2. Please note WHEN ORDERING SPARE PARTS, you should check the most up-to-date information available 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 SERVICE PROVIDERS, your GIGABYTE office may have a DIFFERENT part number code to those given in the FRU list of this printed Service Guide. You MUST use the list provided by your regional GIGABYTE office to order FRU parts for repair and service of customer machines.

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Box Contents

- GS-R12T4S
- Driver CD
- Two SATA cables
- I/O Shield

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

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 precautions for laser devices:

- 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.

Federal Communications Commission (FCC) Statement

Warning

This is a class A product. In a domestic environment this product may cause radio interference.

encel in 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 against harmful 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 or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate 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.

FCC part 68 (applicable to products fitted with USA modems)

The modem complies with Part 68 of the FCC Rules. On this equipment is a label that contains, among other information, the FCC registration number and Ringer Equivalence Number (REN) for this equipment. You must, upon request, provide this information to your telephone company. If your telephone equipment causes harm to the telephone network, the Telephone Company may discontinue your service temporarily. If possible, they will notify in advance. But, if advance notice is not practical, you will be notified as soon as possible. You will be informed of your right to file a complaint with the FCC. Your telephone company may make changes in its facilities, equipment, operations, or procedures that could affect proper operation of your equipment. If they do, you will be notified in advance to give you an opportunity to maintain uninterrupted telephone service. The FCC prohibits this equipment to be connected to party lines or coin-telephone service. The FCC also requires the transmitter of a FAX transmission be properly identified (per FCC Rules Part 68, Sec. 68.381 (c) (3)./ for Canadian users only

Canadian Department of Communications Compliance Statement

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus 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 aux appareils numeriques de Classe A prescrites dans le reglement sur le brouillage radioelectrique edicte par Industrie Canada.

DOC notice (for products fitted with an Industry Canada-compliant modem)

The Canadian Department of Communications label identifies certified equipment. This certification means that the equipment meets certain telecommunications network protective, operational and safety requirements. The Department does not guarantee the equipment will operate to the user satisfaction. Before installing this equipment, users ensure that it is permissible to be connected to the facilities of the local Telecommunications Company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions might not prevent degradation of service in some situations. Repairs to certified equipment should be made by an authorized Canadian maintenance

facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment. Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present are connected together. This precaution may be particularly important in rural areas. Caution: Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

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 /

Class A equipment

This device has been tested and found to comply with the limits for a class A digital device pursuant Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generate, 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 expense.

However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, which can be determined by tuning the device off and on, the user is encouraged to try to correct the interference by one or more of the 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 is connected. Consult the dealer or an experienced radio/television technician for help.











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	<ul style="list-style-type: none"> ◆ Support for Dual Intel® Xeon® Nehalem-EP/Westmere processors in 1366 socket ◆ Supports QuickPath Interconnect up to 6.4GT/s ◆ Enhanced Intel SpeedStep Technology (EIST) & Demand Based Switch (DBS) ◆ Support Intel Virtualization Technology (VT)
	Chipset	<ul style="list-style-type: none"> ◆ Intel® 5500 (Tylersburg-24D) Chipset ◆ Intel® 82801JR (ICH10R)
	Memory	<ul style="list-style-type: none"> ◆ 6 x 1.5V DDR3 DIMM sockets supporting up to 48 GB of system memory <ul style="list-style-type: none"> * Due to Windows 32-bit operating system limitation, when more than 4 GB of physical memory is installed, the actual memory size displayed will be less than 4 GB. ◆ 6 x 1.35V DDR3L DIMM sockets supporting up to 48 GB of system memory ◆ 3 channel memory architecture ◆ Support for 800/1066/1333 memory modules ◆ Support for ECC RDIMM/ UDIMM memory modules
	LAN	<ul style="list-style-type: none"> ◆ 2 x Intel® 82574L supports 10/100/1000 Mbps
	Expansion Slot	<ul style="list-style-type: none"> ◆ 1 x PCI Express x16 slot, running at x1 (PCIE_6)
	Onboard Graphics	<ul style="list-style-type: none"> ◆ ASPEED AST1300 supports 128MB VRAM
	Mass Storage	<ul style="list-style-type: none"> ◆ 4 x 3.5" Hot-Swap SATA HDDs ◆ Support for Intel IRST SATA RAID 0, RAID 1, RAID 5, RAID 10
	System Fans	<ul style="list-style-type: none"> ◆ 2 x 40x40x28mm 16500rpm ◆ 4 x 40x40x56mm 16500rpm
	USB	<ul style="list-style-type: none"> ◆ Up to 6 USB 2.0/1.1 ports (4 on the back panel, 2 via the USB brackets connected to the internal USB headers)
	Internal Connectors	<ul style="list-style-type: none"> ◆ 1 x 24-pin ATX main power connector ◆ 2 x 8-pin ATX 12V power connector ◆ 6 x SATA 3Gb/s connectors ◆ 1 x PSM1 header ◆ 2 x CPU fan header ◆ 4 x System fan header ◆ 1 x front panel header ◆ 2 x USB 2.0/1.1 headers ◆ 1 x Serial port header ◆ 1 x SPGIO header

 Rear Panel I/O	<ul style="list-style-type: none"> ◆ 4 x USB 2.0/1.1 ports ◆ 2 x RJ-45 port ◆ 1 x COM port ◆ 1 x VGA port ◆ 1 x ID Switch button
 Front Panel I/O	<ul style="list-style-type: none"> ◆ 2 x USB 2.0/1.1 ports
 Front Panel LED/Buttons	<ul style="list-style-type: none"> ◆ 1 x Power button/LED ◆ 1 x ID button/LED ◆ 1 x HDD status LED ◆ 2 x LAN LEDs ◆ 1 x Reset button ◆ 1 x NMI button
 I/O Controller	<ul style="list-style-type: none"> ◆ iTE IT8720F Super I/O chip
 Hardware Monitor	<ul style="list-style-type: none"> ◆ System voltage detection ◆ CPU/System temperature detection ◆ CPU/System fan speed detection ◆ CPU/System fan speed control <p>* Whether the CPU/system fan speed control function is supported will depend on the CPU/system cooler you install.</p>
 BIOS	<ul style="list-style-type: none"> ◆ 1 x 16 Mbit flash ◆ Phoenix BIOS
 Environment Ambient Temperature	<ul style="list-style-type: none"> ◆ Operating Temperature: 5°C to 35°C ◆ Non-operating Temperature: 0°C to 50°C
Relative Humidity	<ul style="list-style-type: none"> ◆ 10-80% operating Humidity at 30°C
 System Dimension	<ul style="list-style-type: none"> ◆ 430Wx43.5Hx710D (mm)
 Electrical Power Supply	<ul style="list-style-type: none"> ◆ Fixed 1U PSU 500W 100-240VAC at 80% efficiency

* 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 replace any component.

- Back up all important system and data files before performing any hardware configuration.
- 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

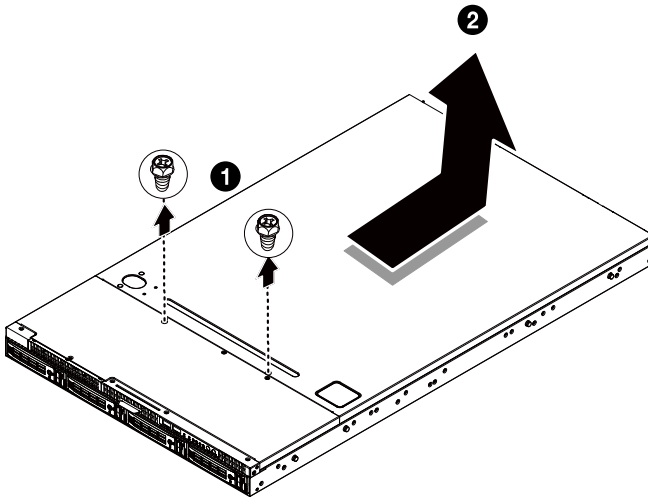


Before you remove or install the system cover

- 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 chassis cover.
2. Push down the indentation located at the side of the back chassis and slide toward to remove the back chassis cover.



2-2 Installing the CPU



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

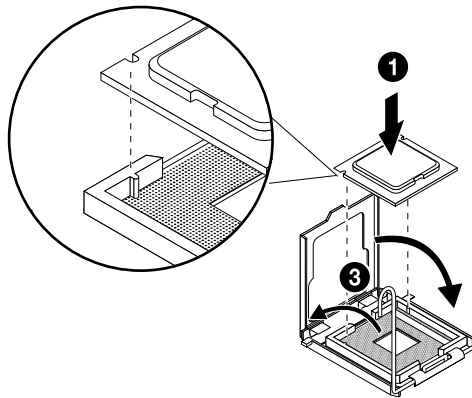
- Make sure that the motherboard supports the CPU.
- Always turn off the computer and unplug the power cord from the power outlet before installing the CPU to prevent hardware damage.
- Unplug all cables from the power outlets.
- Disconnect all telecommunication cables from their ports.
- Place the system 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:

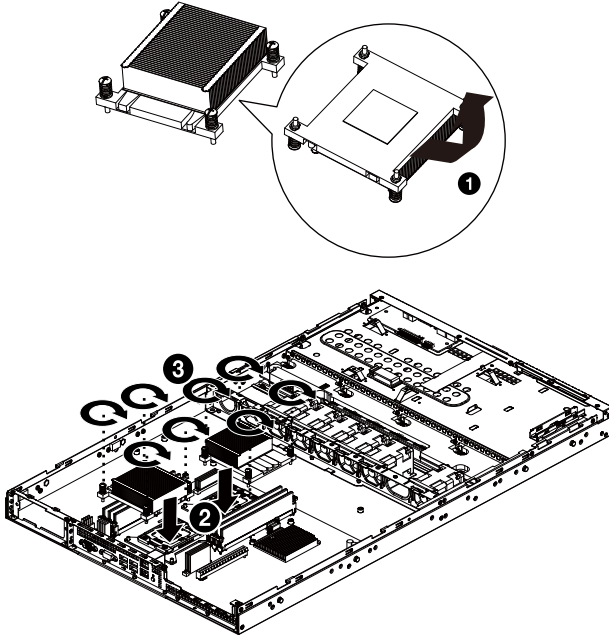
1. Raise the metal locking lever on the socket.
2. Push down the indentation located at the side of the back chassis and slide toward to remove the back chassis cover.



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.



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

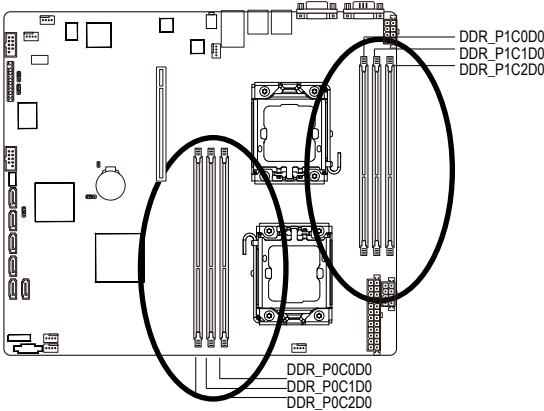
This motherboard provides four DDR3 memory sockets and supports Dual Channel Technology. After the memory is installed, the BIOS will automatically detect the specifications and capacity of the memory. Enabling Dual Channel memory mode will double the original memory bandwidth.

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

Channel A: DDR_P0C0D0, DDR_P1C0D0

Channel B: DDR_P0C1D0, DDR_P1C1D0

Channel C: DDR_P0C2D0, DDR_P1C2D0



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

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

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

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

2-4-2 Installing a Memory

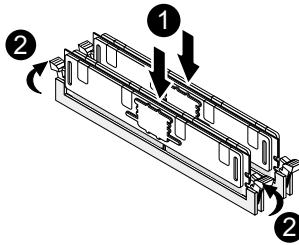


Before installing a memory module, make sure to turn off the computer and unplug the power cord from the power outlet to prevent damage to the memory module.

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.

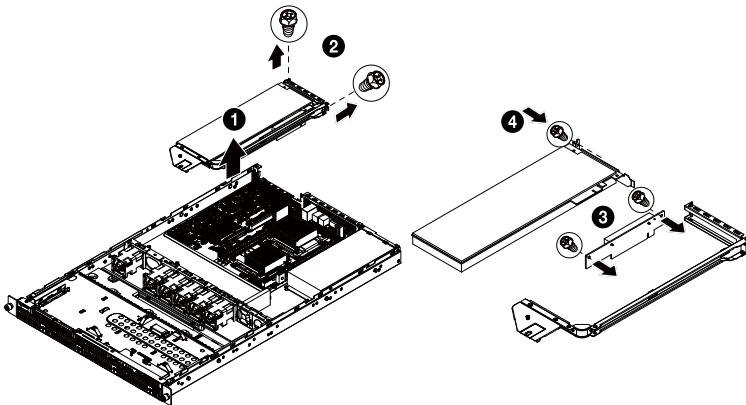
Failure to observe these warnings could result in personal injury or damage to equipment.



- 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. Lift the riser bracket slightly, then pull it out from the server chassis.
2. Loosen the riser bracket screws.
3. Attach the mini card to the riser bracket and secure the mini card with screws.
4. 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.
5. Align the riser bracket to the system module.



2-6 Installing the Hard Disk Drive

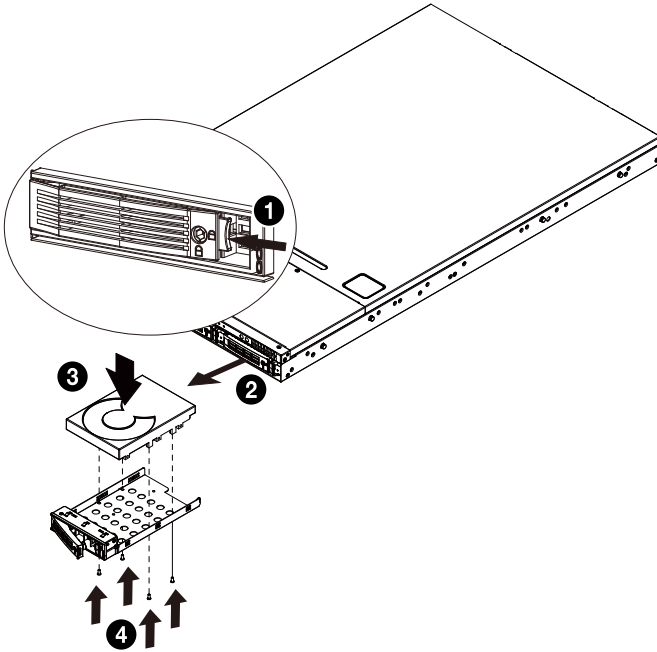


Read the following guidelines before you begin to install the Hard disk drive:

- 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.

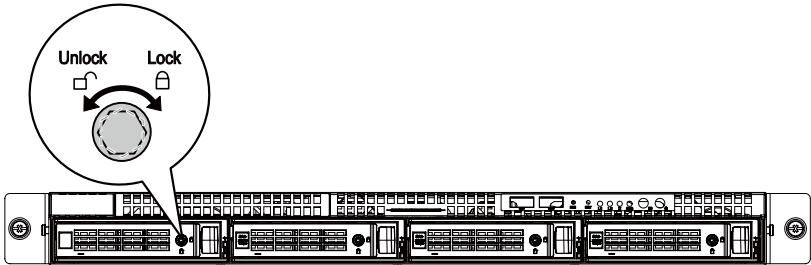
Follow these instructions to Hard disk drive:

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 the screws. Slide the blank into the bay until it locks into place.
5. Engage the HDD Security Lock. For detail instruction, please see the following section.



2-6-1 Hard Disk Drive Security Lock

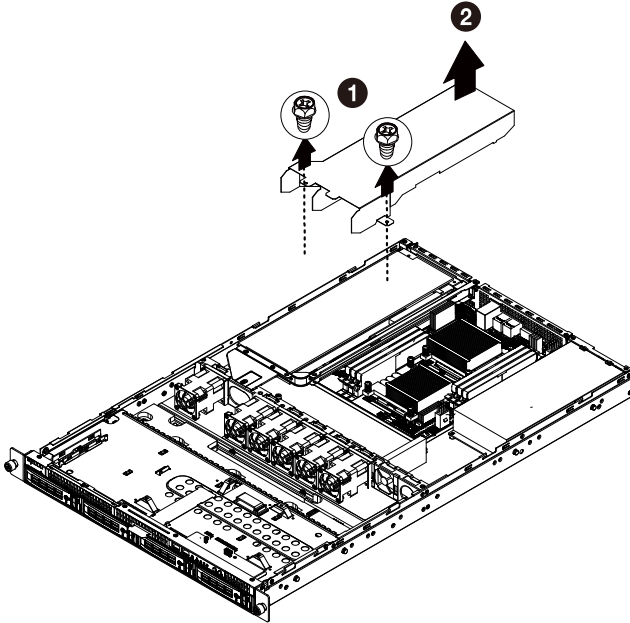
The HDD bays incorporate a security screw to prevent accidental HDD release. To engage the lock, turn the security screw clock-wise toward the Lock symbol. To disengage the lock, turn the security screw counter clock-wise toward the Unlock symbol as shown.



2-7 Removing and Installing the Fan Duct

Follow these instructions to remove/install the fan duct:

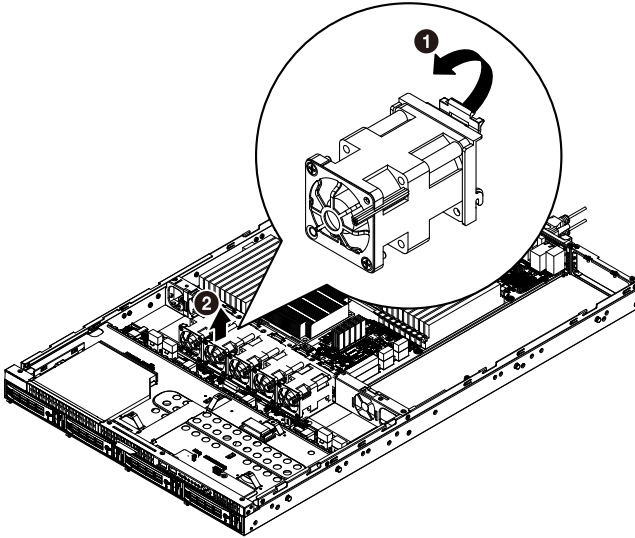
1. Loosen and remove the screws securing the fan duct.
2. Lift up to remove the fan duct
3. To install the fan duct, align the fan duct with the guiding groove. Push down the fan duct into chassis until its firmly seats



2-8 Replacing the FAN Assembly

Follow these instructions to replace the fan assembly:

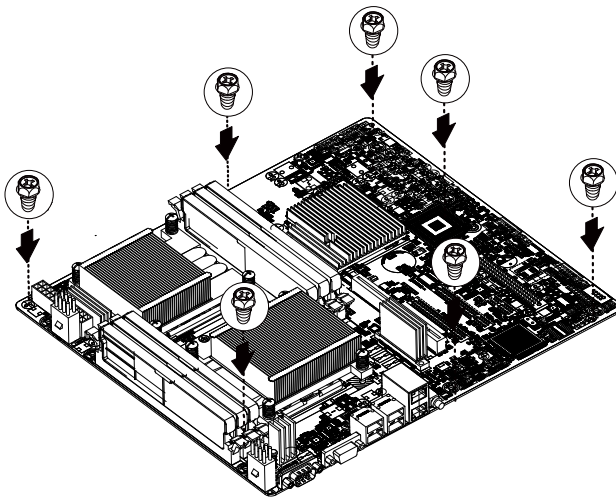
1. Remove the fan assembly pulling the rear edge in the direction of the arrow.
2. Lift up the fan assembly from the chassis.
3. Reverse the previous steps to install the replacement fan assembly.



2-9 Replacing the Motherboard

Follow these instructions to replace the motherboard:

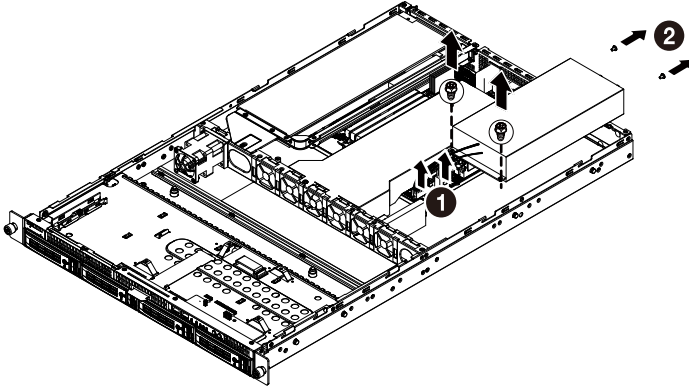
1. Remove the chassis cover. See Removing the Chassis Cover on page 11.
2. Remove the fan duct from the chassis by pulling the rear edge in the direction of the arrow. Remove the processor, heat sink, memory module, and PCI assembly. See previous sections for detail instruction.
3. Disconnect the power, SATA, front panel, and mainboard cable connectors.
4. Remove the seven (7) screws securing the mainboard in place.
5. Lift the mainboard out of the chassis in the direction of the arrow, front edge first, to clear the I/O ports.
6. Insert the replacement mainboard, rear edge first, to locate the I/O ports.
7. Replace the seven (7) screws to secure the mainboard in place.



2-10 Replacing the Power Supply

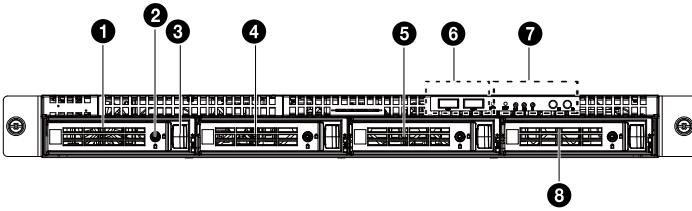
Follow these instructions to replace the power supply:

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



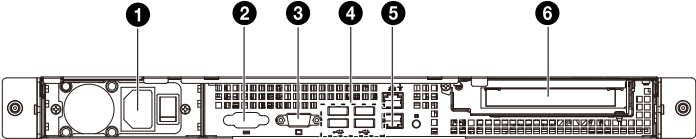
Chapter 3 System Appearance

3-1 Front View



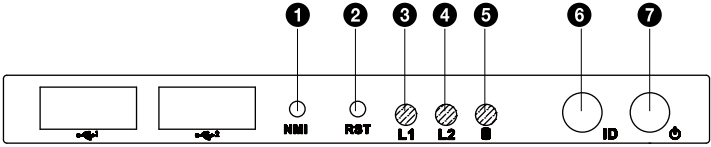
No.	Description
1	HDD bay
2.	HDD bay lock
3.	HDD front release button
4.	HDD bay
5.	HDD bay
6.	Front USB 2.0 ports
7.	Front Panel LEDs and buttons
8.	HDD bay

3-2 Rear View



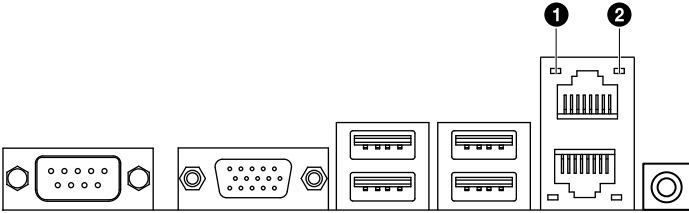
No.	Decription
1	Power module
2.	Serial port
3.	VGA port
4.	USB 2.0 ports
5.	RJ-45 LAN ports
6.	Full-height riser card bay

3-3 Front Panel LED and Buttons



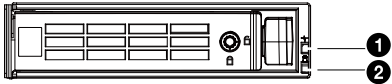
No.	Name	Color	Status	Description
1	NMI button			
2	Reset button			
3.	LAN1 LED	Green	On	Link between system and network or no access
		Green	Blink	Network access
4.	LAN2 LED	Green	On	Link between system and network or no access
		Green	Blink	Network access
5.	HDD Status LED	Green	On	HDD access
		N/A	Off	Idle
6.	ID button and LED	Blue	On	System identification is active
		N/A	Off	System identification is disabled
7.	Power button and LED	Green	On	Power supply is on
		Green	Blink	Power supply is in standby mode
		N/A	Off	Power supply is off or AC input voltage is out of normal operating range.

3-4 Rear System LAN LEDs



No.	Name	Color	Status	Description
1	Connection/ Speed LED	Orange	On	Linking at 1 Gbps data rate
		Green	On	Linking at 100 Mbps data rate
		N/A	Off	Linking at 10 Mbps data rate
2.	Activity LED	Green	Blink	Data transmission or receiving is occurring
		Green	On	No data transmission

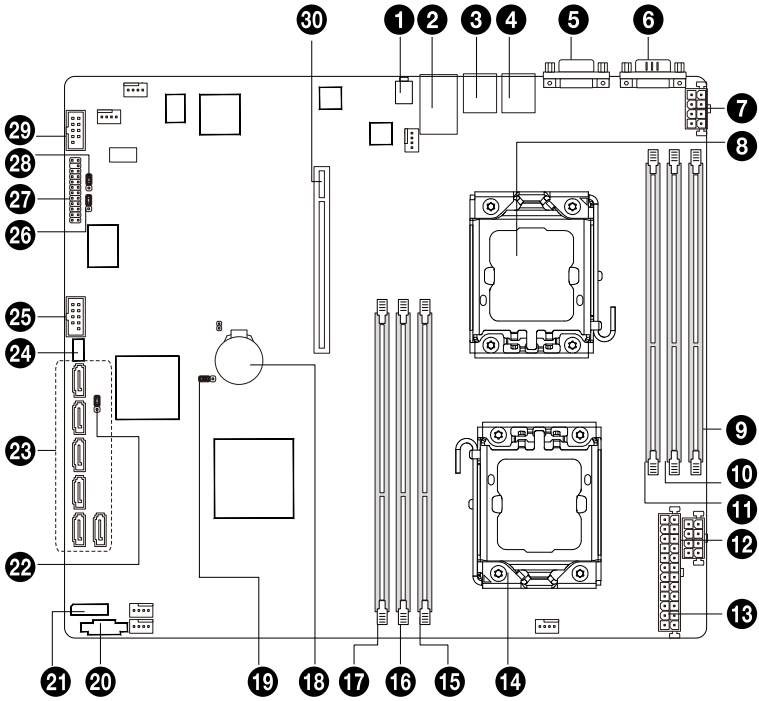
3-5 Hard Disk Drive LEDs



Description	SATA HDD LEDs	
	Green	Red
HDD Prsent	On	Off
HDD Access	Blink (4Hz)	Off
HDD Failure	Off	On
HDD Removed	Off	On
HDD connected and rebuilding data	On	Blink (1Hz)
HDD locate	Blink (4Hz)	Blink (4Hz)

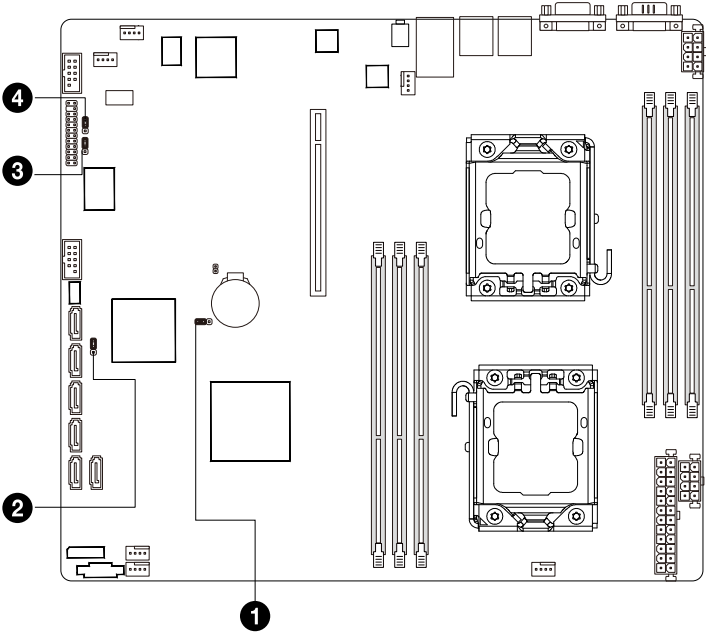
Chapter 4 Motherboard Components

4-1 GA-7TCSV3 Motherboard Components



No	Code	Description
1	ID_SW	ID switch
2	GBE1_2	RJ45 LAN ports
3	USB1	USB ports
4	USB2	USB ports
5	VGA1	VGA port
6	COM1	Serial port
7	SSI_2X4P1	8 pin power connector
8	CPU1	Intel LGA1366 socket (Secondary CPU)
9	DDR_P1C2D0	Channel C slot 0 (for secondary CPU)
10	DDR_P1C1D0	Channel B slot 0 (for secondary CPU)
11	DDR_P1C0D0	Channel A slot 0 (for secondary CPU)
12	SSI_2X4P2	8 pin power connector
13	ATX_12V1	24 pin power connector
14	CPU_FAN1	CPU1 fan cable connector
15	CPU0	Intel LGA1366 socket (Primary CPU)
16	DDR_P0C0D0	Channel A slot 0 (for primary CPU)
17	DDR_P0C1D0	Channel B slot 0 (for primary CPU)
18	DDR_P0C2D0	Channel C slot 0 (for primary CPU)
19	CLR_CMOS	Clear CMOS jumper
20	PSM11	PM Bus connector
21	HDDBPB1	HDD back plane LED connector
22	PASS_DIS	Password clear jumper
23	SATA0~5	SATA cable connectors
24	SGPIO2	SGPIO connector
25	F_USB1	Front USB connector
26	BIOS_RVCR	BIOS recovery jumper
27	F_PANEL1	Front panel connector
28	CLR_RTC	Clear RTC jumper
29	COM2	Serial cable connector
30	PCI-E_6	PCI-E slot 6 (x16 slot)

4-2 Jumper Setting



No.	Jumper Code	Jumper Setting
1.	CLR_CMOS (Clearing CMOS Jumper)	1-2 Close: Normal operation (Default setting)
		2-3 Close: Clear CMOS data
2.	PASS_DIS (Skip Supervisor Password Jumper)	1-2 Close: Normal operation. (Default setting)
		2-3 Close: Skip supervisor password.
3.	BIOS_RVCR (BIOS Recovery Jumper)	1-2 Close: Normal operation (Default setting)
		2-3 Close: BIOS recovery mode.
4.	CLR_RTC (Clearing RTC Jumper)	1-2 Close: Normal operation (Default setting)
		2-3 Close: Clear RTC status