OPEN
Industry Standard, Flexible Architecture

GREEN
Less Heat, Less Power Consumption

STABLE
Robust Design, Quality Parts

Stable and
Reliable Solution

Server/Workstation
Motherboard

1U2E Series

User Manual

English

Version 1.0
Published March 2022

Copyright Notice:

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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.

CALIFORNIA, USA ONLY

The Lithium battery adopted on this motherboard contains Perchlorate, a toxic substance controlled in Perchlorate Best Management Practices (BMP) regulations passed by the California Legislature. When you discard the Lithium battery in California, USA, please follow the related regulations in advance.
"Perchlorate Material-special handling may apply, see www.dtsc.ca.gov/hazardouswaste/perchlorate"

ASRock Rack's Website: www.ASRockRack.com

Setting up the Server in a Restricted Access Location

- Access can only be gained by service persons or by users who have been instructed about the reasons for the restrictions applied to the location and about any precautions that shall be taken.
- Access is through the use of a tool or lock and key, or other means of security, and is controlled by the authority responsible for the location.
- Leave enough clearance (25 inches in the front and 30 inches in the back of the rack) to allow the front door to be opened completely and to allow for sufficient airflow.
- This product is for installation merely in a Restricted Access Location.
- This product is not suitable for use with visual display work place devices according to §2 of the the German Ordinance for Work with Visual Display Units.

Replaceable Batteries

CAUTION
RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS

Warning

When removal of the chassis lid required for servicing:
- Turn off power and unplug any power cords/cables, and
- Reinstall the chassis lid before restoring power.

Important Safety Instructions

Pay close attention to the following safety instructions before performing any of the operation. Basic safety precautions should be followed to protect yourself from harm and the product from damage:

- Operation of the product should be carried out by suitably trained, qualified, and certified personnel only to avoid risk of injury from electrical shock or energy hazard.
- Disconnect the power cord from the wall outlet when installing or removing main system components, such as the motherboard and power supply unit.
- Place the system on a stable and flat surface.
- Use extreme caution when working with high-voltage components.
- When handling parts, use a grounded wrist strap designed to prevent static discharge.
- Keep the area around the system clean and clutter-free.
- Keep all components and printed circuit boards (PCBs) in their antistatic bags when not in use.
- Handle a board by its edges only; do not touch its components, peripheral chips, memory modules or contacts.

Contents

Chapter 1 Introduction

Thank you for purchasing 1U2E Series, a reliable barebone system produced under ASRock Rack's consistently stringent quality control. It delivers excellent performance with robust design conforming to ASRock Rack's commitment to quality and endurance.

Because the hardware specifications might be updated, the content of this documentation will be subject to change without notice. In case any modifications of this documentation occur, the updated version will be available on ASRock Rack's website without further notice. If you require technical support related to this product, please visit our website for specific information about the model you are using.
ASRock Rack's Website: www.ASRockRack.com

1.1 Shipping Box Contents

Item	Quantity	
	1U2E-C252	1U2E-X570
1U2E Series Barebone (1U form factor)	1	1
System Board (MB)*	1	1
Power Supply Unit*	1	1
System Fans*	4	4
2.5" HDD Backplanes (BPB)*	1	1
Front Panel Board (FPB)*	1	1
Slide Rail	1	1
Accessory Box	1	1
Quick Installation Guide	1	1

** The components are pre-installed.*

If any items are missing or appear damaged, contact your authorized dealer.

English

1.2 Specifications

1U2E Series	
System Physical Status	
Form Factor	1U Rackmount
Dimension (D x W x H)	393.2 x 430 x 43.5 mm (15.5" x 16.93" x 1.71")
Support MB Size	mATX (E3C252D4U / X570D4U)
Front Panel	
Button	• Power On button • System reset button
LED	• Power LED • Hard drive activity LED • 2 x Network activity LEDs • System event LED
I/O Port	2 x USB 2.0 ports
Drive Bay / Storage	
Front Side	External: 2 x 2.5" SATA/NVMe drive bays Internal: 1 fixed 3.5" SATA drive bay or a slim ODD (optional)
System Cooling	
Fan	4 PWM Hot-swap 40 x 28 mm fans
Power Supply	
Type	Single PSU
Output Watts	315W
Efficiency	80-PLUS Gold

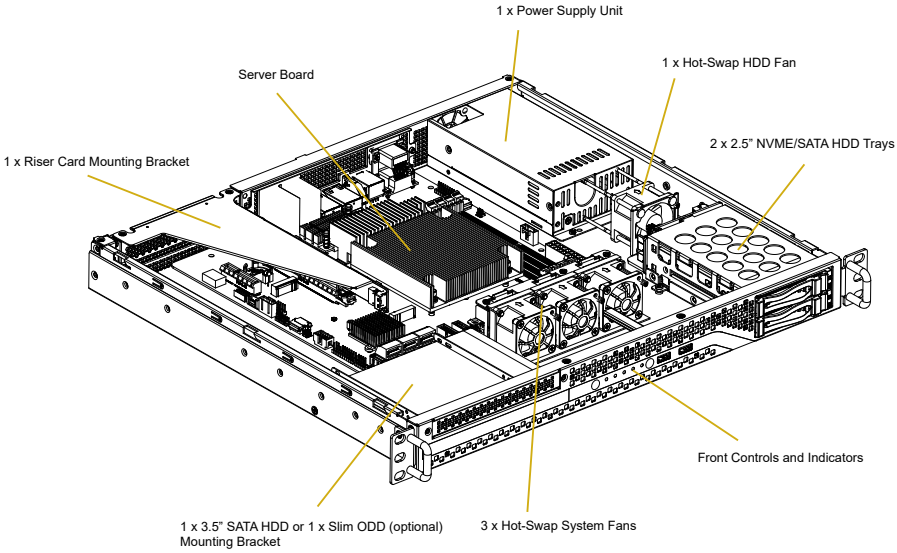
**Please be noted that the functions are supported depending on the type of the server board.*

Please refer to the user manual of the motherboard you use for detailed information about motherboard components and features.

Chapter 2 Server System Overview

This chapter provides diagrams showing the location of important components of the server system.

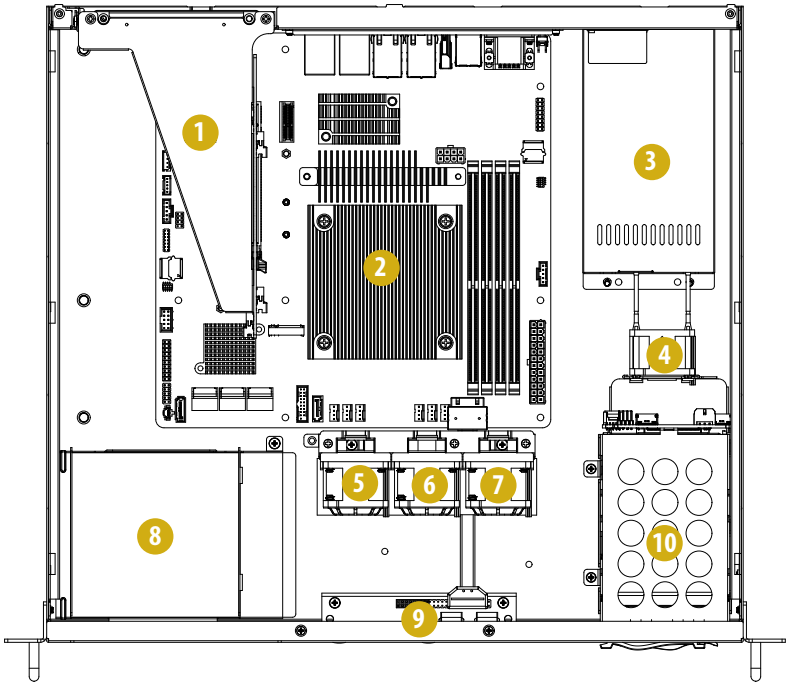
2.1 System Components



The illustrations shown in this manual are examples only, the actual system may differ slightly .

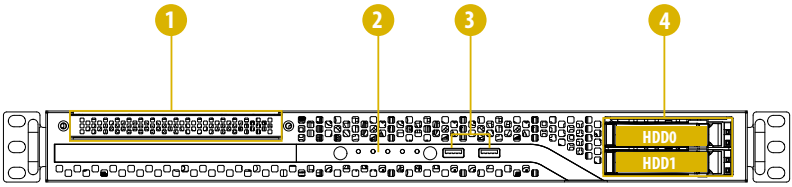
English

2.2 Internal Features



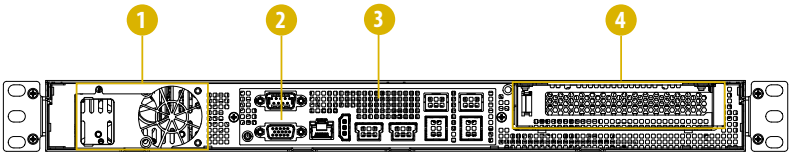
No.	From
1	1 x Riser Card Mounting Bracket *(RB1U4SL_G4_RDV riser card installed)*
2	Serverboard
3	1 x Power Supply Unit (PSU)
4	System Fan 1 (FAN1)
5	System Fan 4 (FAN4)
6	System Fan 3 (FAN3)
7	System Fan 2 (FAN2)
8	3.5" SATA HDD (HDD2) or Slim ODD (optional)
9	Front Panel Board (FPB)
10	2 x 2.5" SATA/NVME HDD (HDD0/HDD1)

2.3 System Front Panel



No.	Description
1	1 x Slim Optical Disk Drive (ODD) (optional)
2	Control Panel Buttons and LEDs
3	2 x USB 2.0 Ports
4	2 x 2.5" SATA/NVME HDD Trays

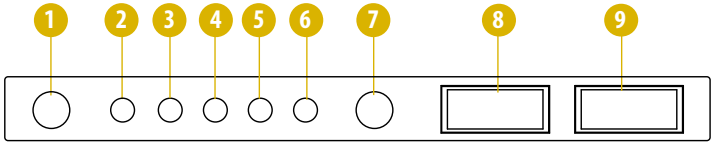
2.4 System Rear Panel



No.	Description
1	1 x Power Supply Unit
2	I/O Shield (depends on the specification of the server board)
3	Rear Vent
4	1 x Riser Card Mounting Bracket *(RB1U4SL_G4_RDV riser card installed)*

2.5 Front Control Panel Buttons and LEDs

Front Control Panel



No.	Description
1	Power Button
2	Power Status LED
3	HDD Status LED
4	LAN1 Activity LED
5	LAN2 Activity LED
6	System Status LED
7	System Reset Button
8	USB 2.0 Port (USB_1)
9	USB 2.0 Port (USB_2)

**Please be noted that the functions are supported depending on the type of the server board.*

There are two push buttons located on the front of the chassis. These are a power on/off and a reset button (in order from left to right).

Power Button

Press the power switch button to toggle the system power on and standby/sleep modes. To remove all power from the system completely, disconnect the power cord from the server.

System Reset Button

When the system is completely unresponsive, press the system reset button to reboot the server without shutting it off and initialize the system.

Status LED Definitions

The control panel located on the front of the chassis has five LEDs. These LEDs provide you with critical information related to different parts of the system.

Power LED	
Status	**Description**
Blue	Power on
Off	Power off

HDD Status LED	
Status	**Description**
Blinking Yellow	HDD access
Off	HDD idle

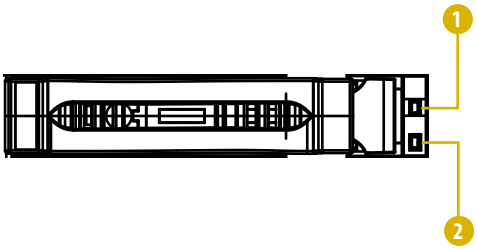
LAN1 LED	
Status	**Description**
Blue	Link between system and network or no access
Blinking Blue	Network access

LAN2 LED	
Status	**Description**
Blue	Link between system and network or no access
Blinking Blue	Network access

System Status LED	
Status	**Description**
Off	Running or normal operation
Red	At least one sensor has critical alert

2.6 Drive Tray LEDs

Two LEDs are located on each 2.5" HDD tray. These are a hard disk drive activity LED and a hard disk drive status indicator LED (in order from top to bottom).



No.	Description
1	HDD ACT LED
2	HDD STATUS LED

Status LED Definitions

HDD ACT LED	
Status	**Description**
Solid Green	HDD active
Blinking Green	HDD accessing or reading -
Off	No HDD

HDD STATUS LED	
Status	**Description**
Off	Normal
Red	HDD failed *(1U2E-X570 not supported)*

Chapter 3 Hardware Installation and Maintenance

This chapter helps you assemble the chassis and install components.

Before You Begin

Before you work with the server, pay close attention to the "Important Safety Instructions" at the beginning of this manual.

1. Make sure the server is powered off.
   Power down the server if it is still running.
   (1) Press the Power button to power off the server from full-power mode to standby-power (sleep) mode. The Power LED at the front turns from solid green to blinking green.
   (2) Disconnect the power cord first from the AC outlet and then from the server. The power LED turns off.

> ⚠ *The server is not completely powered down when you press the Power button on the front panel. The Power button lets the server toggle between Power On and Standby (Sleep) modes. Some internal circuitry remain active in the Standby mode. To remove all power from the system completely, be sure to disconnect the power cord from the server.*

2. Ensure you have a clean and stable working environment. Avoid dust and dirt because contaminants may cause malfunctions.
3. Ground yourself properly before touching any system component. A discharge of static electricity may damage components. Wear a grounded wrist strap if available.

Installing Procedures

The followings are prerequisite to be installed.

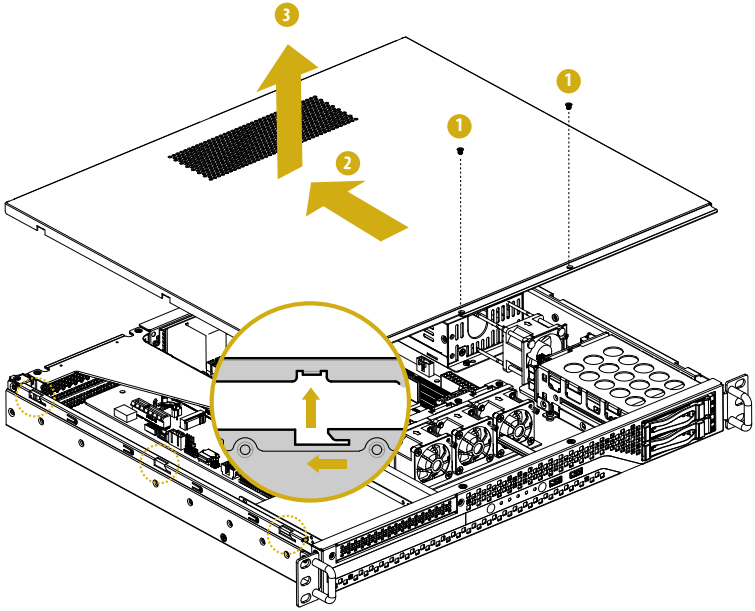
- 2.5" or 3.5" HDD(s)
- Power Supply Unit (Pre-installed)
- System and HDD Fans (Pre-installed)
- Server Board (Pre-installed)

> ⚠ *1. Some components are already pre-installed. Simply properly connect the relavant cables before or after installation. See the Quick Installation Guide for more details.*
> *2. Refer to the user manual of the server board you use for instructions on how to install server board components.*

3.1 Server Top Cover

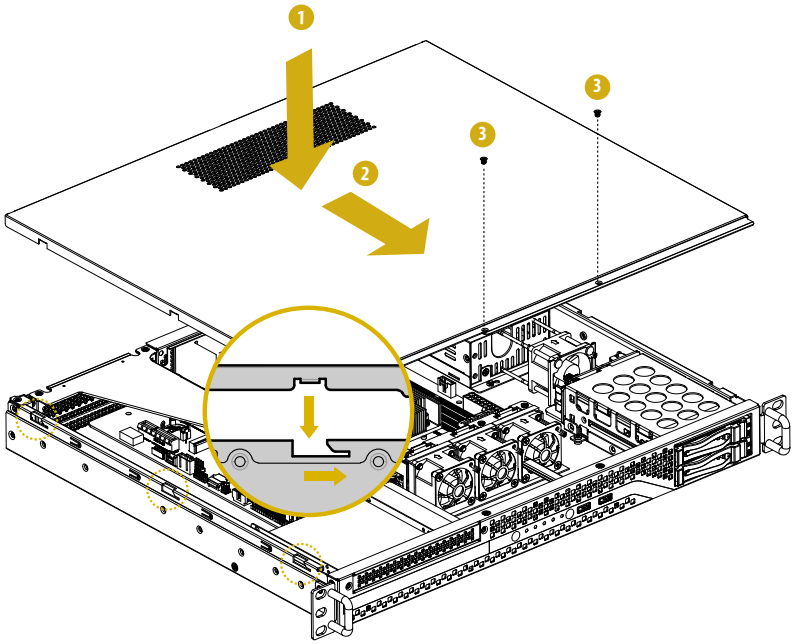
Removing the Server Top Cover

> 1. *Before removing the top cover, power off the server and unplug the power cord.*
> 2. *The system must be operated with the chassis top cover installed to ensure proper cooling.*



1. Remove the screws that secure the top cover to the chassis.
2. Push the top cover toward the rear of the chassis to remove the cover from the locked position.
3. Lift up and remove the top cover.

Installing the Server Top Cover

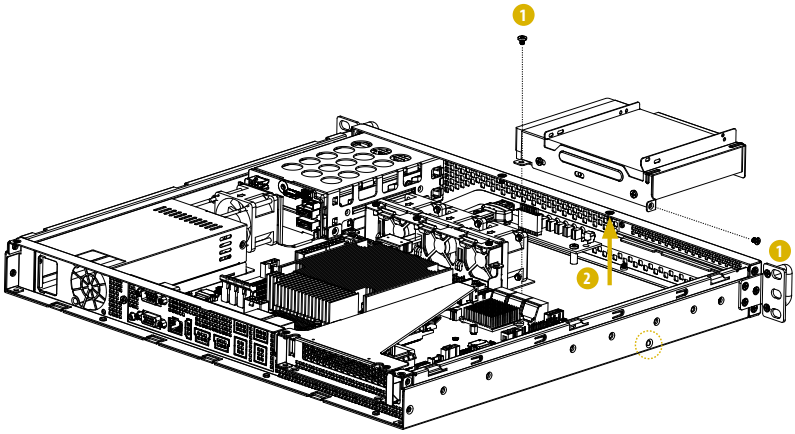


1. Lower the top cover on the chassis, making sure the side latches align with the cutouts.
2. Slide the top cover toward the front.
3. Secure the top cover with the screws.

3.2 3.5" Hard Drive

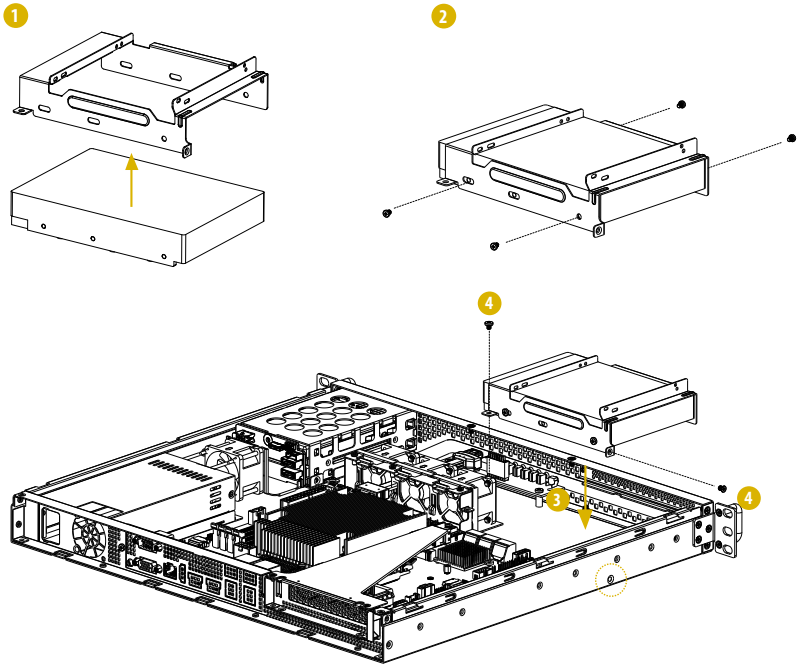
Removing a 3.5" Hard Drive Carrier from the Chassis

1. Release the screws that secure the hard drive carrier to the chassis.
2. Lift up and remove the carrier.



Installing a 3.5” Hard Drive to the Hard Drive Carrier

1. Place the 3.5" HDD into the carrier with the printed circuit board side facing down. Carefully align the mounting holes in the hard drive and the carrier.
2. Secure the hard drive using the screws.
3. Place the drive carrier, with a 3.5" HDD installed, back to the chassis with screw holes aligned.
4. Secure it to the chassis with screws.

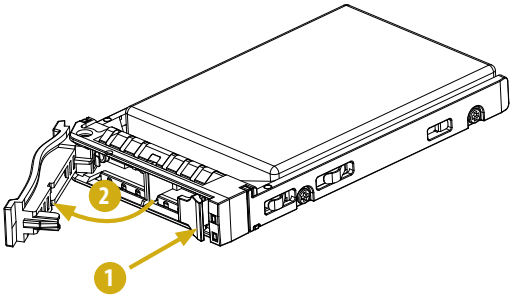


3.3 2.5” Hard Drive

The system supports 2.5" hard drives. Two 2.5" hard drive trays are located on the front of the system.

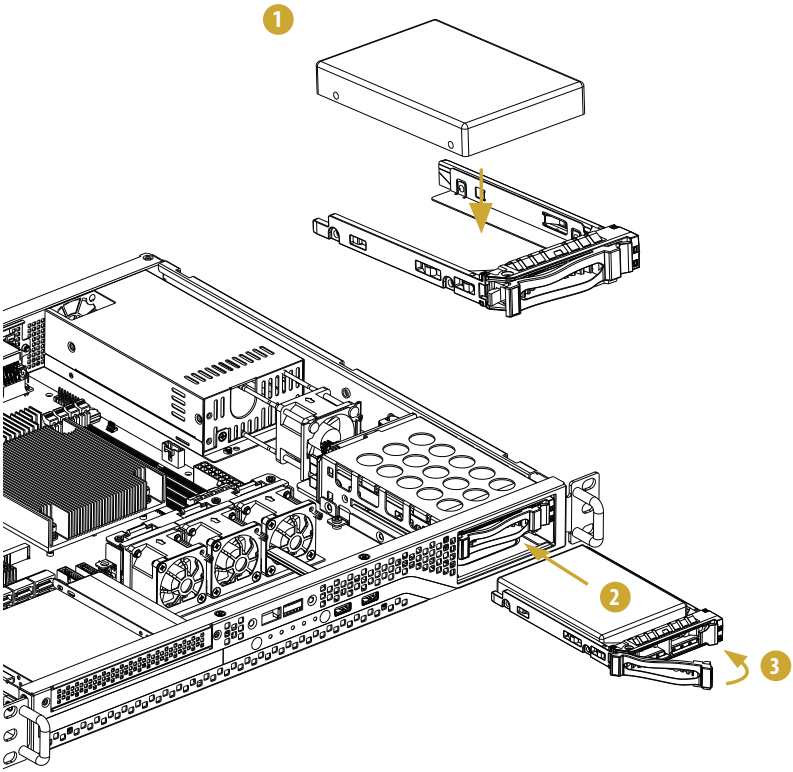
Removing 2.5” Hard Drive Trays from the Chassis

1. Press the locking lever latch on the drive tray to unlock the retention lever.
2. Rotate the lever out and away from the module bay and pull the hard drive out of the HDD tray.



Installing a 2.5” Hard Drive to the Hard Drive Tray

1. Place a 2.5" HDD into the bracket with the printed circuit board side facing down.
2. Slide the drive tray into the HDD bay until the drive is fully seated.
3. Push in the locking lever to lock the HDD tray into place.



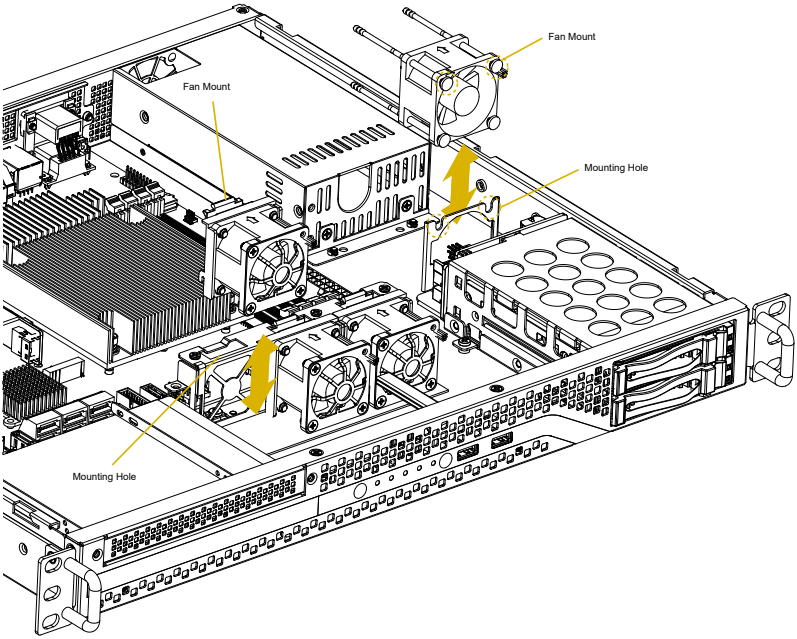
3.4 System Fan

System fans are required for the cooling in the system. Please make sure that the chassis top cover is properly installed in order for the cooling air to circulate properly through the chassis and cool the system and components.

If a fan fails, the ambient air temperature in the chassis will rise. Replace any failed fan immediately.

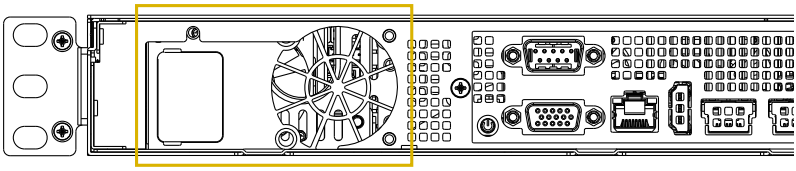
Replacing the Simple-Swap Fan

1. Remove the cover. Unplug the fan connecter and remove the failed fan.
2. Align the mounting holes on the fan bar with the fan mounts on the replacement fan.
3. Gently place the fan on the fan bar. Make sure the fan is well seated.
4. Plug the fan wires into the correct fan header.



3.5 Power Supply

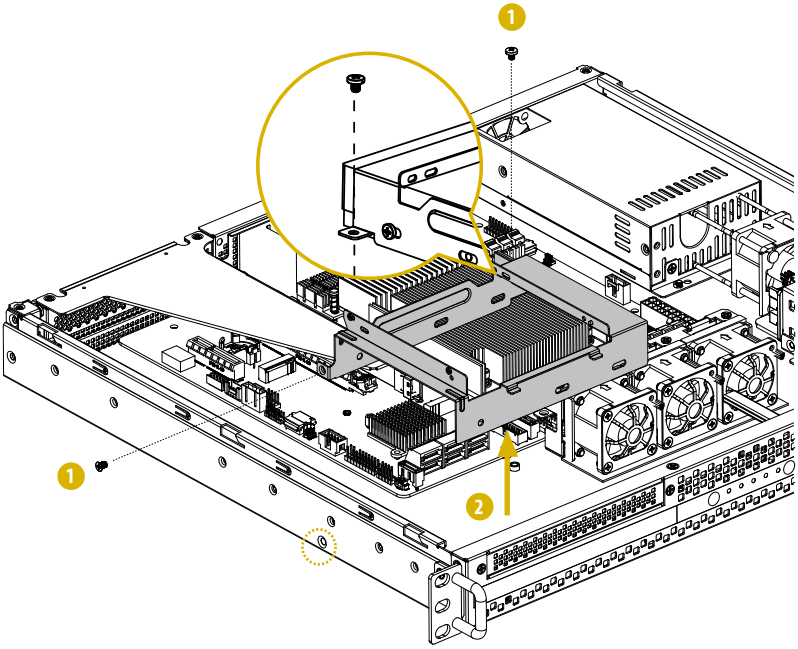
This system has a single 315 watt power supply and can accommodate one AC power supply in the bay at the rear of the chassis. If the power supply unit fails, the system will shut down and you will need to replace the power supply unit.



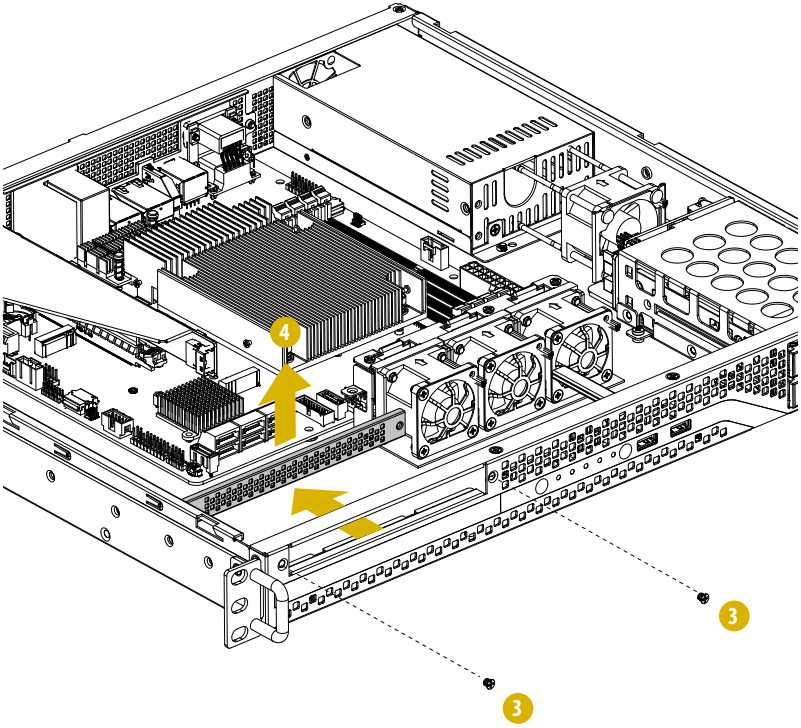
3.6 Slim Optical Drive (optional)

Removing the Optical Drive Carrier and the Blanking Plate from the Chassis

1. Release the screws that secure the optical drive carrier to the chassis.
2. Lift up and remove the carrier.



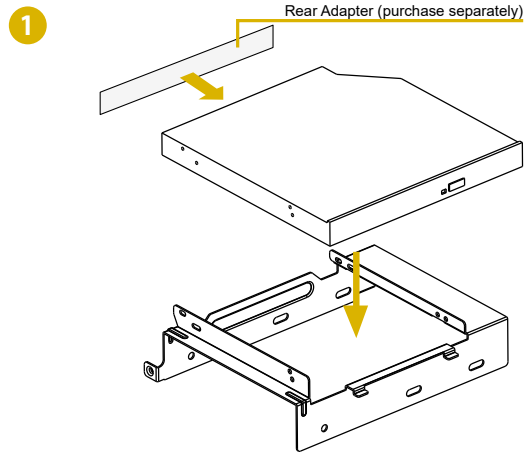
3. Release the screws that secure the dust filter blanking plate to the chassis.
4. Push to remove the blanking plate and keep it for reassembly.



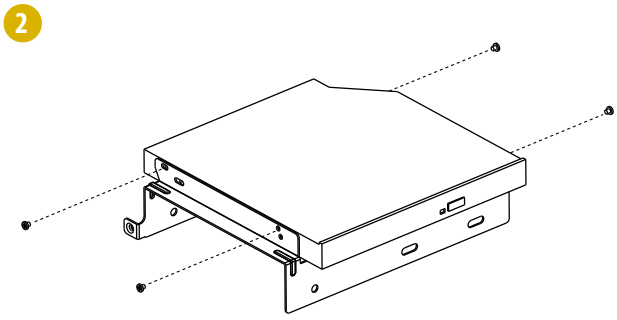
Installing an Optical Drive to the Chassis

To use a slim optical drive, you need to purchase a rear SATA/Power adapter seperately. Before installation, secure the rear adapter to the bare drive with screws.

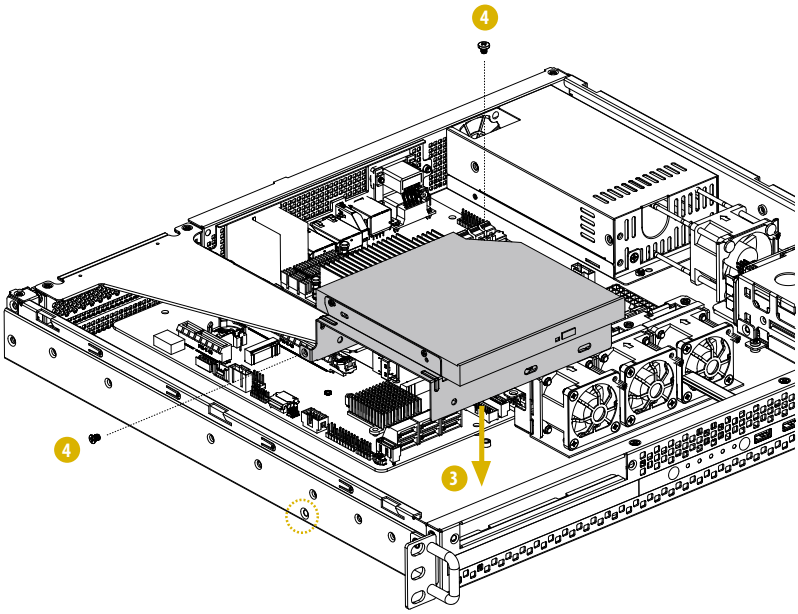
1. Place the slim optical drive into the carrier with the connector end toward the rear side of the carrier where the mounting holes are located.
   Carefully align the mounting holes in the hard drive and the carrier.



2. Secure the optical drive using four screws.



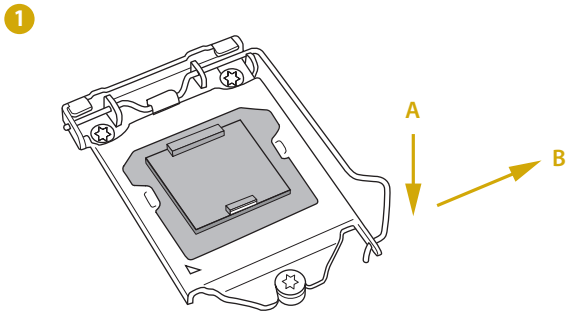
3. Place the optical drive assembly back to the chassis with screw holes aligned.
4. Secure the ptical drive assembly to the chassis with two screws.

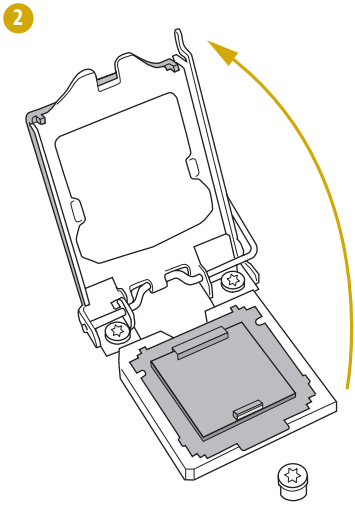


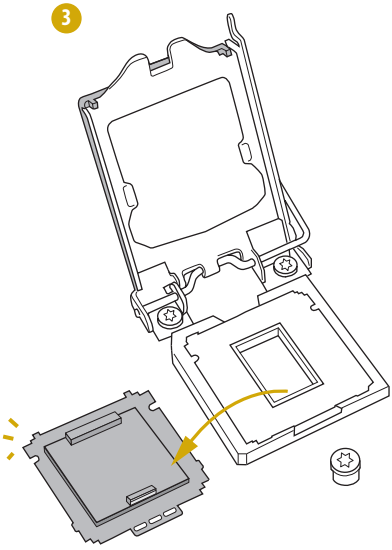
Appendix A

Installing the CPU (LGA 1200 Socket)

1. *Before you insert the 1200-Pin CPU into the socket, please check if the PnP cap is on the socket, if the CPU surface is unclean, or if there are any bent pins in the socket. Do not force to insert the CPU into the socket if above situation is found. Otherwise, the CPU will be seriously damaged.*
2. *Unplug all power cables before installing the CPU.*







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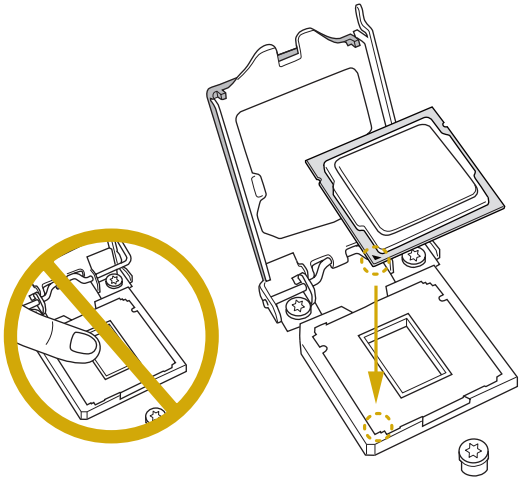

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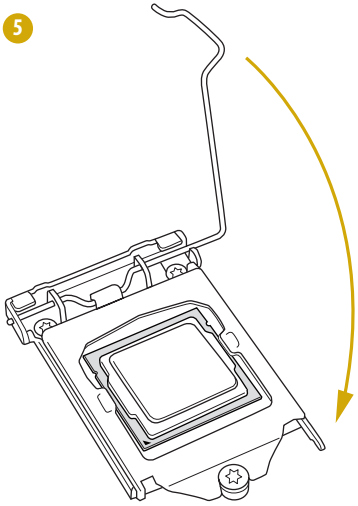

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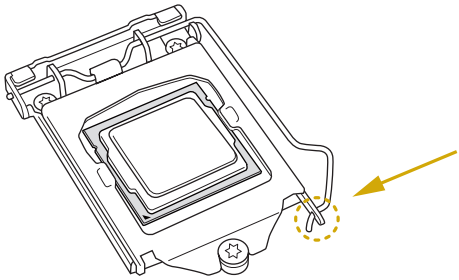
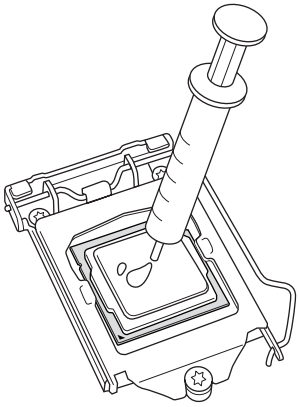
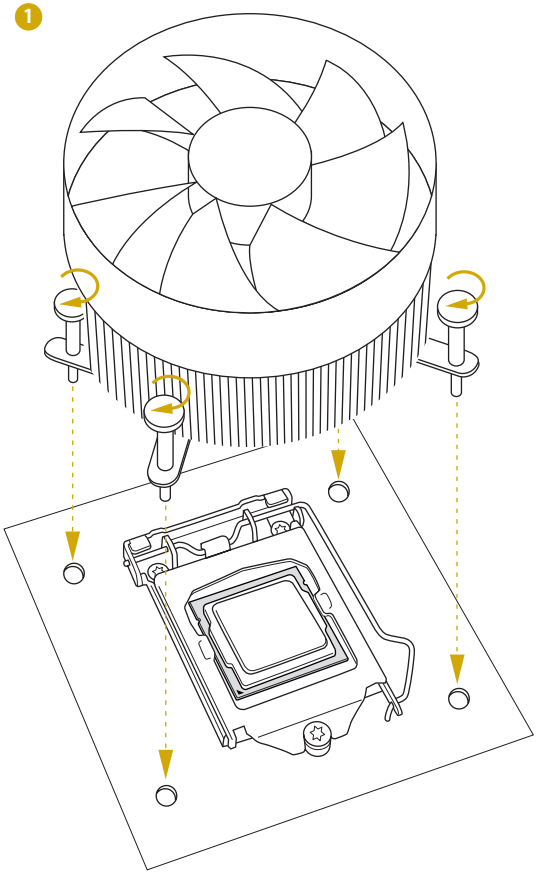


Please save and replace the cover if the processor is removed. The cover must be placed if you wish to return the motherboard for after service.

Installing the CPU Fan and Heatsink (LGA 1200 Socket)





Installing the CPU (AMD AM4 Socket)

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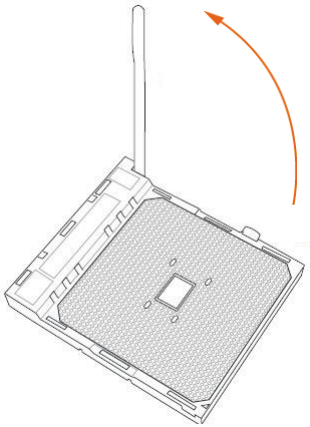

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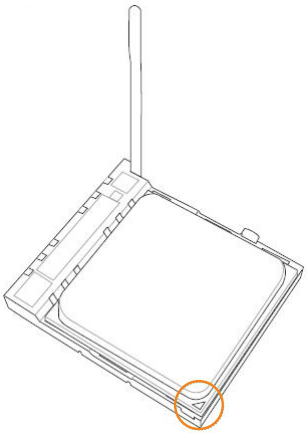


3

Installing the CPU Fan and Heatsink (AMD AM4 Socket)

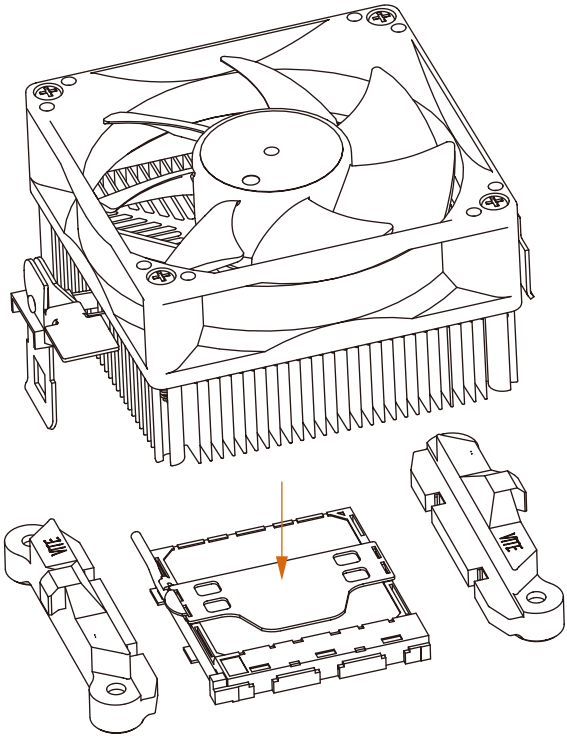
After you install the CPU into this motherboard, it is necessary to install a larger heatsink and cooling fan to dissipate heat. You also need to spray thermal grease between the CPU and the heatsink to improve heat dissipation. Make sure that the CPU and the heatsink are securely fastened and in good contact with each other.

*Please be aware of the maximum dimensions of the heatsink to be used is 116 * 83.65mm.*

1. *Please turn off the power or remove the power cord before changing a CPU or a heatsink.*
2. *Please turn off the power or remove the power cord when overheating occurs with the Renoir processor.*

Installing the CPU Box Cooler SR1

1



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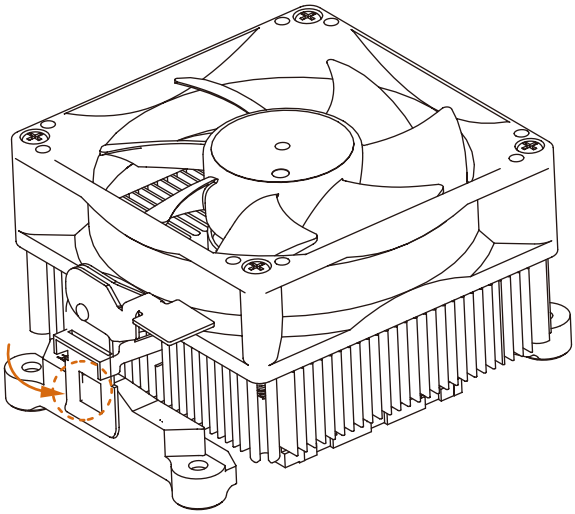
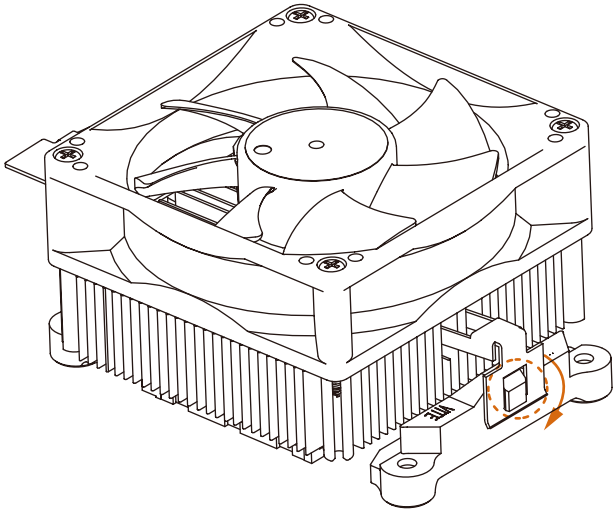


3



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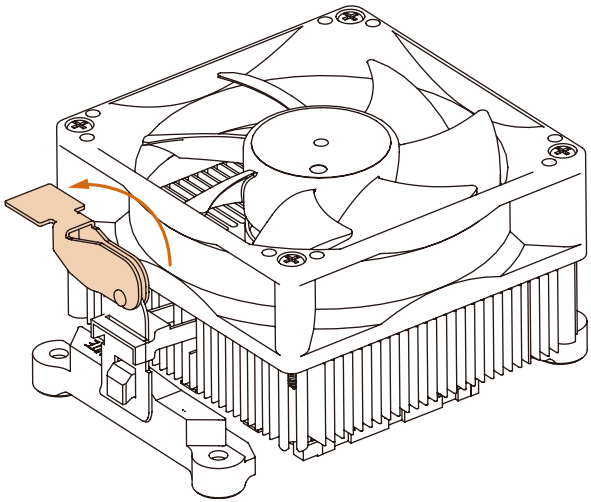
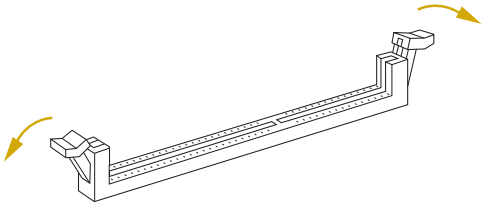


Appendix B

Installation of Memory Modules (DIMM)

The DIMM only fits in one correct orientation. It will cause permanent damage to the motherboard and the DIMM if you force the DIMM into the slot at incorrect orientation. For more information about DIMM installation, please refer to the User Manual that comes with the serverboard you use.

1



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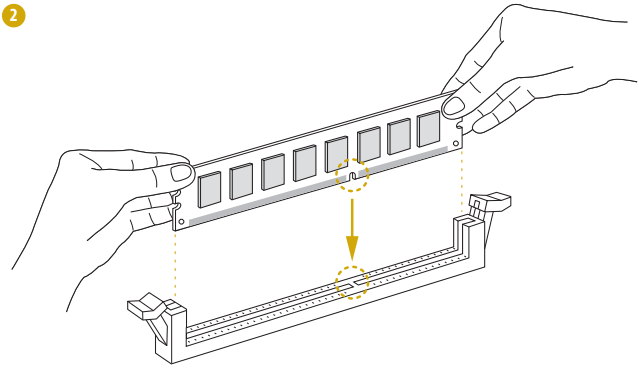

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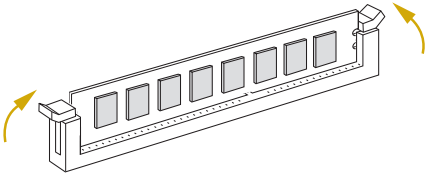
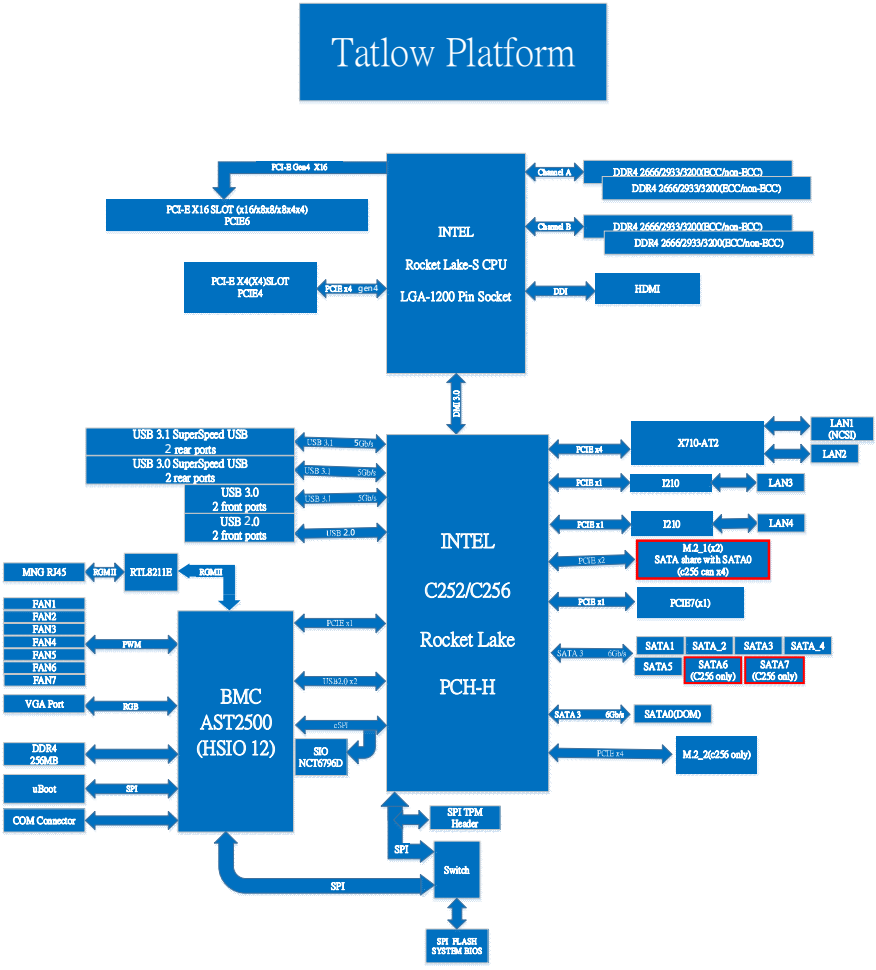


Illustrations in this User Manual are provided for reference only and may slightly differ from actual product appearances.

English

Appendix C

Block Diagram (E3C252D4U)



Block Diagram (X570D4U)