ASRock

B550 ROCK WiFi

User Manual

Contact Information

If you need to contact ASRock or want to know more about ASRock, you're welcome to visit ASRock's website at http://www.asrock.com; or you may contact your dealer for further information. For technical questions, please submit a support request form at https://event.asrock.com/tsd.asp

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Contents

Chapter 1 Introduction

Thank you for purchasing ASRock B550 Rock WiFi motherboard, a reliable motherboard produced under ASRock's consistently stringent quality control. It delivers excellent performance with robust design conforming to ASRock's commitment to quality and endurance.

Because the motherboard specifications and the BIOS software 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's website without further notice. If you require technical support related to this motherboard, please visit our website for specific information about the model you are using. You may find the latest VGA cards and CPU support list on ASRock's website as well. ASRock website http://www.asrock.com.

1.1 Package Contents

- ASRock B550 Rock WiFi Motherboard (ATX Form Factor)
- 2 x Serial ATA (SATA) Data Cables (Optional)
- 2 x ASRock WiFi 2.4/5/6 GHz Antennas (Optional)

1.2 Specifications

Platform	• ATX Form Factor • 2oz Copper PCB
CPU	• Supports AMD AM4 Socket Ryzen™ 3000, 3000 G-Series, 4000 G-Series, 5000 and 5000 G-Series Desktop Processors* * Please refer to CPU support list for details.
Chipset	• AMD B550
Memory	• Dual Channel DDR4 Memory Technology • 4 x DDR4 DIMM Slots • AMD Ryzen series CPUs (Vermeer) support DDR4 4533+(OC)/4466(OC)/4400(OC)/4333(OC)/4266(OC)/4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/3733(OC)/3600(OC)/3466(OC)/3200/2933/2667/2400/2133 ECC & non-ECC, un-buffered memory* • AMD Ryzen series CPUs (Matisse) support DDR4 4533+(OC)/4466(OC)/4400(OC)/4333(OC)/4266(OC)/4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/3733(OC)/3600(OC)/3466(OC)/3200/2933/2667/2400/2133 ECC & non-ECC, un-buffered memory* • AMD Ryzen series APUs (Cezanne) support DDR4 4733+(OC)/4666(OC)/4600(OC)/4533(OC)/4466(OC)/4400(OC)/4333(OC)/4266(OC)/4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/3733(OC)/3600(OC)/3466(OC)/3200/2933/2667/2400/2133 ECC & non-ECC, un-buffered memory* • AMD Ryzen series APUs (Renoir) support DDR4 4733+(OC)/4666(OC)/4600(OC)/4533(OC)/4466(OC)/4400(OC)/4333(OC)/4266(OC)/4200(OC)/4133(OC)/4000(OC)/3866(OC)/3800(OC)/3733(OC)/3600(OC)/3466(OC)/3200/2933/2667/2400/2133 ECC & non-ECC, un-buffered memory* • AMD Ryzen series APUs (Picasso) support DDR4 3333+(OC)/3200(OC)/2933/2667/2400/2133 non-ECC, un-buffered memory*

* For Ryzen Series APUs (Picasso, Cezanne and Renoir), ECC is only supported with PRO CPUs.
* Please refer to Memory Support List on ASRock's website for more information. (http://www.asrock.com/)
* Please refer to page 25 for AMD non-XMP memory frequency support.

- Max. capacity of system memory: 128GB
- Supports Extreme Memory Profile (XMP) memory modules
- 15μ Gold Contact in DIMM Slots

Expansion Slot

AMD Ryzen series CPUs (Vermeer and Matisse)

- 2 x PCIe x16 Slots (PCIE1: Gen4x16 mode; PCIE2: Gen3 x2 mode)*

AMD Ryzen series APUs (Cezanne and Renoir)

- 2 x PCIe x16 Slots (PCIE1: Gen3x16 mode; PCIE2: Gen3 x2 mode)*

AMD Ryzen series APUs (Picasso)

- 2 x PCIe x16 Slots (PCIE1: Gen3x8 mode; PCIE2: Gen3 x2 mode)*

* Supports NVMe SSD as boot disks

- 1 x M.2 Socket (Key E), supports type 2230 WiFi/BT PCIe WiFi module

Graphics

- Integrated AMD Radeon™ Vega Series Graphics in Ryzen Series APU* (Actual support may vary by CPU)
- 1 x HDMI 2.1, supports HDR, HDCP 2.3, 4K Ultra HD (UHD) playback and max. resolution up to 4K 60Hz*

* Picasso supports HDCP 2.2 with HDMI 2.0 Port

Audio

- 7.1 CH HD Audio (Realtek ALC897 Audio Codec)

LAN

- 2.5 Gigabit LAN 10/100/1000/2500 Mb/s
- Dragon RTL8125BG
- Supports Dragon 2.5G LAN Software
  - Smart Auto Adjust Bandwidth Control
  - Visual User Friendly UI
  - Visual Network Usage Statistics
  - Optimized Default Setting for Game, Browser, and Streaming Modes
  - User Customized Priority Control

Wireless LAN	• 802.11axe Wi-Fi 6E Module • Supports IEEE 802.11a/b/g/n/ac/ax/axe • Supports Dual-Band 2x2 with extended 6GHz band* support * Wi-Fi 6E (6GHz band) will be supported by Microsoft® Windows® 11. The availability will depend on the different regulation status of each country and region. It will be activated (for supported countries) through Windows® Update and software updates once available. * A 6GHz compatible router is required for 6E functionality. • 2 antennas to support 2 (Transmit) x 2 (Receive) diversity technology • Supports Bluetooth 5.3 • Supports MU-MIMO
USB	CPU: • 1 x USB 3.2 Gen1 Type-C (Rear) • 3 x USB 3.2 Gen1 Type-A (3 Rear (USB32_12 and USB32_3)) Chipset: • 1 x USB 3.2 Gen1 Type-C (Front) • 3 x USB 3.2 Gen1 Type-A (1 Rear (USB32_4), 2 Front) • 7 x USB 2.0 (3 Rear, 4 Front) * All USB ports support ESD Protection
Rear Panel I/O	• 2 x Antenna Ports • 1 x HDMI Port • 1 x USB 3.2 Gen1 Type-C Port • 4 x USB 3.2 Gen1 Type-A Ports • 3 x USB 2.0 Ports • 1 x RJ-45 LAN Port • HD Audio Jacks: Line in / Front Speaker / Microphone
Storage	CPU: • 1 x Hyper M.2 Socket (M2_1, Key M), supports type 2280 PCIe Gen4x4 (64 Gb/s) mode (with Vermeer, Matisse) or Gen3x4 (32 Gb/s) mode (with Cezanne, Renoir and Picasso)*

Chipset:

- 1 x Ultra M.2 Socket (M2_2, Key M), supports type 2280 SATA3 6.0 Gb/s & PCIe Gen3x4 (32 Gb/s) modes*
- 1 x M.2 Socket (M2_3, Key M), supports type 2280 PCIe Gen3x2 (16 Gb/s) mode*
- 4 x SATA3 6.0 Gb/s Connectors

* Supports NVMe SSD as boot disks
* NVMe SSD is not supported with AMD Athlon™ 3000G Processors

RAID

- Supports RAID 0, RAID 1 and RAID 10 for SATA storage devices

Connector

- 1 x SPI TPM Header
- 1 x Power LED and Speaker Header
- 1 x RGB LED Header*
- 3 x Addressable LED Headers**
- 2 x CPU Fan Connectors (4-pin) (Smart Fan Speed Control)***
- 4 x Chassis Fan Connectors (4-pin) (Smart Fan Speed Control)***
- 1 x 24 pin ATX Power Connector
- 1 x 8 pin 12V Power Connector (Hi-Density Power Connector)
- 1 x Front Panel Audio Connector
- 2 x USB 2.0 Headers (Support 4 USB 2.0 ports)
- 1 x USB 3.2 Gen1 Header (Support 2 USB 3.2 Gen1 ports)
- 1 x Front Panel Type C USB 3.2 Gen1 Header

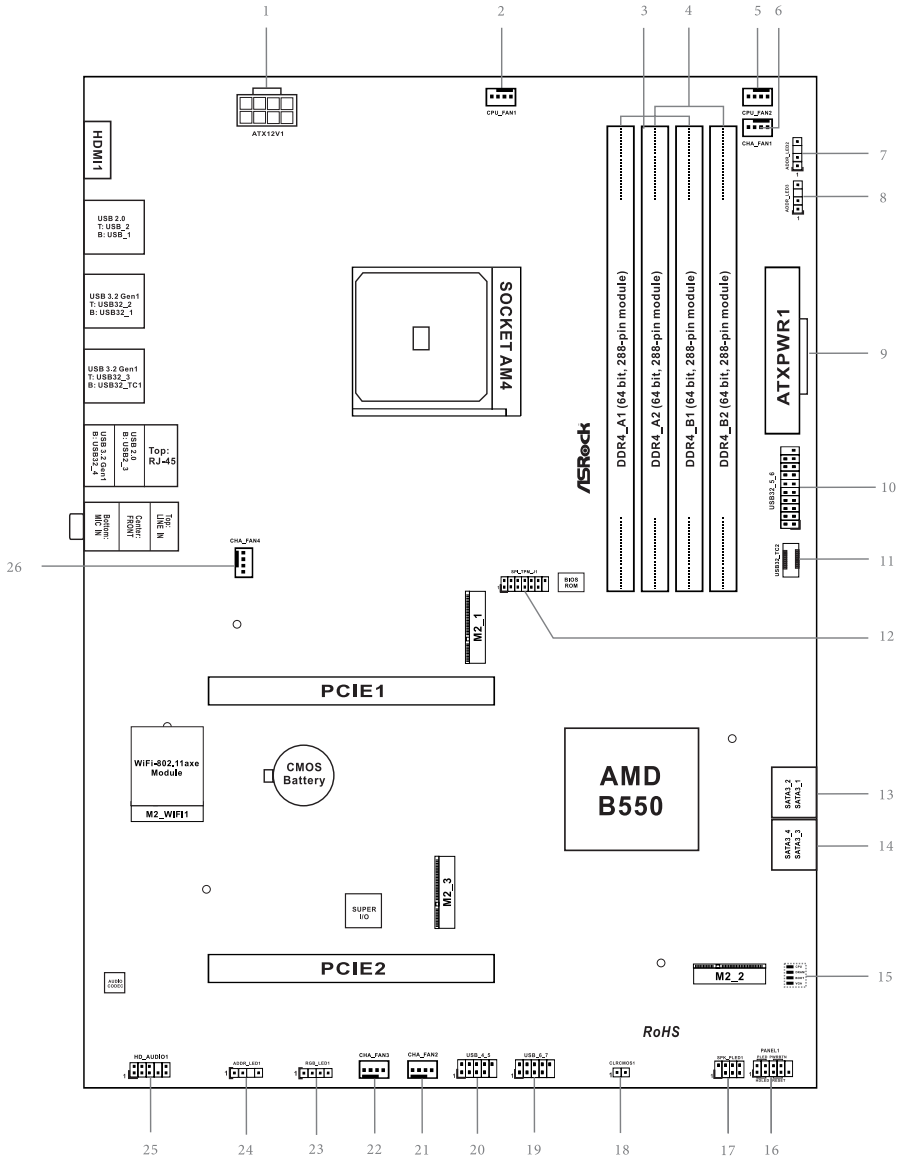
* Supports in total up to 12V/3A, 36W LED Strip
** Support in total up to 5V/3A, 15W LED Strip
*** CPU_FAN1 supports the fan power up to 1A (12W).
*** CPU_FAN2 and CHA_FAN1~4 support the fan power up to 3A (36W).
*** CPU_FAN2 and CHA_FAN1~4 can auto detect if 3-pin or 4-pin fan is in use.

BIOS Feature	• AMI UEFI Legal BIOS with GUI support
OS	• Microsoft® Windows® 10 64-bit / 11 64-bit
Certifications	• FCC, CE • ErP/EuP ready (ErP/EuP ready power supply is required)

** For detailed product information, please visit our website: http://www.asrock.com*

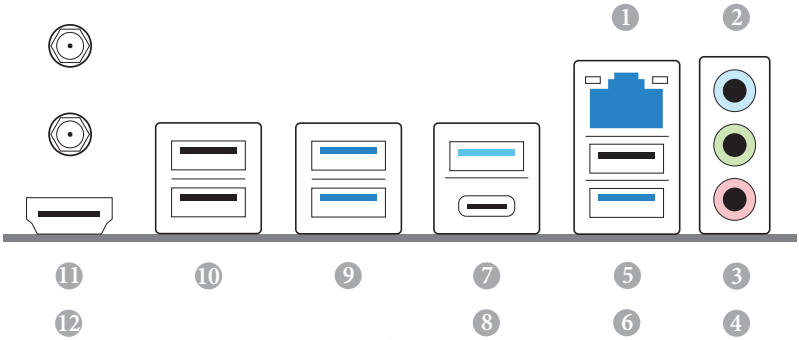
Please realize that there is a certain risk involved with overclocking, including adjusting the setting in the BIOS, applying Untied Overclocking Technology, or using third-party overclocking tools. Overclocking may affect your system's stability, or even cause damage to the components and devices of your system. It should be done at your own risk and expense. We are not responsible for possible damage caused by overclocking.

1.3 Motherboard Layout



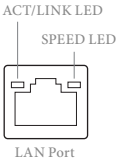
No.	Description
1	ATX 12V Power Connector (ATX12V1)
2	CPU Fan Connector (CPU_FAN1)
3	2 x 288-pin DDR4 DIMM Slots (DDR4_A1, DDR4_B1)
4	2 x 288-pin DDR4 DIMM Slots (DDR4_A2, DDR4_B2)
5	CPU Fan Connector (CPU_FAN2)
6	Chassis Fan Connector (CHA_FAN1)
7	Addressable LED Header (ADDR_LED2)
8	Addressable LED Header (ADDR_LED3)
9	ATX Power Connector (ATXPWR1)
10	USB 3.2 Gen1 Header (USB32_5_6)
11	Front Panel Type C USB 3.2 Gen1 Header (USB32_TC2)
12	SPI TPM Header (SPI_TPM_J1)
13	SATA3 Connectors (SATA3_2)(Upper), (SATA3_1)(Lower)
14	SATA3 Connectors (SATA3_4)(Upper), (SATA3_3)(Lower)
15	Post Status Checker (PSC)
16	System Panel Header (PANEL1)
17	Power LED and Speaker Header (SPK_PLED1)
18	Clear CMOS Jumper (CLRCMOS1)
19	USB 2.0 Header (USB_6_7)
20	USB 2.0 Header (USB_4_5)
21	Chassis Fan Connector (CHA_FAN2)
22	Chassis Fan Connector (CHA_FAN3)
23	RGB LED Header (RGB_LED1)
24	Addressable LED Header (ADDR_LED1)
25	Front Panel Audio Header (HD_AUDIO1)
26	Chassis Fan Connector (CHA_FAN4)

1.4 I/O Panel



No.	Description	No.	Description
1	2.5G LAN RJ-45 Port*	7	USB 3.2 Gen1 Port (USB32_3)
2	Line In (Light Blue)**	8	USB 3.2 Gen1 Type-C Port (USB32_TC1)
3	Front Speaker (Lime)**	9	USB 3.2 Gen1 Ports (USB32_12)
4	Microphone (Pink)**	10	USB 2.0 Ports (USB_12)
5	USB 2.0 Port (USB2_3)	11	HDMI Port
6	USB 3.2 Gen1 Port (USB32_4)	12	Antenna Ports

** There are two LEDs on each LAN port. Please refer to the table below for the LAN port LED indications.*

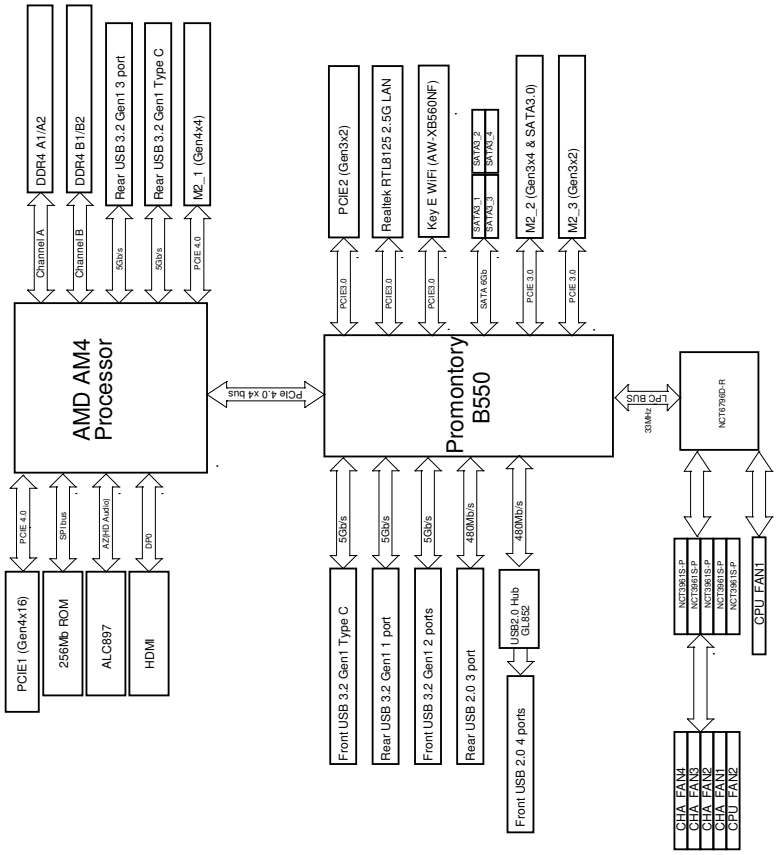


Activity / Link LED		Speed LED	
Status	**Description**	**Status**	**Description**
Off	No Link	Off	10Mbps connection
Blinking	Data Activity	Orange	100Mbps/1Gbps connection
On	Link	Green	2.5Gbps connection

** ***Function of the Audio Ports in 7.1-channel Configuration***:

Port	Function
Light Blue (Rear panel)	Rear Speaker Out
Lime (Rear panel)	Front Speaker Out
Pink (Rear panel)	Central /Subwoofer Speaker Out
Lime (Front panel)	Side Speaker Out

1.5 Block Diagram



1.6 802.11axe Wi-Fi 6E Module and ASRock WiFi 2.4/5/6 GHz Antennas

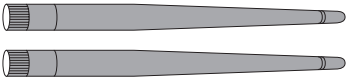
802.11axe Wi-Fi 6E + BT Module

This motherboard comes with an exclusive 802.11 a/b/g/n/ac/ax/axe Wi-Fi 6E + BT v5.3 module that offers support for 802.11 a/b/g/n/ac/ax/axe Wi-Fi 6E connectivity standards and Bluetooth v5.3. Wi-Fi 6E + BT module is an easy-to-use wireless local area network (WLAN) adapter to support Wi-Fi 6E + BT. Bluetooth v5.3 standard features Smart Ready technology that adds a whole new class of functionality into the mobile devices. BT also includes Low Energy Technology and ensures extraordinary low power consumption for PCs.

* The transmission speed may vary according to the environment.
* Wi-Fi 6E (6GHz band) will be supported by Microsoft® Windows® 11. The availability will depend on the different regulation status of each country and region. It will be activated (for supported countries) through Windows® Update and software updates once available.

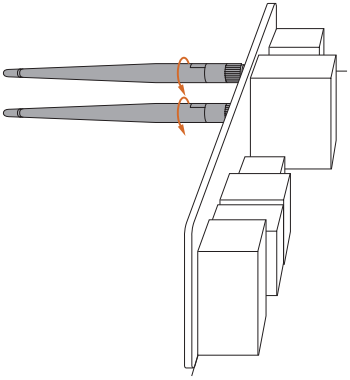
* A 6GHz compatible router is required for 6E functionality.

WiFi Antennas Installation Guide



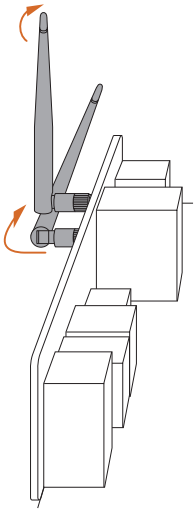
Step 1

Prepare the WiFi 2.4/5/6 GHz Antennas that come with the package.



Step 2

Connect the two WiFi 2.4/5/6 GHz Antennas to the antenna connectors. Turn the antenna clockwise until it is securely connected.



Step 3

Set the WiFi 2.4/5/6 GHz Antenna as shown in the illustration.

*You may need to adjust the direction of the antenna for a stronger signal.

Chapter 2 Installation

This is an ATX form factor motherboard. Before you install the motherboard, study the configuration of your chassis to ensure that the motherboard fits into it.

Pre-installation Precautions

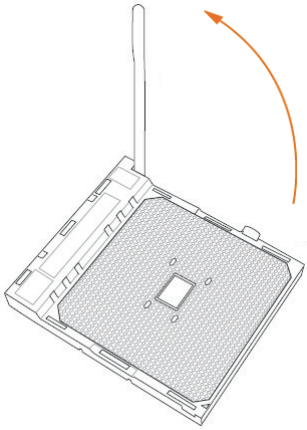
Take note of the following precautions before you install motherboard components or change any motherboard settings.

- Make sure to unplug the power cord before installing or removing the motherboard. Failure to do so may cause physical injuries to you and damages to motherboard components.
- In order to avoid damage from static electricity to the motherboard's components, NEVER place your motherboard directly on a carpet. Also remember to use a grounded wrist strap or touch a safety grounded object before you handle the components.
- Hold components by the edges and do not touch the ICs.
- Whenever you uninstall any components, place them on a grounded anti-static pad or in the bag that comes with the components.
- When placing screws to secure the motherboard to the chassis, please do not over-tighten the screws! Doing so may damage the motherboard.

2.1 Installing the CPU

Unplug all power cables before installing the CPU.

1



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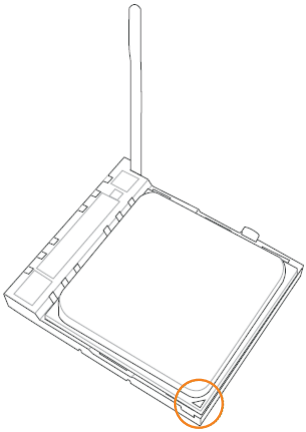

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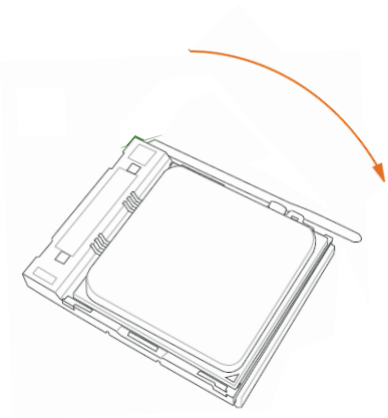


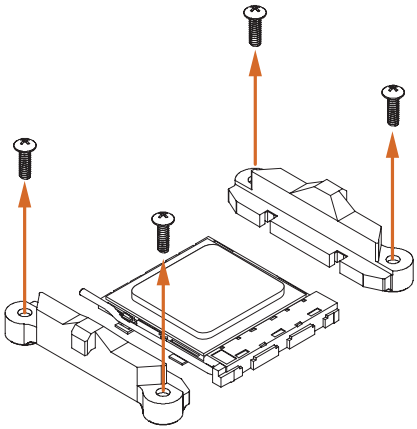
2.2 Installing the CPU Fan and Heatsink

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 turn off the power or remove the power cord before changing a CPU or heatsink.

Installing the CPU Box Cooler SR1

1



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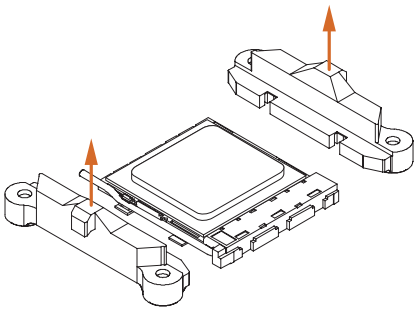

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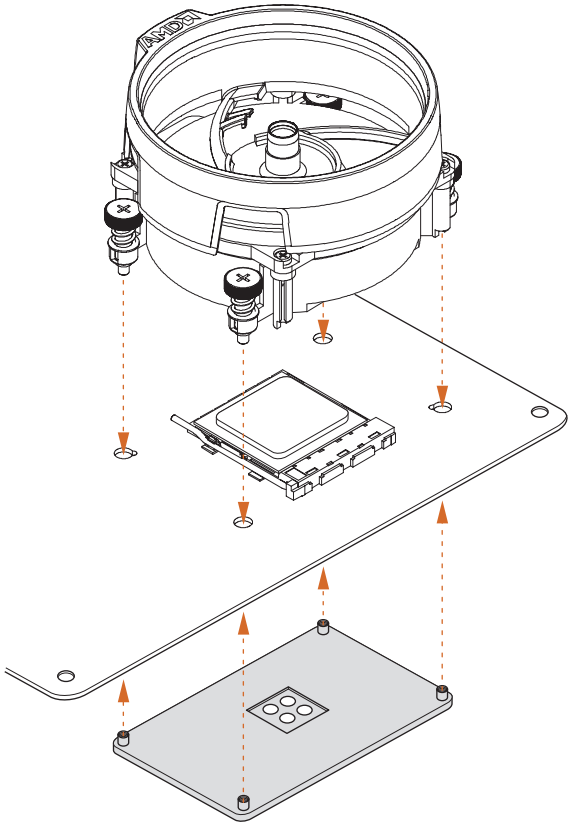

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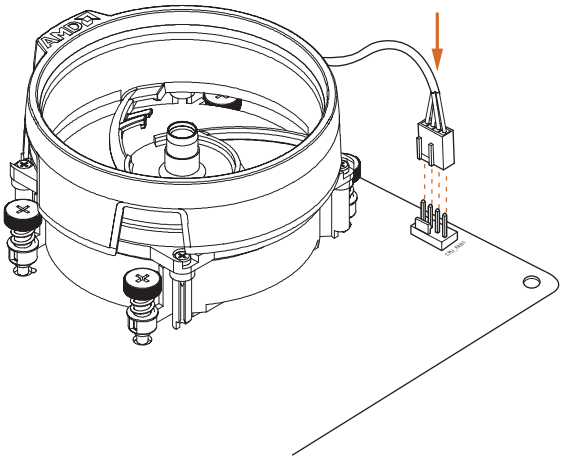
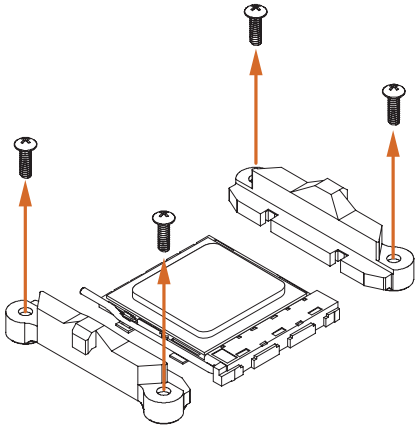


Installing the AM4 Box Cooler SR2

1



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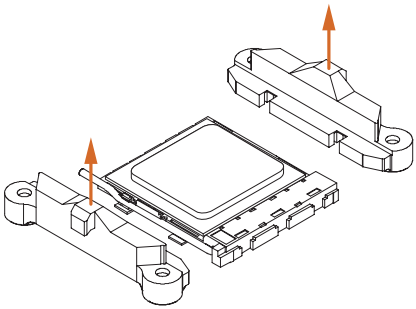

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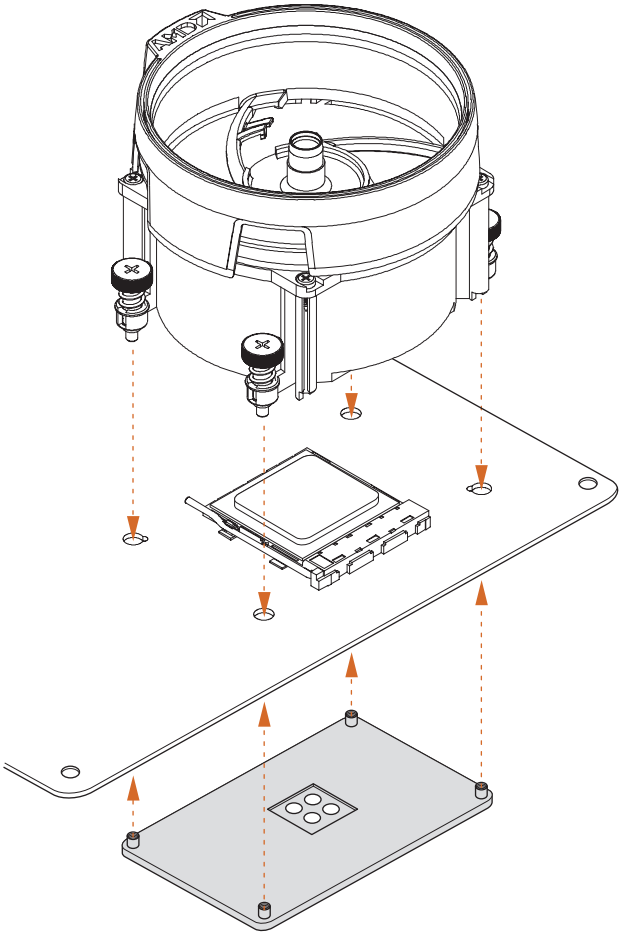

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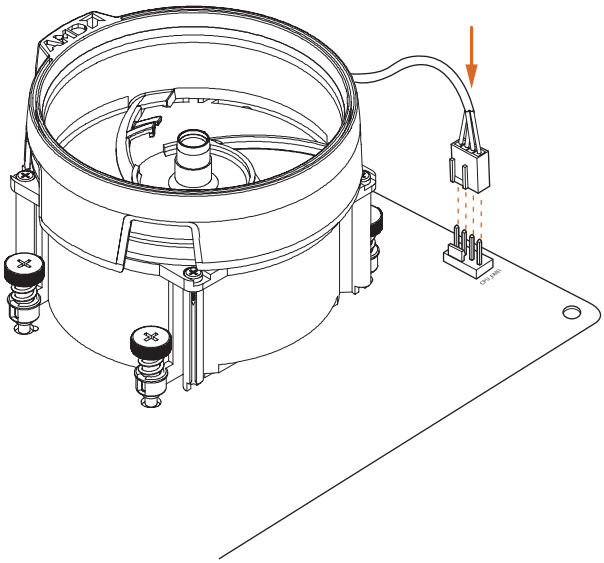
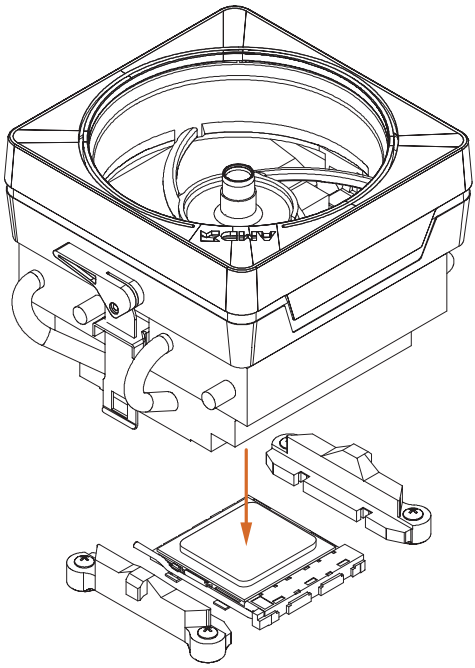


*The diagrams shown here are for reference only. The header might be in a different position on your motherboard.

Installing the AM4 Box Cooler SR3

1



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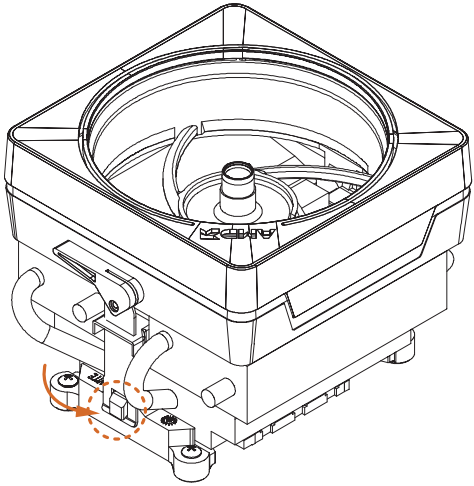

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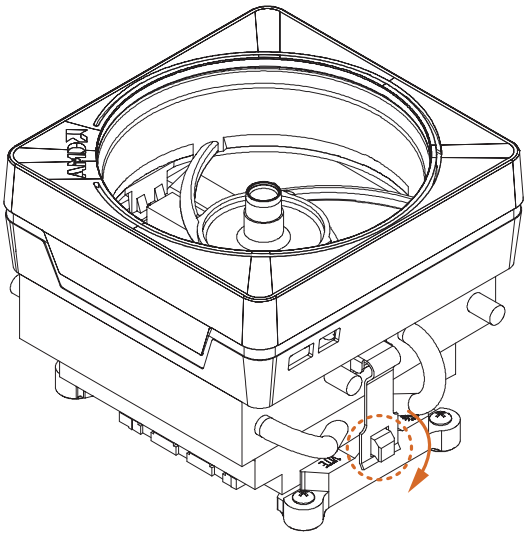

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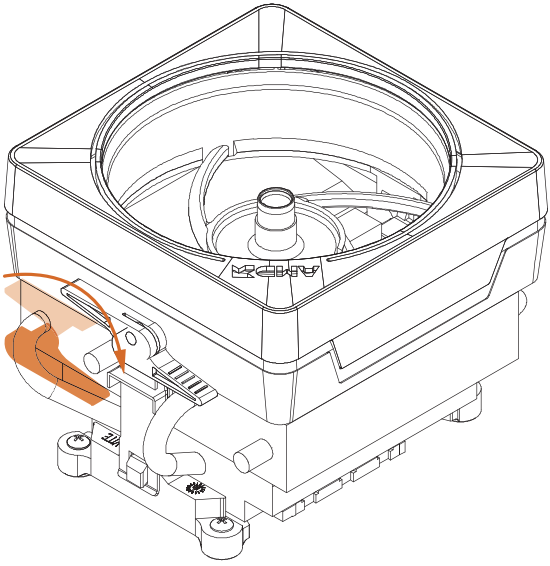

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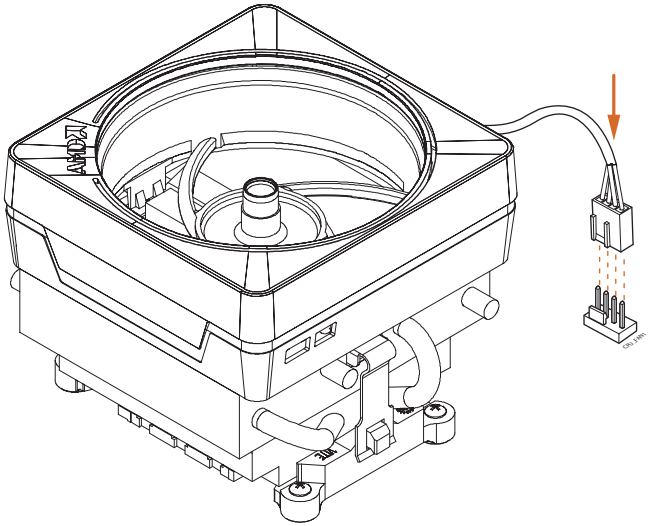

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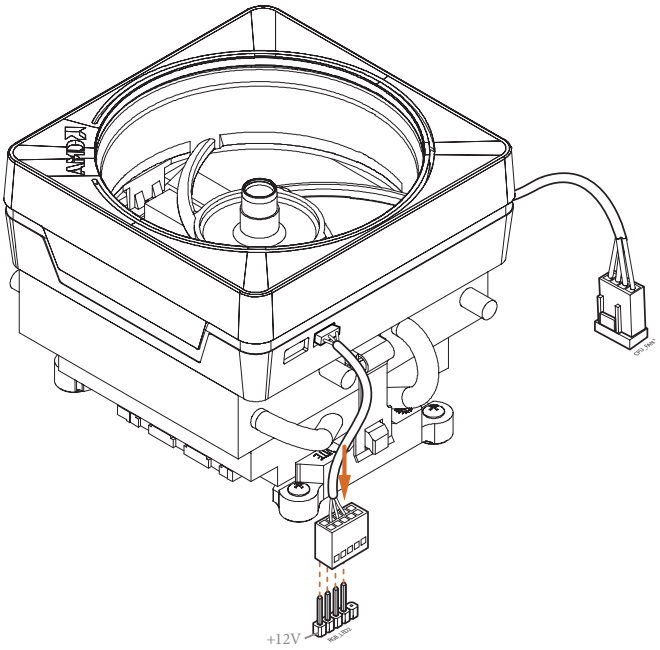


*The diagrams shown here are for reference only. The header might be in a different position on your motherboard.

2.3 Installing Memory Modules (DIMM)

This motherboard provides four 288-pin DDR4 (Double Data Rate 4) DIMM slots, and supports Dual Channel Memory Technology.

1. *For dual channel configuration, you always need to install identical (the same brand, speed, size and chip-type) DDR4 DIMM pairs.*
2. *It is unable to activate Dual Channel Memory Technology with only one or three memory module installed.*
3. *It is not allowed to install a DDR, DDR2 or DDR3 memory module into a DDR4 slot; otherwise, this motherboard and DIMM may be damaged.*

AMD non-XMP Memory Frequency Support

Ryzen Series CPUs (Vermeer and Matisse):

UDIMM Memory Slot				Frequency (Mhz)
A1	A2	B1	B2	
-	SR	-	-	3200
-	DR	-	-	3200
-	SR	-	SR	3200
-	DR	-	DR	3200
SR	SR	SR	SR	2933
SR/DR	DR	SR/DR	DR	2667
SR/DR	SR/DR	SR/DR	SR/DR	2667

English

Ryzen Series APUs (Cezanne and Renoir):

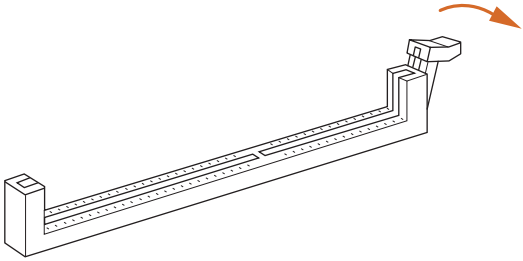
UDIMM Memory Slot				Frequency (Mhz)
A1	A2	B1	B2	
-	SR	-	-	3200
-	DR	-	-	3200
-	SR	-	SR	3200
-	DR	-	DR	3200
SR	SR	SR	SR	2933
SR/DR	DR	SR/DR	DR	2667
SR/DR	SR/DR	SR/DR	SR/DR	2667

Ryzen Series APUs (Picasso):

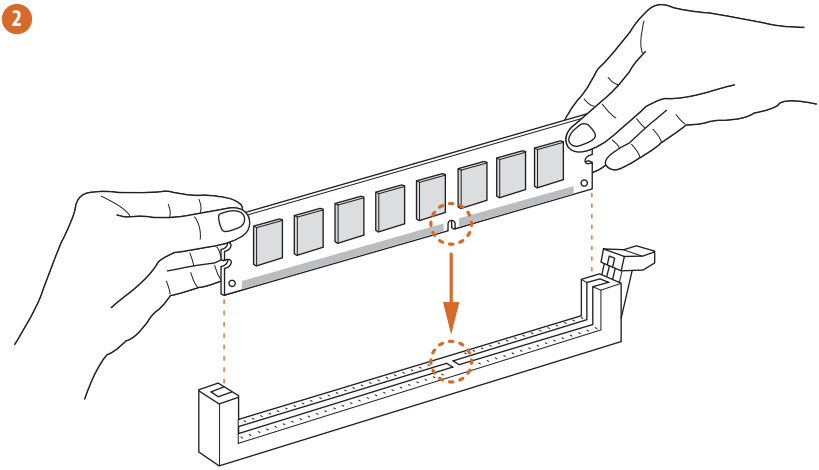
UDIMM Memory Slot				Frequency (Mhz)
A1	A2	B1	B2	
-	SR	-	-	2933
-	DR	-	-	2667
-	SR	-	SR	2667
-	DR	-	DR	2400
SR	SR	SR	SR	2133
SR/DR	DR	SR/DR	DR	1866
SR/DR	SR/DR	SR/DR	SR/DR	1866

SR: Single rank DIMM, 1Rx4 or 1Rx8 on DIMM module label
DR: Dual rank DIMM, 2Rx4 or 2Rx8 on DIMM module label

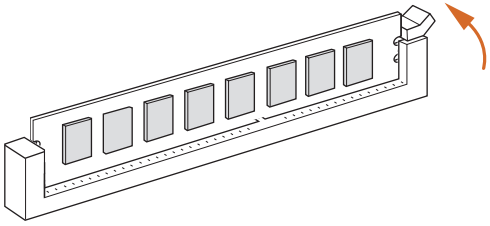
1



2

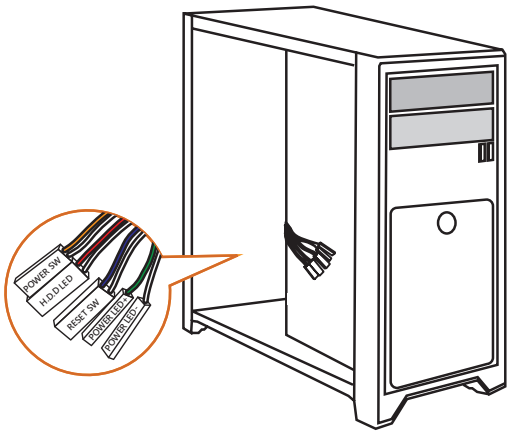


3

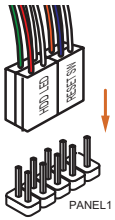


2.4 Connecting the Front Panel Header

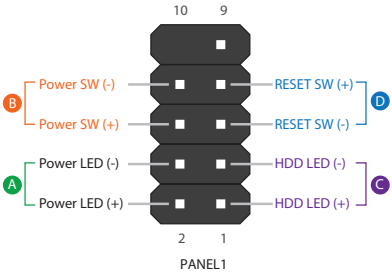
1



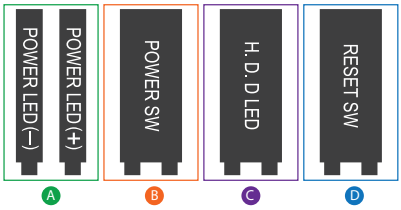
2



System Panel Header

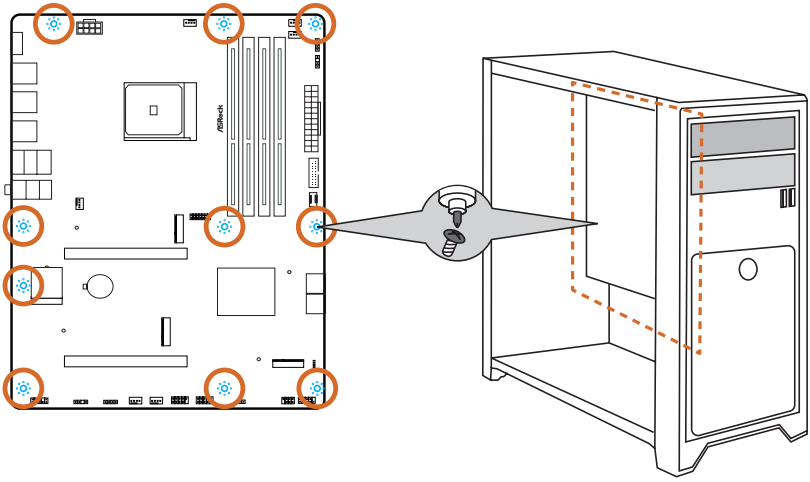


Front Panel Wires



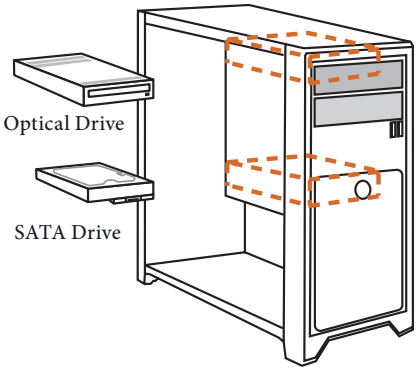
English

2.5 Installing the Motherboard

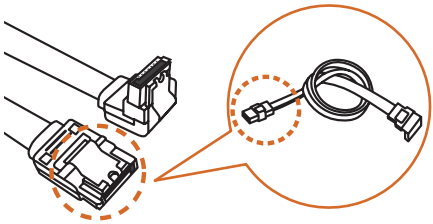


2.6 Installing SATA Drives

1

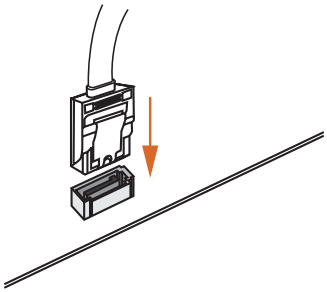


2

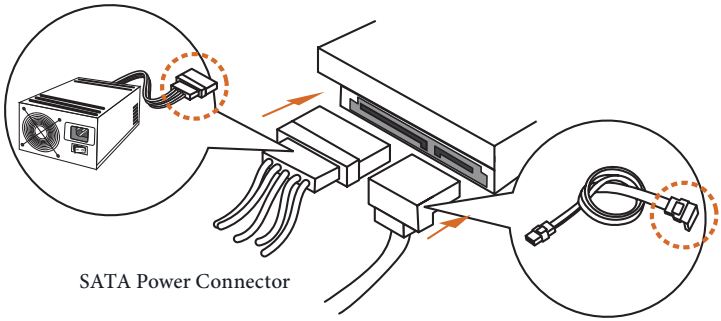


English

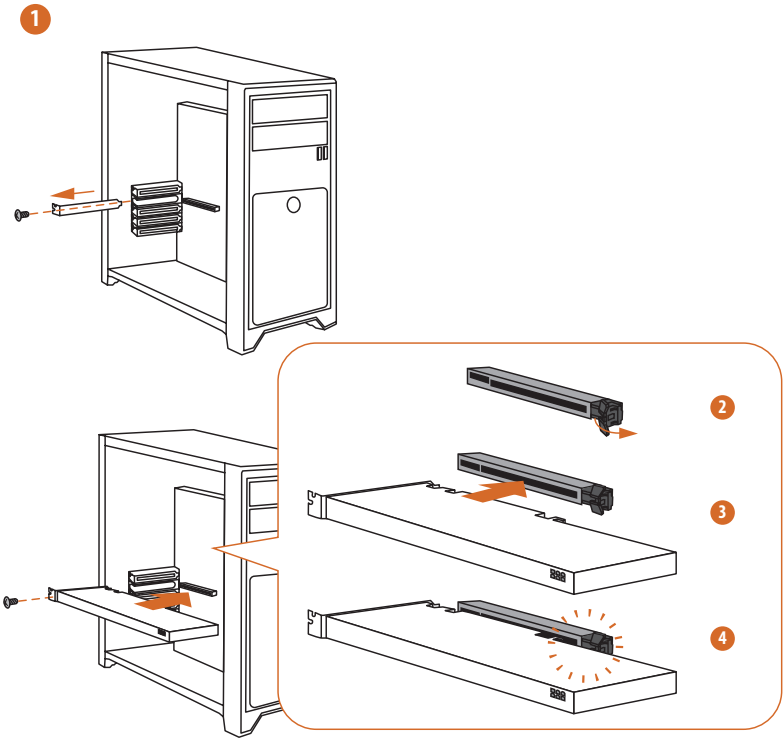
3



4



2.7 Installing a Graphics Card



Expansion Slots (PCIe Slots)

There are 2 PCIe slots on the motherboard.

Before installing an expansion card, please make sure that the power supply is switched off or the power cord is unplugged. Please read the documentation of the expansion card and make necessary hardware settings for the card before you start the installation.

PCIe slots:

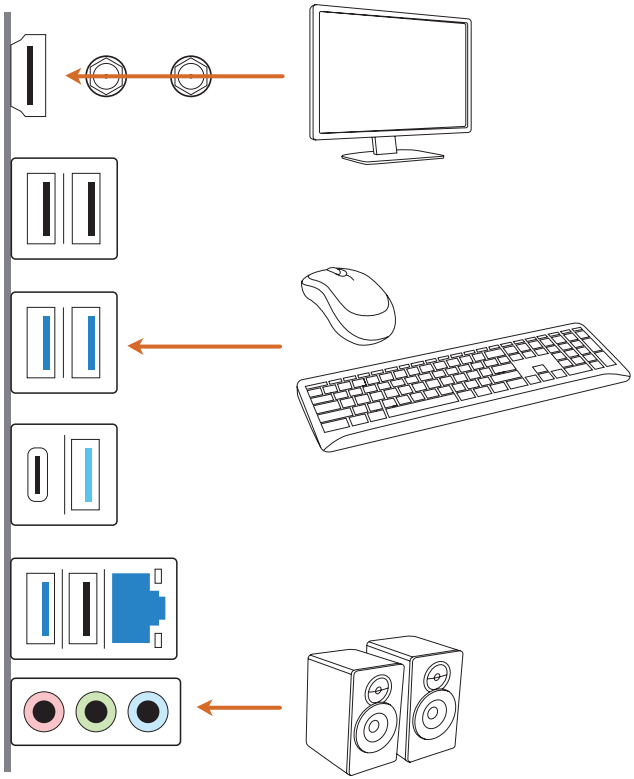
PCIE1 (PCIe 4.0 x16 slot) is used for PCIe x16 lane width graphics cards.
PCIE2 (PCIe 3.0 x16 slot) is used for PCIe x2 lane width graphics cards.

PCIe Slot Configurations

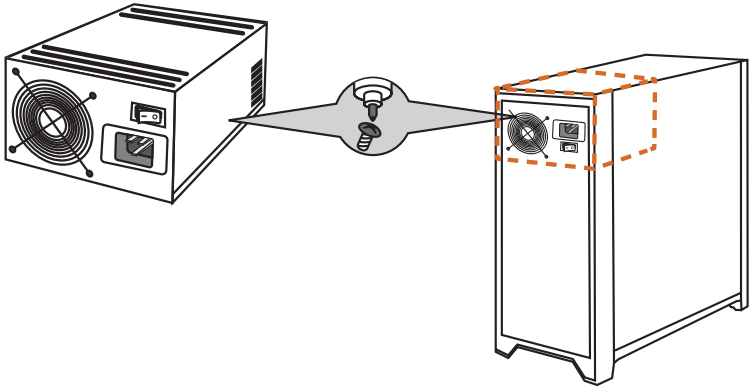
	PCIE1	PCIE2
Ryzen Series CPUs (Vermeer and Matisse)	Gen4x16	Gen3x2
Ryzen Series APUs (Cezanne and Renoir)	Gen3x16	Gen3x2
Ryzen Series APUs (Picasso)	Gen3x8	Gen3x2

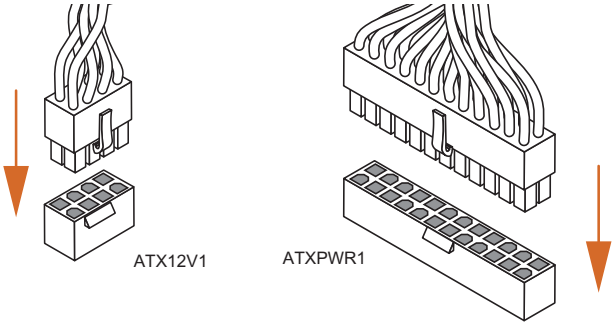
For a better thermal environment, please connect a chassis fan to the motherboard's chassis fan connector (CHA_FAN1, CHA_FAN2, CHA_FAN3 or CHA_FAN4) when using multiple graphics cards.

2.8 Connecting Peripheral Devices

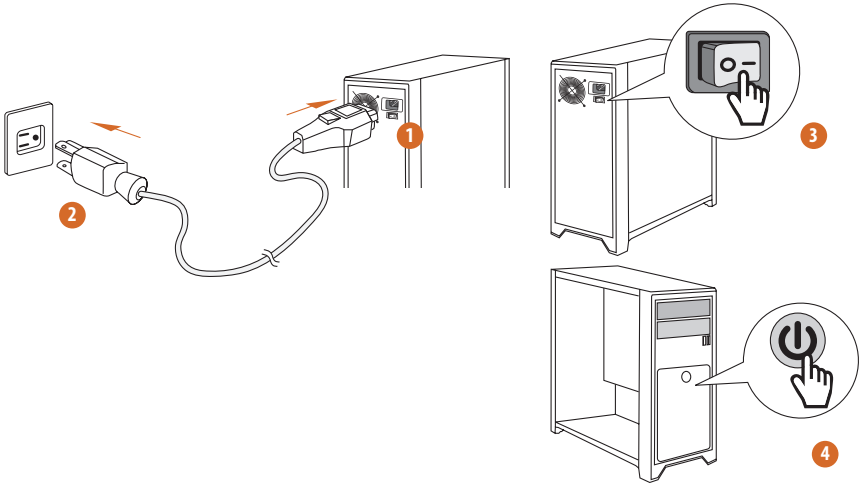


2.9 Connecting the Power Connectors



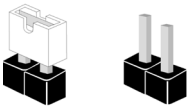


2.10 Power On



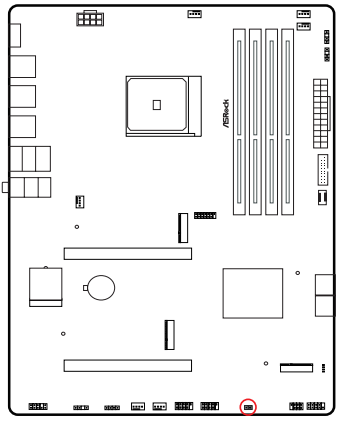
2.11 Jumpers Setup

The illustration shows how jumpers are setup. When the jumper cap is placed on the pins, the jumper is “Short”. If no jumper cap is placed on the pins, the jumper is “Open”.



Clear CMOS Jumper
(CLRCMOS1) (see p.7, No. 18)

CLRCMOS1 allows you to clear the data in CMOS. The data in CMOS includes system setup information such as system password, date, time, and system setup parameters. To clear and reset the system parameters to default setup, please turn off the computer and unplug the power cord, then use a jumper cap to short the pins on CLRCMOS1 for 3 seconds. Please remember to remove the jumper cap after clearing the CMOS. If you need to clear the CMOS when you just finish updating the BIOS, you must boot up the system first, and then shut it down before you do the clear-CMOS action.



CLRCMOS1

2-pin Jumper

Short: Clear CMOS
Open: Default

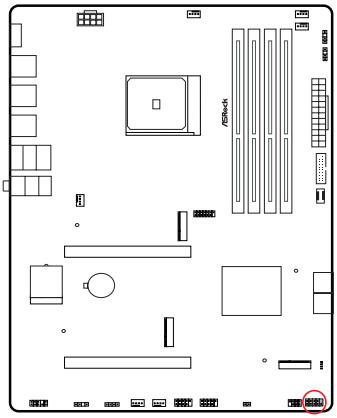
English

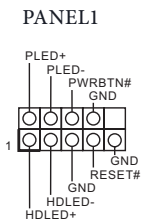
2.12 Onboard Headers and Connectors

Onboard headers and connectors are NOT jumpers. Do NOT place jumper caps over these headers and connectors. Placing jumper caps over the headers and connectors will cause permanent damage to the motherboard.

System Panel Header
(9-pin PANEL1) (see p.7, No. 16)

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





PWRBTN (Power Button):
Connect to the power button on the chassis front panel. You may configure the way to turn off your system using the power button.

RESET (Reset Button):
Connect to the reset button on the chassis front panel. Press the reset button to restart the computer if the computer freezes and fails to perform a normal restart.

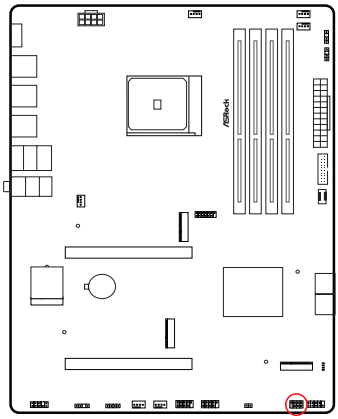
PLED (System Power LED):
Connect to the power status indicator on the chassis front panel. The LED is on when the system is operating. The LED keeps blinking when the system is in S1/S3 sleep state. The LED is off when the system is in S4 sleep state or powered off (S5).

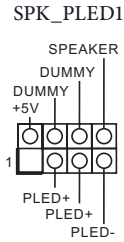
HDLED (Hard Drive Activity LED):
Connect to the hard drive activity LED on the chassis front panel. The LED is on when the hard drive is reading or writing data.

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

Power LED and Speaker Header
(7-pin SPK_PLED1) (see p.7, No. 17)

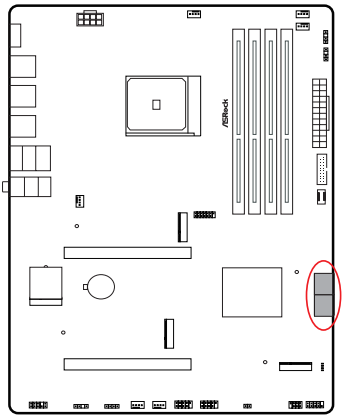
Please connect the chassis power LED and the chassis speaker to this header.

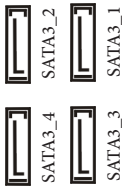




Serial ATA3 Connectors
Right Angle:
(SATA3_1) (see p.7, No. 13) (Lower)
(SATA3_2) (see p.7, No. 13) (Upper)
(SATA3_3) (see p.7, No. 14) (Lower)
(SATA3_4) (see p.7, No. 14) (Upper)

These four SATA3 connectors support SATA data cables for internal storage devices with up to 6.0 Gb/s data transfer rate.



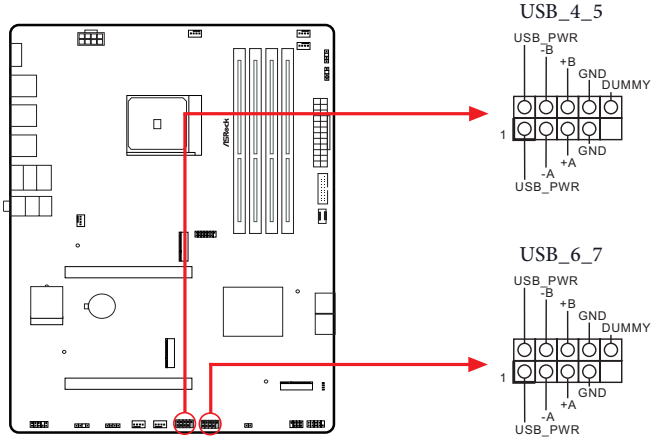


USB 2.0 Headers

(9-pin USB_4_5) (see p.7, No. 20)

(9-pin USB_6_7) (see p.7, No. 19)

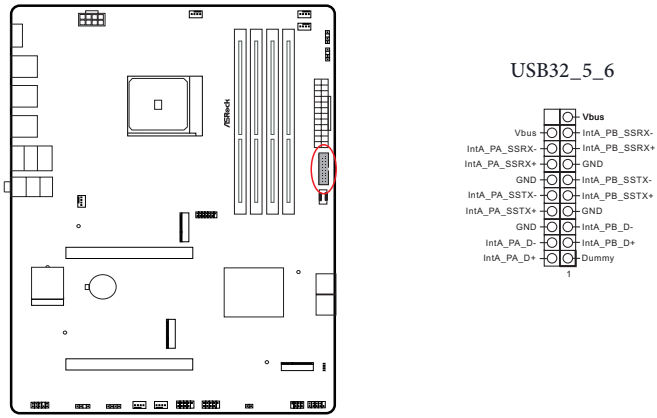
There are two headers on this motherboard. Each USB 2.0 header can support two ports.



USB 3.2 Gen1 Header

(19-pin USB32_5_6) (see p.7, No. 10)

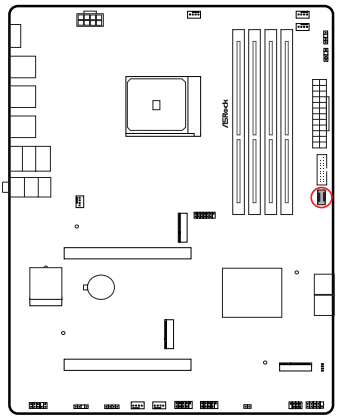
There is one header on this motherboard. The USB 3.2 Gen1 header can support two ports.



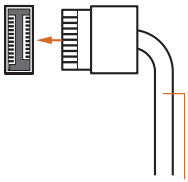
English

Front Panel Type C USB 3.2 Gen1 Header
(20-pin USB32_TC2) (see p.7, No. 11)

There is one Front Panel Type C USB 3.2 Gen1 Header on this motherboard. This header is used for connecting a USB 3.2 Gen1 module for additional USB 3.2 Gen1 ports.



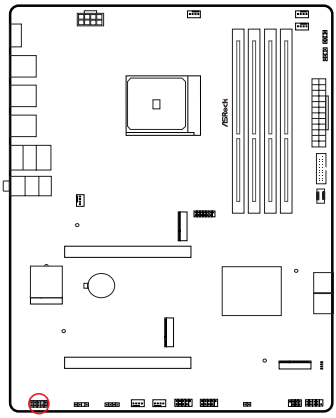
USB32_TC2



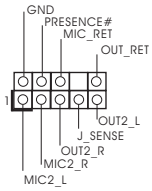
USB Type-C Cable

Front Panel Audio Header
(9-pin HD_AUDIO1) (see p.7, No. 25)

This header is for connecting audio devices to the front audio panel.



HD_AUDIO1



High Definition Audio supports Jack Sensing, but the panel wire on the chassis must support HDA to function correctly. Please follow the instructions in our manual and chassis manual to install your system.

English

Chassis Fan Connectors

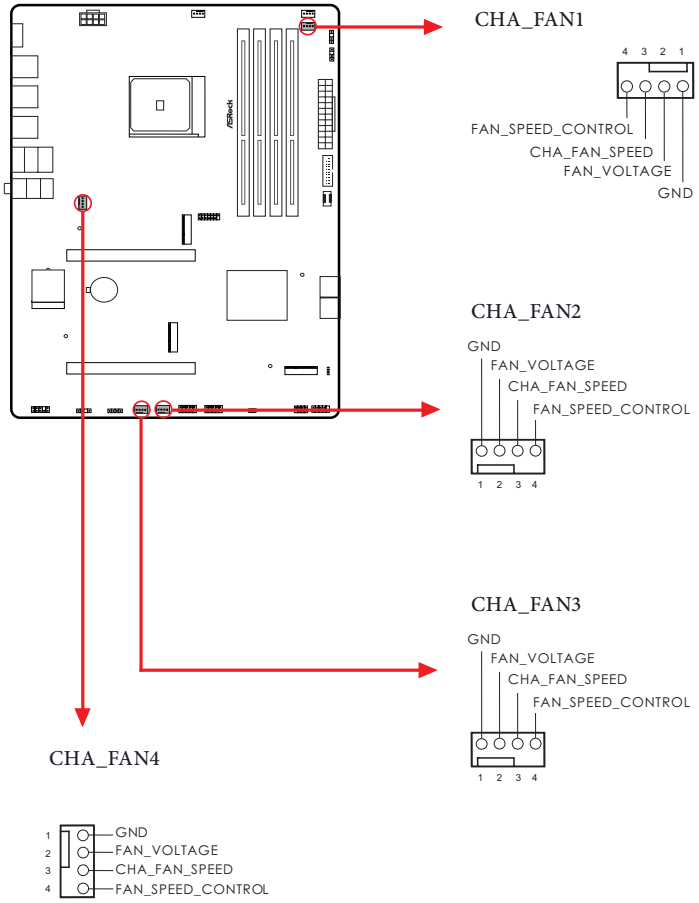
(4-pin CHA_FAN1) (see p.7, No. 6)

(4-pin CHA_FAN2) (see p.7, No. 21)

(4-pin CHA_FAN3) (see p.7, No. 22)

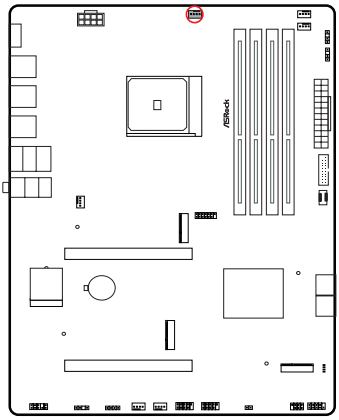
(4-pin CHA_FAN4) (see p.7, No. 26)

This header allows you to connect Case or Radiator fan. If you plan to connect a 3-pin fan, please connect it to Pin 1-3.

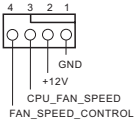


CPU Fan Connector
(4-pin CPU_FAN1) (see p.7, No. 2)

This header allows you to connect CPU fan. If you plan to connect a 3-pin fan, please connect it to Pin 1-3.

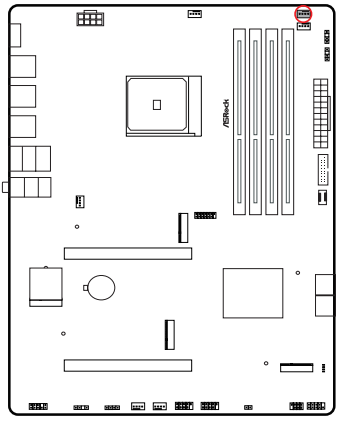


CPU_FAN1

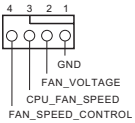


CPU Fan Connector
(4-pin CPU_FAN2) (see p.7, No. 5)

This header allows you to connect CPU fan or Water Pump. If you plan to connect a 3-pin fan, please connect it to Pin 1-3.

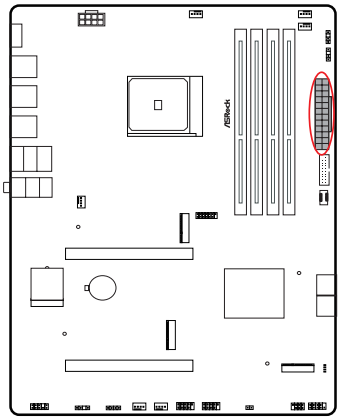


CPU_FAN2

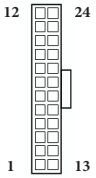


ATX Power Connector
(24-pin ATXPWR1) (see p.7, No. 9)

This motherboard provides a 24-pin ATX power connector. To use a 20-pin ATX power supply, please plug it along Pin 1 and Pin 13.



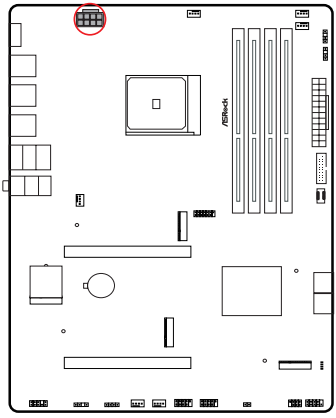
ATXPWR1



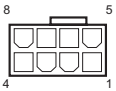
ATX 12V Power Connector
(8-pin ATX12V1) (see p.7, No. 1)

This motherboard provides one 8-pin ATX 12V power connector. To use a 4-pin ATX power supply, please plug it along Pin 1 and Pin 5.

***Warning: Please make sure that the power cable connected is for the CPU and not the graphics card. Do not plug the PCIe power cable to this connector.**



ATX12V1

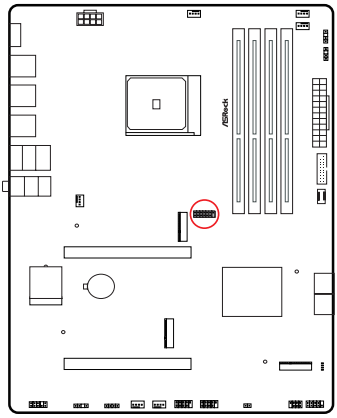


English

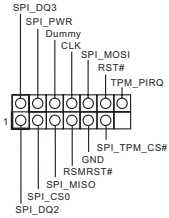
SPI TPM Header

(13-pin SPI_TPM_J1) (see p.7, No. 12)

This connector supports SPI Trusted Platform Module (TPM) system, which can securely store keys, digital certificates, passwords, and data. A TPM system also helps enhance network security, protects digital identities, and ensures platform integrity.



SPI_TPM_J1

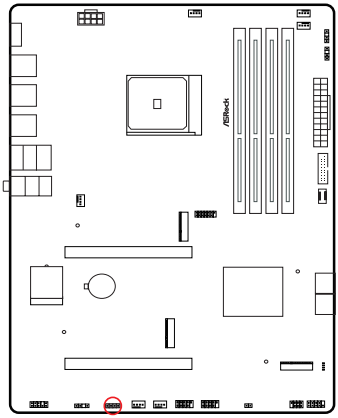


RGB LED Header

(4-pin RGB_LED1) (see p.7, No. 23)

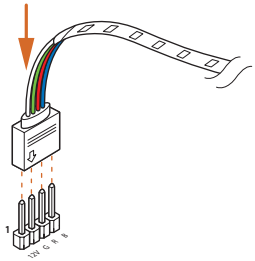
This RGB header is used to connect RGB LED extension cable which allow users to choose from various LED lighting effects.

Caution: Never install the RGB LED cable in the wrong orientation; otherwise, the cable may be damaged.



RGB_LED1

Connect your RGB LED strip to the **RGB LED Header (RGB_LED1)** on the motherboard.

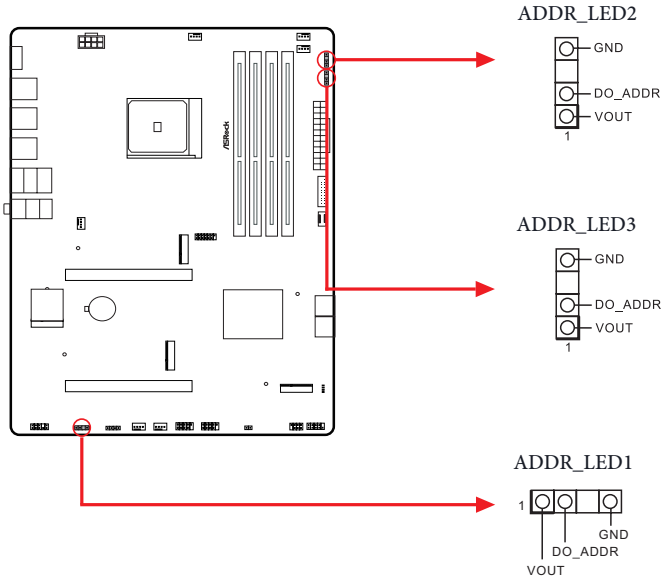


1. *Never install the RGB LED cable in the wrong orientation; otherwise, the cable may be damaged.*
2. *Before installing or removing your RGB LED cable, please power off your system and unplug the power cord from the power supply. Failure to do so may cause damages to motherboard components.*

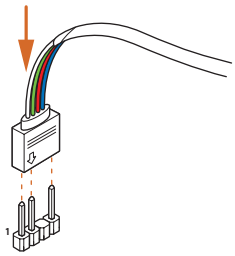
1. *Please note that the RGB LED strip does not come with the package.*
2. *The RGB LED header supports standard 5050 RGB LED strip (12V/G/R/B), with a maximum power rating of 3A (12V) and length within 2 meters.*

English

Addressable LED Headers
(3-pin ADDR_LED1) (see p.7, No. 24)
(3-pin ADDR_LED2) (see p.7, No. 7)
(3-pin ADDR_LED3) (see p.7, No. 8)
These headers are used to connect Addressable LED extension cables which allow users to choose from various LED lighting effects.
Caution: Never install the Addressable LED cable in the wrong orientation; otherwise, the cable may be damaged.



Connect your Addressable RGB LED strips to the **Addressable LED Headers (ADDR_LED1 / ADDR_LED2 / ADDR_LED3)** on the motherboard.



English

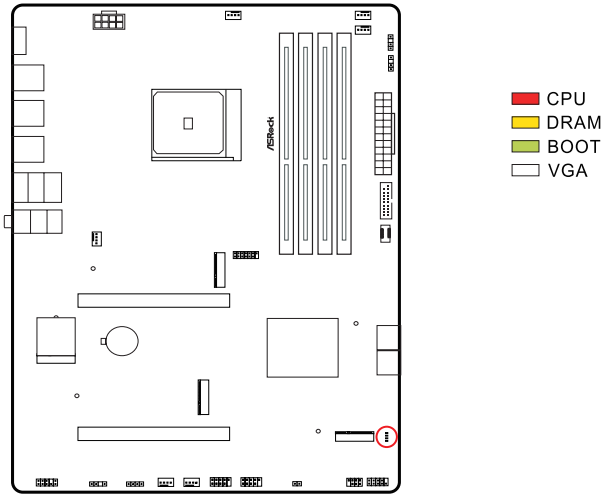
1. *Never install the Addressable LED cable in the wrong orientation; otherwise, the cable may be damaged.*
2. *Before installing or removing your Addressable LED cable, please power off your system and unplug the power cord from the power supply. Failure to do so may cause damages to motherboard components.*

1. *Please note that the Addressable LED strips do not come with the package.*
2. *The Addressable LED header supports WS2812B addressable RGB LED strip (5V/ Data/GND), with a maximum power rating of 3A (5V) and length within 2 meters.*

2.13 Post Status Checker

Post Status Checker (PSC) diagnoses the computer when users power on the machine. The LEDs light up to show what component is running into an issue. They emit red, yellow, white and yellow-green lights to indicate, respectively, the CPU, memory, storage and VGA are not detected or fail. They will remain lit until the issue is fixed. The lights go off if the four mentioned above are functioning normally.

Component	LED Indicator	Status
CPU	Solid Red	indicates CPU is dysfunctional.
DRAM	Solid Yellow	indicates DRAM is dysfunctional.
BOOT	Solid Yellow-Green	indicates boot device is dysfunctional.
VGA	Solid White	indicates GPU is dysfunctional.



It is normal for the DRAM status LED to blink during memory training. This indicates the system is working properly.

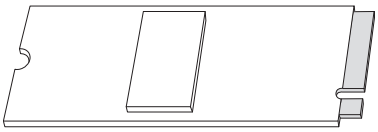
Tutorial Video

2.14 M.2 SSD Installation Guide (M2_1)

The M.2 is a small size and versatile card edge connector that aims to replace mPCIe and mSATA. The Hyper M.2 Socket (M2_1, Key M) supports type 2280 PCIe Gen4x4 (64 Gb/s) mode (with Vermeer, Matisse) or Gen3x4 (32 Gb/s) mode (with Cezanne, Renoir and Picasso).

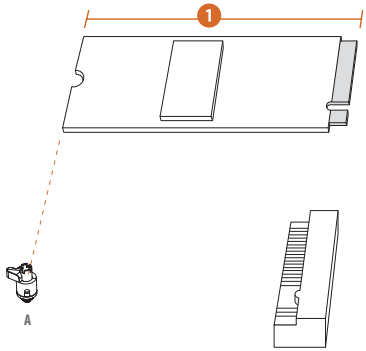
* NVMe SSD is not supported with AMD Athlon™ 3000G Processors

Installing the M.2 SSD



Step 1

Prepare a M.2 SSD.

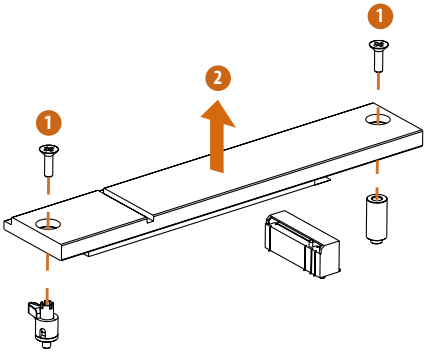


Step 2

Depending on the PCB type and length of your M.2 SSD, find the corresponding nut location to be used.

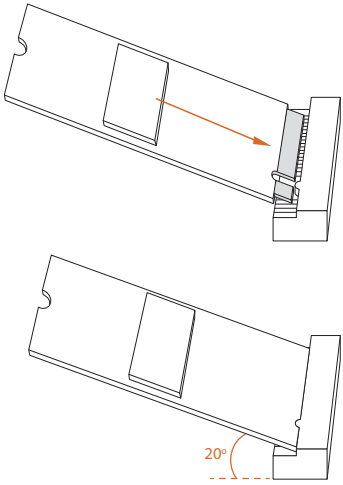
No.	1
Nut Location	A
PCB Length	8cm
Module Type	Type 2280

English



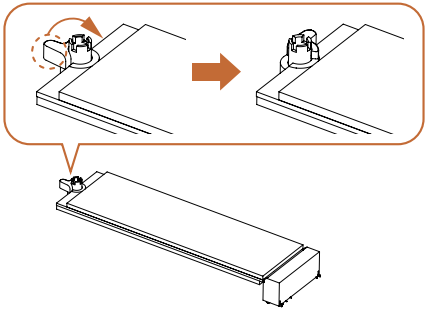
Step 3

Before installing a M.2 SSD, please loosen the screws to remove the M.2 heatsink.
*Please remove the protective films on the bottom side of the M.2 heatsink before you install a M.2 SSD.



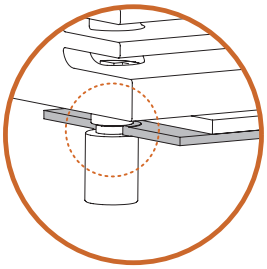
Step 4

Align and gently insert the M.2 SSD into the M.2 slot. Please be aware that the M.2 SSD only fits in one orientation.

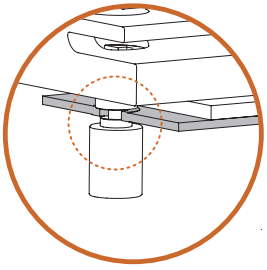


Step 5

Ensure that the notch at the end of the M.2 SSD aligns with the nut. Then secure the M.2 SSD by turning the nut lock clockwise to its locked position.



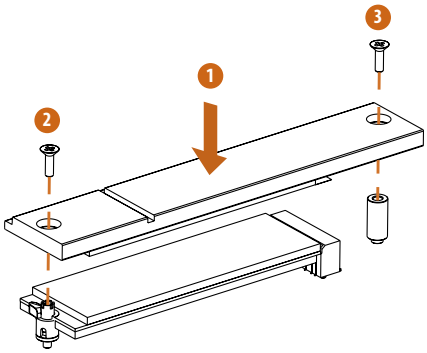
Correct Installation:
The M.2 SSD's PCB is in proper place, and the M.2 heatsink can be screwed in.



Incorrect Installation:
The M.2 SSD's PCB sits between M.2 heatsink and standoff. Do not continue.

Step 6

Before securing the M.2 heatsink, make sure to align the notch on the M.2 SSD to the standoff on the motherboard; otherwise, the M.2 SSD may be damaged.



Step 7

Tighten the screws with a screwdriver to secure the M.2 SSD and M.2 heatsink into place in the order shown. Tighten screw opposite the M.2 connector first (2), and then tighten the one next to the M.2 connector (3).
*Please do not overtighten the screw as this might damage the M.2 SSD and M.2 heatsink.

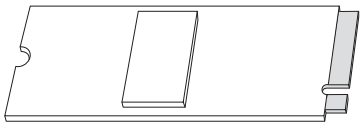
For the latest updates of M.2 SSD support list, please visit our website for details: http://www.asrock.com

2.15 M.2 SSD Installation Guide (M2_2)

The M.2 is a small size and versatile card edge connector that aims to replace mPCIe and mSATA. The Ultra M.2 Socket (M2_2, Key M) supports type 2280 SATA3 6.0 Gb/s & PCIe Gen3x4 (32 Gb/s) modes.

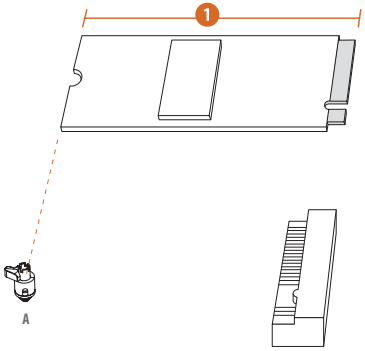
* NVMe SSD is not supported with AMD Athlon™ 3000G Processors

Installing the M.2 SSD



Step 1

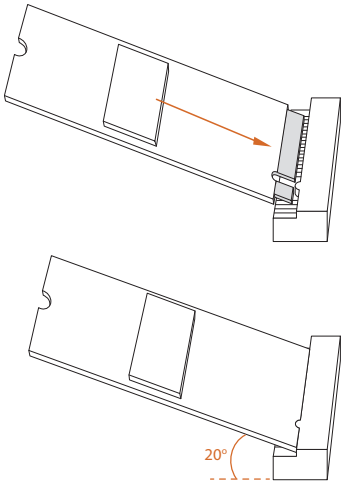
Prepare a M.2 SSD.



Step 2

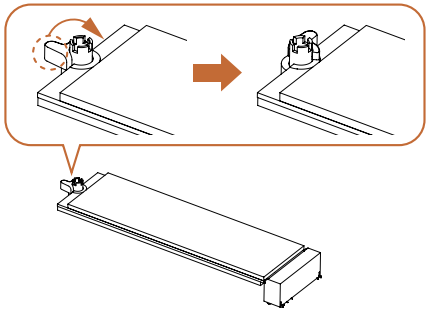
Depending on the PCB type and length of your M.2 SSD, find the corresponding nut location to be used.

No.	1
Nut Location	A
PCB Length	8cm
Module Type	Type 2280



Step 3

Align and gently insert the M.2 SSD into the M.2 slot. Please be aware that the M.2 SSD only fits in one orientation.



Step 4

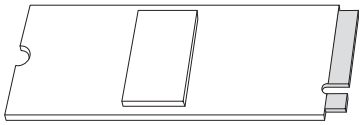
Ensure that the notch at the end of the M.2 SSD aligns with the nut. Then secure the M.2 SSD by turning the nut lock clockwise to its locked position.

For the latest updates of M.2 SSD support list, please visit our website for details: http://www.asrock.com

2.16 M.2 SSD Installation Guide (M2_3)

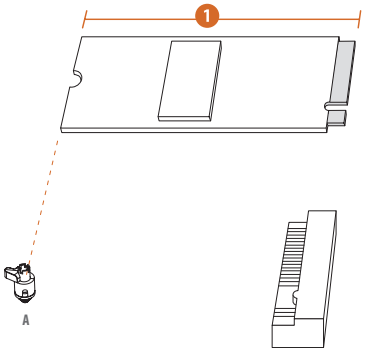
The M.2 is a small size and versatile card edge connector that aims to replace mPCIe and mSATA. The M.2 Socket (M2_3, Key M) supports type 2280 PCIe Gen3x2 (16 Gb/s) mode.
* NVMe SSD is not supported with AMD Athlon™ 3000G Processors

Installing the M.2 SSD



Step 1

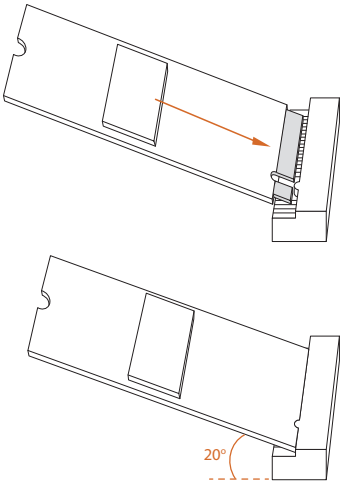
Prepare a M.2 SSD.



Step 2

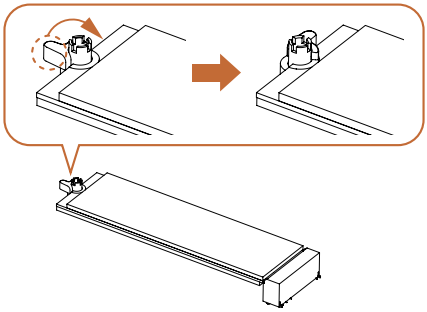
Depending on the PCB type and length of your M.2 SSD, find the corresponding nut location to be used.

No.	1
Nut Location	A
PCB Length	8cm
Module Type	Type 2280



Step 3

Align and gently insert the M.2 SSD into the M.2 slot. Please be aware that the M.2 SSD only fits in one orientation.



Step 4

Ensure that the notch at the end of the M.2 SSD aligns with the nut. Then secure the M.2 SSD by turning the nut lock clockwise to its locked position.

For the latest updates of M.2 SSD support list, please visit our website for details: http://www.asrock.com

Version 1.0
Published April 2026

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FCC Compliance Statement

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.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment 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 equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Button Battery Safety Notice

⚠WARNING

- **INGESTION HAZARD:** This product contains a button cell or coin battery.
- **DEATH** or serious injury can occur if ingested.
- A swallowed button cell or coin battery can cause **Internal Chemical Burns** in as little as **2 hours**.
- **KEEP** new and used batteries **OUT OF REACH of CHILDREN**
- **Seek immediate medical attention** if a battery is suspected to be swallowed or inserted inside any part of the body.

- Remove and immediately recycle or dispose of used batteries according to local regulations and keep away from children. Do NOT dispose of batteries in household trash or incinerate.
- Even used batteries may cause severe injury or death.
- Call a local poison control center for treatment information.
- Battery type: CR2032
- Battery voltage: 3V
- Non-rechargeable batteries are not to be recharged.
- Do not force discharge, recharge, disassemble, heat above (manufacturer's specified temperature rating) or incinerate. Doing so may result in injury due to venting, leakage or explosion resulting in chemical burns.
- This product contains an irreplaceable battery.
- This icon indicates that a swallowed button battery can cause serious injury or death. Please keep batteries out of sight or reach of children.

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"

CALIFORNIA, USA ONLY

WARNING: Risk of cancer and reproductive harm from exposure to Lead. See www.P65Warnings.ca.gov

CE Conformity

CE

ASRock INC. hereby declares that this device is in compliance with the essential requirements and other relevant provisions of related Directives. Full text of EU declaration of conformity is available at: http://www.asrock.com

ASRock follows the green design concept to design and manufacture our products, and makes sure that each stage of the product life cycle of ASRock product is in line with global environmental regulations. In addition, ASRock disclose the relevant information based on regulation requirements.

Please refer to https://www.asrock.com/general/about.asp?cat=Responsibility for information disclosure based on regulation requirements ASRock is complied with.

UKCA Conformity

UK CA

ASRock INC. hereby declares that this device is in compliance with the essential requirements and other relevant provisions of related UKCA Directives. Full text of UKCA declaration of conformity is available at: http://www.asrock.com

Consumer Limited Warranty - Australia

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage caused by our goods. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. If you require assistance please call ASRock Tel : +886-2-28965588 ext.123 (Standard International call charges apply)

WARNING

THIS PRODUCT CONTAINS A BUTTON BATTERY
If swallowed, a button battery can cause serious injury or death.
Please keep batteries out of sight or reach of children.

Proper Disposal

DO NOT throw the motherboard in municipal waste. This product has been designed to enable proper reuse of parts and recycling. This symbol of the crossed out wheeled bin indicates that the product (electrical and electronic equipment) should not be placed in municipal waste. Check local regulations for disposal of electronic products.

Class B ITE

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HIGH-DEFINITION MULTIMEDIA INTERFACE

European Community Radio Equipment Directive Compliance Statement

This device complies with directive 2014/53/EU issued by the Commision of the European Community. This equipment complies with EU radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Operations in the 5.15-5.35/6GHz band are restricted to indoor usage only.

	AT	BE	BG	CH	CY	CZ	DE
	DK	EE	EL	ES	FI	FR	HR
	HU	IE	IS	IT	LI	LT	LU
	LV	MT	NL	NO	PL	PT	RO
	SE	SI	SK	TR			

CE

Radio Frequency Bands and Maximum Power Levels

- Features : Wi-Fi 6E, BT
- Frequency Range : 2.4 GHz: 2400-2485MHz; 5 GHz: 5150-5350MHz, 5470-5725MHz, 5725-5850MHz; 6 GHz: 5955-6415MHz
- Max Power Level : 2.4 GHz: 20dBm; 5 GHz: 23dBm; 6 GHz: 23dBm

Compliance Statement of Innovation, Science and Economic Development Canada (ISED)

This device complies with with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device. Operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems. CAN ICES-003(B)/NMB-003(B)

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ASRock Incorporation

Contains Wi-Fi 6E module with Bluetooth

AZUREWAVE WiFi 6E AW-XB560NF

Model: RTL8852CE

R-NZ

FCC ID : TX2-RTL8852CE

IC : 6317A-RTL8852CE

CE

R 217-220558

T D220558217

CCAF22Y10250T1

5.9~6.4GHz indoor use only