PHANTOM GAMING

ASRock

B760M PG LIGHTNING

B760M PG LIGHTNING 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

ASRock Incorporation

e-mail: info@asrock.com.tw

ASRock EUROPE B.V.

e-mail: sales@asrock.nl

ASRock America, Inc.

e-mail: sales@asrockamerica.com



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B760M PG Lightning WiFi



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B760M PG Lightning

Contents

Chapter 1 Introduction **1**

1.1 Package Contents 1

1.2 Specifications 2

1.3 Motherboard Layout 6

1.4 I/O Panel 9

1.5 Block Diagram 12

1.6 802.11ax Wi-Fi 6E Module and ASRock WiFi 2.4/5/6 GHz Antennas (For B760M PG Lightning WiFi) 13

Chapter 2 Installation **15**

2.1 Installing the CPU 16

2.2 Installing the CPU Fan and Heatsink 18

2.3 Installing Memory Modules (DIMM) 19

2.4 Connecting the Front Panel Header 21

2.5 Installing the I/O Panel Shield 22

2.6 Installing the Motherboard 23

2.7 Installing SATA Drives 24

2.8 Installing a Graphics Card 26

2.9 Connecting Peripheral Devices 28

2.10 Connecting the Power Connectors 29

2.11 Power On 30

2.12 Jumpers Setup 31

2.13 Onboard Headers and Connectors 32

2.14 Post Status Checker 40

2.15 M.2 WiFi/BT PCIe WiFi Module and Intel® CNVi (Integrated WiFi/BT) Installation Guide (For B760M PG Lightning) 41

2.16 M.2 SSD Module Installation Guide (M2_1) 43

2.17 M.2 SSD Module Installation Guide (M2_2 and M2_3) 47

Chapter 1 Introduction

Thank you for purchasing ASRock B760M PG Lightning WiFi / B760M PG Lightning 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 B760M PG Lightning WiFi / B760M PG Lightning Motherboard (Micro ATX Form Factor)
- ASRock B760M PG Lightning WiFi / B760M PG Lightning User Manual
- 2 x Serial ATA (SATA) Data Cables (Optional)
- 1 x I/O Panel Shield
- 2 x SMA WiFi Antenna Cables (Optional) (For B760M PG Lightning WiFi)
- 2 x ASRock WiFi 2.4/5/6 GHz Antennas (Optional) (For B760M PG Lightning WiFi)
- 1 x Plastic Cover for Wi-Fi Module (Optional) (For B760M PG Lightning WiFi)
- 3 x Screws for M.2 Sockets (Optional) (For B760M PG Lightning WiFi)
- 4 x Screws for M.2 Sockets (Optional) (For B760M PG Lightning)
- 1 x Standoff for M.2 Socket (Optional)

1.2 Specifications

Platform	• Micro ATX Form Factor
CPU	• Supports 14th, 13th & 12th Gen Intel® Core™ Processors (LGA1700) • Supports Intel® Hybrid Technology • Supports Intel® Turbo Boost Max 3.0 Technology • Supports Intel® Thermal Velocity Boost (TVB) • Supports Intel® Adaptive Boost Technology (ABT)
Chipset	• Intel® B760
Memory	• Dual Channel DDR5 Memory Technology • 4 x DDR5 DIMM Slots • Supports DDR5 non-ECC, un-buffered memory up to 7200+(OC)* 1DPC 1R Up to 7200+ MHz (OC), 4800 MHz Natively. 1DPC 2R Up to 6000+ MHz (OC), 4400 MHz Natively. 2DPC 1R Up to 5600+ MHz (OC), 4000 MHz Natively. 2DPC 2R Up to 4800+ MHz (OC), 3600 MHz Natively. • Max. capacity of system memory: 192GB • Supports Intel® Extreme Memory Profile (XMP) 3.0 * Please refer to Memory Support List on ASRock's website for more information. (http://www.asrock.com/)
Expansion Slot	CPU: • 1 x PCIe 5.0 x16 Slot (PCIE1), supports x16 mode* Chipset: • 1 x PCIe 3.0 x16 Slot (PCIE2), supports x4 mode* • 1 x M.2 Socket (Key E), supports type 2230 WiFi/BT PCIe WiFi module and Intel® CNVio/CNVio2 (Integrated WiFi/BT) * Supports NVMe SSD as boot disks • Supports AMD CrossFire™

Graphics	• Intel® UHD Graphics Built-in Visuals and the VGA outputs can be supported only with processors which are GPU integrated. • Intel® X^e Graphics Architecture (Gen 12) • 1 x HDMI 2.1 TMDS Compatible, supports HDCP 2.3 and max. resolution up to 4K 60Hz • 1 x DisplayPort 1.4 with DSC (compressed), supports HDCP 2.3 and max. resolution up to 8K 60Hz / 5K 120Hz
Audio	• 7.1 CH HD Audio (Realtek ALC897 Audio Codec) • Nahimic Audio
LAN	• 2.5 Gigabit LAN 10/100/1000/2500 Mb/s • Dragon RTL8125BG • Supports Phantom Gaming 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 (For B760M PG Lightning WiFi)	• 802.11ax Wi-Fi 6E Module • Supports IEEE 802.11a/b/g/n/ac/ax • 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 + High speed class II • Supports MU-MIMO

Rear Panel I/O	• 2 x Antenna Ports (For B760M PG Lightning WiFi) • 2 x Antenna Mounting Points (For B760M PG Lightning) • 1 x PS/2 Mouse/Keyboard Port • 1 x HDMI Port • 1 x DisplayPort 1.4 • 1 x USB 3.2 Gen1 Type-C Port • 3 x USB 3.2 Gen1 Type-A Ports • 2 x USB 2.0 Ports • 1 x RJ-45 LAN Port • HD Audio Jacks: Line in / Front Speaker / Microphone
USB	• 1 x USB 3.2 Gen1 Type-C (Rear) • 5 x USB 3.2 Gen1 Type-A (3 Rear, 2 Front) • 6 x USB 2.0 (2 Rear, 4 Front) * All USB ports support ESD Protection
Storage	CPU: • 1 x Hyper M.2 Socket (M2_1, Key M), supports type 2242/2260/2280 PCIe Gen4x4 (64 Gb/s) mode* Chipset: • 1 x Hyper M.2 Socket (M2_2, Key M), supports type 2280 PCIe Gen4x4 (64 Gb/s) mode* • 1 x Hyper M.2 Socket (M2_3, Key M), supports type 2280 PCIe Gen4x4 (64 Gb/s) mode* • 4 x SATA3 6.0 Gb/s Connectors * Supports Intel® Volume Management Device (VMD) * Supports NVMe SSD as boot disks
RAID	• Supports RAID 0, RAID 1, RAID 5 and RAID 10 for SATA storage devices

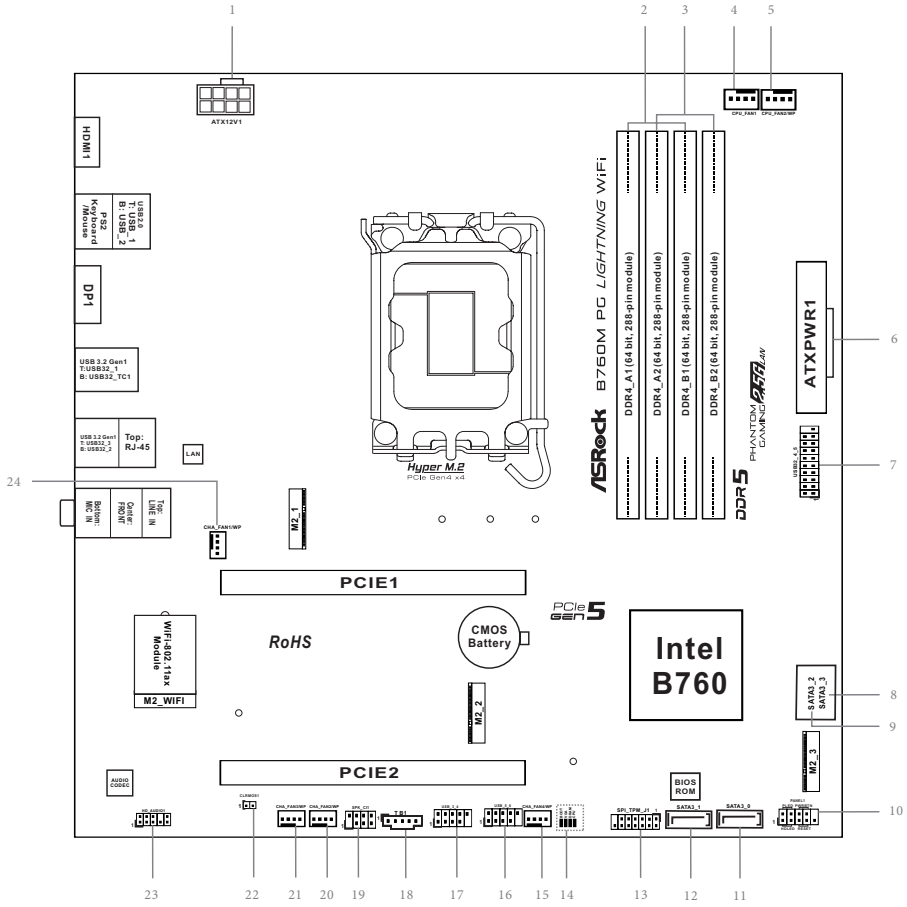
Connector	• 1 x SPI TPM Header • 1 x Chassis Intrusion and Speaker Header • 1 x CPU Fan Connector (4-pin)* • 1 x CPU/Water Pump Fan Connector (4-pin) (Smart Fan Speed Control)** • 4 x Chassis/Water Pump Fan Connectors (4-pin) (Smart Fan Speed Control)*** • 1 x 24 pin ATX Power Connector • 1 x 8 pin 12V Power Connector (Hi-Density Power Connector) • 1 x Front Panel Audio Connector • 1 x Thunderbolt AIC Connector (5-pin) (Supports ASRock Thunderbolt 4 AIC Card) • 2 x USB 2.0 Headers (Support 4 USB 2.0 ports) • 1 x USB 3.2 Gen1 Header (Supports 2 USB 3.2 Gen1 ports) * CPU_FAN1 supports the fan power up to 1A (12W). ** CPU_FAN2/WP supports the fan power up to 2A (24W). *** CHA_FAN1~4/WP support the fan power up to 2A (24W). *** CPU_FAN2/WP and CHA_FAN1~4/WP 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*

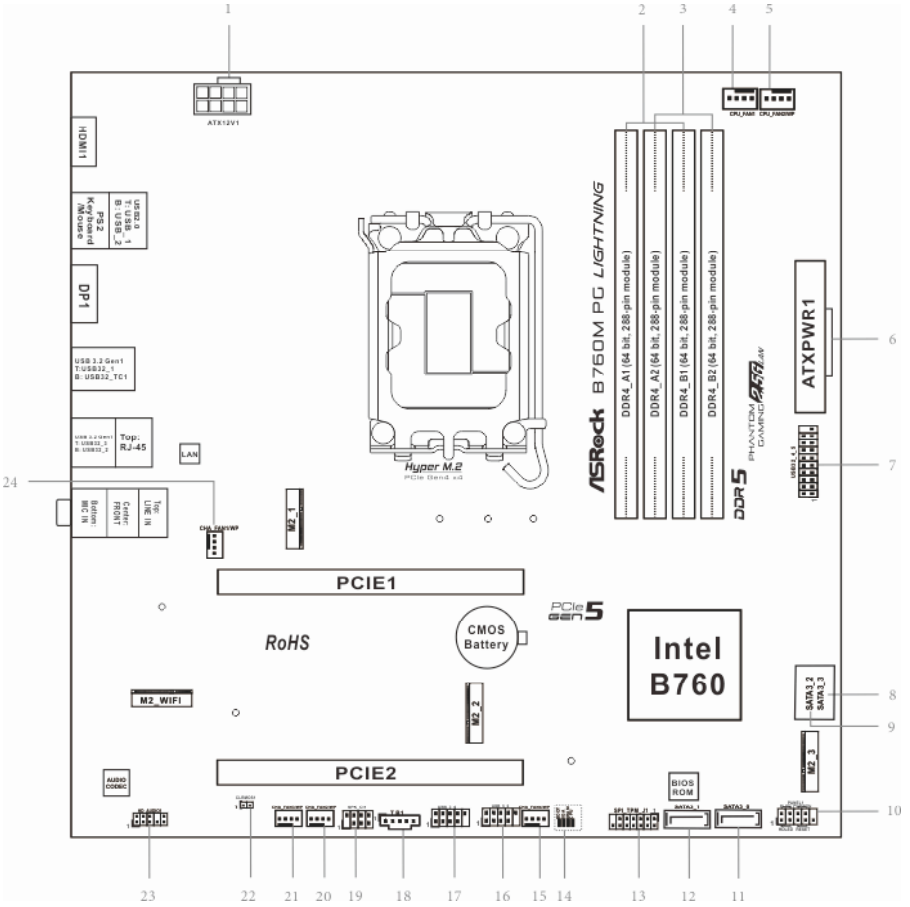
Please realize that there is a certain risk involved with overclocking, including adjusting the setting in the BIOS, applying Untied Overclocking Technology, or using third-party overclocking tools. Overclocking may affect your system's stability, or even cause damage to the components and devices of 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

B760M PG Lightning WiFi:



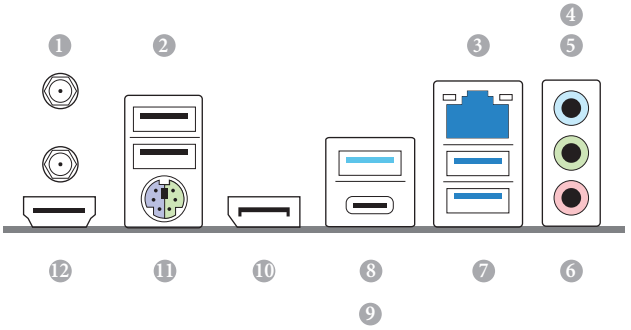
B760M PG Lightning:



No.	Description
1	ATX 12V Power Connector (ATX12V1)
2	2 x 288-pin DDR4 DIMM Slots (DDR4_A1, DDR4_B1)
3	2 x 288-pin DDR4 DIMM Slots (DDR4_A2, DDR4_B2)
4	CPU Fan Connector (CPU_FAN1)
5	CPU/Water Pump Fan Connector (CPU_FAN2/WP)
6	ATX Power Connector (ATXPWR1)
7	USB 3.2 Gen1 Header (USB32_4_5)
8	SATA3 Connector (SATA3_3)(Lower)
9	SATA3 Connector (SATA3_2)(Upper)
10	System Panel Header (PANEL1)
11	SATA3 Connector (SATA3_0)
12	SATA3 Connector (SATA3_1)
13	SPI TPM Header (SPI_TPM_J1)
14	Post Status Checker (PSC)
15	Chassis/Water Pump Fan Connector (CHA_FAN4/WP)
16	USB 2.0 Header (USB_5_6)
17	USB 2.0 Header (USB_3_4)
18	5-pin Thunderbolt AIC Connector (TB1)
19	Chassis Intrusion and Speaker Header (SPK_CI1)
20	Chassis/Water Pump Fan Connector (CHA_FAN2/WP)
21	Chassis/Water Pump Fan Connector (CHA_FAN3/WP)
22	Clear CMOS Jumper (CLRMOS1)
23	Front Panel Audio Header (HD_AUDIO1)
24	Chassis/Water Pump Fan Connector (CHA_FAN1/WP)

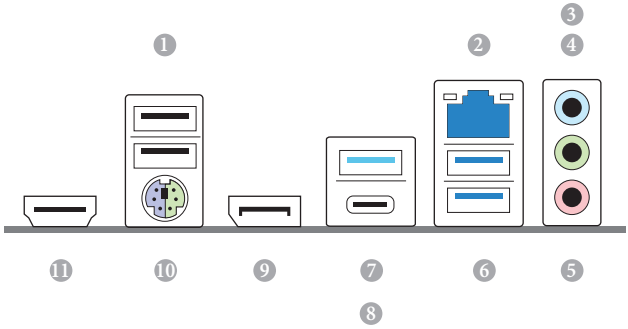
1.4 I/O Panel

B760M PG Lightning WiFi:



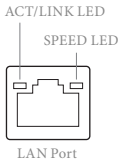
No.	Description	No.	Description
1	Antenna Ports	8	USB 3.2 Gen1 Type-A Port (USB32_1)
2	USB 2.0 Ports (USB_12)	9	USB 3.2 Gen1 Type-C Port (USB32_TC1)
3	2.5G LAN RJ-45 Port*	10	DisplayPort 1.4
4	Line In (Light Blue)**	11	PS/2 Mouse/Keyboard Port
5	Front Speaker (Lime)**	12	HDMI Port
6	Microphone (Pink)**		
7	USB 3.2 Gen1 Type-A Ports (USB32_23)		

B760M PG Lightning:



No.	Description	No.	Description
1	USB 2.0 Ports (USB_12)	7	USB 3.2 Gen1 Type-A Port
2	2.5G LAN RJ-45 Port*		(USB32_1)
3	Line In (Light Blue)**	8	USB 3.2 Gen1 Type-C Port
4	Front Speaker (Lime)**		(USB32_TC1)
5	Microphone (Pink)**	9	DisplayPort 1.4
6	USB 3.2 Gen1 Type-A Ports	10	PS/2 Mouse/Keyboard Port
	(USB32_23)	11	HDMI Port

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

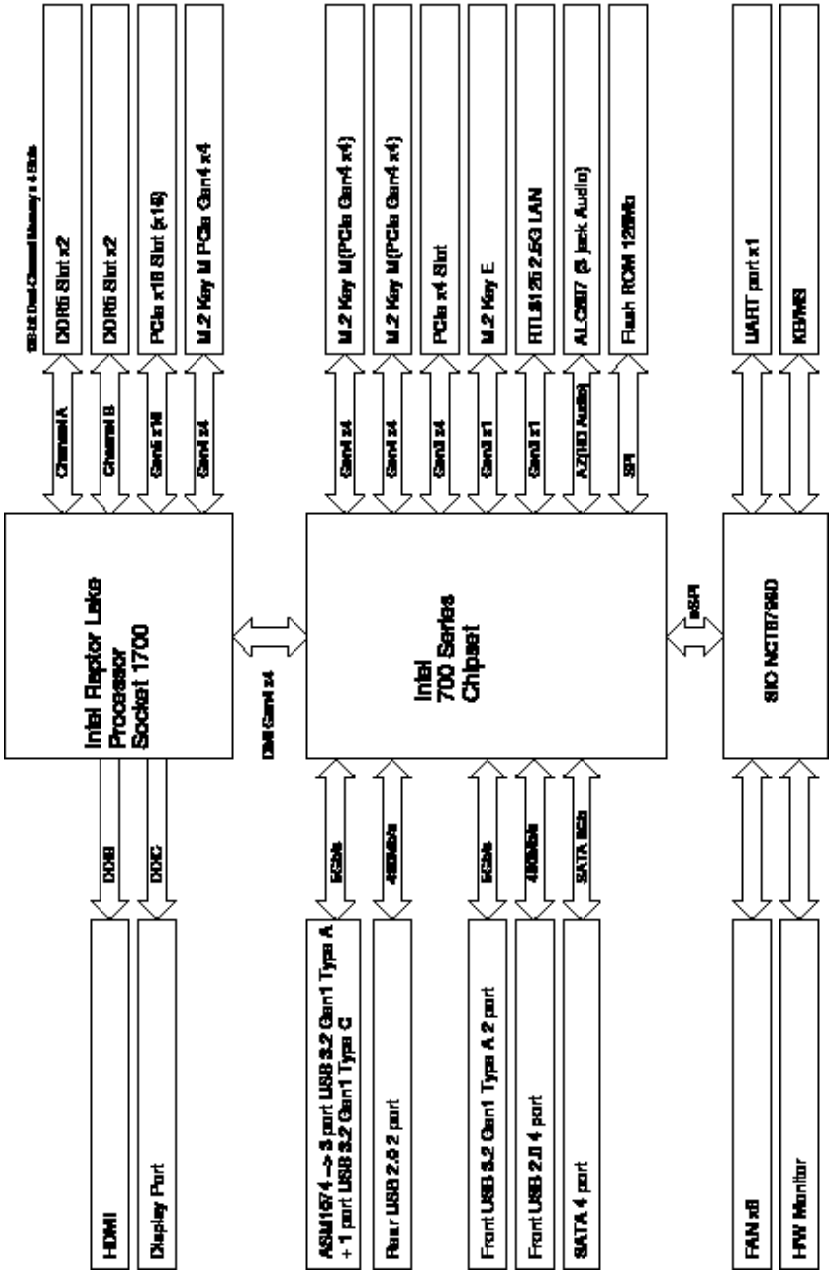


Activity / Link LED		Speed LED	
Status	**Description**	**Status**	**Description**
Off	No Link	Off	10Mbps connection
Blinking	Data Activity	Orange	100Mbps/1Gbps connection
On	Link	Green	2.5Gbps connection

*** **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



1.6 802.11ax Wi-Fi 6E Module and ASRock WiFi 2.4/5/6 GHz Antennas (For B760M PG Lightning WiFi)

802.11ax Wi-Fi 6E + BT Module

This motherboard comes with an exclusive 802.11 a/b/g/n/ac/ax Wi-Fi 6E + BT v5.3 module that offers support for 802.11 a/b/g/n/ac/ax 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 5.3 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.

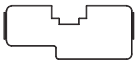
Wi-Fi Antennas Installation Guide



SMA Wi-Fi Antenna Cables



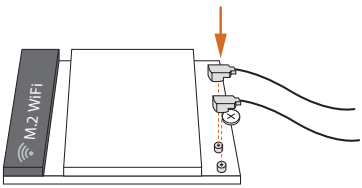
WiFi 2.4/5/6 GHz Antennas



Plastic Cover for Wi-Fi Module

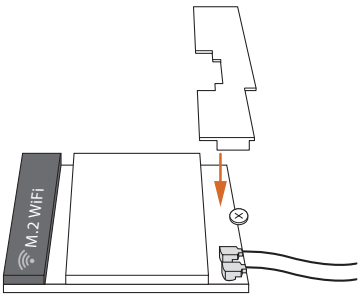
Step 1

Prepare the SMA Wi-Fi Antenna Cables, WiFi 2.4/5/6 GHz Antennas and Plastic Cover for Wi-Fi Module that come with the package.



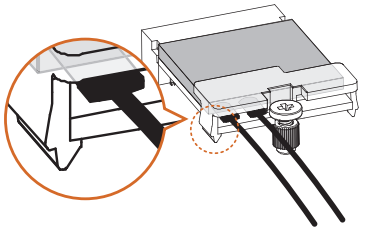
Step 2

Attach the SMA Wi-Fi Antenna Cables to the WiFi Module.

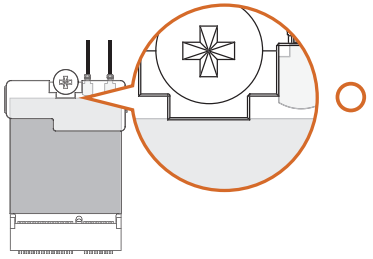


Step 3

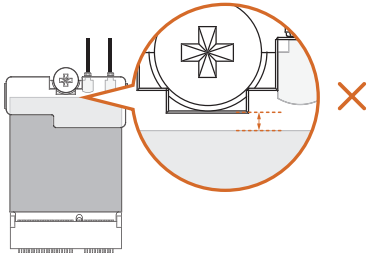
Attach the protective plastic cover to the WiFi Module.

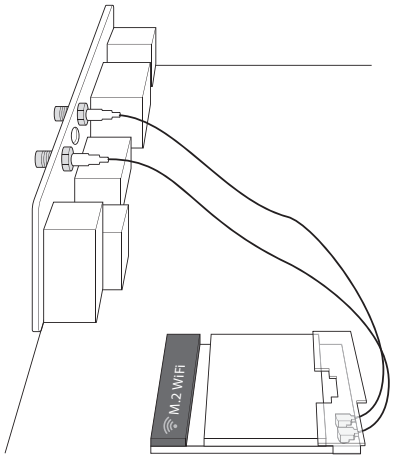


Ensure the WiFi Module is securely held by the protective plastic cover.



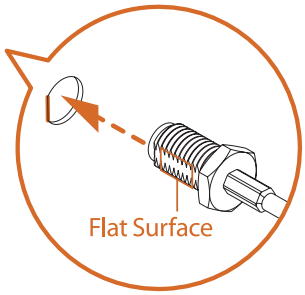
Ensure the protective plastic cover is properly attached into place.

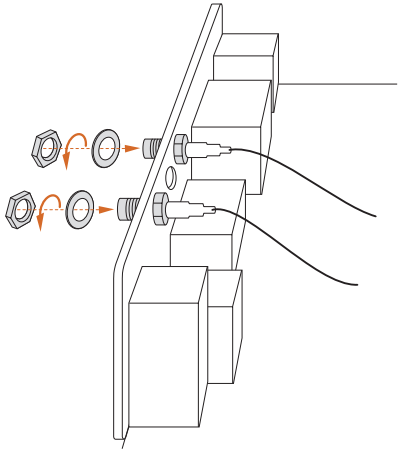




Step 4

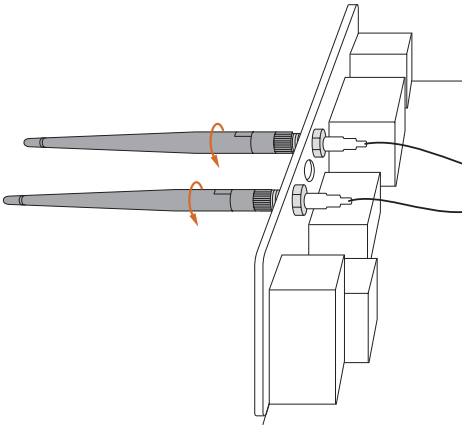
Insert the two RF cables into the antenna ports on the I/O shield.





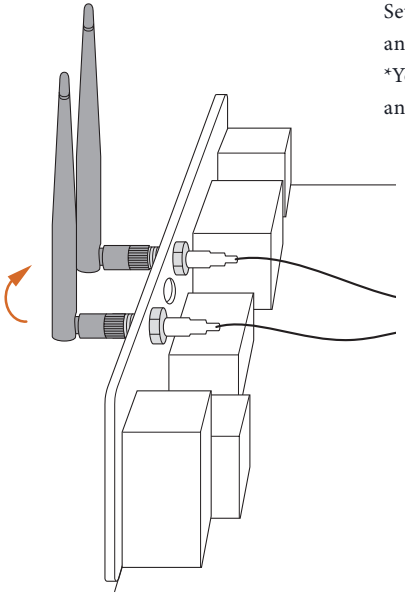
Step5

Secure the RF cables with the bundled screw nuts and washers.



Step 6

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



Step 7

Set the WiFi 2.4/5/6 GHz Antennas at 90-degree angle.
*You may need to adjust the direction of the antenna for a stronger signal.

*The illustrations here are for reference only.

Chapter 2 Installation

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

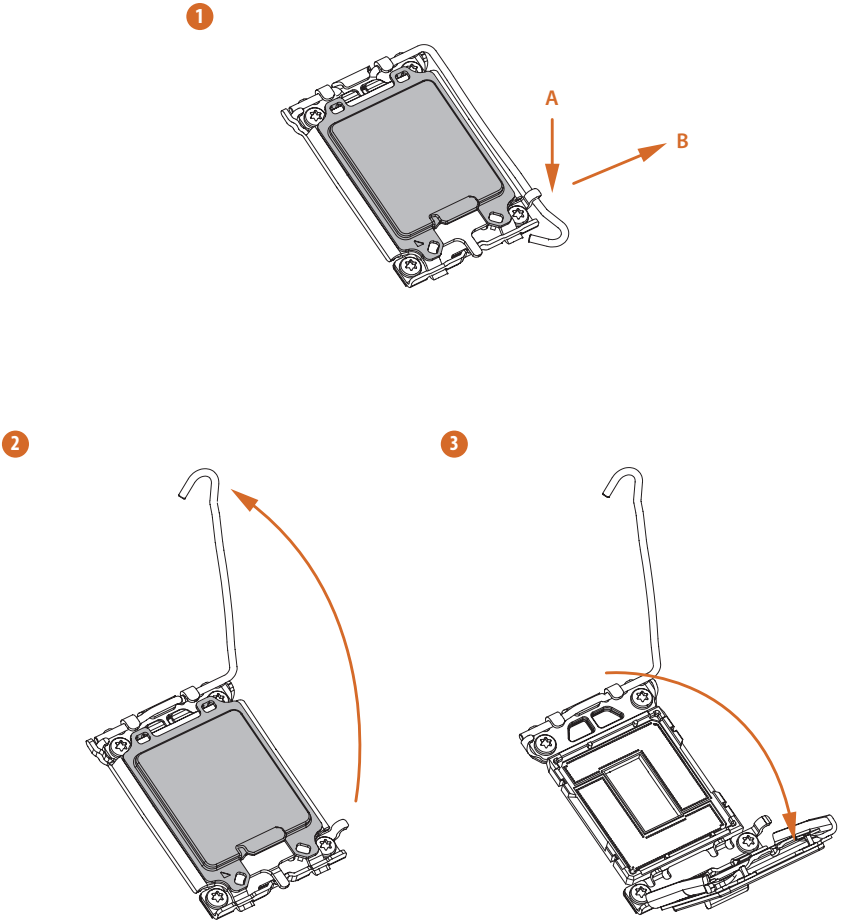
Pre-installation Precautions

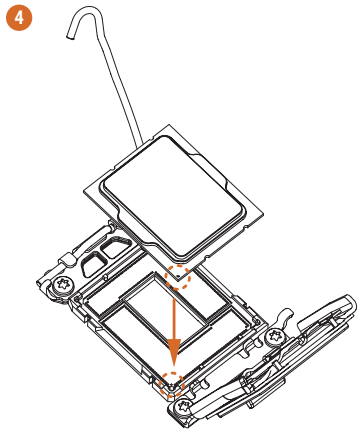
Take note of the following precautions before you install motherboard components or change any motherboard settings.

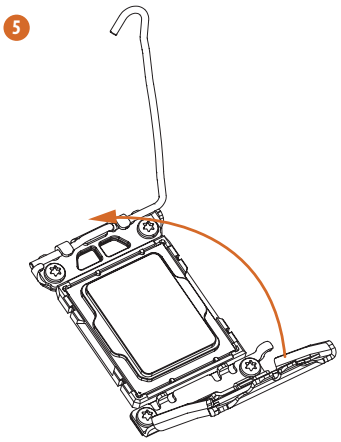
- Make sure to unplug the power cord before installing or removing the motherboard components. Failure to do so may cause physical injuries and damages to motherboard components.
- In order to avoid damage from static electricity to the motherboard's components, NEVER place your motherboard directly 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.

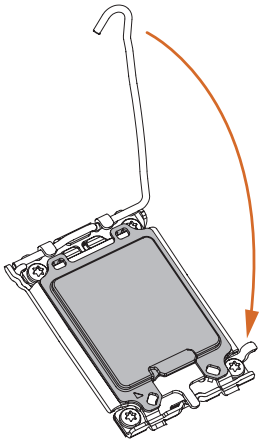
2.1 Installing the CPU

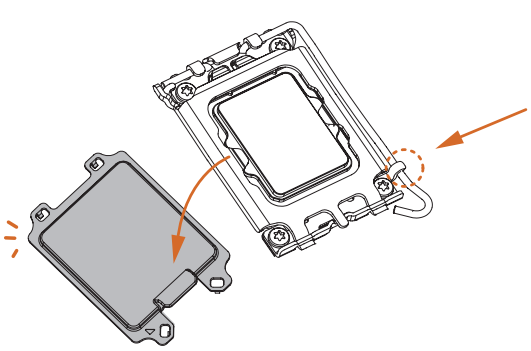
1. *Before you insert the 1700-Pin CPU into the socket, please check if the **PnP cap** is on the socket, if the CPU surface is unclean, or if there are any **bent pins** in the socket. Do not force to insert the CPU into the socket if above situation is found. Otherwise, the CPU will be seriously damaged.*
2. *Unplug all power cables before installing the CPU.*





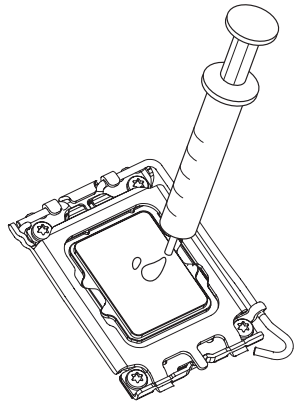


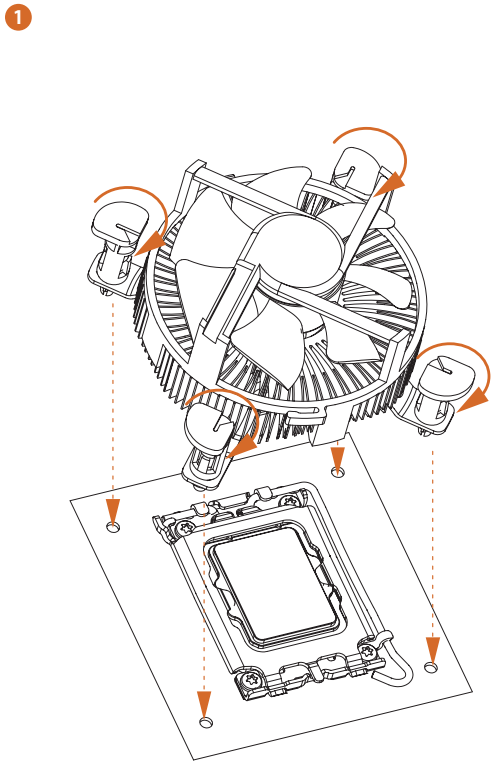




Please save and replace the cover if the processor is removed. The cover must be placed if you wish to return the motherboard for after service.

2.2 Installing the CPU Fan and Heatsink





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.*
4. *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.*

Recommended Memory Configuration

1 DIMM

A1	A2	B1	B2
			V

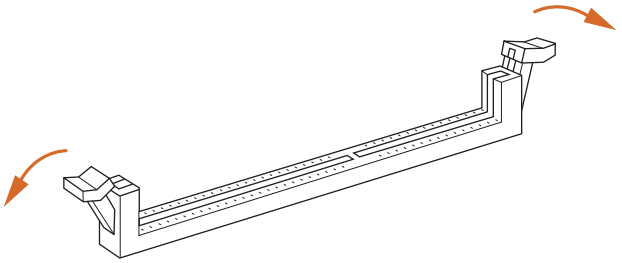
2 DIMMs

A1	A2	B1	B2
	V		V

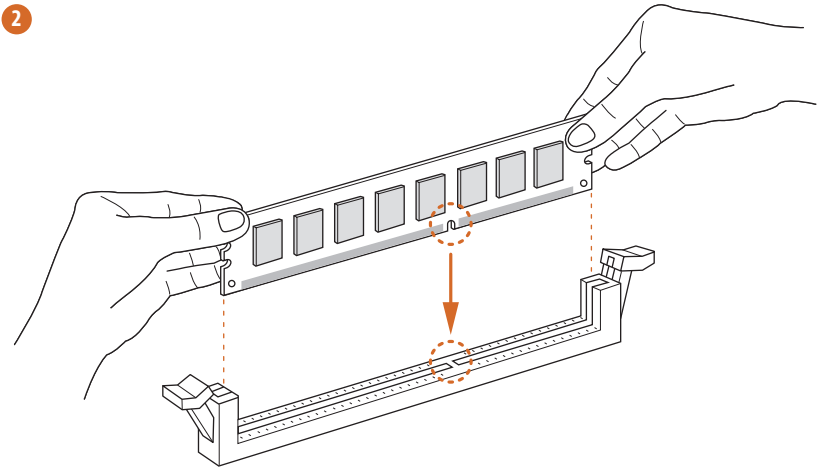
4 DIMMs

A1	A2	B1	B2
V	V	V	V

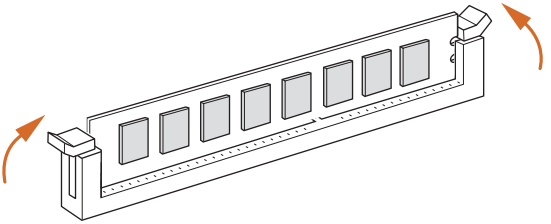
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2

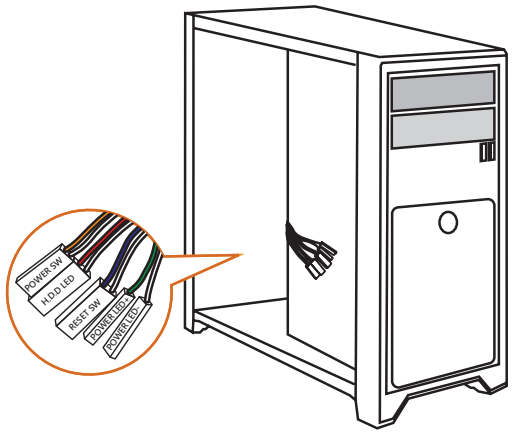


3

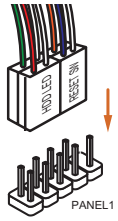


2.4 Connecting the Front Panel Header

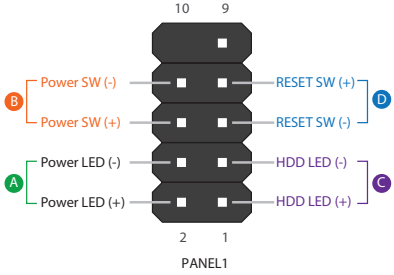
1



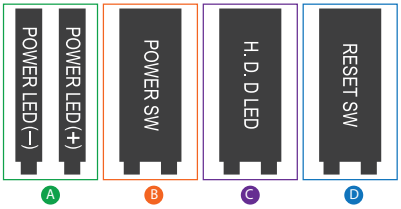
2



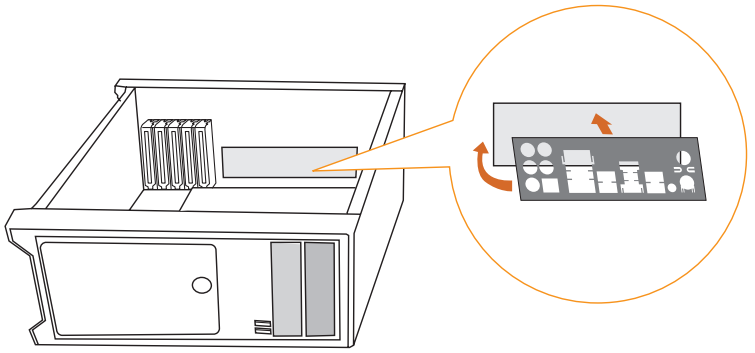
System Panel Header



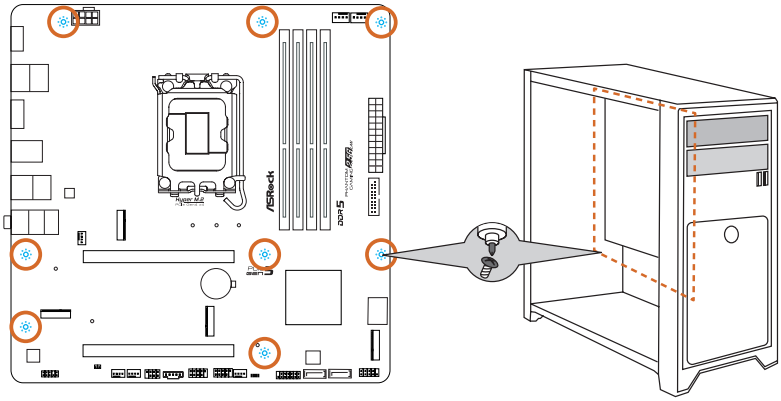
Front Panel Wires



2.5 Installing the I/O Panel Shield

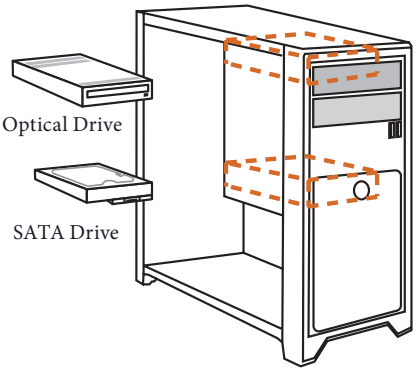


2.6 Installing the Motherboard

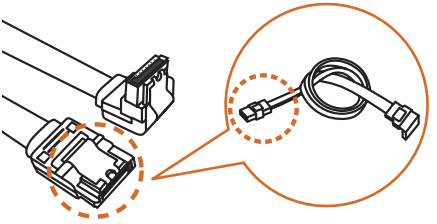


2.7 Installing SATA Drives

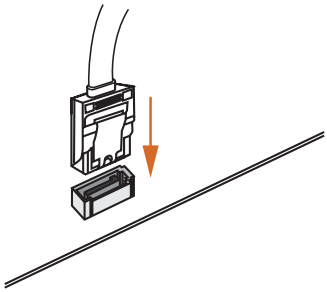
1



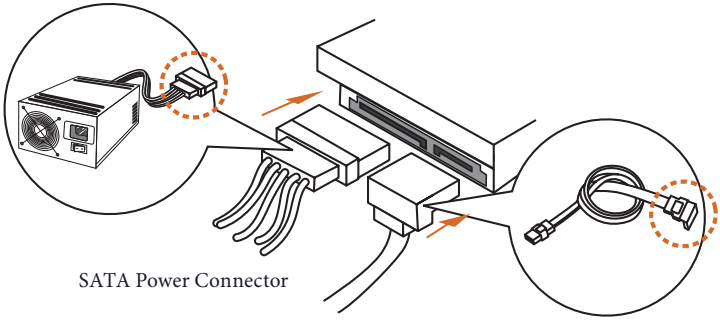
2



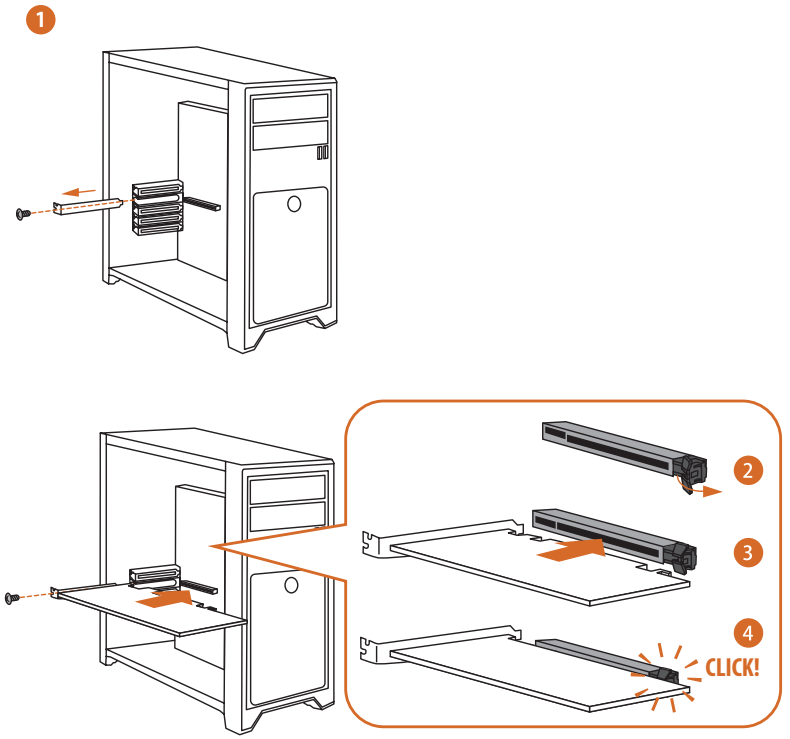
3



4



2.8 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:

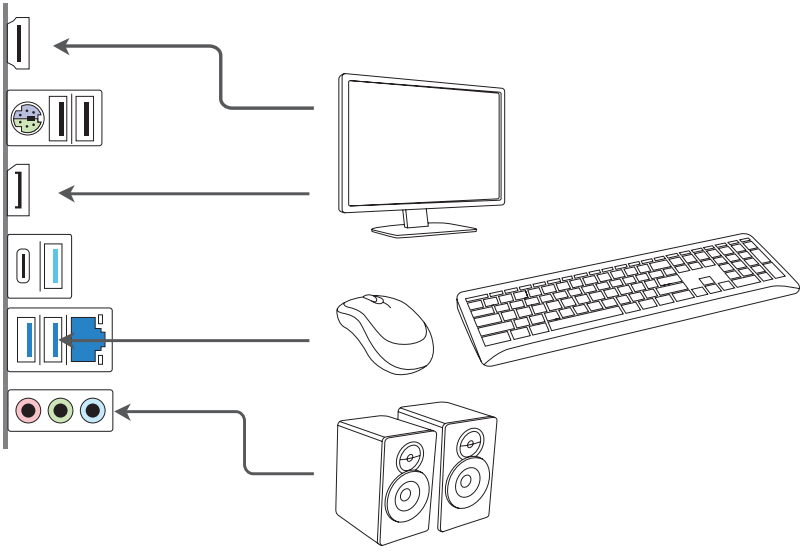
PCIE1 (PCIe 5.0 x16 slot) is used for PCIe x16 lane width graphics cards.
PCIE2 (PCIe 3.0 x16 slot) is used for PCIe x4 lane width graphics cards.

PCIe Slot Configurations

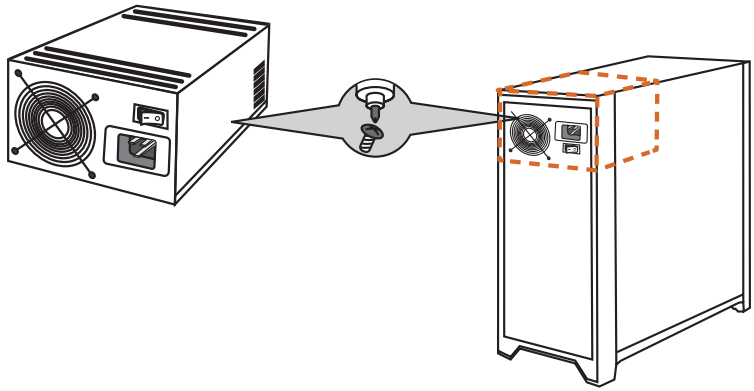
	PCIE1	PCIE2
Single Graphics Card	Gen5x16	N/A
Two Graphics Cards in CrossFire™ Mode	Gen5x16	Gen3x4

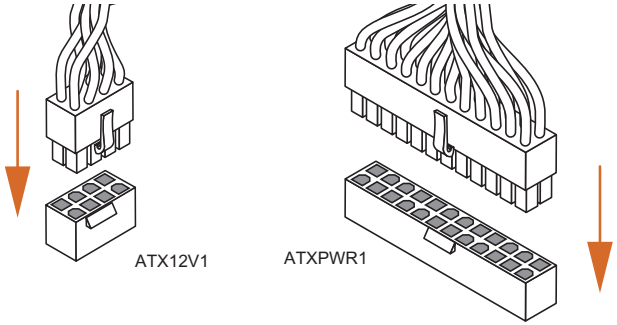
For a better thermal environment, please connect a chassis fan to the motherboard's chassis fan connector (CHA_FAN1~4/WP) when using multiple graphics cards.

2.9 Connecting Peripheral Devices

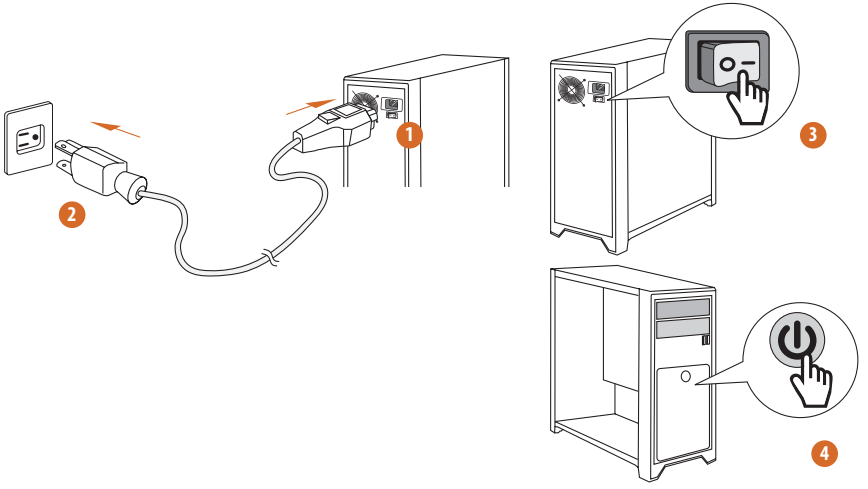


2.10 Connecting the Power Connectors



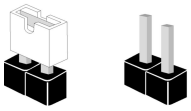


2.11 Power On



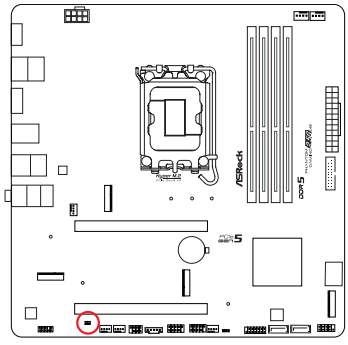
2.12 Jumpers Setup

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
(CLRMOS1) (see p.6, 7, No. 22)

CLRMOS1 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 CLRMOS1 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.



CLRMOS1



2-pin Jumper

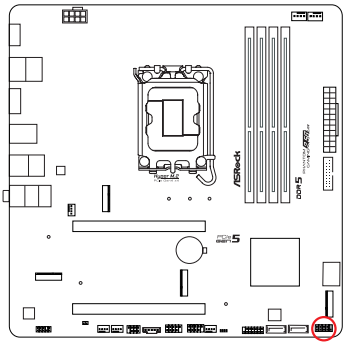
Short: Clear CMOS
Open: Default

2.13 Onboard Headers and Connectors

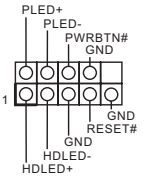
Onboard headers and connectors are NOT jumpers. Do NOT place jumper caps over these headers and connectors. Placing jumper caps over the headers and connectors will cause permanent damage to the motherboard.

System Panel Header
(9-pin PANEL1) (see p.6, 7, No. 10)

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.



PANEL1



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.

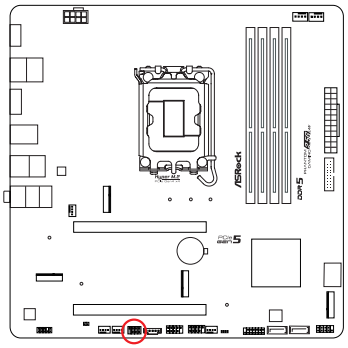
PLED (System Power LED):
Connect to the power status indicator on the chassis front panel. The LED is on when the system is operating. The LED keeps blinking when the system is in S1/S3 sleep state. The LED is off when the system is in S4 sleep state or powered off (S5).

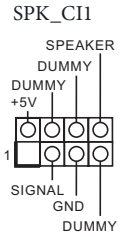
HDLED (Hard Drive Activity LED):
Connect to the hard drive activity LED on the chassis front panel. The LED is on when the hard drive is reading or writing data.

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.

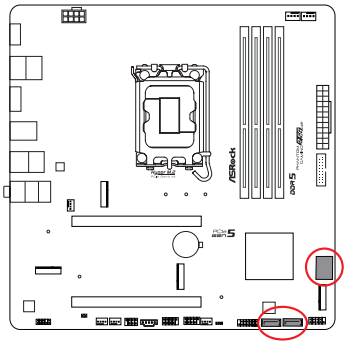
Chassis Intrusion and Speaker Header
(7-pin SPK_CI1) (see p.6, 7, No. 19)

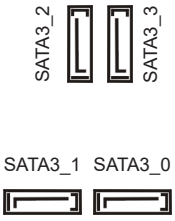
Please connect the chassis intrusion and the chassis speaker to this header.





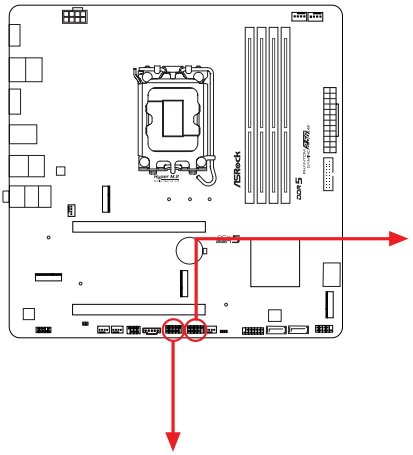
Serial ATA3 Connectors
Vertical:
(SATA3_0) (see p.6, 7, No. 11)
(SATA3_1) (see p.6, 7, No. 12)
Right Angle:
(SATA3_2) (see p.6, 7, No. 9)(Upper)
(SATA3_3) (see p.6, 7, No. 8)(Lower)
These four SATA3 connectors support SATA data cables for internal storage devices with up to 6.0 Gb/s data transfer rate.





USB 2.0 Headers
(9-pin USB_3_4) (see p.6, 7, No. 17)
(9-pin USB_5_6) (see p.6, 7, No. 16)

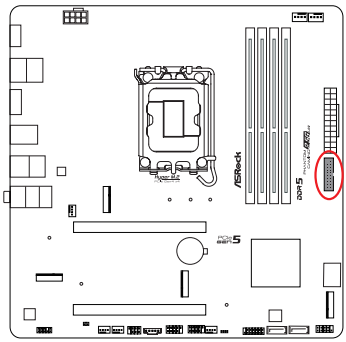
There are two headers on this motherboard. Each USB 2.0 header can support two ports.



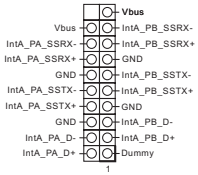
USB 3.2 Gen1 Header

(19-pin USB32_4_5) (see p.6, 7, No. 7)

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



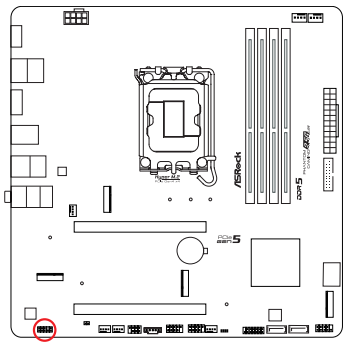
USB32_4_5



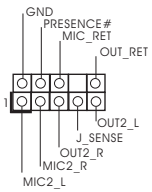
Front Panel Audio Header

(9-pin HD_AUDIO1) (see p.6, 7, No. 23)

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



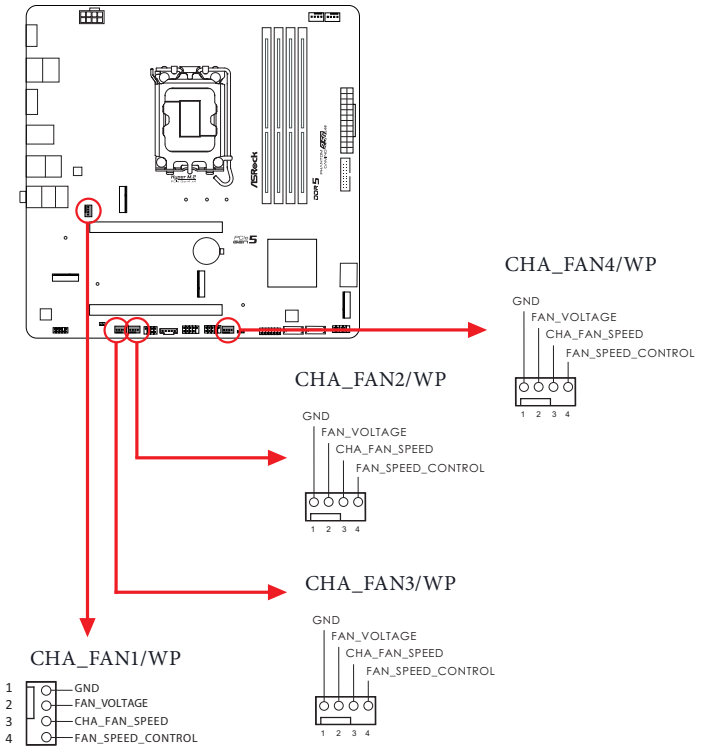
HD_AUDIO1



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.

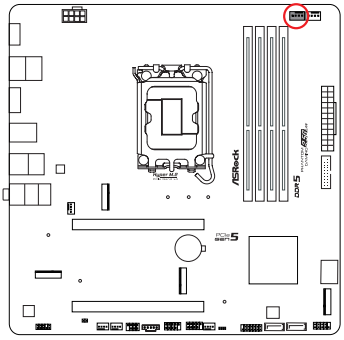
Chassis/Water Pump Fan Connectors
(4-pin CHA_FAN1/WP) (see p.6, 7, No. 24)
(4-pin CHA_FAN2/WP) (see p.6, 7, No. 20)
(4-pin CHA_FAN3/WP) (see p.6, 7, No. 21)
(4-pin CHA_FAN4/WP) (see p.6, 7, No. 15)

This motherboard provides four 4-Pin water cooling chassis fan connectors. If you plan to connect a 3-Pin chassis water cooler fan, please connect it to Pin 1-3.

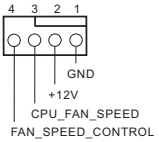


CPU Fan Connector
(4-pin CPU_FAN1) (see p.6, 7, No. 4)

This motherboard provides a 4-Pin CPU fan (Quiet Fan) connector. If you plan to connect a 3-Pin CPU fan, please connect it to Pin 1-3.

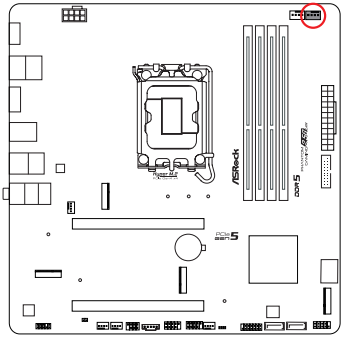


CPU_FAN1

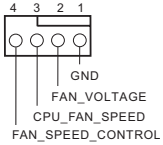


CPU/Water Pump Fan Connector
(4-pin CPU_FAN2/WP) (see p.6, 7, No. 5)

This motherboard provides a 4-Pin water cooling CPU fan connector. If you plan to connect a 3-Pin CPU water cooler fan, please connect it to Pin 1-3.

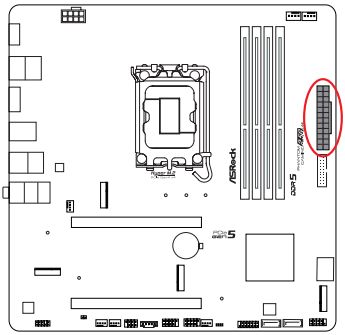


CPU_FAN2/WP

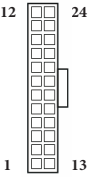


ATX Power Connector
(24-pin ATXPWR1) (see p.6, 7, No. 6)

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.



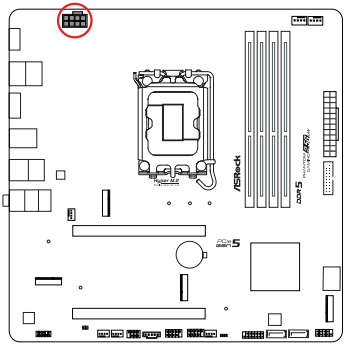
ATXPWR1



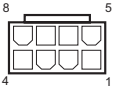
ATX 12V Power Connector
(8-pin ATX12V1) (see p.6, 7, No. 1)

This motherboard provides a 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.**



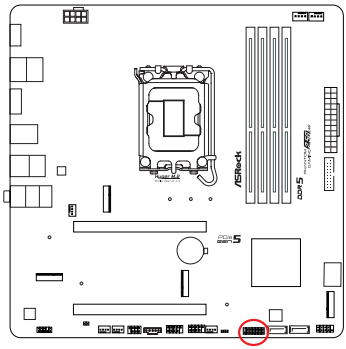
ATX12V1



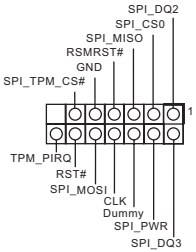
SPI TPM Header

(13-pin SPI_TPM_J1) (see p.6, 7, No. 13)

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

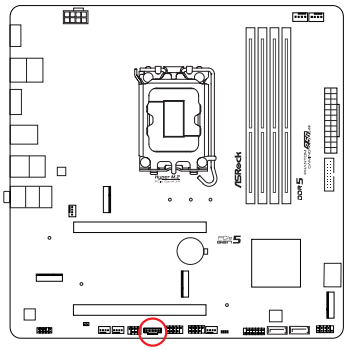


Thunderbolt AIC Connector

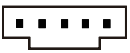
(5-pin TB1) (see p.6, 7, No. 18)

Please connect a Thunderbolt™ add-in card (AIC) to the Thunderbolt AIC connector via the GPIO cable.

*Please install the Thunderbolt™ AIC card to PCIE2 (default slot).

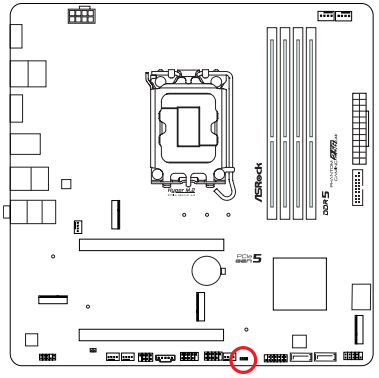


TB1



2.14 Post Status Checker

Post Status Checker (PSC) diagnoses the computer when users power on the machine. It emits a red light to indicate whether the CPU, memory, VGA or storage is dysfunctional. The lights go off if the four mentioned above are functioning normally.





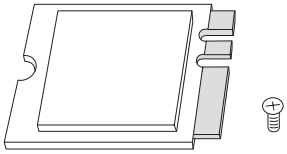
2.15 M.2 WiFi/BT PCIe WiFi Module and Intel® CNVi (Integrated WiFi/BT) Installation Guide (For B760M PG Lightning)

The M.2 is a small size and versatile card edge connector that aims to replace mPCIe and mSATA. The M.2 Socket (Key E) supports type 2230 WiFi/BT PCIe WiFi module and Intel® CNVi (Integrated WiFi/BT).

* The M.2 socket does not support SATA M.2 SSDs.

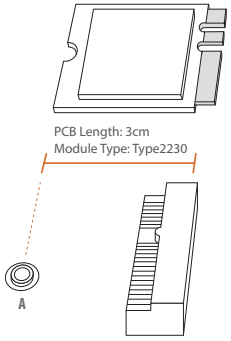
Before you install Intel® Integrated Connectivity (CNVi) module, be sure to turn off the AC power.

Installing the WiFi/BT module or Intel® CNVi (Integrated WiFi/BT)



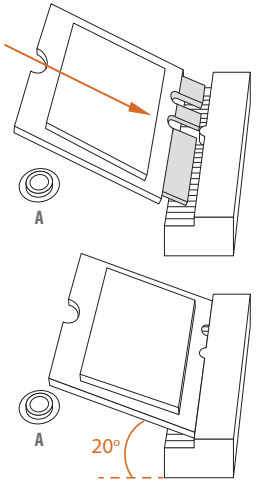
Step 1

Prepare a type 2230 WiFi/BT PCIe WiFi module or Intel® CNVi (Integrated WiFi/BT) and the screw.



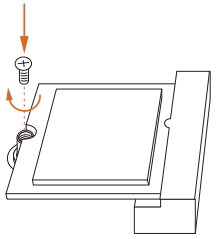
Step 2

Find the nut location to be used.



Step 3

Gently insert the WiFi/BT PCIe WiFi module or Intel® CNVi (Integrated WiFi/BT) into the M.2 slot. Please be aware that the module only fits in one orientation.



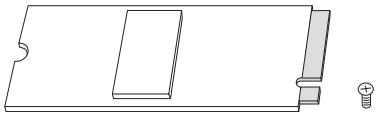
Step 4

Tighten the screw with a screwdriver to secure the module into place. Please do not overtighten the screw as this might damage the module.

2.16 M.2 SSD Module 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 2242/2260/2280 PCIe Gen4x4 (64 Gb/s) mode.

Installing the M.2 SSD Module

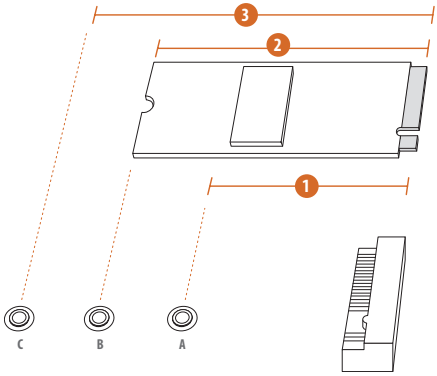


Step 1

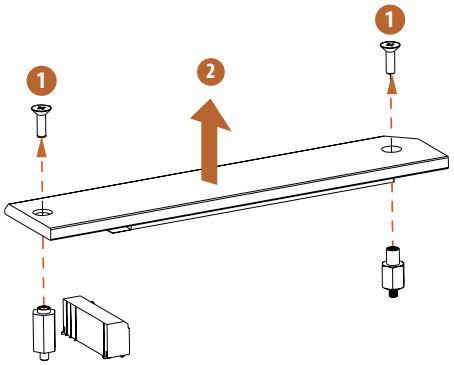
Prepare a M.2 SSD module and the screw.

Step 2

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



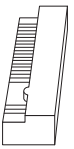
No.	1	2	3
Nut Location	A	B	C
PCB Length	4.2cm	6cm	8cm
Module Type	Type 2242	Type 2260	Type 2280



Step 3

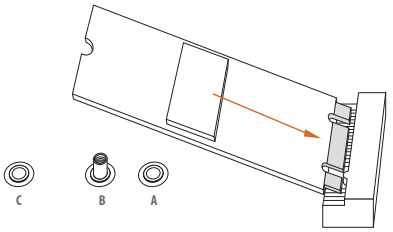
Before installing a M.2 SSD module, please loosen the screws to remove the M.2 heatsink.
*Please remove the protective films on the bottom side of the M.2 heatsink before you install a M.2 SSD module.

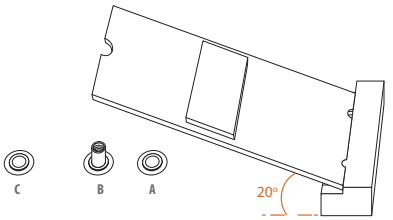




Step 4

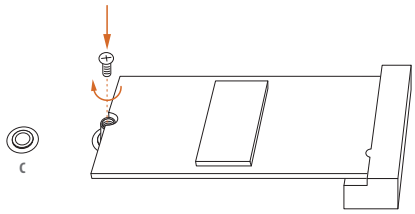
Peel off the yellow protective film on the nut to be used. Prepare the M.2 standoff that comes with the package, and tighten the standoff into the desired nut location on the motherboard. Skip
Step 4 if your M.2 SSD module is Type 2280.





Step 5

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



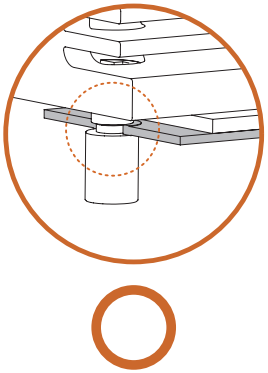
Step 6

Tighten the screw with a screwdriver to secure the module into place. Please do not overtighten the screw as this might damage the module. Skip Step 6 if your M.2 SSD module is Type 2280.

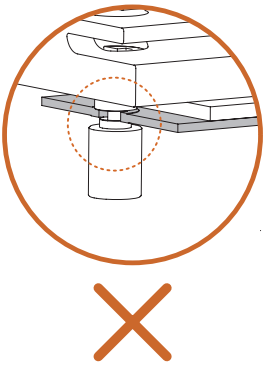
Step 7

Before securing the M.2 heatsink, make sure to align the notch on the SSD to the standoff on the motherboard if you use a Type 2280 SSD module; otherwise, the SSD module may be damaged.

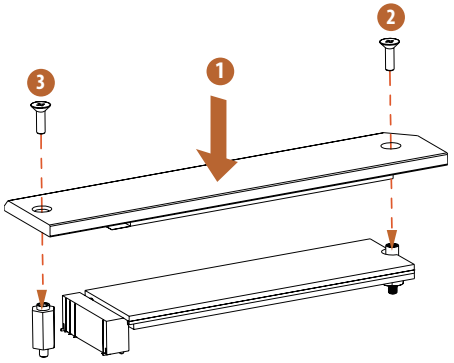
*The illustrations here are for reference only.



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



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



Step 8

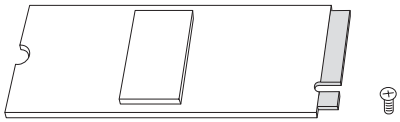
Tighten the screws with a screwdriver to secure the module (if your M.2 SSD module is Type 2280) and M.2 heatsink into place in the order shown. Tighten screw opposite the M.2 connector first (2), and then tighten the one next to the M.2 connector (3).
*Please do not overtighten the screw as this might damage the module and M.2 heatsink.

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

2.17 M.2 SSD Module Installation Guide (M2_2 and M2_3)

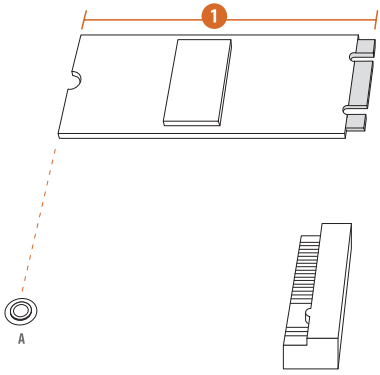
The M.2 is a small size and versatile card edge connector that aims to replace mPCIe and mSATA. The Hyper M.2 Socket (M2_2, Key M) supports type 2280 PCIe Gen4x4 (64 Gb/s) mode. The Hyper M.2 Socket (M2_3, Key M) supports type 2280 PCIe Gen4x4 (64 Gb/s) mode.

Installing the M.2 SSD Module



Step 1

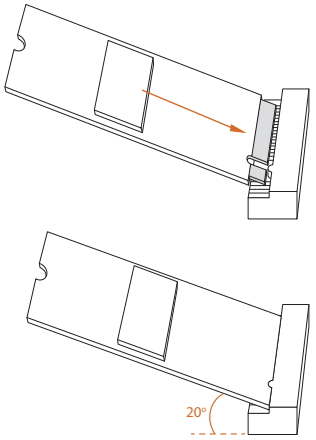
Prepare a M.2 SSD module and the screw.



Step 2

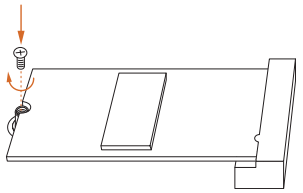
Depending on the PCB type and length of your M.2 SSD module, find the corresponding nut location to be used.

No.	1
Nut Location	A
PCB Length	8cm
Module Type	Type2280



Step 4

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



Step 5

Tighten the screw with a screwdriver to secure the module into place. Please do not overtighten the screw as this might damage the module.

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

Version 1.0
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(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.

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"Perchlorate Material-special handling may apply, see www.dtsc.ca.gov/hazardouswaste/perchlorate"

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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.