



# **B550 GAMING WIFI**

## **Motherboard**

User Guide

# Contents

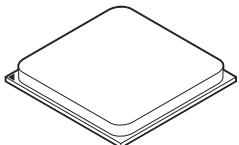
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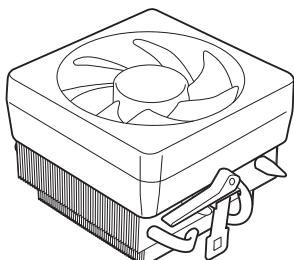
# Quick Start

Thank you for purchasing a new motherboard from MSI®. This Quick Start section provides demonstration diagrams about how to install your computer. Some of the installations also provide video demonstrations. Please link to the URL to watch it with the web browser on your phone or tablet. You may have even link to the URL by scanning the QR code.

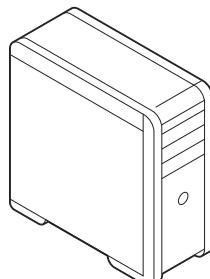
## Preparing Tools and Components



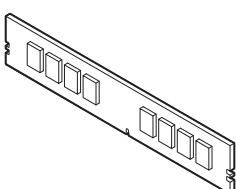
AMD® AM4 CPU



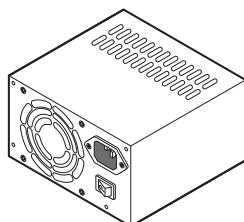
CPU Fan



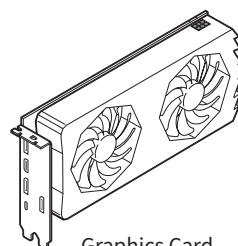
Chassis



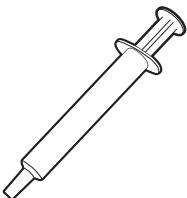
DDR4 Memory



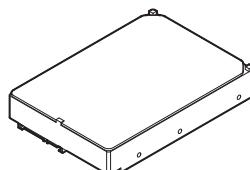
Power Supply Unit



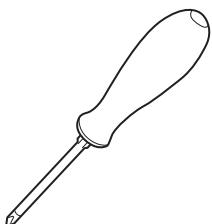
Graphics Card



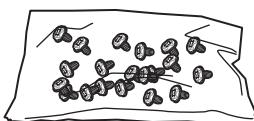
Thermal Paste



SATA Hard Disk Drive



Phillips Screwdriver



A Package of Screws

## Safety Information

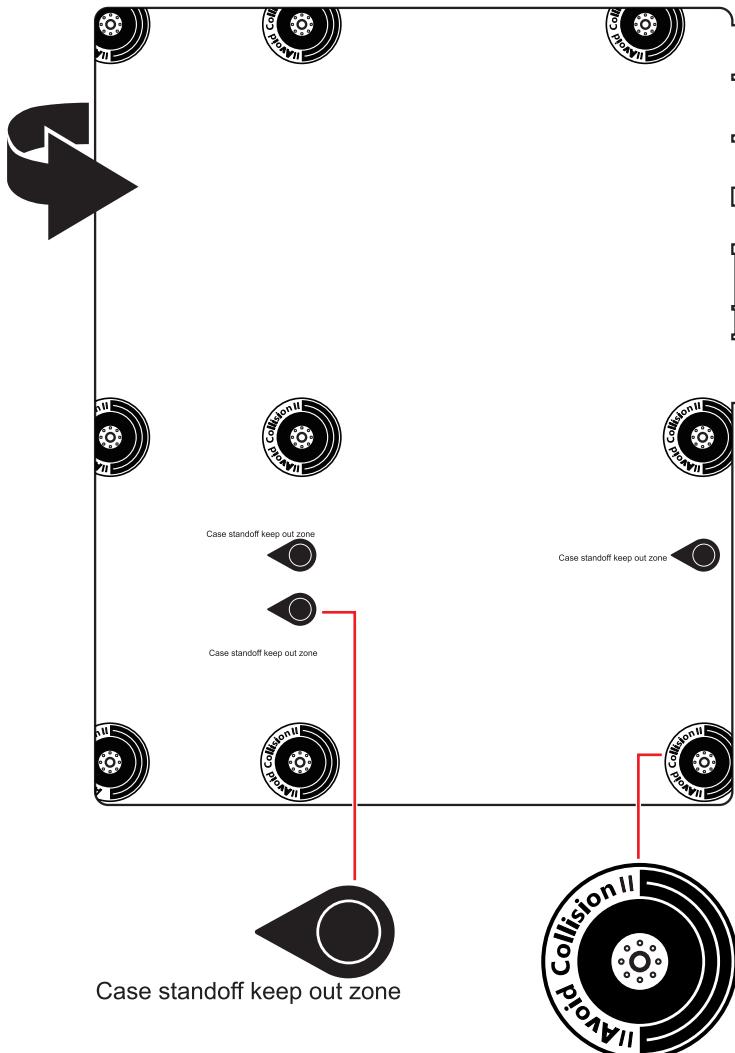
- The components included in this package are prone to damage from electrostatic discharge (ESD). Please adhere to the following instructions to ensure successful computer assembly.
- Ensure that all components are securely connected. Loose connections may cause the computer to not recognize a component or fail to start.
- Hold the motherboard by the edges to avoid touching sensitive components.
- It is recommended to wear an electrostatic discharge (ESD) wrist strap when handling the motherboard to prevent electrostatic damage. If an ESD wrist strap is not available, discharge yourself of static electricity by touching another metal object before handling the motherboard.
- Store the motherboard in an electrostatic shielding container or on an anti-static pad whenever the motherboard is not installed.
- Before turning on the computer, ensure that there are no loose screws or metal components on the motherboard or anywhere within the computer case.
- Do not boot the computer before installation is completed. This could cause permanent damage to the components as well as injury to the user.
- If you need help during any installation step, please consult a certified computer technician.
- Always turn off the power supply and unplug the power cord from the power outlet before installing or removing any computer component.
- Keep this user guide for future reference.
- Keep this motherboard away from humidity.
- Make sure that your electrical outlet provides the same voltage as is indicated on the PSU, before connecting the PSU to the electrical outlet.
- Place the power cord such a way that people can not step on it. Do not place anything over the power cord.
- All cautions and warnings on the motherboard should be noted.
- If any of the following situations arises, get the motherboard checked by service personnel:
  - Liquid has penetrated into the computer.
  - The motherboard has been exposed to moisture.
  - The motherboard does not work well or you can not get it work according to user guide.
  - The motherboard has been dropped and damaged.
  - The motherboard has obvious sign of breakage.
- Do not leave this motherboard in an environment above 60°C (140°F), it may damage the motherboard.

## Case stand-off notification

To prevent damage to the motherboard, any unnecessary mounting stand-off between the motherboard circuits and the computer case is prohibited. The Case stand-off keep out zone signs will be marked on the backside of motherboard (as shown below) to serve as a warning to user.

## Avoid collision notification

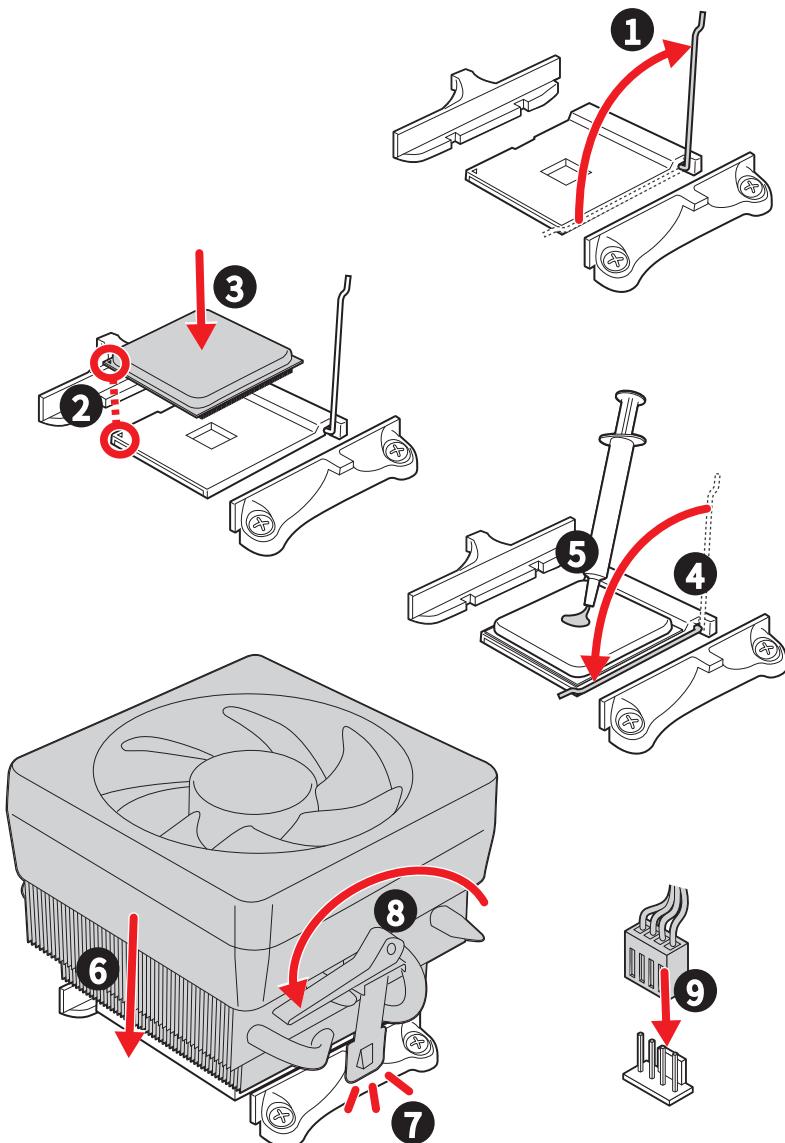
Protective paint is printed around each screw hole to prevent parts from being scratched.



# Installing a Processor

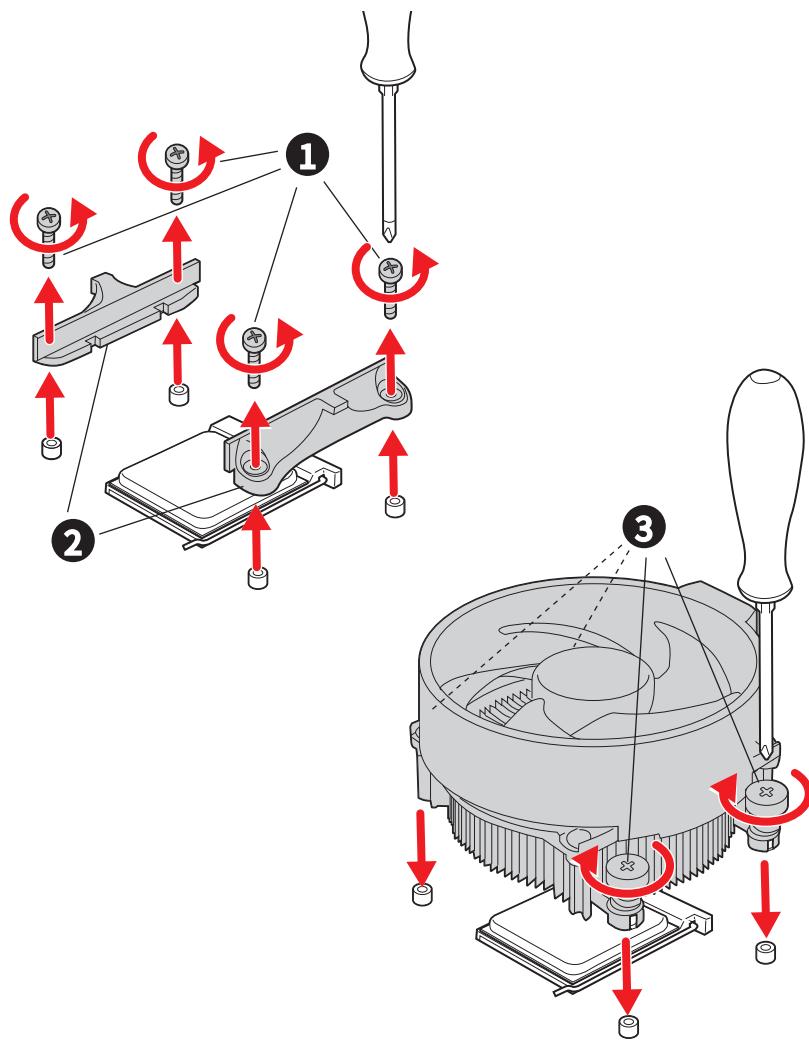


• <https://youtu.be/Xv89nhFk1vc>



 **Important**

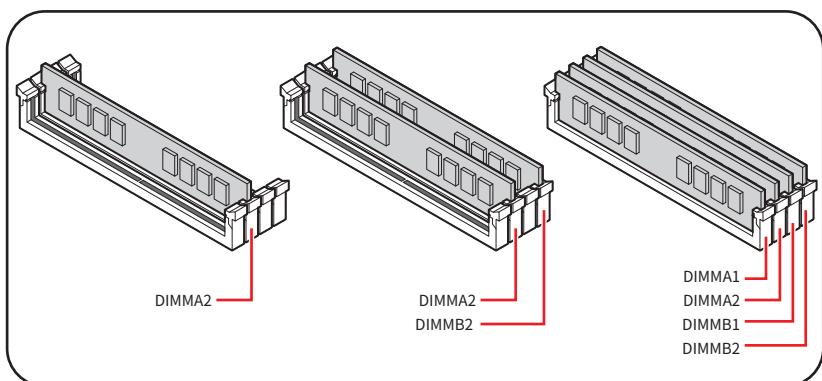
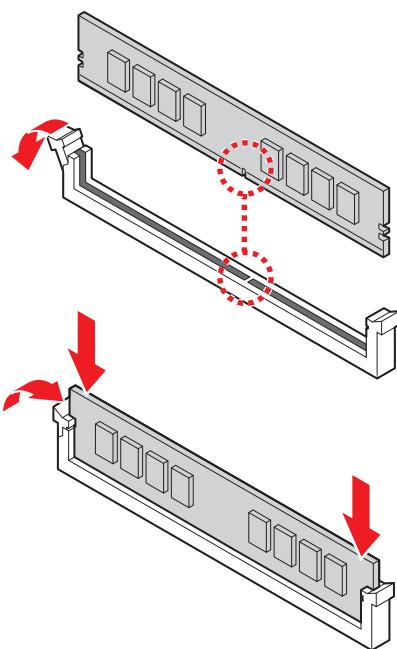
If you are installing the screw-type CPU heatsink, please follow the figure below to remove the retention module first and then install the heatsink.



## Installing DDR4 memory



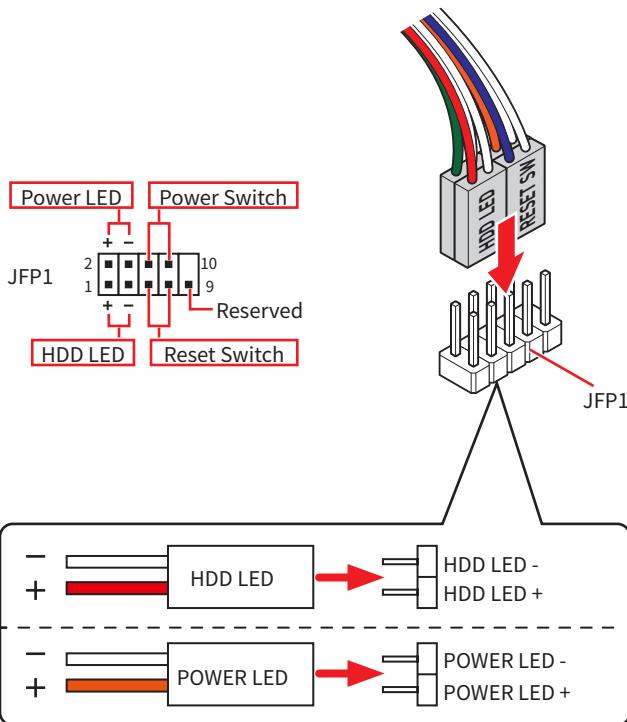
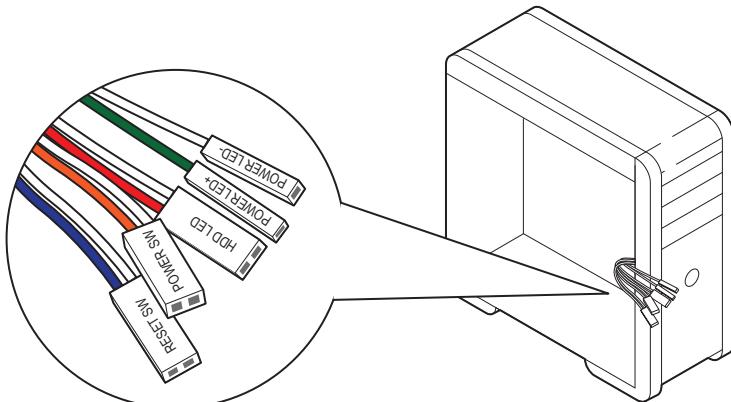
- <https://youtu.be/XiNmkDNzCZk>



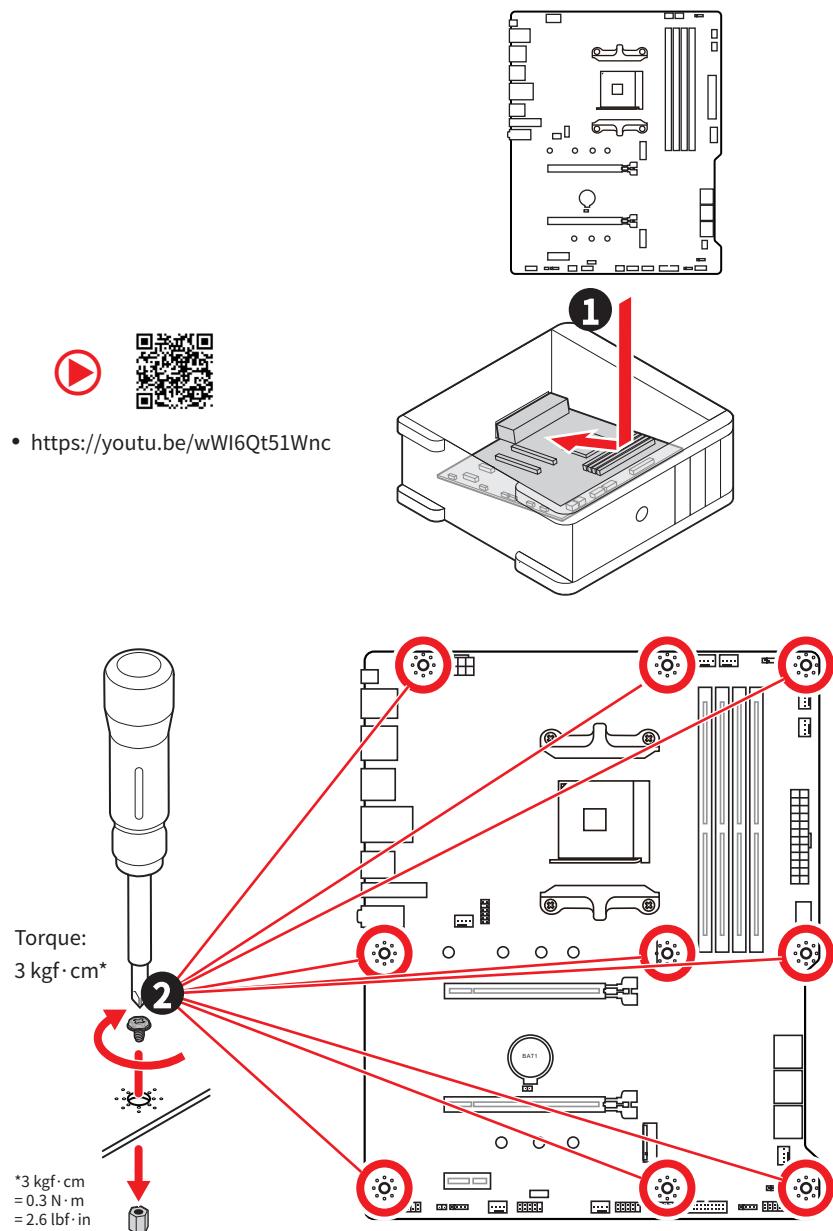
# Connecting the Front Panel Header



- <http://youtu.be/DPELIdVNzUI>



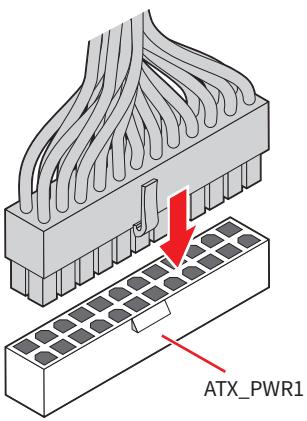
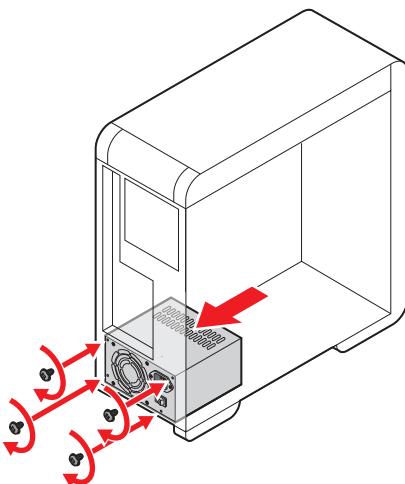
## Installing the Motherboard



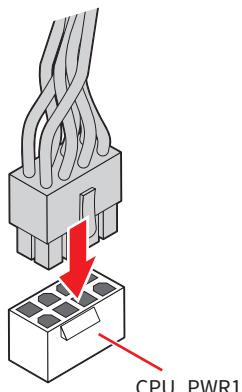
## Connecting the Power Connectors



- [http://youtu.be/gkDYyR\\_83I4](http://youtu.be/gkDYyR_83I4)



ATX\_PWR1

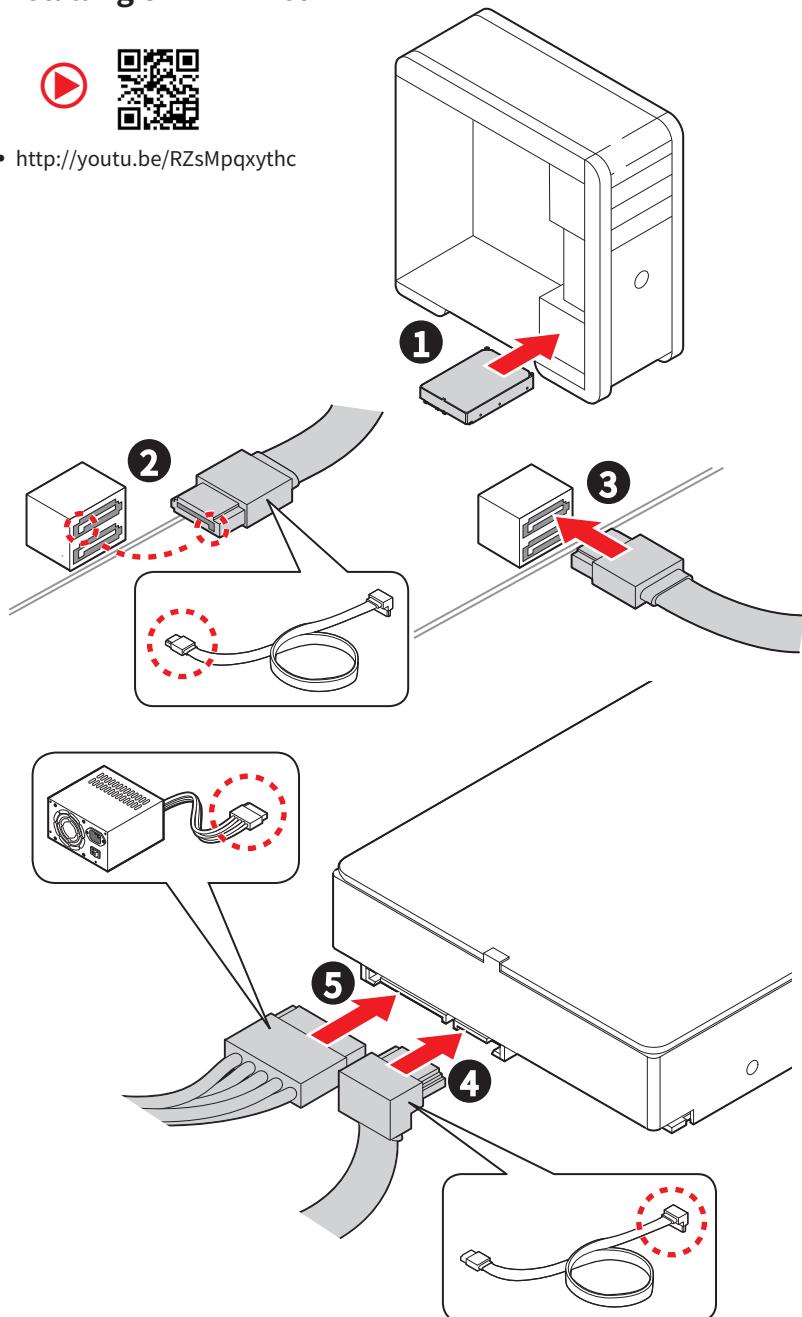


CPU\_PWR1

## Installing SATA Drives



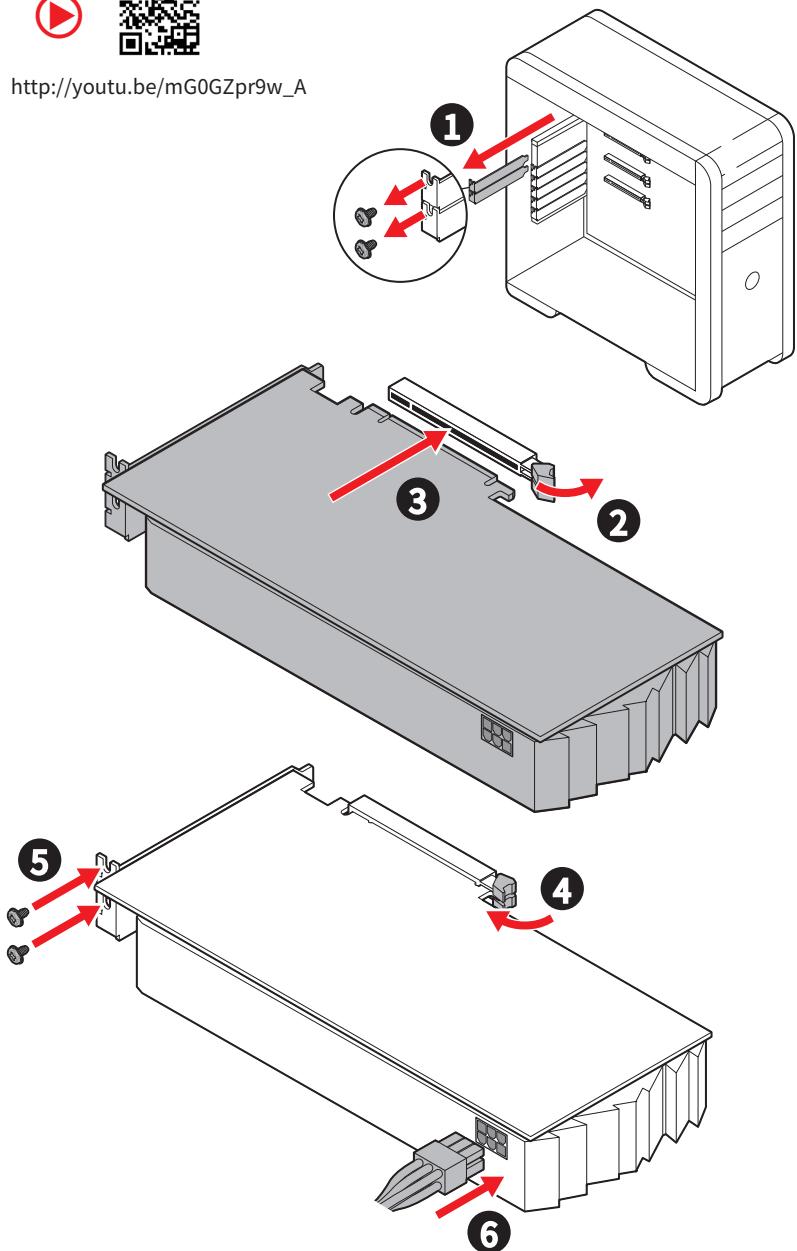
- <http://youtu.be/RZsMpqxythc>



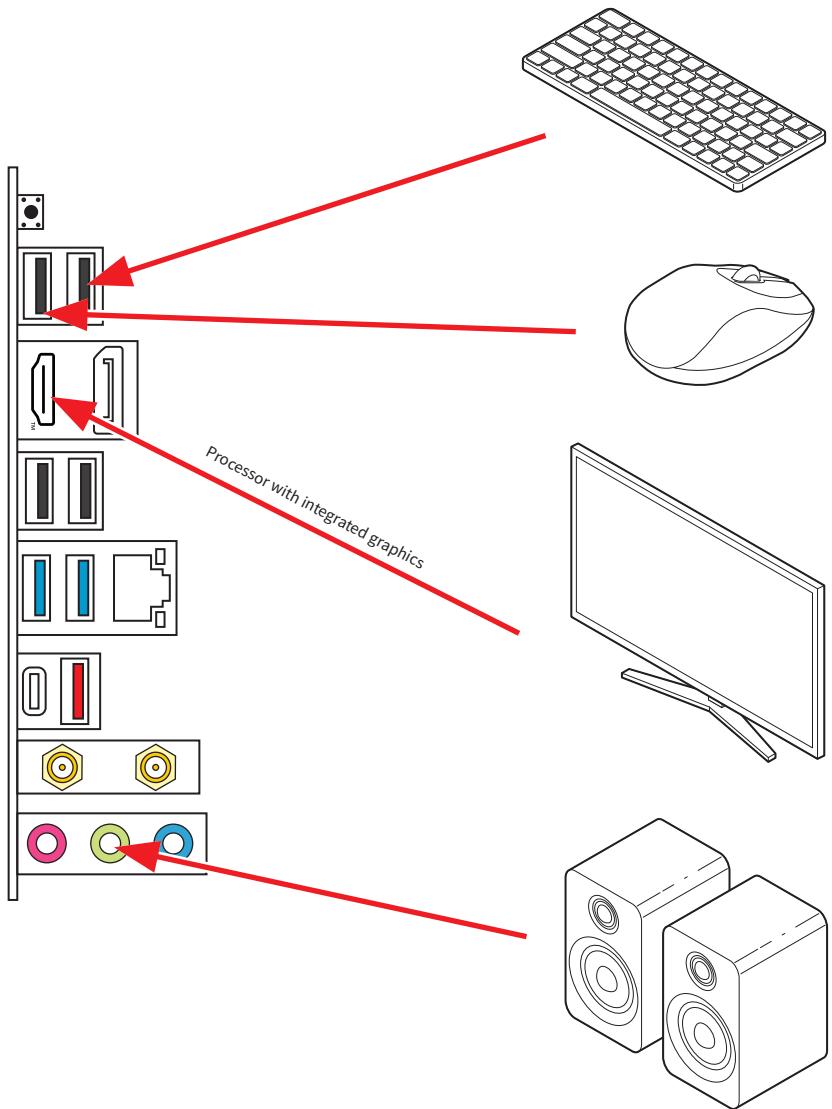
## Installing a Graphics Card



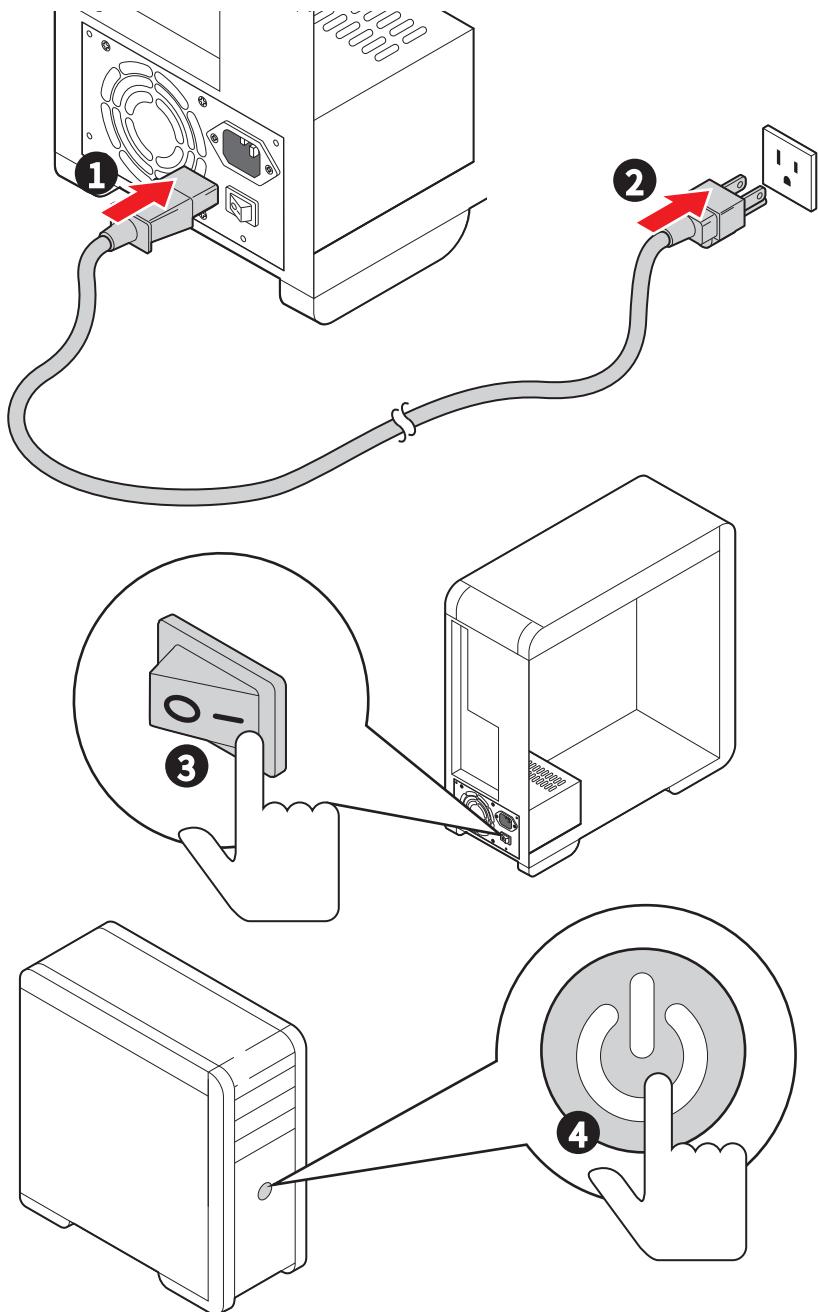
- [http://youtu.be/mG0GZpr9w\\_A](http://youtu.be/mG0GZpr9w_A)



## Connecting Peripheral Devices



## Power On



# Specifications

CPU	<ul style="list-style-type: none"><li>Supports AMD Ryzen™ 5000 Series, 5000 G-Series, 4000 G-Series, and 3000 Series processors</li><li>Supports Socket AM4</li></ul> <p>* Please go to <a href="http://www.msi.com">www.msi.com</a> to get the newest support status as new processors are released.</p>
Chipset	AMD B550 Chipset
Memory	<ul style="list-style-type: none"><li>4x DDR4 memory slots, supporting up to 128 GB*</li><li>Supports DDR4 1866/ 2133/ 2400/ 2667/ 2800/ 2933/ 3000/ 3066/ 3200 MHz by JEDEC</li><li>Supports DDR4 2667/ 2800/ 2933/ 3000/ 3066/ 3200/ 3466/ 3600/ 3733/ 3866/ 4000/ 4133/ 4266/ 4400+ MHz by A-XMP OC MODE</li><li>1DPC 1R max speed 4400 MHz</li><li>1DPC 2R max speed 3866 MHz</li><li>2DPC 1R max speed 4000 MHz</li><li>2DPC 2R max speed 3600 MHz</li><li>Dual channel memory architecture</li><li>Supports non-ECC UDIMM memory</li><li>Supports ECC UDIMM memory (non-ECC mode)</li><li>Supports un-buffered memory</li></ul> <p>* Please refer to <a href="http://www.msi.com">www.msi.com</a> for more information on compatible memory.</p>
Expansion Slots	<ul style="list-style-type: none"><li>2x PCIe x16 slots<ul style="list-style-type: none"><li>PCI_E1 slot (From CPU)<ul style="list-style-type: none"><li>Supports PCIe 4.0/ 3.0 x16*</li></ul></li><li>PCI_E2** slot (From B550 chipset)<ul style="list-style-type: none"><li>Supports PCIe 3.0 x4</li></ul></li></ul></li><li>1x PCIe x1 slot<ul style="list-style-type: none"><li>PCI_E3 slot (From B550 chipset)<ul style="list-style-type: none"><li>Support PCIe 3.0 x1</li></ul></li></ul></li></ul> <p>* The supported specification depends on installed processor.</p> <p>** When installing PCIe SSD in M.2_2 slot, PCI_E2 slot will be unavailable.</p>
Onboard Graphics	<ul style="list-style-type: none"><li>1x HDMI™ 2.1 port, supporting a maximum resolution of 4096x2160 60Hz**</li><li>1x DisplayPort 1.2 port, supporting a maximum resolution of 4096x2160 60Hz**</li><li>Maximum shared memory of 16 GB</li></ul> <p>* Graphics specifications may vary depending on the CPU installed.</p> <p>** Available for the processor with integrated graphics.</p>

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<b>SATA Ports</b>	<ul style="list-style-type: none"> <li>• 6x SATA 6Gb/s ports (From B550 Chipset)</li> </ul>
<b>M.2 SSD Slots</b>	<ul style="list-style-type: none"> <li>• 2x M.2 slots (Key M)           <ul style="list-style-type: none"> <li>• M2_1 slot (From CPU)               <ul style="list-style-type: none"> <li>• Supports PCIe 4.0/ 3.0 x4*</li> <li>• Supports SATA 6Gb/s</li> <li>• Supports 2242/ 2260/ 2280/ 22110 storage devices</li> </ul> </li> <li>• M2_2 slot (From B550 Chipset)               <ul style="list-style-type: none"> <li>• Supports PCIe 3.0 x4</li> <li>• Supports 2242/ 2260/ 2280 storage devices</li> </ul> </li> </ul> </li> </ul> <p>* The supported specification depends on installed processor.</p>
<b>RAID</b>	<ul style="list-style-type: none"> <li>• Supports RAID 0, RAID 1 and RAID 10 for SATA storage devices</li> <li>• Supports RAID 0 and RAID 1 for M.2 NVMe storage devices</li> </ul>
<b>Audio</b>	<p>Realtek® ALC892/ ALC897 Codec</p> <ul style="list-style-type: none"> <li>• 7.1-Channel High Definition Audio</li> </ul>
<b>LAN</b>	<ul style="list-style-type: none"> <li>• 1x Realtek® 8111H 1Gbps LAN controller</li> </ul>
<b>Wi-Fi &amp; Bluetooth®</b>	<p>Wi-Fi 5</p> <ul style="list-style-type: none"> <li>• The Wireless module is pre-installed in the M.2 (Key-E)slot</li> <li>• Supports 802.11 a/ b/ g/ n/ ac, dual band (2.4GHz, 5GHz) up to 433 Mbps speed</li> <li>• Supports Bluetooth® 5.0*</li> </ul> <p>* The Bluetooth version may be updated, please refer to the Wi-Fi chipset vendor's website for details.</p>
<b>Power Connectors</b>	<ul style="list-style-type: none"> <li>• 1x 24-pin ATX main power connector</li> <li>• 1x 8-pin +12V power connector</li> </ul>
<b>Internal USB Connectors</b>	<ul style="list-style-type: none"> <li>• 1x USB 5Gbps Type-C front panel connector (From B550 chipset)</li> <li>• 1x USB 5Gbps connector (From B550 chipset)           <ul style="list-style-type: none"> <li>• Supports additional 2 USB 5Gbps ports</li> </ul> </li> <li>• 2x USB 2.0 Type-A connectors (From B550 chipset)           <ul style="list-style-type: none"> <li>• Supports additional 4 USB 2.0 ports</li> </ul> </li> </ul>
<b>Fan Connectors</b>	<ul style="list-style-type: none"> <li>• 1x 4-pin CPU fan connector</li> <li>• 1x 4-pin water-pump fan connector</li> <li>• 6x 4-pin system fan connectors</li> </ul>

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<b>System Connectors</b>	<ul style="list-style-type: none"><li>• 1x Front panel audio connector</li><li>• 2x System panel connectors</li><li>• 1x Chassis intrusion connector</li><li>• 1x TPM module connector</li><li>• 1x Serial port connector</li></ul>
<b>Jumpers</b>	<ul style="list-style-type: none"><li>• 1x Clear CMOS jumper</li></ul>
<b>LED Features</b>	<ul style="list-style-type: none"><li>• 1x 4-pin RGB LED connector</li><li>• 2x 3-pin RAINBOW LED connectors</li><li>• 1x EZ LED Control switch</li><li>• 4x EZ Debug LED</li></ul>
<b>Back Panel Connectors</b>	<ul style="list-style-type: none"><li>• 1x Flash BIOS Button</li><li>• 4x USB 2.0 Type-A ports (From B550 chipset)</li><li>• 1x Display port</li><li>• 1x HDMI™ port</li><li>• 1x LAN (RJ45) port</li><li>• 2x USB 5Gbps Type-A ports (From CPU)</li><li>• 1x USB 10Gbps Type-A port (From CPU)</li><li>• 1x USB 10Gbps Type-C port (From CPU)</li><li>• 2x Wi-Fi antenna connectors</li><li>• 3x Audio jacks</li></ul>
<b>I/O Controller</b>	NUVOTON NCT6687-R Controller Chip
<b>Hardware Monitor</b>	<ul style="list-style-type: none"><li>• CPU/ System/ Chipset temperature detection</li><li>• CPU/ System/ Pump fan speed detection</li><li>• CPU/ System/ Pump fan speed control</li></ul>

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<b>Form Factor</b>	<ul style="list-style-type: none"><li>• ATX Form Factor</li><li>• 9.6 in. x 12 in. (244 mm x 305 mm)</li></ul>
<b>BIOS Features</b>	<ul style="list-style-type: none"><li>• 1x 256 Mb flash</li><li>• UEFI AMI BIOS</li><li>• ACPI 6.0, SMBIOS 2.8</li><li>• Multi-language</li></ul>
<b>Software</b>	<ul style="list-style-type: none"><li>• Drivers</li><li>• MSI Center</li><li>• Acrobat</li><li>• Adobe Creative Cloud</li><li>• AIDA64 Extreme - MSI Edition</li><li>• CPU-Z MSI GAMING</li><li>• Dropbox</li><li>• Norton 360</li></ul>

# Special Features

## MSI Center Features

- MSI AI Engine
- Cooling Wizard
- Mystic Light
- Ambient Link
- Frozr AI Cooling
- Hardware Monitoring
- Live Update
- MSI Companion
- System Diagnosis
- True Color
- User Scenario
- AI LAN Manager

## Audio

- Audio Boost

## Storage

- Lightning Gen 4 M.2

## Cooling

- All Aluminum Design
- Extended Heatsink Design
- Pump Fan
- Smart Fan Control

## LED

- Mystic Light Extension (RAINBOW/RGB)
- Mystic Light SYNC
- Ambient Link
- EZ LED Control
- EZ DEBUG LED

## Protection

- M.2 Shield
- PCI-E Steel Armor
- PCI-E Steel Slot

## Performance

- Lightning Gen 4 PCI-E Slot
- Lightning Gen 4 M.2
- DDR4 Boost
- Core Boost
- GAME Boost
- USB with Type A+C
- USB 3.2 Gen 2
- Front USB Type-C

## Experience

- Click BIOS 5
- Flash BIOS Button

# Package Contents

Please check the contents of your motherboard package. It should contain:

## Board

- 1x Motherboard

## Documentation

- 1x Quick installation guide
- 1x European Union regulatory notice

## Cables

- 2x SATA 6Gb/s cables

## Accessories

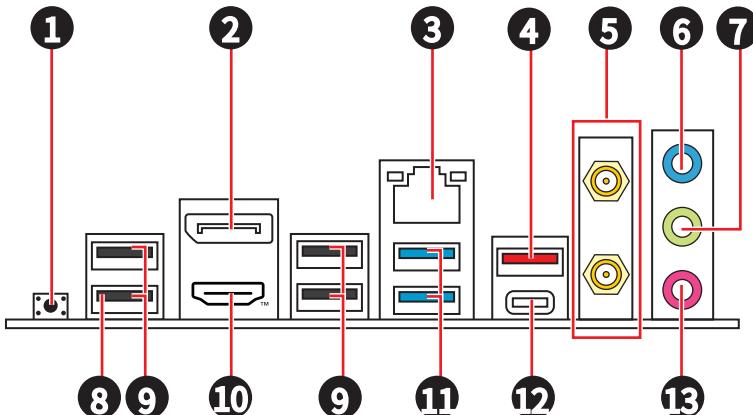
- 1x Wi-Fi Antenna
- 3x M.2 screws



### **Important**

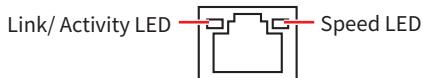
*If any of the above items are damaged or missing, please contact your retailer.*

# Back Panel Connectors



Item	Description
1	Flash BIOS button - Please refer to page 50 for details about updating BIOS with Flash BIOS button.
2	DisplayPort
3	1Gbps LAN (RJ45) port
4	USB 10Gbps Type-A port (From CPU)
5	Wi-Fi antenna connectors
6	Line-in port
7	Line-out port
8	Flash BIOS port
9	USB 2.0 Type-A ports (From B550 chipset)
10	HDMI™ port <b>HDMI™</b> HIGH-DEFINITION MULTIMEDIA INTERFACE
11	USB 5Gbps Type-A ports (From CPU)
12	USB 10Gbps Type-C port (From CPU)
13	Mic-in port

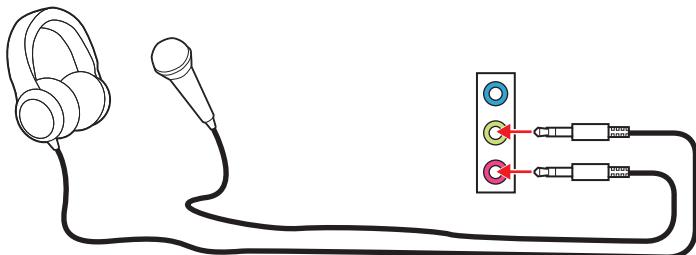
## LAN Port LED Status Table



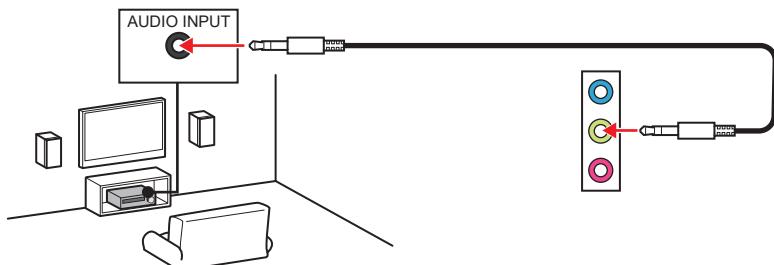
Link/ Activity LED		Speed LED	
Status	Description	Status	Speed
Off	No link	Off	10Mbps
Yellow blinking slowly	Linked	Green	100Mbps
Yellow blinking rapidly	Data activity	Orange	1Gbps

## Audio Jacks Connection

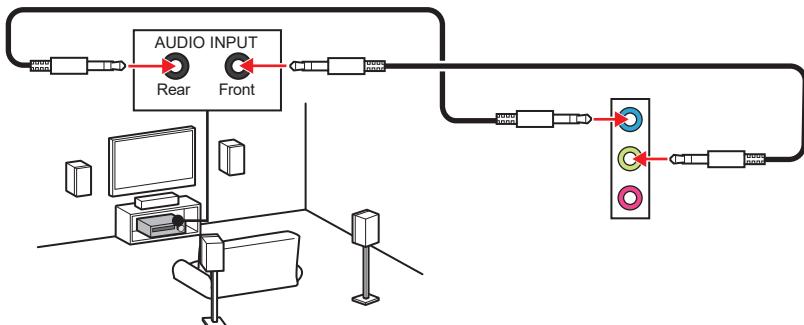
Audio jacks to headphone and microphone diagram



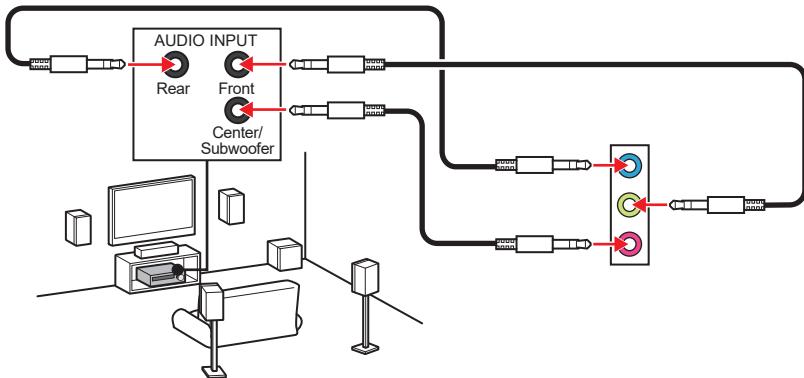
Audio jacks to stereo speakers diagram



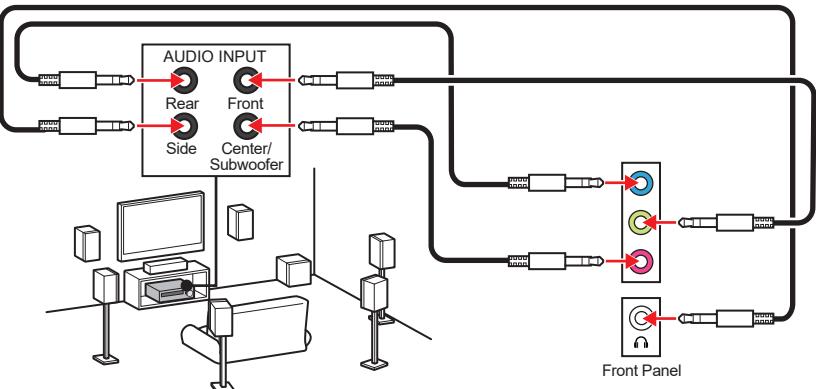
### Audio jacks to 4-channel speakers diagram



### Audio jacks to 5.1-channel speakers diagram

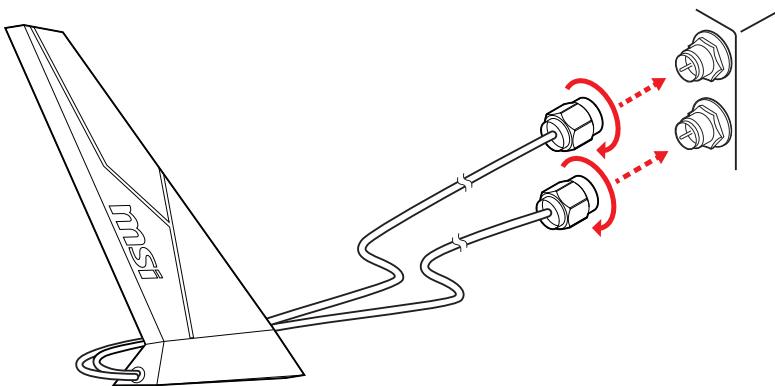


### Audio jacks to 7.1-channel speakers diagram

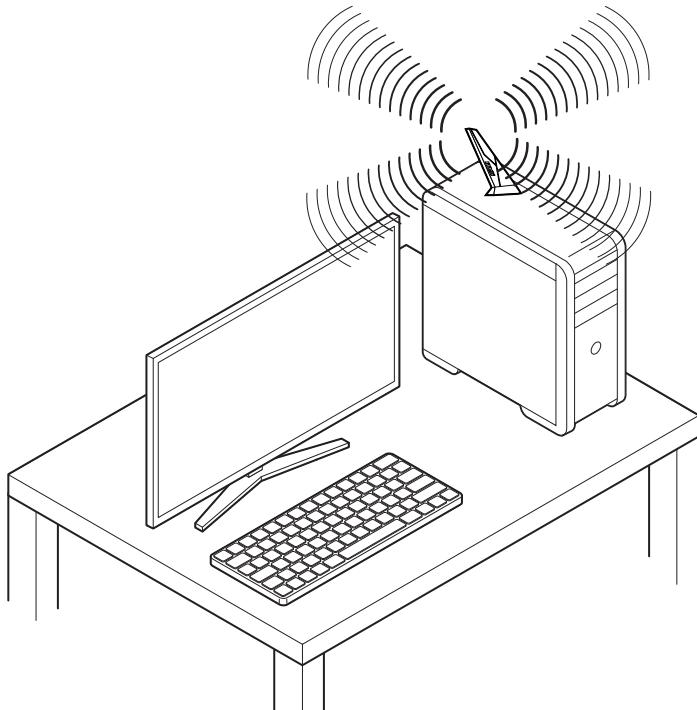


## Installing Antennas

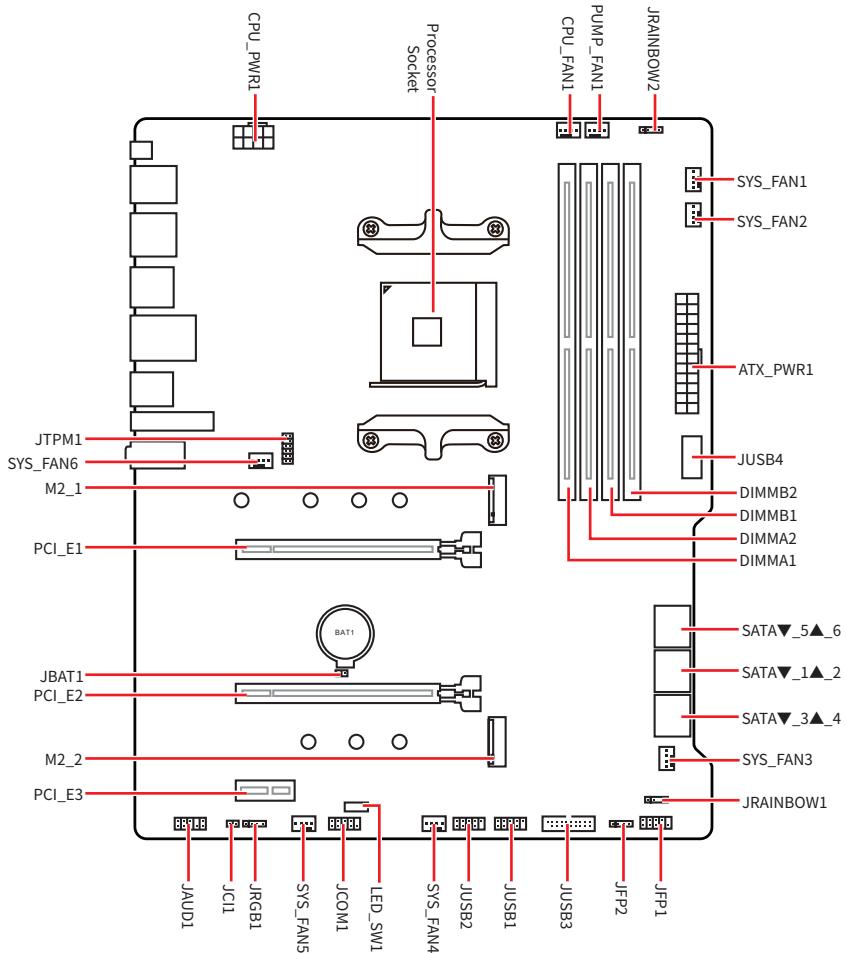
1. Screw two antenna cables tight to the Wi-Fi antenna connectors as shown.



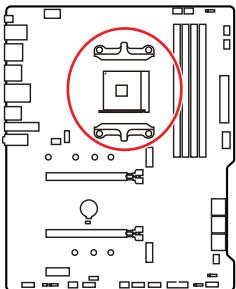
2. Place the antenna as high as possible.



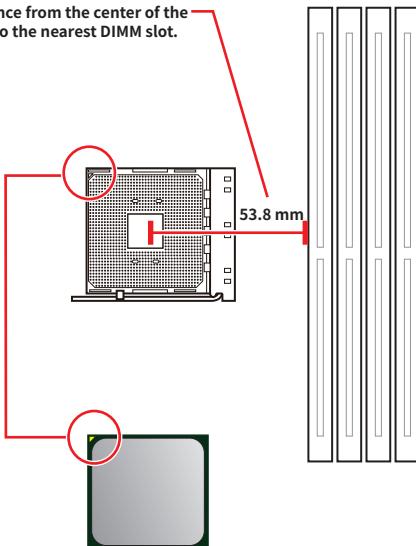
# Overview of Components



# CPU Socket



Distance from the center of the CPU to the nearest DIMM slot.



## Introduction to the AM4 CPU

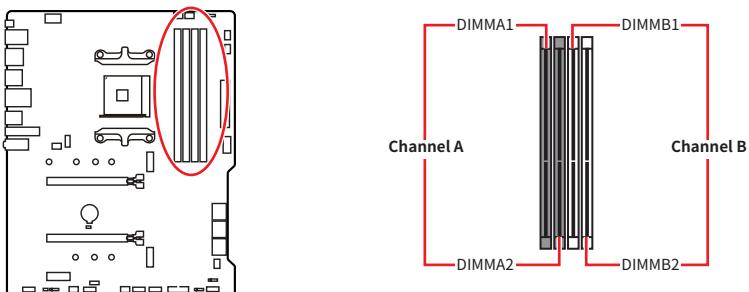
The surface of the AM4 CPU has a yellow triangle to assist in correctly lining up the CPU for motherboard placement. The yellow triangle is the Pin 1 indicator.



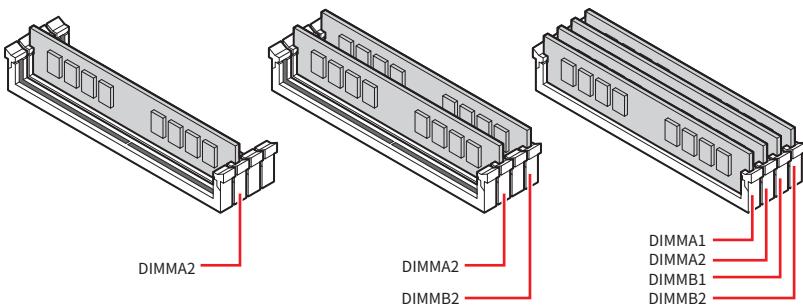
### Important

- When changing the processor, the system configuration could be cleared and reset BIOS to default values, due to the AM4 processor's architecture.
- Always unplug the power cord from the power outlet before installing or removing the CPU.
- When installing a CPU, always remember to install a CPU heatsink. A CPU heatsink is necessary to prevent overheating and maintain system stability.
- Confirm that the CPU heatsink has formed a tight seal with the CPU before booting your system.
- Overheating can seriously damage the CPU and motherboard. Always make sure the cooling fans work properly to protect the CPU from overheating. Be sure to apply an even layer of thermal paste (or thermal tape) between the CPU and the heatsink to enhance heat dissipation.
- If you purchased a separate CPU and heatsink/ cooler, Please refer to the documentation in the heatsink/ cooler package for more details about installation.
- This motherboard is designed to support overclocking. Before attempting to overclock, please make sure that all other system components can tolerate overclocking. Any attempt to operate beyond product specifications is not recommended. MSI® does not guarantee the damages or risks caused by inadequate operation beyond product specifications.

## DIMM Slots



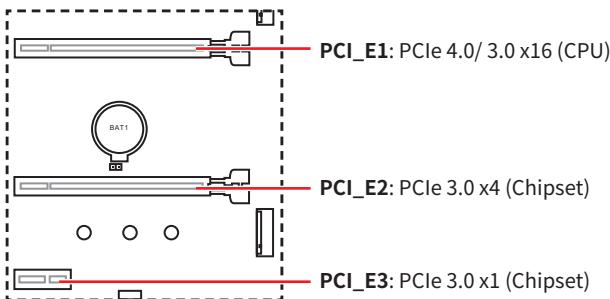
## Memory module installation



### Important

- Always insert memory modules in the **DIMMA2** slot first.
- To ensure system stability for Dual channel mode, memory modules must be of the same type, number and density.
- Some memory modules may operate at a lower frequency than the marked value when overclocking due to the memory frequency operates dependent on its Serial Presence Detect (SPD). Go to BIOS and find the **DRAM Frequency** to set the memory frequency if you want to operate the memory at the marked or at a higher frequency.
- It is recommended to use a more efficient memory cooling system for full DIMMs installation or overclocking.
- The stability and compatibility of installed memory module depend on installed CPU and devices when overclocking.
- Please refer to [www.msi.com](http://www.msi.com) for more information on compatible memory.

## PCI\_E1~3: PCIe Expansion Slots



### **Important**

- If you install a large and heavy graphics card, you need to use a tool such as **MSI Gaming Series Graphics Card Bolster** to support its weight to prevent deformation of the slot.
- For a single PCIe x16 expansion card installation with optimum performance, using the **PCI\_E1** slot is recommended.
- When adding or removing expansion cards, always turn off the power supply and unplug the power supply power cable from the power outlet. Read the expansion card's documentation to check for any necessary additional hardware or software changes.
- When installing PCIe SSD in M.2\_2 slot, **PCI\_E2** slot will be unavailable.

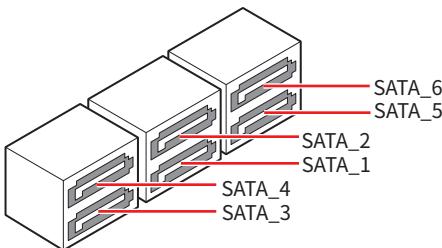
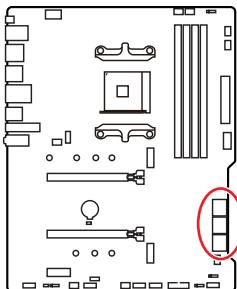
### M.2 slots and PCIe slots combination table

Slot	Combination	
M2_1 (CPU)	PCIe/ SATA	
M2_2 (Chipset)	PCIe x4	—
PCI_E1 (CPU)	✓	✓
PCI_E2 (Chipset)	—	✓
PCI_E3 (Chipset)	✓	✓

(SATA: M.2 SATA SSD, PCIe: M.2 PCIe SSD, ✓: available, —: unavailable)

## SATA\_1~6: SATA 6Gb/s Connectors

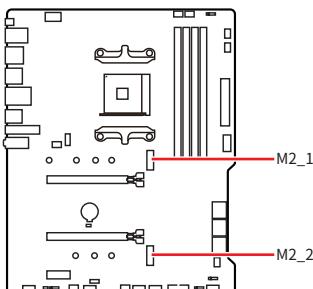
These connectors are SATA 6Gb/s interface ports. Each connector can connect to one SATA device.



### Important

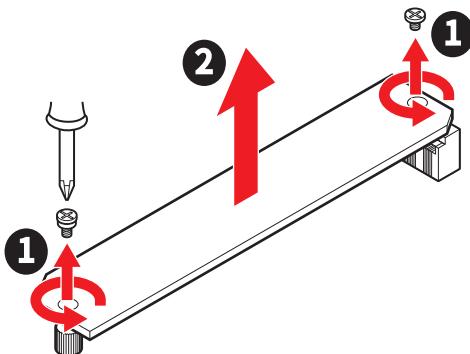
- Please do not fold the SATA cable at a 90-degree angle. Data loss may result during transmission otherwise.
- SATA cables have identical plugs on either sides of the cable. However, it is recommended that the flat connector be connected to the motherboard for space saving purposes.

## M2\_1~2: M.2 Slots (Key M)

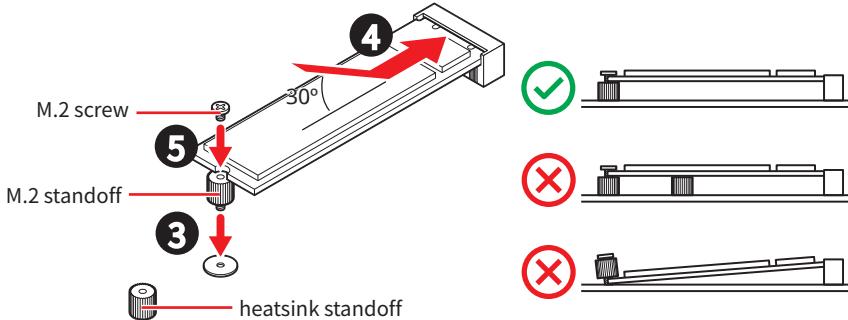


### Installing M.2 module into M2\_1 slot

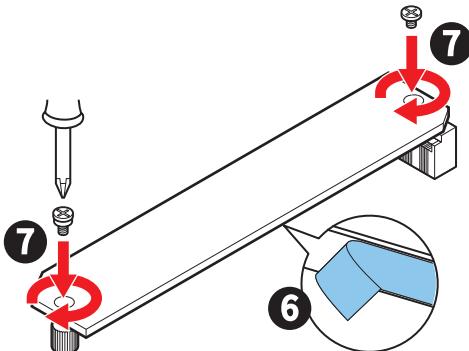
1. Loosen the screws of M.2 Shield Frozr heatsink.
2. Lift the M.2 Shield Frozr heatsink up and remove it.



3. Move and fasten the M.2 standoff to the appropriate position for your M.2 SSD, or remove the M.2 standoff if your M.2 SSD length is same as the length of M.2 heatsink to avoid damage to the M.2 SSD.
4. Insert your M.2 SSD into the M.2 slot at a 30-degree angle.
5. Secure the M.2 SSD in place with the M.2 screw, or skip this step if you remove the M.2 standoff in step 3.



6. Remove the protective films from the thermal pads under the M.2 Shield Frozr heatsink.
7. Put the M.2 Shield Frozr heatsink back in place and secure it.

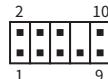
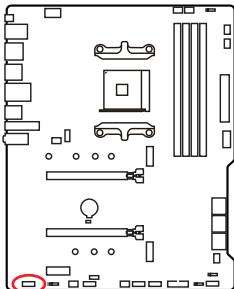


## M2\_2 slot installation

Please follows the step 3 ~ 5 above to install the M.2 SSD into the M2\_2 slot.

## JAUD1: Front Audio Connector

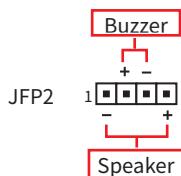
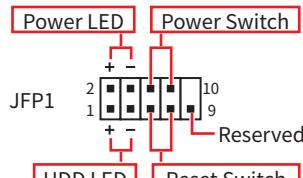
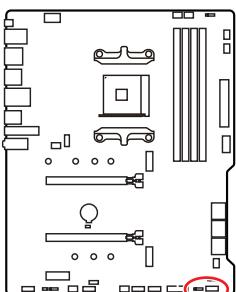
This connector allows you to connect audio jacks on the front panel.



Pin	Signal Name	Pin	Signal Name
1	MIC L	2	Ground
3	MIC R	4	NC
5	Head Phone R	6	MIC Detection
7	SENSE_SEND	8	No Pin
9	Head Phone L	10	Head Phone Detection

## JFP1, JFP2: Front Panel Connectors

The JFP1 connector controls the power on, power reset, and the LEDs on your PC case/chassis. Power Switch/ Reset Switch headers allow you to connect power button/ reset button. Power LED header connects to LED light on the PC case, and HDD LED header indicates the activity of the hard disk. The JFP2 connector is for Buzzer and Speaker. To connect the cables from PC case to the right pins, please refer to the following images below.

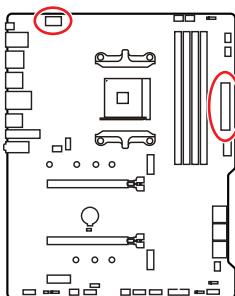


### Important

Please note that Power LED and HDD LED have positive and negative connection, you need to link up the cable to the corresponding positive and negative port on the motherboard. Otherwise, LEDs won't work properly.

## CPU\_PWR1, ATX\_PWR1: Power Connectors

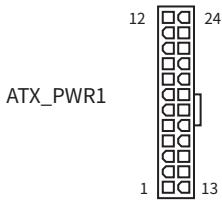
These connectors allow you to connect an ATX power supply.



CPU\_PWR1

Pin	Signal Name	Pin	Signal Name
1	Ground	2	Ground
3	Ground	4	Ground
5	+12V	6	+12V
7	+12V	8	+12V

ATX\_PWR1



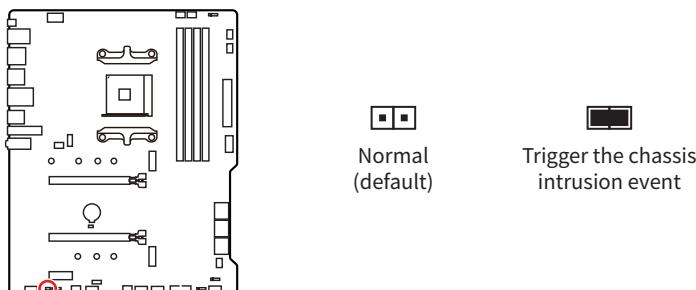
Pin	Signal Name	Pin	Signal Name
1	+3.3V	2	+3.3V
3	Ground	4	+5V
5	Ground	6	+5V
7	Ground	8	PWR OK
9	5VSB	10	+12V
11	+12V	12	+3.3V
13	+3.3V	14	-12V
15	Ground	16	PS-ON#
17	Ground	18	Ground
19	Ground	20	Res
21	+5V	22	+5V
23	+5V	24	Ground

### **Important**

Make sure that all the power cables are securely connected to a proper ATX power supply to ensure stable operation of the motherboard.

## JCI1: Chassis Intrusion Connector

This connector allows you to connect the chassis intrusion switch cable.



### Using chassis intrusion detector

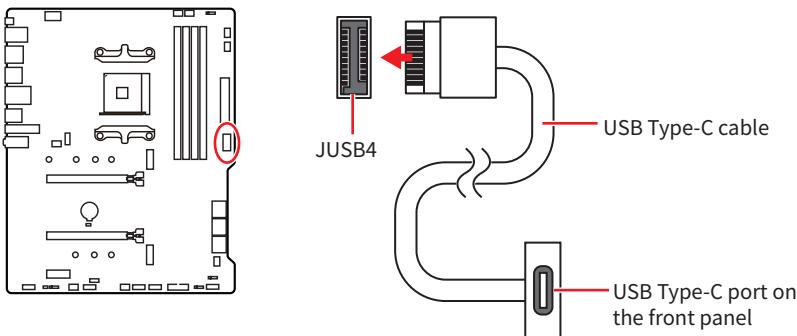
1. Connect the **JCI1** connector to the chassis intrusion switch/ sensor on the chassis.
2. Close the chassis cover.
3. Go to **BIOS > SETTINGS > Security > Chassis Intrusion Configuration**.
4. Set **Chassis Intrusion** to **Enabled**.
5. Press **F10** to save and exit and then press the **Enter** key to select **Yes**.
6. Once the chassis cover is opened again, a warning message will be displayed on screen when the computer is turned on.

### Resetting the chassis intrusion warning

1. Go to **BIOS > SETTINGS > Security > Chassis Intrusion Configuration**.
2. Set **Chassis Intrusion** to **Reset**.
3. Press **F10** to save and exit and then press the Enter key to select **Yes**.

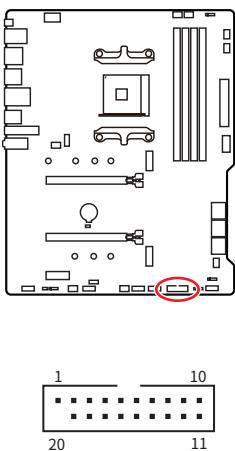
## JUSB4: USB 3.2 Gen 1 Type-C Front Panel Connector

This connector allows you to connect USB 5Gbps Type-C connector on the front panel. The connector has a foolproof design. When you connect the cable, be sure to connect it with the corresponding orientation.



## JUSB3: USB 3.2 Gen 1 Connector

This connector allows you to connect USB 5Gbps ports on the front panel.



Pin	Signal Name	Pin	Signal Name
1	Power	2	USB3_RX_DN
3	USB3_RX_DP	4	Ground
5	USB3_TX_C_DN	6	USB3_TX_C_DP
7	Ground	8	USB2.0-
9	USB2.0+	10	Ground
11	USB2.0+	12	USB2.0-
13	Ground	14	USB3_TX_C_DP
15	USB3_TX_C_DN	16	Ground
17	USB3_RX_DP	18	USB3_RX_DN
19	Power	20	No Pin

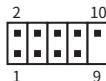
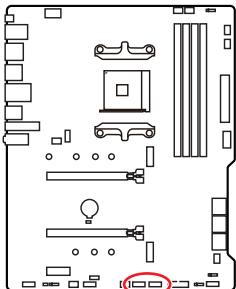


### Important

Note that the Power and Ground pins must be connected correctly to avoid possible damage.

## JUSB1~2: USB 2.0 Connectors

These connectors allow you to connect USB 2.0 ports on the front panel.



Pin	Signal Name	Pin	Signal Name
1	VCC	2	VCC
3	USB0-	4	USB1-
5	USB0+	6	USB1+
7	Ground	8	Ground
9	No Pin	10	NC

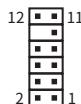
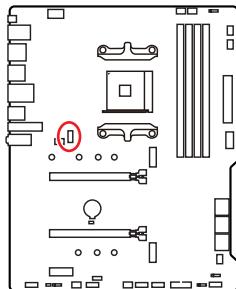


### Important

- Note that the VCC and Ground pins must be connected correctly to avoid possible damage.
- In order to recharge your iPad, iPhone and iPod through USB ports, please install MSI Center utility.

## JTPM1: TPM Module Connector

This connector is for TPM (Trusted Platform Module). Please refer to the TPM security platform manual for more details and usages.



Pin	Signal Name	Pin	Signal Name
1	SPI Power	2	SPI Chip Select
3	Master In Slave Out (SPI Data)	4	Master Out Slave In (SPI Data)
5	Reserved	6	SPI Clock
7	Ground	8	SPI Reset
9	Reserved	10	No Pin
11	Reserved	12	Interrupt Request

## CPU\_FAN1, PUMP\_FAN1, SYS\_FAN1~6: Fan Connectors

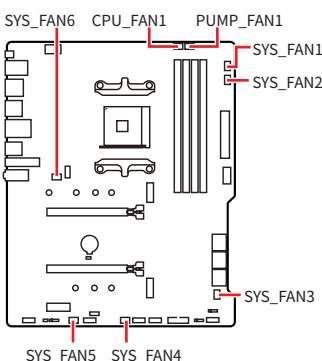
Fan connectors can be classified as PWM (Pulse Width Modulation) Mode or DC Mode. PWM Mode fan connectors provide constant 12V output and adjust fan speed with speed control signal. DC Mode fan connectors control fan speed by changing voltage. The auto mode fan connectors can automatically detect PWM and DC mode.

You can control fans in **BIOS> HARDWARE MONITOR** panel. It allows you to set DC or PWM to your fan type. Check the **Smart Fan Mode**, the fan speed will change according to the CPU or system temperature. Uncheck the **Smart Fan Mode**, the fan will spin at maximum speed.



### Important

Make sure fans are working properly after switching the PWM/ DC mode.



PWM Mode pin definition

Pin	Signal Name	Pin	Signal Name
1	Ground	2	+12V
3	Sense	4	Speed Control Signal

DC Mode pin definition

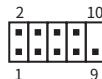
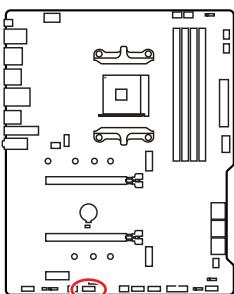
Pin	Signal Name	Pin	Signal Name
1	Ground	2	Voltage Control
3	Sense	4	NC

### Fan connector specifications

Connector	Default fan mode	Max. current	Max. power
CPU_FAN1	Auto mode	2A	24W
PUMP_FAN1	PWM mode	3A	36W
SYS_FAN1~6	DC mode	1A	12W

## JCOM1: Serial Port Connector

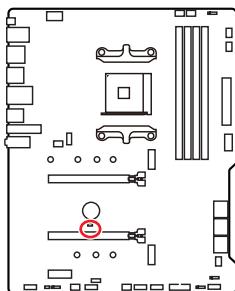
This connector allows you to connect the optional serial port with bracket.



Pin	Signal Name	Pin	Signal Name
1	DCD	2	SIN
3	SOUT	4	DTR
5	Ground	6	DSR
7	RTS	8	CTS
9	RI	10	No Pin

## JBAT1: Clear CMOS (Reset BIOS) Jumper

There is CMOS memory onboard that is external powered from a battery located on the motherboard to save system configuration data. If you want to clear the system configuration, set the jumpers to clear the CMOS memory.



Keep Data  
(default)



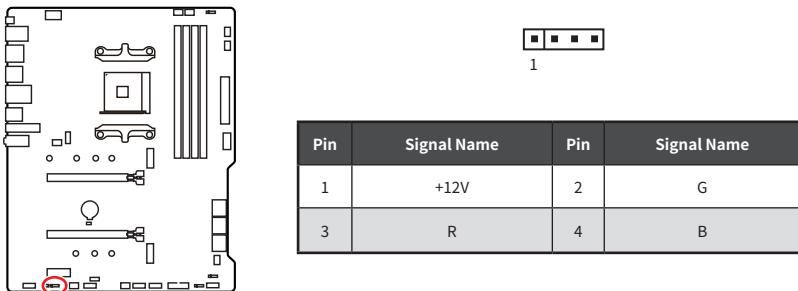
Clear CMOS/  
Reset BIOS

### Resetting BIOS to default values

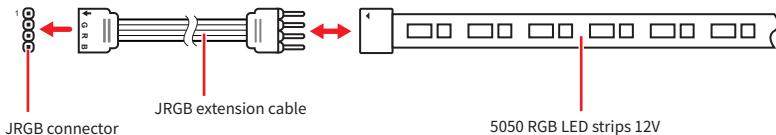
1. Power off the computer and unplug the power cord.
2. Use a jumper cap to short **JBAT1** for about 5-10 seconds.
3. Remove the jumper cap from **JBAT1**.
4. Plug the power cord and Power on the computer.

## JRGB1: RGB LED connector

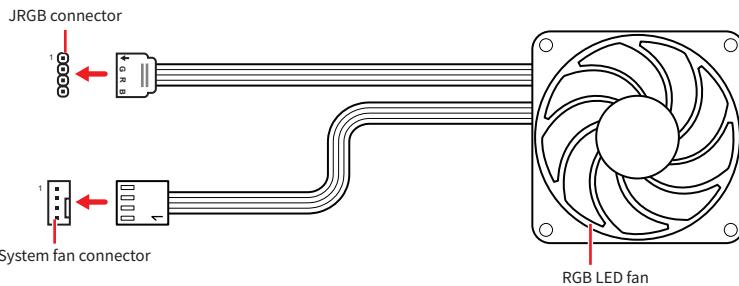
The JRGB connector allows you to connect the 5050 RGB LED strips 12V.



### RGB LED Strip Connection



### RGB LED Fan Connection

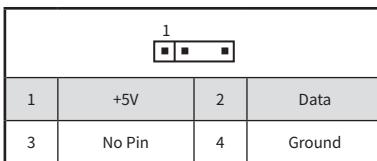
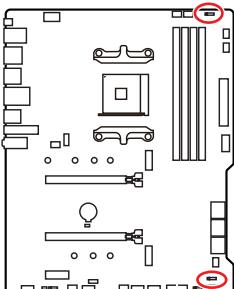


#### **Important**

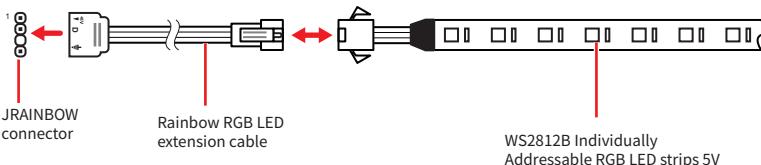
- The JRGB connector supports up to 2 meters continuous 5050 RGB LED strips (12V/G/R/B) with the maximum power rating of 3A (12V).
- Always turn off the power supply and unplug the power cord from the power outlet before installing or removing the RGB LED strip.
- Please use MSI's software to control the extended LED strip.

## JRAINBOW1~2: Addressable RGB LED connectors

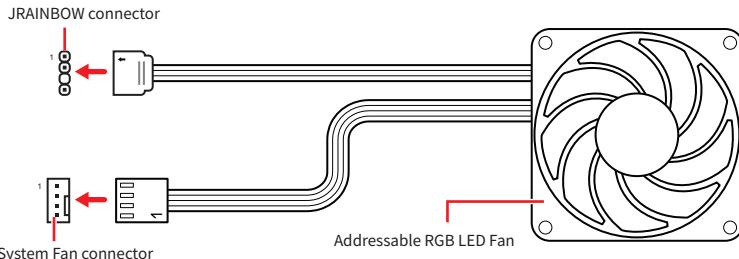
The JRAINBOW connectors allow you to connect the WS2812B Individually Addressable RGB LED strips 5V.



### Addressable RGB LED Strip Connection



### Addressable RGB LED Fan Connection



#### CAUTION

Do not connect the wrong type of LED strips. The JRGB connector and the JRAINBOW connector provide different voltages, and connecting the 5V LED strip to the JRGB connector will result in damage to the LED strip.



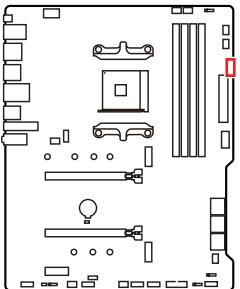
#### Important

- The JRAINBOW connector supports up to 75 LEDs WS2812B Individually Addressable RGB LED strips (5V/Data/Ground) with the maximum power rating of 3A (5V). In the case of 20% brightness, the connector supports up to 200 LEDs.
- Always turn off the power supply and unplug the power cord from the power outlet before installing or removing the RGB LED strip.
- Please use MSI's software to control the extended LED strip.

# Onboard LEDs

## EZ Debug LED

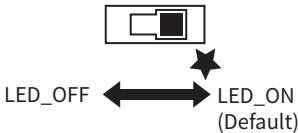
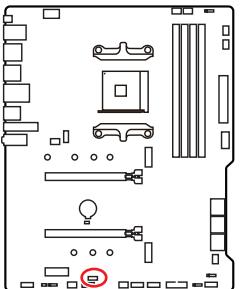
These LEDs indicate the debug status of the motherboard.



- **CPU** - indicates CPU is not detected or fail.
- **DRAM** - indicates DRAM is not detected or fail.
- **VGA** - indicates GPU/ PCIE/ M.2 device is not detected or fail.
- **BOOT** - indicates the booting device is not detected or fail.

## LED\_SW1: EZ LED Control

This switch is used to switch on/ off all the LEDs of motherboard.



# Installing OS, Drivers & MSI Center

Please download and update the latest utilities and drivers at [www.msi.com](http://www.msi.com)

## Installing Windows 11

1. Power on the computer.
2. Insert the Windows 11 installation disc/USB into your computer.
3. Press the **Restart** button on the computer case.
4. Press **F11** key during the computer POST (Power-On Self Test) to get into Boot Menu.
5. Select the Windows 11 installation disc/USB from the Boot Menu.
6. Press any key if screen shows **Press any key to boot from CD or DVD...** message. If not, please skip this step.
7. Follow the instructions on the screen to install Windows 11.

# Installing Drivers with MSI Driver Utility Installer

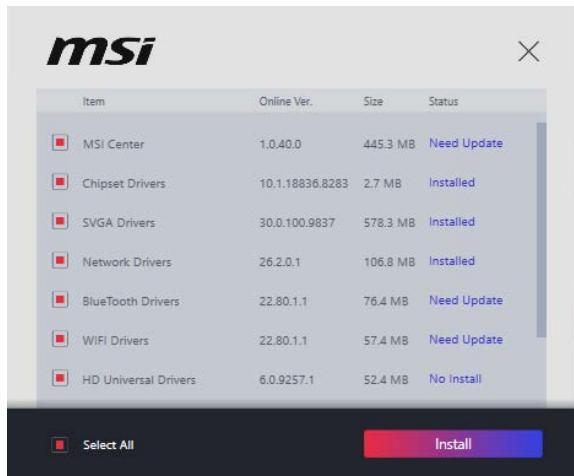
## **Important**

- Some new network chips have not been natively supported by Windows 11. It is recommended that the **LAN driver** be installed before installing drivers with **MSI Driver Utility Installer**. Please refer to [www.msi.com](http://www.msi.com) to install the LAN driver for your motherboard.
- The **MSI Driver Utility Installer** will only pop up once. If you cancel or close it during the process, please refer to the **Live Update** chapter of the **MSI Center** manual to install the drivers. You can also go to [www.msi.com](http://www.msi.com) to search your motherboard and download the drivers.
- **MSI Driver Utility Installer** needs to be installed over the internet.

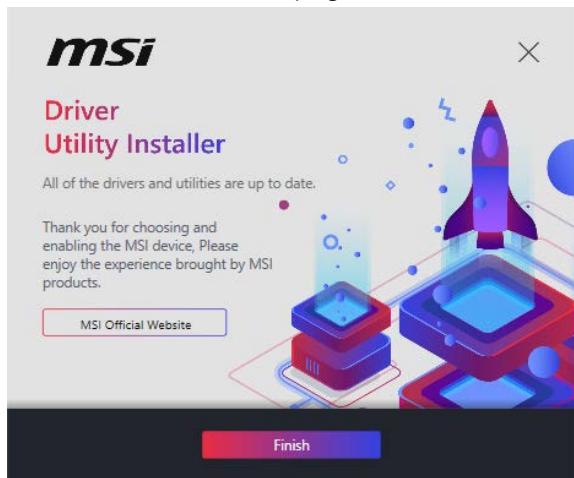
1. Start up your computer in Windows 11.
2. Select Start > Settings > Windows Update, and then select Check for updates.
3. **MSI Driver Utility Installer** will pop up automatically.



4. Select the **I have read and agree to the MSI Terms of Use** check box, and then click **Next**.



- Check the **Select All** checkbox in the lower-left corner and click **Install** to install MSI Center and drivers. The installation progress will be shown at the bottom.



- Once the progress has completed, click **Finish**.

## MSI Center

MSI Center is an application that helps you easily optimize game settings and smoothly use content creation softwares. It also allows you to control and synchronize LED light effects on PCs and other MSI products. With MSI Center, you can customize ideal modes, monitor system performance, and adjust fan speed.

### MSI Center User Guide



If you would like to know more information about MSI Center, please refer to  
<http://download.msi.com/manual/mb/MSICENTER.pdf>  
or scan the QR code to access.



#### **Important**

*Functions may vary depending on the product you have.*

# UEFI BIOS

MSI UEFI BIOS is compatible with UEFI (Unified Extensible Firmware Interface) architecture. UEFI has many new functions and advantages that traditional BIOS cannot achieve, and it will completely replace BIOS in the future. The MSI UEFI BIOS uses UEFI as the default boot mode to take full advantage of the new chipset capabilities.



## Important

*The term BIOS in this user guide refers to UEFI BIOS unless otherwise noted.*

### UEFI advantages

- Fast booting - UEFI can directly boot the operating system and save the BIOS self-test process. It can also eliminate the time to switch to CSM mode during POST.
- Supports for hard drive partitions larger than 2 TB.
- Supports more than 4 primary partitions with a GUID Partition Table (GPT).
- Supports unlimited number of partitions.
- Supports full capabilities of new devices - new devices may not provide backward compatibility.
- Supports secure startup - UEFI can check the validity of the operating system to ensure that no malware tampers with the startup process.

### Incompatible UEFI cases

- **32-bit Windows operating system** - this motherboard supports only Windows 11 64-bit operating system.
- **Older graphics card** - the system will detect your graphics card. If you use older graphics cards, it may display a warning message **There is no GOP (Graphics Output protocol) support detected in this graphics card.**



## Important

*We recommend that you replace it with a graphics card supporting GOP/UEFI or use CPU with integrated graphics for having normal function.*

### How to check the BIOS mode?

1. Power on your computer.
2. Press **Delete** key when the **Press DEL key to enter Setup Menu, F11 to enter Boot Menu** message appears on the screen during the boot process.
3. After entering the BIOS, you can check the **BIOS Mode** at the top of the screen.

BIOS Mode: UEFI

## BIOS Setup

The default settings offer the optimal performance for system stability in normal conditions. You should **always keep the default settings** to avoid possible system damage or failure booting unless you are familiar with BIOS.

### **Important**

- BIOS items are regularly updated for better system performance. The items may be slightly different from the latest BIOS; therefore, the description is for reference only. You could also refer to the **HELP** information panel for BIOS item description.
- The BIOS screens, options and settings will vary depending on your system.

## Entering BIOS Setup

Press **Delete** key when the **Press DEL key to enter Setup Menu, F11 to enter Boot Menu** message appears on the screen during the boot process.

### Function key

**F1:** General Help list  
**F2:** Add/ Remove a favorite item  
**F3:** Enter Favorites menu  
**F4:** Enter CPU Specifications menu  
**F5:** Enter Memory-Z menu  
**F6:** Load optimized defaults  
**F7:** Switch between Advanced mode and EZ mode  
**F8:** Load Overclocking Profile  
**F9:** Save Overclocking Profile  
**F10:** Save Change and Reset\*  
**F12:** Take a screenshot and save it to USB flash drive (FAT/ FAT32 format only).  
**Ctrl+F:** Enter Search page

\* When you press F10, a confirmation window appears and it provides the modification information. Select between Yes or No to confirm your choice.

## BIOS User Guide



If you'd like to know more instructions on setting up the BIOS, please refer to <http://download.msi.com/manual/mb/AMDX570BIOS.pdf> or scan the QR code to access.

### **Important**

Functions may vary depending on the product you have.

## Resetting BIOS

You might need to restore the default BIOS settings to solve certain problems. There are several ways to reset BIOS:

- Go to BIOS and press **F6** to load optimized defaults.
- Short the **Clear CMOS** jumper on the motherboard.



### **Important**

*Be sure the computer is off before clearing CMOS data. Please refer to the **Clear CMOS** jumper section for resetting BIOS.*

## Updating BIOS

### Updating BIOS with M-FLASH

Before updating:

Please download the latest BIOS file that matches your motherboard model from MSI website. And then save the BIOS file into the USB flash drive.

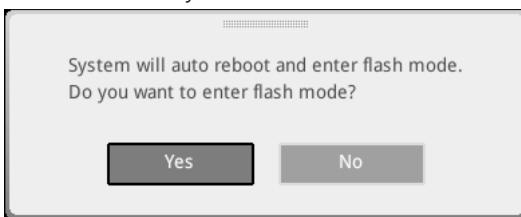
Updating BIOS:

1. Insert the USB flash drive that contains the update file into the USB port.
2. Please refer the following methods to enter flash mode.

- Reboot and press **Ctrl + F5** key during POST and click on Yes to reboot the system.

Press <Ctrl+F5> to activate M-Flash for BIOS update.

- Reboot and press Del key during POST to enter BIOS. Click the **M-FLASH** button and click on Yes to reboot the system.



3. Select a BIOS file to perform the BIOS update process.
4. When prompted click on **Yes** to start recovering BIOS.
5. After the flashing process is 100% completed, the system will reboot automatically.

## Updating the BIOS with MSI Center

Before updating:

- Make sure the LAN driver is already installed and the internet connection is set up properly.
- Please close all other application softwares before updating the BIOS.

To update BIOS:

1. Install and launch MSI Center and go to **Support** page.
2. Select **Live Update** and click on **Advance** button.
3. Select the BIOS file and click on **Install** button.
4. The installation reminder will appear, then click the Install button on it.
5. The system will automatically restart to update BIOS.
6. After the flashing process is 100% completed, the system will restart automatically.

## Updating BIOS with Flash BIOS Button

1. Please download the latest BIOS file that matches your motherboard model from the MSI® website.
2. Rename the BIOS file to MSI.ROM, and save it to the root of the USB storage device.
3. Connect the power supply to **CPU\_PWR1** and **ATX\_PWR1**. (No need to install CPU and memory.)
4. Plug the USB storage device that contains the MSI.ROM file into the **Flash BIOS Port** on the rear I/O panel.
5. Press the **Flash BIOS Button** to flash BIOS, and the LED starts flashing.
6. The LED will be turned off when the process is completed.

# Regulatory Notices

## FCC-B Radio Frequency Interference Statement



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 radiates 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.

### NOTE

- The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- Shield interface cables and AC power cord, if any, must be used in order to comply with the emission limits.

## FCC Conditions

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

### MSI Computer Corp.

901 Canada Court, City of Industry, CA 91748, USA

(626)913-0828

[www.msi.com](http://www.msi.com)

## CE Conformity

Products bearing the CE marking comply with one or more of the following EU Directives as may be applicable:



- RED 2014/53/EU
- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU
- RoHS Directive 2011/65/EU
- Implementing measure Directive 2009/125/EC of ESPR Regulation (EU) 2024/1781

Compliance with these directives is assessed using applicable European Harmonized Standards.

The point of contact for regulatory matters is MSI-Europe: Eindhoven 5706 5692 ER Son, the Netherlands.

For any support regarding the EU General Product Safety Regulation (GPSR), please contact MSI Computer Europe B.V. via [gpsr@msi.com](mailto:gpsr@msi.com) Science Park Eindhoven 5706 5692 ER Son, the Netherlands

## Products with Radio Functionality (EMF)

This product incorporates a radio transmitting and receiving device. For computers in normal use, a separation distance of 20 cm ensures that radio frequency exposure levels comply with EU requirements. Products designed to be operated at closer proximities, such as tablet computers, comply with applicable EU requirements in typical operating positions. Products can be operated without maintaining a separation distance unless otherwise indicated in instructions specific to the product.

## Restrictions for Products with Radio Functionality



### WLAN 5150-5350 MHz:

The WiFi operating in the band 5150-5350 MHz shall be restricted to indoor use in the European Union.

### WLAN 6E:

#### a. Low Power Indoor (LPI) Wi-Fi 5.945-6.425 GHz devices:

The device is restricted to indoor use only when operating in the 5945 to 6425 MHz frequency range in the European Union.

#### b. Very Low Power (VLP) Wi-Fi 5.945-6.425 GHz devices (portable devices):

The device is not permitted to be used on Unmanned Aircraft Systems (UAS) when operating in the 5945 to 6425 MHz frequency range in the European Union.

## Wireless Radio Use

This device is restricted to indoor use when operating in the 2.4GHz, 5GHz, 6GHz frequency band.

Cet appareil doit être utilisé à l'intérieur.

당해 무선설비는 운용중 전파혼신 가능성이 있음.

この製品は、周波数帯域 2.4GHz, 5GHz, 6GHz で動作しているときは、屋内においてのみ使用可能です。

### NCC無線設備警告聲明

工作頻率2.4GHz, 5GHz, 6GHz該頻段限於室內使用。

經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

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

This device complies 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)

## Australia and New Zealand notice

This equipment incorporates a radio transmitting and receiving device. In normal use, a separation distance of 20 cm ensures that radio frequency exposure levels comply with the Australian and New Zealand Standards.

## クラスB情報技術装置

この装置は、クラスB情報技術装置です。この装置は、家庭環境で使用することを目的としていますが、この装置がラジオやテレビジョン受信機に近接して使用されると、受信障害を引き起こすことがあります。取扱説明書に従って正しい取り扱いをして下さい。

VCCI-B

## KC인증서



R-R-MSI-70-7C56

상호: (주)엠에스아이코리아

제품명: 메인보드

모델명: 70-7C56

제조년월: 2025년

제조자 및 제조국가: MSI/중국

# Battery Information

## European Union:



Batteries, battery packs, and accumulators should not be disposed of as unsorted household waste. Please use the public collection system to return, recycle, or treat them in compliance with the local regulations.

## BSMI:



廢電池請回收

For better environmental protection, waste batteries should be collected separately for recycling or special disposal.

## California, USA:



The button cell battery may contain perchlorate material and requires special handling when recycled or disposed of in California.

For further information please visit:

<https://dtsc.ca.gov/perchlorate/>

## WARNING

<ul style="list-style-type: none"><li>• <b>INGESTION HAZARD:</b> This product contains a button cell or coin battery.</li><li>• <b>DEATH</b> or serious injury can occur if ingested.</li><li>• A swallowed button cell or coin battery can cause <b>Internal Chemical Burns</b> in as little as <b>2 hours</b>.</li><li>• <b>KEEP</b> new and used batteries <b>OUT OF REACH OF CHILDREN</b></li><li>• <b>Seek immediate medical attention</b> if a battery is suspected to be swallowed or inserted inside any part of the body.</li></ul>	
<ul style="list-style-type: none"><li>• 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.</li><li>• Even used batteries may cause severe injury or death. Call a local poison control center for treatment information.</li><li>• Battery type: CR2032</li><li>• Battery voltage: 3V</li><li>• Non-rechargeable batteries are not to be recharged.</li><li>• 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.</li><li>• This product contains an irreplaceable battery.</li><li>• This icon indicates that a swallowed button battery can cause serious injury or death. Please keep batteries out of sight or reach of children.</li></ul>	

## Chemical Substances Information

In compliance with chemical substances regulations, such as the EU REACH Regulation (Regulation EC No. 1907/2006 of the European Parliament and the Council), MSI provides the information of chemical substances in products at:

<https://csr.msi.com/global/index>

## Environmental Policy

- The product has been designed to enable proper reuse of parts and recycling and should not be thrown away at its end of life.
- Users should contact the local authorized point of collection for recycling and disposing of their end-of-life products.
- Visit the MSI website and locate a nearby distributor for further recycling information.
- Users may also reach us at [gpcontdev@msi.com](mailto:gpcontdev@msi.com) for information regarding proper Disposal, Take-back, Recycling, and Disassembly of MSI products.
- Please visit <<https://us.msi.com/page/recycling>> for information regarding the recycling of your product in the US.



## WEEE (Waste Electrical and Electronic Equipment) Statement



**European Union:** This symbol on the product indicates that this product cannot be discarded as municipal waste. Instead, it is your responsibility to dispose of your waste electrical and electronic equipment by handing it over to a designated collection point for recycling. For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

## 日本JIS C 0950材質宣言

日本工業規格JIS C 0950により、2006年7月1日以降に販売される特定分野の電気および電子機器について、製造者による含有物質の表示が義務付けられます。

<https://csr.msi.com/tw/Japan-JIS-C-0950-Material-Declarations>

## India RoHS

This product complies with the “India E-waste (Management and Handling) Rule 2011” and prohibits use of lead, mercury, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers in concentrations exceeding 0.1 weight % and 0.01 weight % for cadmium, except for the exemptions set in Schedule 2 of the Rule.

## Türkiye EEE yönetmeliği

Türkiye Cumhuriyeti: EEE Yönetmeliğine Uygundur

## Україна обмеження на наявність небезпечних речовин

Обладнання відповідає вимогам Технічного регламенту щодо обмеження

використання деяких небезпечних речовин в електричному та електронному обладнані, затвердженого постановою Кабінету Міністрів України від 3 грудня 2008 № 1057.

## Việt Nam RoHS

Kể từ ngày 01/12/2012, tất cả các sản phẩm do công ty MSI sản xuất tuân thủ Thông tư số 30/2011/TT-BCT quy định tạm thời về giới hạn hàm lượng cho phép của một số hóa chất độc hại có trong các sản phẩm điện, điện tử”

## MS-7C56主板产品中有害物质的名称及含量

部件名称	有害物质					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
印刷电路板组件*	×	○	○	○	○	○
纽扣电池	○	○	○	○	○	○
外部信号连接头	×	○	○	○	○	○
其他(例: 线材等)	×	○	○	○	○	○

本表格依据 SJ/T 11364 的规定编制。

○: 表示该有害物质在该部件所有均质材料中的含量均在 GB/T 26572 规定的限量要求以下。

×: 表示该有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 规定的限量要求, 但所有部件都符合欧盟RoHS要求。

\* 印刷电路板组件: 包括印刷电路板及其构成的零部件。

■ 上述有毒有害物质或元素清单会依型号之部件差异而有所增减。

■ 产品部件本体上如有环保使用期限标识, 以本体标识为主。

## 限用物質含有情況標示聲明書

設備名稱:電腦主機板		型號(型式):MS-7C56					
單元	限用物質及其化學符號						
	鉛 (Pb)	汞 (Hg)	镉 (Cd)	六價鉻 (Cr <sup>6</sup> )	多溴聯苯 (PBB)	多溴二苯醚 (PBDE)	
電路板	○	○	○	○	○	○	
電子元件	—	○	○	○	○	○	
金屬機構件	—	○	○	○	○	○	
塑膠機構件	○	○	○	○	○	○	

備考1. “超出0.1 wt %” 及 “超出0.01 wt %” 係指限用物質之百分比含量超出百分比含量基準值。

備考2. “○” 係指該項限用物質之百分比含量未超出百分比含量基準值。

備考3. “—” 係指該項限用物質為排除項目。

## Copyright and Trademarks Notice



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The terms HDMI™, HDMI™ High-Definition Multimedia Interface, HDMI™ Trade dress and the HDMI™ Logos are trademarks or registered trademarks of HDMI™ Licensing Administrator, Inc.

## Technical Support

If a problem arises with your system and no solution can be obtained from the user guide, please contact your place of purchase or local distributor. Alternatively, please try the following help resources for further guidance.

- Visit the MSI website for technical guide, BIOS updates, driver updates, and other information: <http://www.msi.com>
- Register your product at: <http://register.msi.com>

## Revision History

- Version 7.0, 2025/05, First release.

