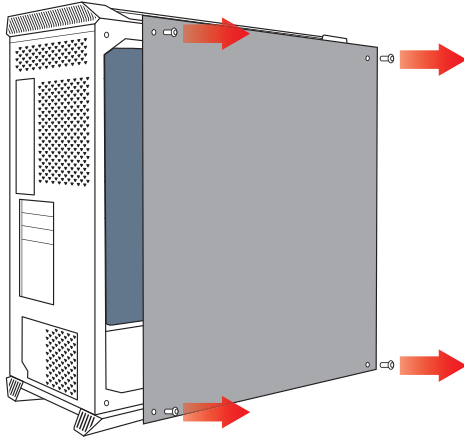


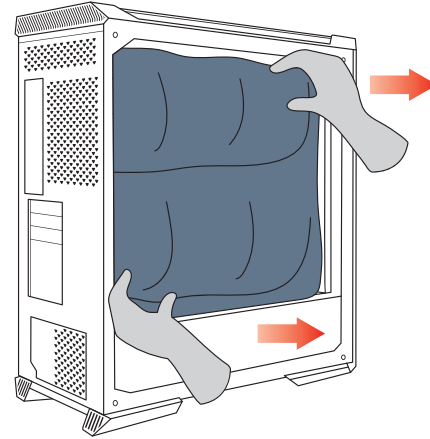


If you have any further questions regarding your new computer, please do not hesitate to contact us either through the online customer service site <https://us.msi.com/support> or by contacting our customer support at **1-626-271-1004**, Monday to Friday from 9:00 a.m. to 6:00 p.m. Pacific Standard Time. You can also contact technical support by calling **1-888-447-6564**, Monday to Friday open 24 hours (Weekend and Public Holiday closed). We will reply to you as soon as possible.



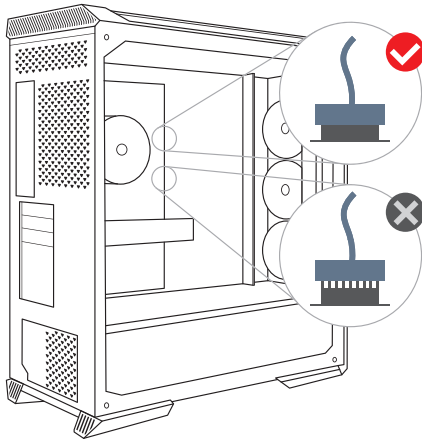
### Step 1 REMOVE THE TEMPERED GLASS SIDE PANEL

Remove the four thumbscrews on the tempered glass side panel. And gently remove the tempered glass panel away from the case and place it in a safe area.



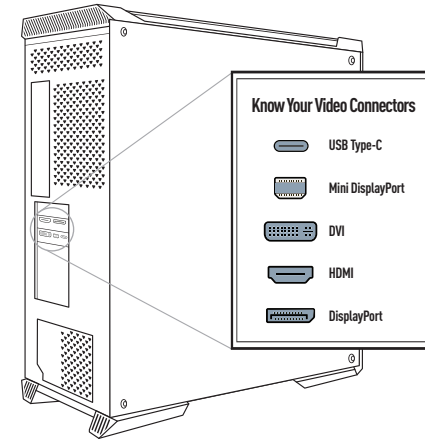
### Step 2 REMOVE THE FOAM PACKAGING

Carefully pull the foam packaging out the system. It should come out easily without having to apply any force.



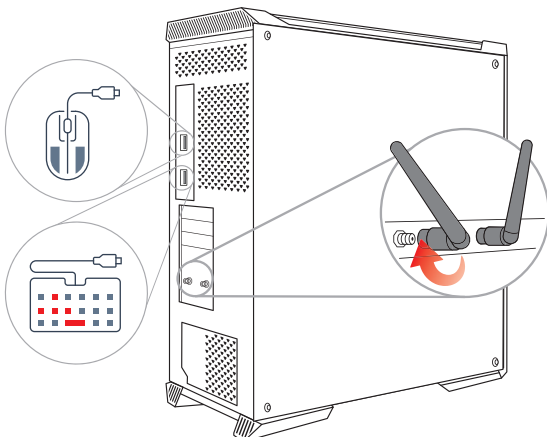
### Step 3 INSPECT YOUR PC

Make sure all components and cables are seated firmly. Now, you can replace the tempered glass side panel and secure with thumbscrews.



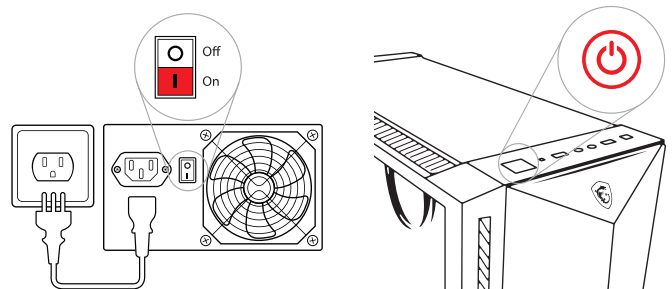
### Step 4 CONNECT YOUR MONITOR

Connect your monitor to either display ports or HDMI ports on the graphics cards.



### Step 5 CONNECT WIFI ANTENNAE, KEYBOARD & MOUSE

Screw the Wi-Fi Antennae to the gold contact points on the rear of the case. Plug the mouse and the keyboard into any of the USB ports.



### Step 6 POWER ON YOUR DESKTOP

Plug the power cable into the power cable socket and plug the other end of the power cable into a power outlet. Turn the power supply switch on by having the "I" symbol on the switch pressed down. Press the power button.

Thank you for purchasing the MSI® **Aegis RS** Desktop. This User Guide gives information about board layout, component overview, BIOS setup and software installation.

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# 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.

# Specifications

<b>CPU</b>	<ul style="list-style-type: none"><li>• Supports 12th Gen Intel® Core™ Processors</li><li>• Processor socket LGA1700</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>
<b>Chipset</b>	Intel® Z690 chipset
<b>Memory</b>	<ul style="list-style-type: none"><li>• 4x DDR5 memory slots, support up to 128GB*<ul style="list-style-type: none"><li>▪ Supports JEDEC standard DDR5 4800/ 6400+ (OC) MHz</li><li>▪ Supports Intel® XMP 3.0 OC</li><li>▪ Supports Dual Controller Dual-Channel mode</li><li>▪ Supports non-ECC, un-buffered memory</li></ul></li></ul> <p>*Please refer <a href="http://www.msi.com">www.msi.com</a> for more information on compatible memory</p>
<b>Expansion Slots</b>	<ul style="list-style-type: none"><li>• 3x PCIe x16 slots<ul style="list-style-type: none"><li>▪ PCI_E1 (From CPU)<ul style="list-style-type: none"><li>▫ Support PCIe 5.0 x16</li></ul></li><li>▪ PCI_E3 &amp; PCI_E4 (From Z690 chipset)<ul style="list-style-type: none"><li>▫ Support PCIe 3.0 x4 &amp; 3.0 x1</li></ul></li></ul></li><li>• 1x PCIe 3.0 x1 slot (From Z690 chipset)</li></ul>
<b>Audio</b>	Realtek® ALC897 Codec <ul style="list-style-type: none"><li>• 7.1-Channel High Definition Audio</li></ul>
<b>Multi-GPU</b>	<ul style="list-style-type: none"><li>• Supports AMD CrossFire™ Technology</li></ul>
<b>Onboard Graphics</b>	<ul style="list-style-type: none"><li>• 1x HDMI 2.1 with HDR port, supports a maximum resolution of 4K 60Hz **/**</li><li>• 1x DisplayPort 1.4 port, supports a maximum resolution of 4K 60Hz **/**</li></ul> <p>* Available only on processors featuring integrated graphics. ** Graphics specifications may vary depending on the CPU installed.</p>
<b>LAN</b>	1x Intel® I225V 2.5Gbps LAN controller

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<b>Wireless LAN &amp; Bluetooth®</b>	<p>Intel® Wi-Fi 6E (Only for PRO Z690-A WIFI)</p> <ul style="list-style-type: none"><li>• The Wireless module is pre-installed in the M.2 (Key-E) slot</li><li>• Supports MU-MIMO TX/RX, 2.4GHz/ 5GHz/ 6GHz* (160MHz) up to 2.4Gbps</li><li>• Supports 802.11 a/ b/ g/ n/ ac/ ax</li><li>• Supports Bluetooth® 5.2**, FIPS, FISMA</li></ul> <p>* Wi-Fi 6E 6GHz may depend on every country's regulations and will be ready in Windows 10 version 21H1 and Windows 11. ** Bluetooth 5.2 will be ready in Windows 10 version 21H1 and Windows 11.</p>
<b>Storage</b>	<ul style="list-style-type: none"><li>• 6x SATA 6Gb/s ports (From Z690 chipset)</li><li>• 4x 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 x4</li><li>▫ Supports 2242/ 2260/ 2280/ 22110 storage devices</li></ul></li><li>▪ M2_2 slot (From Z690 chipset)<ul style="list-style-type: none"><li>▫ Supports PCIe 4.0 x4</li><li>▫ Supports 2242/ 2260/ 2280 storage devices</li></ul></li><li>▪ M2_3 slot (From Z690 chipset)<ul style="list-style-type: none"><li>▫ Supports PCIe 3.0x4</li><li>▫ Supports SATA 6Gb/s</li><li>▫ Supports 2242/ 2260/ 2280 storage devices</li></ul></li><li>▪ M2_4 slot (From Z690 chipset)<ul style="list-style-type: none"><li>▫ Supports PCIe 4.0x4</li><li>▫ Supports SATA 6Gb/s</li><li>▫ Supports 2242/ 2260/ 2280 storage devices</li></ul></li><li>▪ M2_2~4 support Intel® Optane™ Memory</li></ul></li><li>• Support Intel® Smart Response Technology for Intel Core™ processors</li></ul>
<b>RAID</b>	<ul style="list-style-type: none"><li>• Supports RAID 0, RAID 1, RAID 5 and RAID 10 for SATA storage devices</li><li>• Supports RAID 0 , RAID 1 and RAID 5 for M.2 NVMe storage devices</li></ul>

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<b>USB</b>	<ul style="list-style-type: none"><li>• Intel® Z690 Chipset<ul style="list-style-type: none"><li>▪ 1x USB 3.2 Gen 2x2 20Gbps Type-C port on the back panel</li><li>▪ 2x USB 3.2 Gen 2 10Gbps ports (1 Type-C internal connector and 1 Type-A port on the back panel)</li><li>▪ 6x USB 3.2 Gen 1 5Gbps ports (2 Type-A ports on the back panel, and 4 ports are available through the internal USB connectors)</li><li>▪ 4x USB 2.0 Type-A ports on the back panel</li></ul></li><li>• USB Hub GL850G<ul style="list-style-type: none"><li>▪ 4x USB 2.0 ports are available through the internal USB connectors</li></ul></li></ul>
<b>Internal Connectors</b>	<ul style="list-style-type: none"><li>• 1x 24-pin ATX main power connector</li><li>• 2x 8-pin ATX 12V power connector</li><li>• 6x SATA 6Gb/s connectors</li><li>• 4x M.2 slots (M-Key)</li><li>• 1x USB 3.2 Gen 2 10Gbps Type-C port</li><li>• 2x USB 3.2 Gen 1 5Gbps connectors (supports additional 4 USB 3.2 Gen 1 5Gbps ports)</li><li>• 2x USB 2.0 connectors (supports additional 4 USB 2.0 ports)</li><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><li>• 1x Front panel audio connector</li><li>• 2x System panel connectors</li><li>• 1x Chassis Intrusion connector</li><li>• 1x Clear CMOS jumper</li><li>• 1x TPM module connector</li><li>• 1x Tuning controller connector</li><li>• 1x TBT connector (Supports RTD3)</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>• 4x EZ Debug LED</li></ul>

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<b>Back Panel Connectors</b>	<ul style="list-style-type: none"><li>• 1x Flash BIOS Button</li><li>• 1x PS/2 keyboard/ mouse combo port</li><li>• 4x USB 2.0 Type-A ports</li><li>• 1x DisplayPort</li><li>• 1x HDMI 2.1 port</li><li>• 1x LAN (RJ45) port</li><li>• 2x USB 3.2 Gen 1 5Gbps Type-A ports</li><li>• 1x USB 3.2 Gen 2 10Gbps Type-A port</li><li>• 1x USB 3.2 Gen 2x2 20Gbps Type-C port</li><li>• 2x Wi-Fi Antenna connectors (Only for PRO Z690-A WIFI)</li><li>• 6x audio jacks</li></ul>
<b>I/O Controller</b>	NUVOTON NCT6687D-W 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>
<b>Form Factor</b>	<ul style="list-style-type: none"><li>• ATX Form Factor</li><li>• 12 in. x 9.6 in. (30.5 cm x 24.4 cm)</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 6.4, SMBIOS 3.4</li><li>• Multi-language</li></ul>
<b>Software</b>	<ul style="list-style-type: none"><li>• Drivers</li><li>• MSI Center</li><li>• Intel® Extreme Tuning Utility</li><li>• CPU-Z MSI GAMING</li><li>• Google Chrome™, Google Toolbar, Google Drive</li><li>• Norton™ Internet Security Solution</li></ul>

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<b>MSI Center Features</b>	<ul style="list-style-type: none"><li>• Mystic Light</li><li>• LAN Manager</li><li>• User Scenario</li><li>• Hardware Monitor</li><li>• Frozr AI Cooling</li><li>• True Color</li><li>• Live Update</li><li>• Speed Up</li><li>• Super Charger</li></ul>
<b>Special Features</b>	<ul style="list-style-type: none"><li>• Audio<ul style="list-style-type: none"><li>▪ Audio Boost</li></ul></li><li>• Network<ul style="list-style-type: none"><li>▪ 2.5G LAN</li><li>▪ LAN Manager</li><li>▪ Intel WiFi (Only for PRO Z690-A WIFI)</li></ul></li><li>• Cooling<ul style="list-style-type: none"><li>▪ M.2 Shield Frozr</li><li>▪ Pump Fan</li><li>▪ Smart Fan Control</li></ul></li><li>• LED<ul style="list-style-type: none"><li>▪ Mystic Light Extension (RAINBOW/RGB)</li><li>▪ Mystic Light SYNC</li><li>▪ EZ LED Control</li><li>▪ EZ DEBUG LED</li></ul></li></ul>

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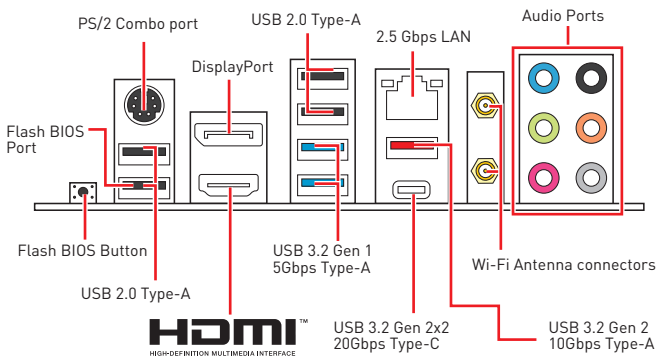
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**Special  
Features**

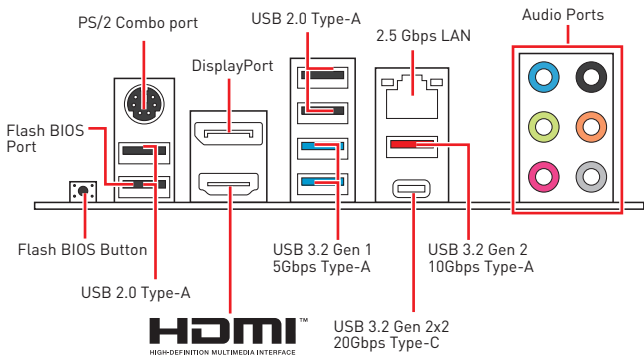
- Performance
  - Multi GPU-CrossFire Technology
  - DDR5 Boost
  - Core Boost
  - USB 3.2 Gen 2x2 20G
  - USB 3.2 Gen 2 10G
  - USB with Type A+C
  - Front USB Type-C
- Protection
  - PCI-E Steel Armor
- Experience
  - MSI Center
  - Frozr AI Cooling
  - Click BIOS 5
  - Flash BIOS Button

# Rear I/O Panel

## PRO Z690-A WIFI



## PRO Z690-A



## LAN Port LED Status Table

Link/ Activity LED	
Status	Description
Off	No link
Yellow	Linked
Blinking	Data activity



Speed LED	
Status	Description
Off	10 Mbps connection
Green	100/ 1000 Mbps connection
Orange	2.5 Gbps connection

## Audio Ports Configuration

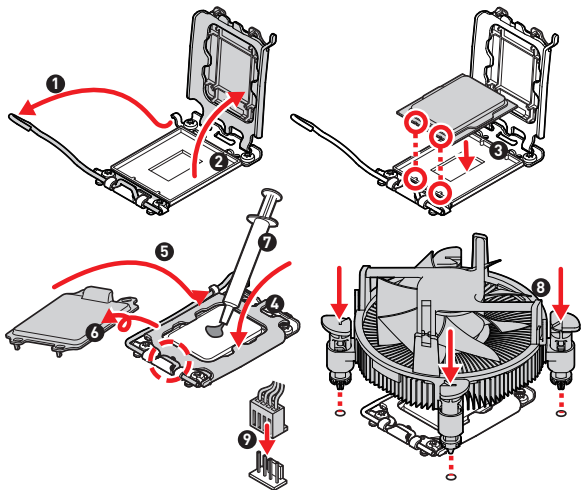
Audio Ports	Channel			
	2	4	6	8
Line-Out/ Front Speaker Out				
Line-In	●	●	●	●
Rear Speaker Out		●	●	●
Center/ Subwoofer Out			●	●
Side Speaker Out				●
Mic In				

●: connected, **Blank**: empty]



## CPU Socket

Please install the CPU into the CPU socket as shown below.

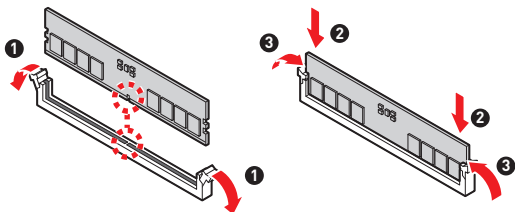


### Important

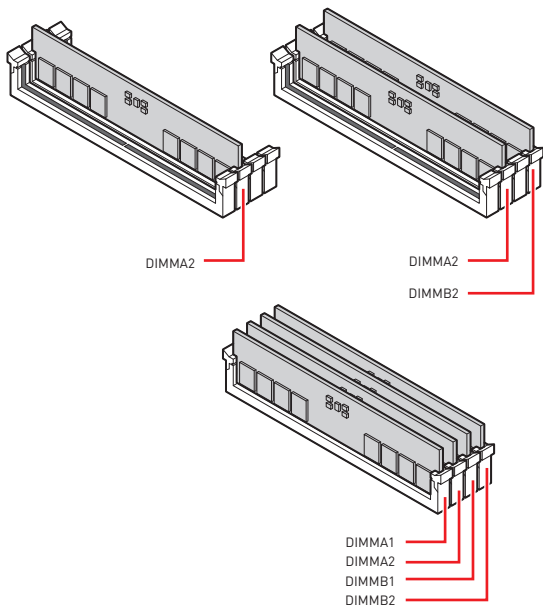
- Always unplug the power cord from the power outlet before installing or removing the CPU.
- Please retain the CPU protective cap after installing the processor. MSI will deal with Return Merchandise Authorization (RMA) requests if only the motherboard comes with the protective cap on the CPU socket.
- 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.
- Whenever the CPU is not installed, always protect the CPU socket pins by covering the socket with the plastic cap.
- If you purchased a separate CPU and heatsink/ cooler, Please refer to the documentation in the heatsink/ cooler package for more details about installation.

## DIMM Slots

Please install the memory module into the DIMM slot as shown below.



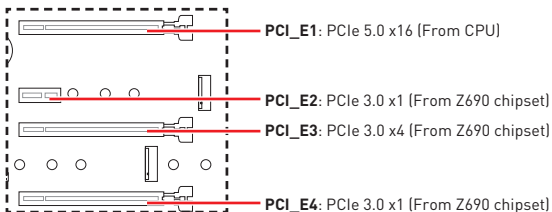
## Memory module installation recommendation



## 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 [www.msi.com](http://www.msi.com) for more information on compatible memory.

## PCI\_E1~4: PCIe Expansion Slots



## Important

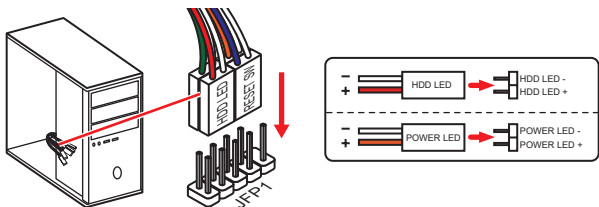
- When adding or removing expansion cards, always turn off the power supply and unplug the power supply power cable from the power outlet. Read the expansion card's documentation to check for any necessary additional hardware or software changes.
- If you install a large and heavy graphics card, you 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.



## JFP1, JFP2: Front Panel Connectors

These connectors connect to the switches and LEDs on the front panel.

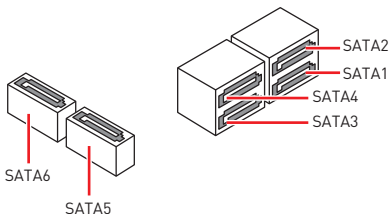
<p>Diagram of the JFP1 connector showing pin connections for Power LED, Power Switch, HDD LED, and Reset Switch.</p>	1	HDD LED +	2	Power LED +
	3	HDD LED -	4	Power LED -
	5	Reset Switch	6	Power Switch
	7	Reset Switch	8	Power Switch
	9	Reserved	10	No Pin



<p>Diagram of the JFP2 connector showing pin connections for Buzzer and Speaker.</p>	1	Speaker -	2	Buzzer +
	3	Buzzer -	4	Speaker +

## SATA1~6: 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.

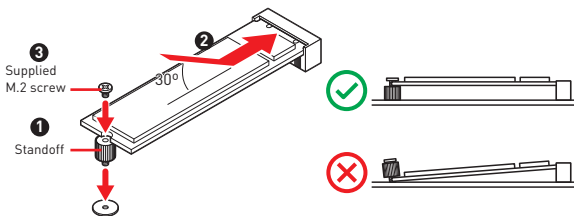
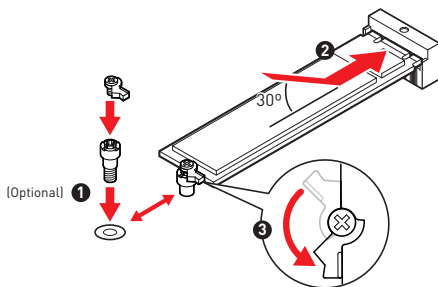
## JAUD1: Front Audio Connector

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

	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

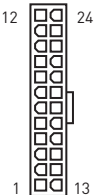
## M2\_1~4: M.2 Slot (Key M)


Please install the M.2 solid-state drive (SSD) into the M.2 slot as shown below.



## ATX\_PWR1, CPU\_PWR1~2: Power Connectors

These connectors allow you to connect an ATX power supply.

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

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




### Important

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

## JUSB1~2: USB 2.0 Connectors

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

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

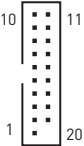


### Important

- 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.

## JUSB3~4: USB 3.2 Gen 1 5Gbps Connector

This connector allows you to connect USB 3.2 Gen 1 5Gbps ports on the front panel.

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

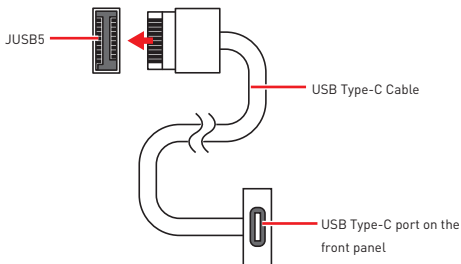


### Important

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


## JUSB5: USB 3.2 Gen 2 Type-C Connector

This connector allows you to connect USB 3.2 Gen 2 10 Gbps Type-C connector on the front panel. The connector possesses a foolproof design. When you connect the cable, be sure to connect it with the corresponding orientation.



## JTBT1: Thunderbolt Add-on Card Connector


This connector allows you to connect the add-on Thunderbolt I/O card.


	1	TBT_Force_PWR	2	TBT_S0IX_Entry_REQ
	3	TBT_CIO_Plug_Event#	4	TBT_S0IX_Entry_ACK
	5	SLP_S3#_TBT	6	TBT_PSON_Override_N
	7	SLP_S5#_TBT	8	Net Name
	9	Ground	10	SMBCLK_VSB
	11	DG_PEWake	12	SMBDATA_VSB
	13	TBT_RTD3_PWR_EN	14	Ground
	15	TBT_Card_DET_R#	16	PD_IRQ#

## 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.

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

 <b>PWM Mode pin definition</b>			
1	Ground	2	+12V
3	Sense	4	Speed Control Signal

 <b>DC Mode pin definition</b>			
1	Ground	2	Voltage Control
3	Sense	4	NC



### Important

You can adjust fan speed in **BIOS > HARDWARE MONITOR**.

## 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.

	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

## JCI1: Chassis Intrusion Connector

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



Normal  
(default)



Trigger the chassis  
intrusion event

### 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**.

## JDASH1: Tuning controller Connector

This connector is used to connect an optional Tuning Controller module.

	1	No pin	2	NC
	3	MCU_SMB_SCL_M	4	MCU_SMB_SDA_M
	5	VCC5	6	Ground



## 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.

## JRAINBOW1~2: Addressable RGB LED connectors

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

	1	+5V	2	Data
	3	No Pin	4	Ground

### 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.

## JRGB1: RGB LED connector

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

1	1	+12V	2	G
	3	R	4	B

### **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.

## EZ Debug LED

These LEDs indicate the status of the motherboard.

- CPU** - indicates CPU is not detected or fail.
- DRAM** - indicates DRAM is not detected or fail.
- VGA** - indicates GPU is not detected or fail.
- BOOT** - indicates booting device is not detected or fail.

# Installing OS, Drivers & MSI Center

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

## Installing Windows 10/ Windows 11

1. Power on the computer.
2. Insert the Windows 10/ 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 10/ 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 10/ Windows 11.

## Installing Drivers

1. Start up your computer in Windows 10/ Windows 11.
2. Insert MSI® Drive disc/ USB Driver into the optical drive/ USB port.
3. Click the **Select to choose what happens with this disc** pop-up notification, then select **Run DVDSetup.exe** to open the installer. If you turn off the AutoPlay feature from the Windows Control Panel, you can still manually execute the **DVDSetup.exe** from the root path of the MSI Drive disc.
4. The installer will find and list all necessary drivers in the **Drivers/Software** tab.
5. Click the **Install** button in the lower-right corner of the window.
6. The drivers installation will then be in progress, after it has finished it will prompt you to restart.
7. Click **OK** button to finish.
8. Restart your computer.

## 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.



*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's 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. And also eliminates 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 64-bit Windows 10/ Windows 11 operating system.
- **Older graphics card** - the system will detect your graphics card. When display a warning message **There is no GOP (Graphics Output protocol) support detected in this graphics card.**

## **Important**

*We recommend that you to replace with a GOP/UEFI compatible graphics card or using integrated graphics from CPU 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 continuously update for better system performance. Therefore, the description may be slightly different from the latest BIOS and should be 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

**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/Intel600BIOS.pdf>

or scan the QR code to access.

## Resetting BIOS

You might need to restore the default BIOS setting 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.
  - 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 properly.
- Please close all other application software 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 your USB flash drive.
3. Connect the power supply to **CPU\_PWR1** and **ATX\_PWR1**. (No need to install CPU and memory.)
4. Plug the USB flash drive 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.



**GUNGNIR 120R**

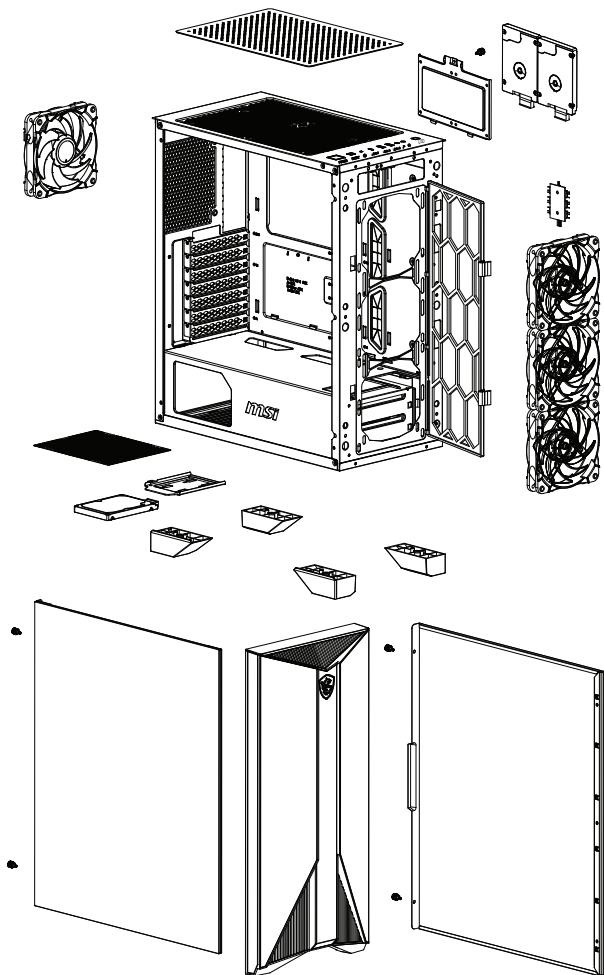
User Guide  
使用手冊



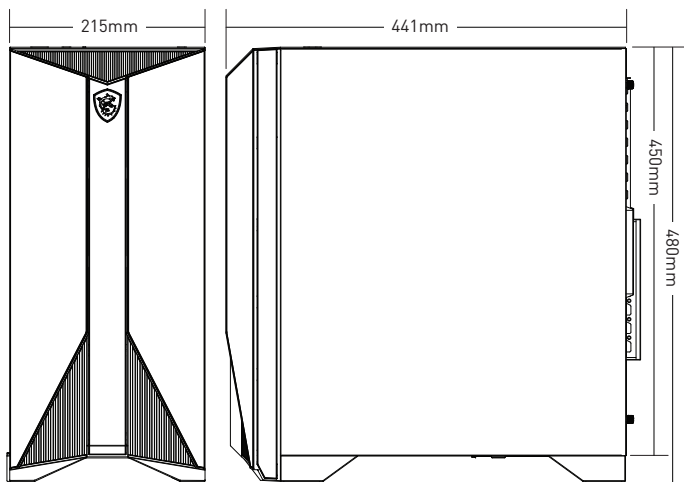
## Specification / 產品規格

Size 尺寸	Mid-Tower
Fan LED Controller 風扇 LED 控制板	1 to 6 ARGB (3 pin) Control Board
Pre-Installed Fan 預裝風扇	Front: 3x 120 mm ARGB fan Rear: 1x 120 mm ARGB fan
Material 材質	Chassis: Steel (SPCC 0.5 mm) ( 鋼板外框 ) Right Side Panel: Steel ( 右側鋼板 ) Left Side Panel: Tempered glass ( 左側強化玻璃 ) Front Bezel: Dual layer tempered glass ( 前面板雙層強化玻璃 )
Dust Filters 防塵濾網	Top: Magnetic frame dust filter PVC mesh ( 頂部 PVC 磁性框防塵濾網 ) Bottom dust filter ( 下防塵濾網 )
Fan Support 支援風扇	Top: 2x 120 mm / 2x 140 mm Front: 3x 120 mm / 2x 140 mm Rear: 1x 120 mm
Drive Bays 硬碟槽	2 x 2.5" SSD mounting brackets ( 1 SSD tray & 2 with screw only ) ( 1 個 SSD 托盤 & 2 個僅鎖螺絲 ) 2 x 3.5" + 2.5" combo HDD tray
Expansion Slots 擴充槽	Supports 7 expansion slots ( 支援 7 個擴充槽 )
IO Panel IO 面板	1x Power button 1x Reset button 1x Power indicator 1x USB 3.2 Gen2 Type C port 2x USB 3.2 Gen1 Type A ports 1x Mic-in jack 1x Audio-out jack 1x LED switch button
Radiator Support 支援水冷排	Top: 120/ 240 mm Front: 120 / 140 / 240 / 280 / 360 mm Rear: 120 mm
Clearance 空間	CPU Cooler Height: Max 170mm (6.69 inch) Graphics Card Length: Max 340 mm (13.38 inch) PSU Length: Standard ATX 250mm (9.84 inch)
Case Dimensions 機殼尺寸	441(D) x 215(W) x 480(H) 17.36(D) x 8.46(W) x 19.90(H) inch
Motherboard Support 支援主機板	ATX/ M-ATX/ Mini-ITX

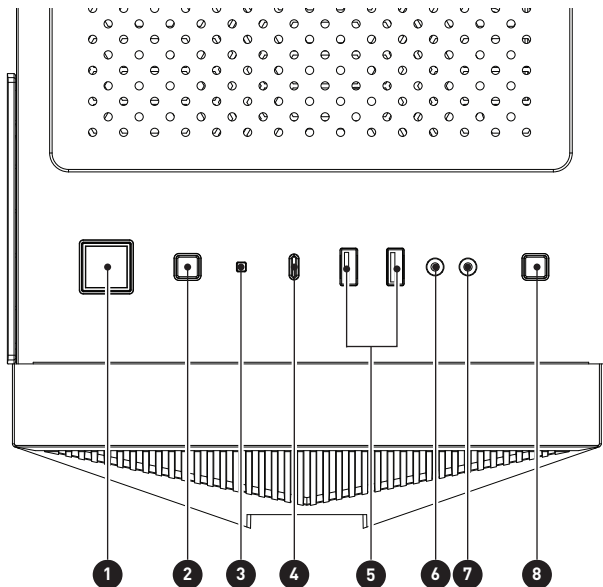
## Case Features / 機殼特色



## Side & Front View/ 側面和前面



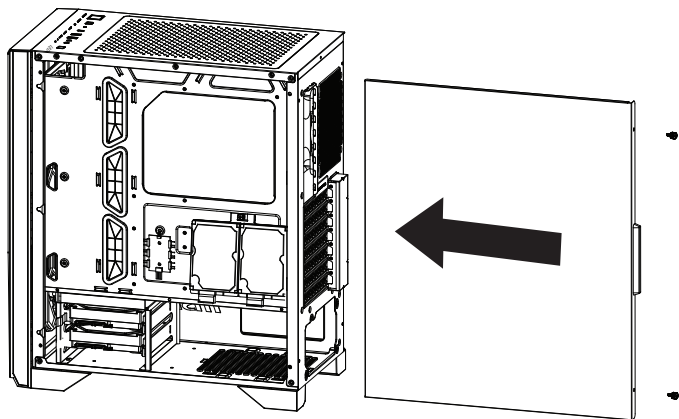
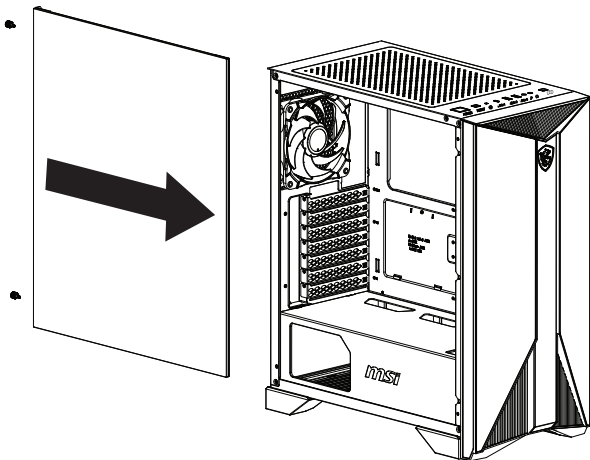
## IO Panel / IO 面板



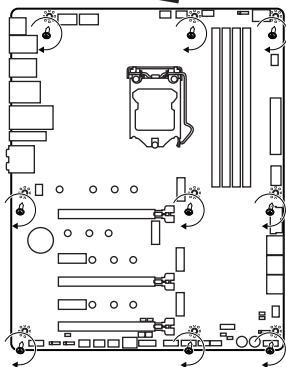
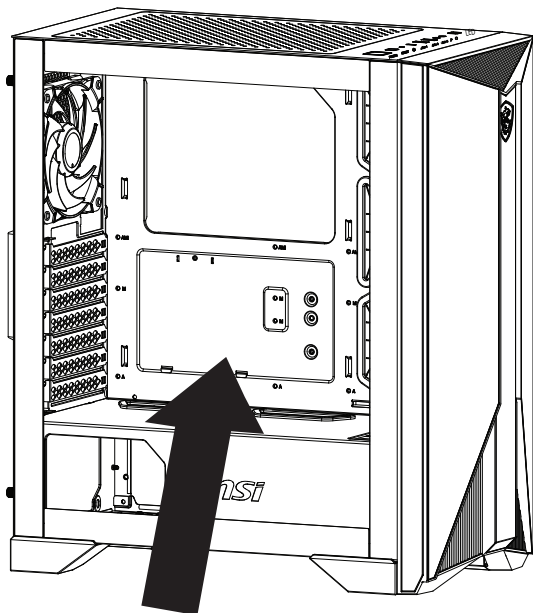
1. Power button / 電源按鈕
2. Reset button / 重新開機按鈕
3. Power indicator / 電源指示燈
4. USB 3.2 Gen 2 Type-C
5. USB 3.2 Gen 1 Type-A
6. Mic-in / 音訊輸入
7. Audio-out / 音訊輸出
8. LED switch button / LED 切換按鈕



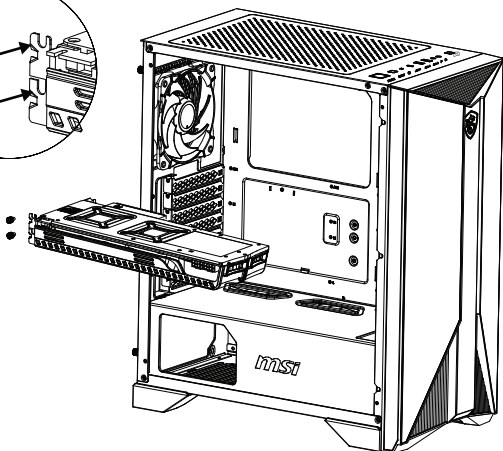
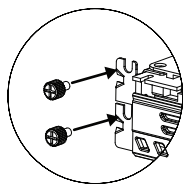
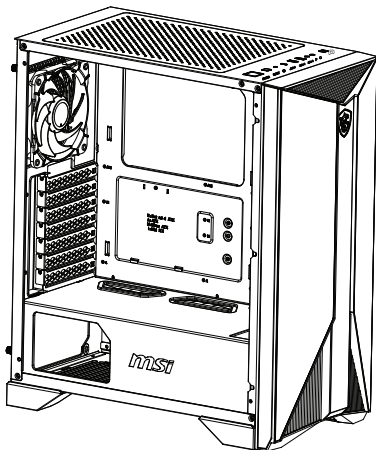
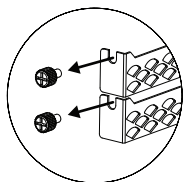
## Opening the Left & Right Side Cover/ 開啟左右側板



## Motherboard Installation / 安裝主機板

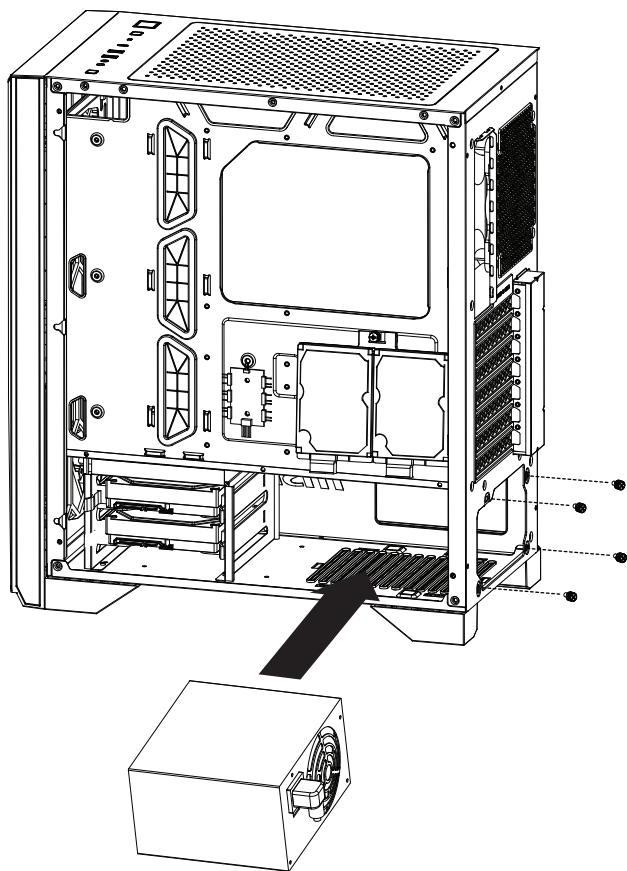


## Graphics Card Installation / 安裝顯示卡






## PSU Installation / 安裝電源供應器



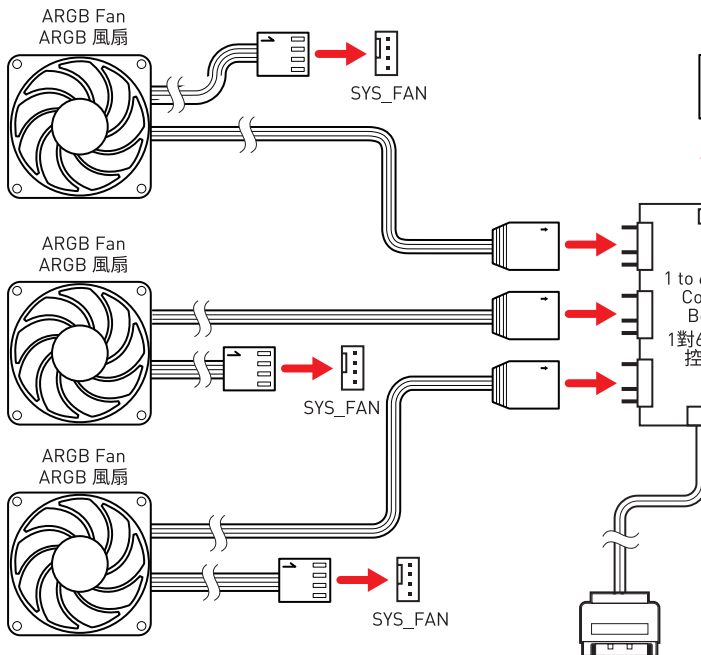
## Control Board Specification / 控制板規格

<b>Dimensions (mm)</b> <b>尺寸 (mm)</b>	50 x 30	
<b>Support LED Type</b> <b>支援 LED 種類</b>	DC5V Addressable RGB LED	
<b>Connectors</b> <b>接頭</b>	1x LED switch connector (LED 按鈕接頭) 1x SATA power connector (SATA 電源接頭) 1x MSI motherboard JRAINBOW connector ( 微星主機板 JRAINBOW 接頭 ) 6x 3-pin ARGB LED connectors (3 針 ARGB LED 接頭)	
<b>ARGB Pin Definition</b> <b>ARGB 針腳定義</b>	 <p>Ground Data +5V</p>	
<b>LED Effects</b> <b>( 1 short press the LED switch )</b> <b>LED 效果</b> <b>( 短按 LED 按鈕 )</b>	<b>LED effect cycle:</b> 1. Rainbow 2. Seven-color trailing 3. Seven-color gradient 4. Violet 5. White 6. Blue 7. Cyan 8. Green 9. Yellow 10. Red 11. Rainbow breathing 12. Red breathing 13. Yellow breathing 14. Green breathing 15. Cyan breathing 16. Blue breathing 17. White breathing 18. Violet breathing 19. Fixed rainbow 20. Red 21. Yellow 22. Green 23. Cyan 24. Blue 25. White 26. Violet	<b>LED 效果循環:</b> 1. 彩虹 2. 七色拖尾 3. 七色漸變 4. 紫色 5. 白色 6. 藍色 7. 青色 8. 綠色 9. 黃色 10. 紅色 11. 彩虹呼吸 12. 紅色呼吸 13. 黃色呼吸 14. 綠色呼吸 15. 青色呼吸 16. 藍色呼吸 17. 白色呼吸 18. 紫色呼吸 19. 固定彩虹 20. 紅色 21. 黃色 22. 綠色 23. 青色 24. 藍色 25. 白色 26. 紫色

## ARGB Fan Connection / 連接 ARGB 風扇

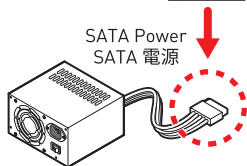
### LED switch control description:

1. Short press the LED switch once to switch the LED effect
2. Press and hold the LED switch for 3 seconds the LED flash white light once, and then into the MSI motherboard Mystic Light synchronization mode. Short press once to back to the Hub control mode.
3. Press and hold the LED switch for 6 seconds to turn off the LED.



### Note / 注意

- Support up to 128 LEDs, Exceeding this limit will lead to overheating, abnormal color or no light.
- 最大支援 128 顆 LED，超過此限定會導致過熱、異色、不亮。



LED Switch  
LED 按鈕

### LED按鈕控制說明：

1. 短按LED按鈕可切換LED效果。
2. 長按LED按鈕3秒鐘，風扇將閃爍一次白光，然後進入微星主機板 Mystic Light同步模式。短按一次返回到集線器控制模式。
3. 按住LED按鈕6秒鐘可關閉LED。

