

ASUS

**ROG STRIX
B650E-I
GAMING
WIFI**

Motherboard

E20253
First Edition
September 2022

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Safety information

Electrical safety

- To prevent electrical shock hazard, disconnect the power cable from the electrical outlet before relocating the system.
- When adding or removing devices to or from the system, ensure that the power cables for the devices are unplugged before the signal cables are connected. If possible, disconnect all power cables from the existing system before you add a device.
- Before connecting or removing signal cables from the motherboard, ensure that all power cables are unplugged.
- Seek professional assistance before using an adapter or extension cord. These devices could interrupt the grounding circuit.
- Ensure that your power supply is set to the correct voltage in your area. If you are not sure about the voltage of the electrical outlet you are using, contact your local power company.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.

Operation safety

- Before installing the motherboard and adding devices on it, carefully read all the manuals that came with the package.
- Before using the product, ensure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- To avoid short circuits, keep paper clips, screws, and staples away from connectors, slots, sockets and circuitry.
- Avoid dust, humidity, and temperature extremes. Do not place the product in any area where it may become wet.
- Place the product on a stable surface.
- If you encounter technical problems with the product, contact a qualified service technician or your retailer.
- Your motherboard should only be used in environments with ambient temperatures between 0°C and 40°C.

Button/Coin Batteries Safety Information



WARNING
KEEP OUT OF REACH OF CHILDREN Swallowing can lead to chemical burns, perforation of soft tissue, and death. Severe burns can occur within 2 hours of ingestion. Seek medical attention immediately.

About this guide

This user guide contains the information you need when installing and configuring the motherboard.

How this guide is organized

This guide contains the following parts:

- **Chapter 1: Product Introduction**

This chapter describes the features of the motherboard and the new technology it supports. It includes description of the switches, jumpers, and connectors on the motherboard.

- **Chapter 2: Basic Installation**

This chapter lists the hardware setup procedures that you have to perform when installing system components.

- **Chapter 3: BIOS and RAID Support**

This chapter tells how to boot into the BIOS, upgrade BIOS using the EZ Flash Utility and support on RAID.

Where to find more information

Refer to the following sources for additional information and for product and software updates.

1. **ASUS website**

The ASUS website (www.asus.com) provides updated information on ASUS hardware and software products.

2. **Optional documentation**

Your product package may include optional documentation, such as warranty flyers, that may have been added by your dealer. These documents are not part of the standard package.

Conventions used in this guide

To ensure that you perform certain tasks properly, take note of the following symbols used throughout this user guide.



CAUTION: Information to prevent damage to the components and injuries to yourself when trying to complete a task.



IMPORTANT: Instructions that you MUST follow to complete a task.



NOTE: Tips and additional information to help you complete a task.

ROG STRIX B650E-I GAMING WIFI specifications summary

CPU	AMD Socket AM5 for AMD Ryzen™ 7000 Series Desktop Processors* * Refer to www.asus.com for CPU support list.
Chipset	AMD B650 Chipset
Memory	2 x DIMM, Max. 64GB, DDR5 6400+(OC)/ 6200(OC)/ 6000(OC)/ 5800(OC)/ 5600(OC)/ 5400(OC)/ 5200/ 5000/ 4800 ECC and Non-ECC, Un-buffered Memory* Dual Channel Memory Architecture Supports AMD EXTended Profiles for Overclocking (EXPO™) OptiMem II * Supported memory types, data rate (Speed), and number of DRAM module vary depending on the CPU and memory configuration, for more information refer to www.asus.com for memory support list. ** Non-ECC, Un-buffered DDR5 Memory supports On-Die ECC function.
Graphics	1 x HDMI® port* 1 x USB Type-C® port supports DisplayPort output*** * Graphics specifications may vary between CPU types. Please refer to AMD CPU specifications. ** Supports 4K@60Hz as specified in HDMI 2.1. *** VGA resolution support depends on processors' or graphic cards' resolution.
Expansion Slots	AMD Ryzen™ 7000 Series Desktop Processors* 1 x PCIe 5.0 x16 slot * Please check the PCIe bifurcation table at https://www.asus.com/support/FAQ/1037507/ . Note: To ensure compatibility of the device installed, please refer to https://www.asus.com/support/ for the list of supported peripherals.
Storage	Total supports 2 x M.2 slots and 2 x SATA 6Gb/s ports* AMD Ryzen™ 7000 Series Desktop Processors M.2_1 slot (Key M), type 2242/2260/2280 (supports PCIe 5.0 x4 mode) M.2_2 slot (Key M), type 2242/2260/2280 (supports PCIe 4.0 x4 mode) 2 x SATA 6Gb/s ports * AMD RAIDXpert2 Technology supports both PCIe RAID 0/1 and SATA RAID 0/1.
Ethernet	1 x Intel® 2.5Gb Ethernet ASUS LANGuard
Wireless & Bluetooth	Wi-Fi 6E 2x2 Wi-Fi 6E (802.11 a/b/g/n/ac/ax) Supports 2.4/5/6GHz frequency band* Bluetooth v5.2 * Wi-Fi 6E 6GHz regulatory may vary between countries. ** The Bluetooth version may vary, please refer to the Wi-Fi module manufacturer's website for the latest specifications.
USB	Rear USB (Total 8 ports) 1 x USB 3.2 Gen 2x2 port (1 x USB Type-C®) 5 x USB 3.2 Gen 2 ports (4 x Type-A + 1 x USB Type-C® with DP Alt mode) 2 x USB 2.0 ports (2 x Type-A) Front USB (Total 5 ports) 1 x USB 3.2 Gen 2 connector (supports USB Type-C®) 1 x USB 3.2 Gen 1 header supports 2 additional USB 3.2 Gen 1 ports 1 x USB 2.0 header supports 2 additional USB 2.0 ports

(continued on the next page)

ROG STRIX B650E-I GAMING WIFI specifications summary

Audio	<p>ROG SupremeFX 7.1 Surround Sound High Definition Audio CODEC ALC4080</p> <ul style="list-style-type: none">- Impedance sense for front and rear headphone outputs- Supports: Jack-detection, Multi-streaming, Front Panel Jack-retasking- High quality 120 dB SNR stereo playback output and 113 dB SNR recording input- Supports up to 32-Bit/384 kHz playback <p>Audio Features:</p> <ul style="list-style-type: none">- Audio Shielding- Savitech SV3H712 AMP- LED-illuminated audio jacks- Rear optical S/PDIF out port- Premium audio capacitors
Back Panel I/O Ports	<p>1 x USB 3.2 Gen 2x2 port (1 x Type-C®)</p> <p>5 x USB 3.2 Gen 2 ports (4 x Type-A + 1 x USB Type-C® with DP Alt mode)</p> <p>2 x USB 2.0 ports (2 x Type-A)</p> <p>1 x HDMI® port</p> <p>1 x Wi-Fi Module</p> <p>1 x Intel® 2.5Gb Ethernet port</p> <p>3 x LED-illuminated audio jacks</p> <p>1 x Optical S/PDIF out port</p> <p>1 x BIOS FlashBack™ button</p> <p>1 x FlexKey button</p> <p>* The rear panel Lime (Line out) port does not support spatial audio. If you wish to use spatial audio, make sure to connect your audio output device to the audio jack on the front panel of your chassis.</p>
Internal I/O Connectors	<p>Fan and Cooling related</p> <p>1 x 4-pin CPU Fan header</p> <p>1 x 4-pin AIO Pump header</p> <p>1 x 4-pin Chassis Fan header</p> <p>Power related</p> <p>1 x 24-pin Main Power connector</p> <p>1 x 8-pin +12V Power connector</p> <p>Storage related</p> <p>2 x M.2 slots (Key M)</p> <p>2 x SATA 6Gb/s ports</p> <p>USB</p> <p>1 x USB 3.2 Gen 2 connector (supports USB Type-C®)</p> <p>1 x USB 3.2 Gen 1 header supports 2 additional USB 3.2 Gen 1 ports</p> <p>1 x USB 2.0 header supports 2 additional USB 2.0 ports</p> <p>Miscellaneous</p> <p>1 x Addressable Gen 2 header</p> <p>1 x Aura RGB header</p> <p>1 x Clear CMOS header</p>

(continued on the next page)

ROG STRIX B650E-I GAMING WIFI specifications summary

Internal I/O Connectors	<ul style="list-style-type: none">1 x CPU Over Voltage jumper1 x Front Panel Audio header (AAFP)1 x 10-1 pin System Panel header1 x Thermal Sensor header
Special Features	<p>Extreme Engine Digi+</p> <ul style="list-style-type: none">- 5K Black Metallic Capacitors <p>ASUS Q-Design</p> <ul style="list-style-type: none">- M.2 Q-Latch- Q-DIMM- Q-LED (CPU [red], DRAM [yellow], VGA [white], Boot Device [yellow green])- Q-Slot <p>ASUS Thermal Solution</p> <ul style="list-style-type: none">- M.2 heatsink backplate- M.2 heatsink- VRM heatsink design
Software Features	<p>ASUS EZ DIY</p> <ul style="list-style-type: none">- BIOS FlashBack™ button- BIOS FlashBack™ LED- ProCool- Pre-mounted I/O shield- SafeSlot- SafeDIMM <p>Aura Sync</p> <ul style="list-style-type: none">- Aura RGB header- Addressable Gen 2 header <p>ROG Exclusive Software</p> <ul style="list-style-type: none">- GameFirst VI- ROG CPU-Z- Sonic Studio III + Sonic Studio Virtual Mixer + Sonic Suite Companion- Sonic Radar III- DTS® Sound Unbound- Anti-virus software <p>ASUS Exclusive Software</p> <ul style="list-style-type: none">- Armoury Crate- AIDA64 Extreme (60 days free trial)- Aura Creator- Aura Sync- Fan Xpert4- Power Saving- Two-Way AI Noise Cancellation

(continued on the next page)

ROG STRIX B650E-I GAMING WIFI specifications summary

Software Features	AI Suite 3 - TPU - DIGI+ VRM - Turbo app - PC Cleaner MyAsus WinRAR UEFI BIOS ASUS EZ DIY - ASUS CrashFree BIOS 3 - ASUS EZ Flash 3 - ASUS UEFI BIOS EZ Mode Dynamic OC Switcher
	BIOS 256 Mb Flash ROM, UEFI AMI BIOS
	Manageability WOL by PME, PXE
	Operating System Windows® 11, Windows® 10 64-bit
	Form Factor Mini-ITX Form Factor 6.7 inch x 6.7 inch (17 cm x 17 cm)



- Specifications are subject to change without notice. Please refer to the ASUS website for the latest specifications.
- MyAsus offers a variety of support features such as helping to troubleshoot issues, optimizing product performance, integrating ASUS software, and recovery drive creation. Please scan the QR Code for installation guide and FAQ.



Package contents

Check your motherboard package for the following items.

Motherboard	1 x ROG STRIX B650E-I GAMING WIFI motherboard
Cables	2 x SATA 6Gb/s cables 1 x ROG USB2.0 splitter cable 1 x Panel cable
Additional Cooling Kit	1 x Thermal pad for M.2
	1 x ASUS Wi-Fi moving antennas
	1 x Cable ties package
	1 x M.2 bracket
	1 x M.2 SSD screw package
Miscellaneous	1 x M.2 Q-Latch package for M.2 backplate 1 x ROG key chain 1 x ROG Strix sticker 1 x ROG Strix thank you card 1 x Rubber package for M.2 backplate
Documentation	1 x User guide



If any of the above items is damaged or missing, contact your retailer.

Installation tools and components

	Phillips (cross) screwdriver
PC chassis	Power supply unit
AMD AM5 CPU	AMD AM5 compatible CPU Fan
DDR5 DIMM	SATA hard disk drive
SATA optical disc drive (optional)	Graphics card (optional)
M.2 SSD module (optional)	Screws



The tools and components in the table above are not included in the motherboard package.

Product Introduction

1.1 Before you proceed

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



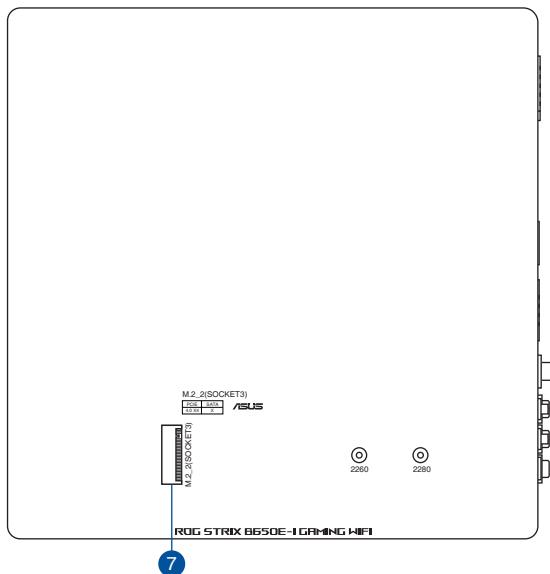
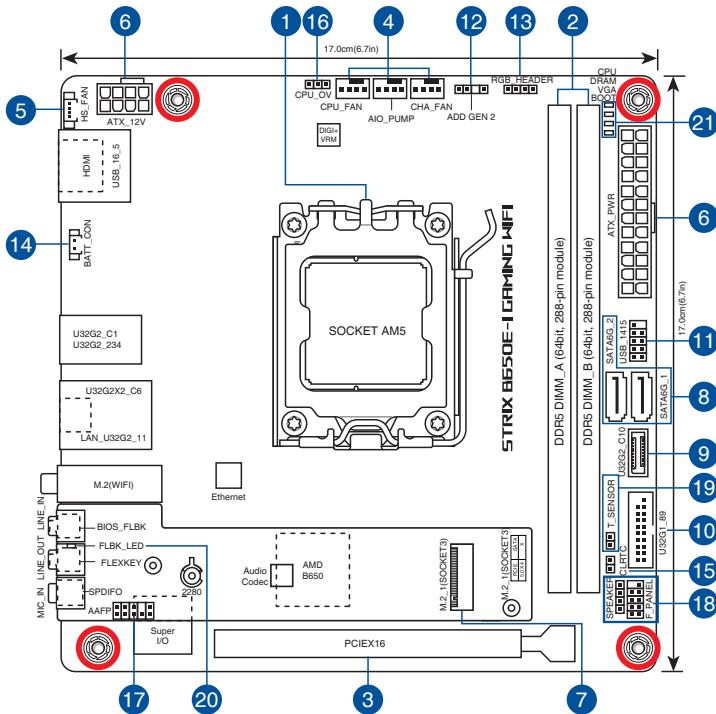
- Unplug the power cord from the wall socket before touching any component.
- Before handling components, use a grounded wrist strap or touch a safely grounded object or a metal object, such as the power supply case, to avoid damaging them due to static electricity.
- Hold components by the edges to avoid touching the ICs on them.
- Whenever you uninstall any component, place it on a grounded antistatic pad or in the bag that came with the component.
- Before you install or remove any component, ensure that the ATX power supply is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, or components.



- The pin definitions in this chapter are for reference only. The pin names depend on the location of the header/jumper/connector.
- For more information on installing your motherboard, please scan the QR code below:



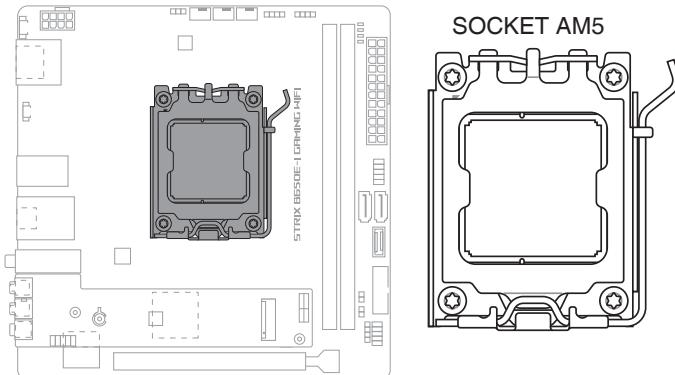
1.2 Motherboard layout



Layout contents	Page
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1. CPU socket

The motherboard comes with a Socket AM5 designed for AMD Ryzen™ 7000 Series Desktop Processors.



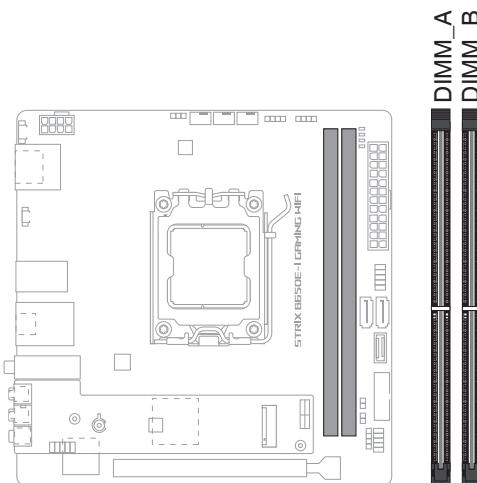
- The AM5 socket has a different pinout design. Ensure that you use a CPU designed for the AM5 socket.
- The CPU fits in only one correct orientation. DO NOT force the CPU into the socket to prevent bending the connectors on the socket and damaging the CPU.
- Ensure that all power cables are unplugged before installing the CPU.
- Upon purchase of the motherboard, ensure that the PnP cap is on the socket and the socket contacts are not bent. Contact your retailer immediately if the PnP cap is missing, or if you see any damage to the PnP cap/socket contacts/motherboard components. ASUS will shoulder the cost of repair only if the damage is shipment/transit-related.
- Keep the cap after installing the motherboard. ASUS will process Return Merchandise Authorization (RMA) requests only if the motherboard comes with the cap on the AM5 socket.
- The product warranty does not cover damage to the socket contacts resulting from incorrect CPU installation/removal, or misplacement/loss/incorrect removal of the PnP cap.

2. DIMM slots

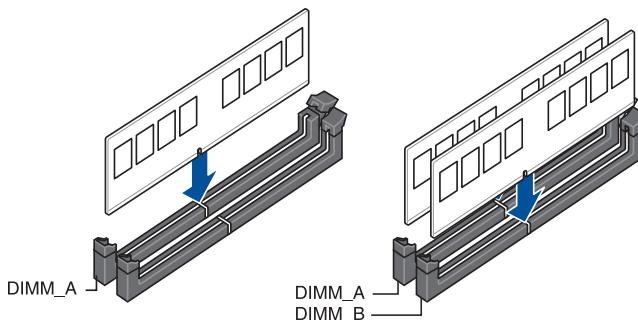
The motherboard comes with Dual Inline Memory Modules (DIMM) slots designed for DDR5 (Double Data Rate 5) memory modules.



A DDR5 memory module is notched differently from a DDR, DDR2, DDR3, or DDR4 module. DO NOT install a DDR, DDR2, DDR3, or DDR4 memory module to the DDR5 slot.



Recommended memory configurations



Memory configurations

You may install 8GB, 16GB, and 32GB unbuffered, ECC or non-ECC DDR5 DIMMs into the DIMM sockets.



You may install varying memory sizes in Channel A and Channel B. The system maps the total size of the lower-sized channel for the dual-channel configuration. Any excess memory from the higher-sized channel is then mapped for single-channel operation.

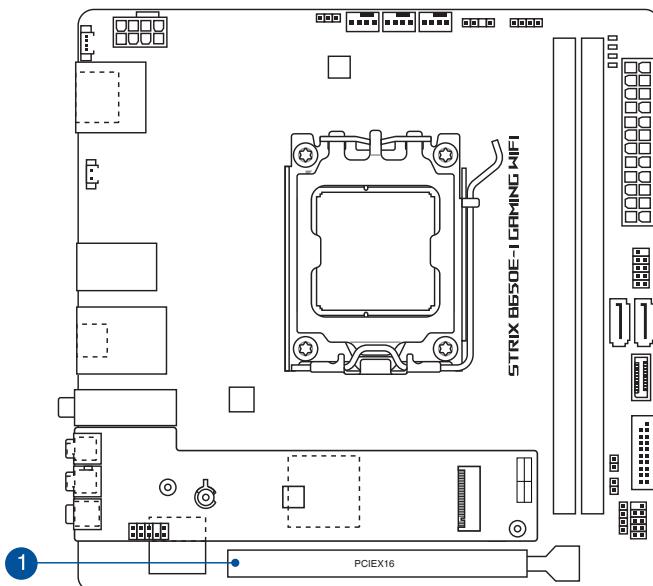


- The default memory operation frequency is dependent on its Serial Presence Detect (SPD), which is the standard way of accessing information from a memory module. Under the default state, some memory modules for overclocking may operate at a lower frequency than the vendor-marked value.
- For system stability, use a more efficient memory cooling system to support a full memory load or overclocking condition.
- Always install the DIMMs with the same CAS Latency. For an optimum compatibility, we recommend that you install memory modules of the same version or data code (D/C) from the same vendor. Check with the vendor to get the correct memory modules.
- Visit the ASUS website for the latest QVL, and memory frequency support depends on the CPU types.

3. Expansion slots

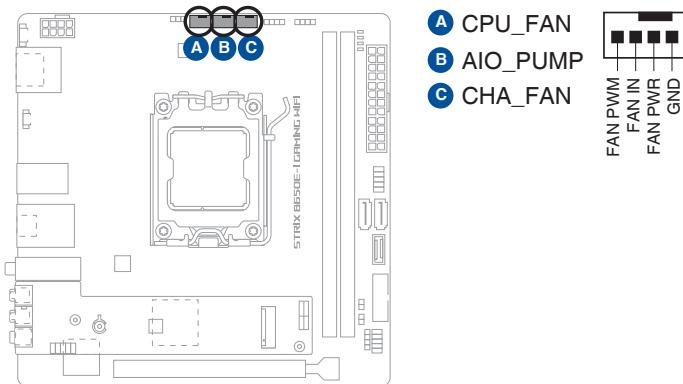


Unplug the power cord before adding or removing expansion cards. Failure to do so may cause you physical injury and damage motherboard components.



4. Fan and Pump headers

The Fan and Pump headers allow you to connect fans or pumps to cool the system.



- DO NOT forget to connect the fan cables to the fan headers. Insufficient air flow inside the system may damage the motherboard components. These are not jumpers! Do not place jumper caps on the fan headers!
- Ensure the cable is fully inserted into the header.

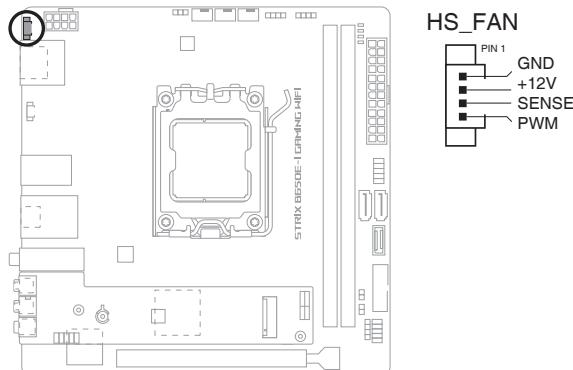


For water cooling kits, connect the pump header to the **AIO_PUMP** header.

Header	Max. Current	Max. Power	Default Speed	Shared Control
CPU_FAN	1A	12W	Q-Fan Controlled	A
CHA_FAN	1A	12W	Q-Fan Controlled	-
AIO_PUMP	1A	12W	Full Speed	-

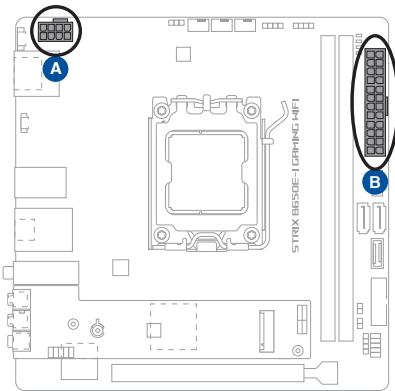
5. Heatsink fan header

The Heatsink fan header is for connecting the Heatsink fan on the integrated heatsink.

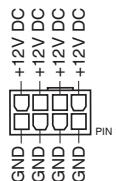


6. Power connectors

These Power connectors allow you to connect your motherboard to a power supply. The power supply plugs are designed to fit in only one orientation, find the proper orientation and push down firmly until the power supply plugs are fully inserted.



A ATX_12V



B ATX_PWR

+3 Volts	[]	GND
+12 Volts	[]	+5 Volts
+12 Volts	[]	+5 Volts
+5V Standby	[]	+5 Volts
Power OK	[]	-5 Volts
GND	[]	GND
+5 Volts	[]	GND
GND	[]	GND
+5 Volts	[]	PSON#
GND	[]	GND
+3 Volts	[]	-12 Volts
+3 Volts	[]	+3 Volts

PIN 1



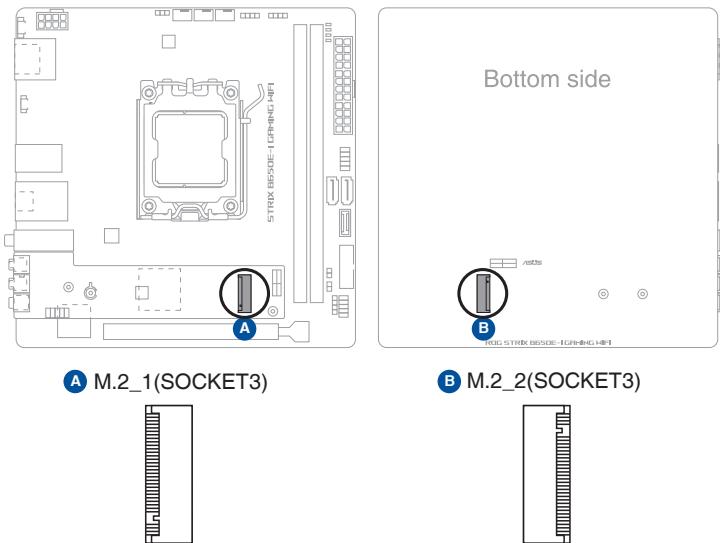
Ensure to connect the 8-pin power plug.



We recommend that you use a PSU with a higher power output when configuring a system with more power-consuming devices. The system may become unstable or may not boot up if the power is inadequate.

7. M.2 slots

The M.2 slots allow you to install M.2 devices such as M.2 SSD modules.



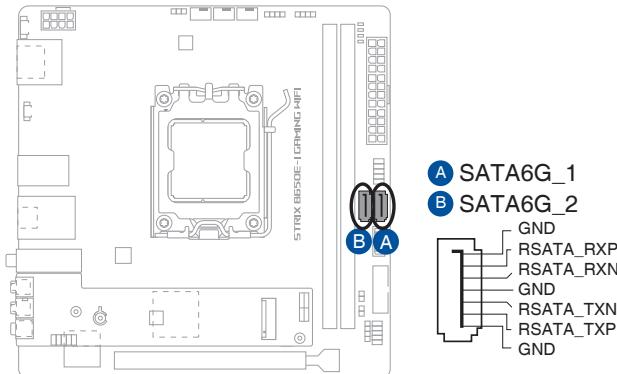
-
- 
- **AMD Ryzen™ 7000 Series Desktop Processors:**
 - M.2_1 supports PCIE 5.0 x4 mode M Key design and type 2242 / 2260 / 2280 storage devices.
 - M.2_2 supports PCIE 4.0 x4 mode M Key design and type 2242 / 2260 / 2280 storage devices.
 - AMD RAIDXpert2 Technology supports both PCIe RAID 0/1 and SATA RAID 0/1.
-



The M.2 SSD module is purchased separately.

8. SATA 6Gb/s ports

The SATA 6Gb/s ports allow you to connect SATA devices such as optical disc drives and hard disk drives via SATA cables.



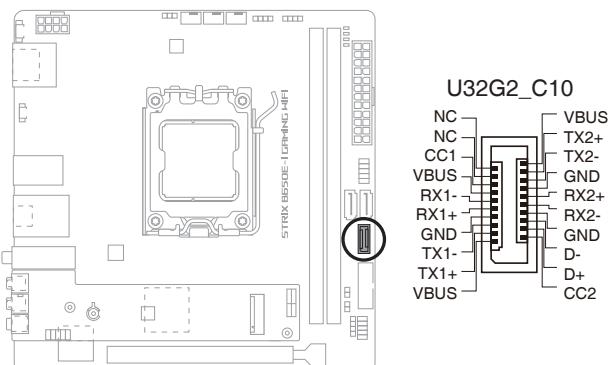
If you installed SATA storage devices to the **SATA6G_1-2** ports, you can create a RAID 0 and 1 configuration through the onboard AMD B650 chipset.



Before creating a RAID set, refer to the **RAID Configuration Guide**. You can download the **RAID Configuration Guide** from the ASUS website.

9. USB 3.2 Gen 2 Type-C® Front Panel connector

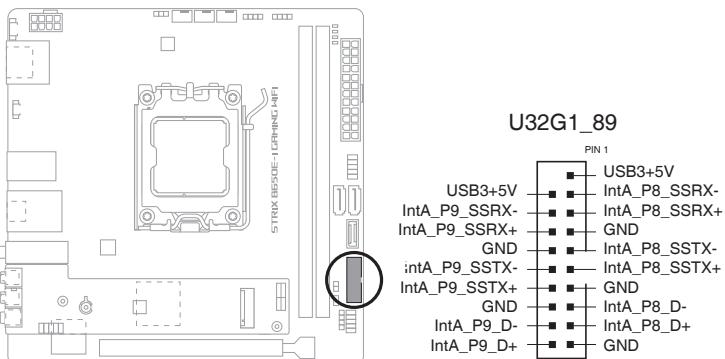
The USB 3.2 Gen 2 Type-C® connector allows you to connect a USB 3.2 Gen 2 Type-C® module for an additional USB 3.2 Gen 2 Type-C® port on the front panel. The USB 3.2 Gen 2 Type-C® connector provides data transfer speeds of up to 10 Gb/s.



The USB 3.2 Gen 2 Type-C® module is purchased separately.

10. USB 3.2 Gen 1 header

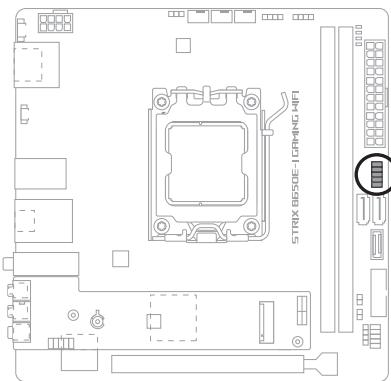
The USB 3.2 Gen 1 header allows you to connect a USB 3.2 Gen 1 module for additional USB 3.2 Gen 1 ports. The USB 3.2 Gen 1 header provides data transfer speeds of up to 5 Gb/s.



The USB 3.2 Gen 1 module is purchased separately.

11. USB 2.0 header

The USB 2.0 header allows you to connect a USB module for additional USB 2.0 ports. The USB 2.0 header provides data transfer speeds of up to 480 Mb/s connection speed.



USB_1415

NC	[]	GND	[]
USB_P14+	[]	USB_P15+	[]
USB_P14-	[]	USB_P15-	[]
USB+5V	[]	USB+5V	[]

PIN 1



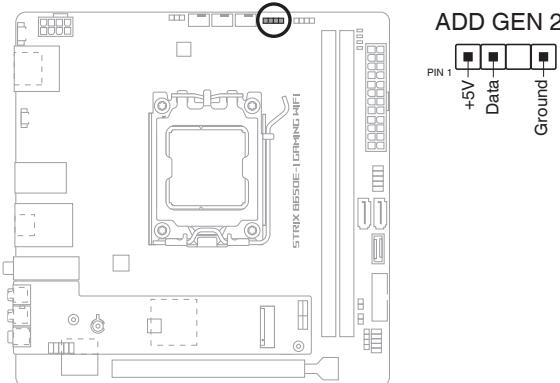
DO NOT connect a 1394 cable to the USB connectors. Doing so will damage the motherboard!



The USB 2.0 module is purchased separately.

12. Addressable Gen 2 header

The Addressable Gen 2 header allows you to connect individually addressable RGB WS2812B LED strips or WS2812B based LED strips.



The Addressable Gen 2 header supports WS2812B addressable RGB LED strips (5V/ Data/Ground), with a maximum power rating of 3A (5V), and the addressable headers on this board can handle a combined maximum of 500 LEDs.



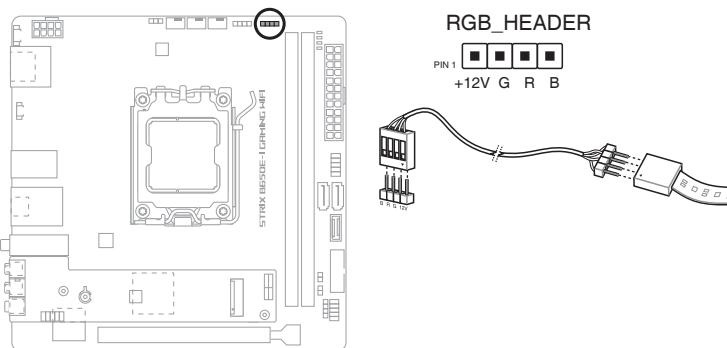
Before you install or remove any component, ensure that the power supply is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, or components.



- Actual lighting and color will vary with LED strip.
- If your LED strip does not light up, check if the addressable RGB LED strip is connected in the correct orientation, and the 5V connector is aligned with the 5V header on the motherboard.
- The addressable RGB LED strip will only light up when the system is powered on.
- The addressable RGB LED strip is purchased separately.

13. Aura RGB header

The Aura RGB header allows you to connect RGB LED strips.



The Aura RGB header supports 5050 RGB multi-color LED strips (12V/G/R/B), with a maximum power rating of 3A (12V).



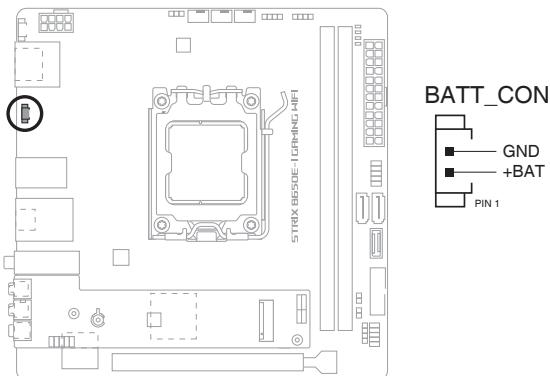
Before you install or remove any component, ensure that the power supply is switched off or the power cord is detached from the power supply. Failure to do so may cause severe damage to the motherboard, peripherals, or components.



- Actual lighting and color will vary with LED strip.
- If your LED strip does not light up, check if the RGB LED extension cable and the RGB LED strip is connected in the correct orientation, and the 12V connector is aligned with the 12V header on the motherboard.
- The LED strip will only light up when the system is powered on.
- The LED strip is purchased separately.

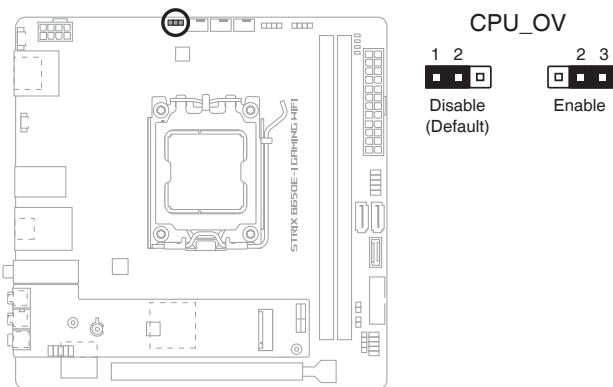
14. RTC Battery header

This connector is for the lithium CMOS battery.



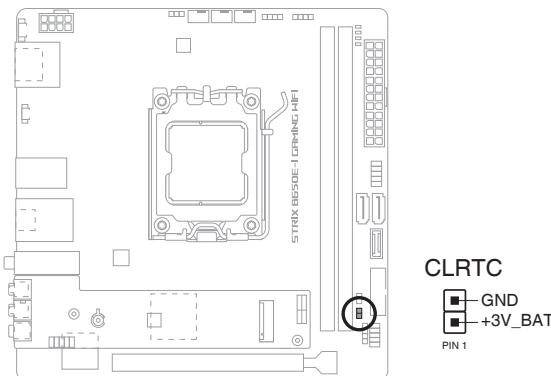
15. CPU Over Voltage jumper

The CPU Over Voltage jumper allows you to set a higher CPU voltage for a flexible overclocking system (depending on the type of the installed CPU). Set to pins 2-3 to increase the CPU voltage setting, or set to pins 1-2 to use the default CPU voltage setting.



16. Clear CMOS header

The Clear CMOS header allows you to clear the Real Time Clock (RTC) RAM in the CMOS, which contains the date, time, system passwords, and system setup parameters.



To erase the RTC RAM:

1. Turn OFF the computer and unplug the power cord.
2. Short-circuit pin 1-2 with a metal object or jumper cap for about 5-10 seconds.
3. Plug the power cord and turn ON the computer.
4. Hold down the key during the boot process and enter BIOS setup to re-enter data.



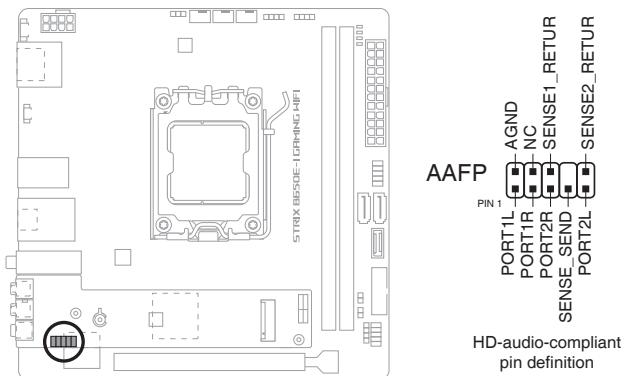
DO NOT short-circuit the pins except when clearing the RTC RAM. Short-circuiting or placing a jumper cap will cause system boot failure!



If the steps above do not help, remove the onboard button cell battery and move the jumper again to clear the CMOS RTC RAM data. After clearing the CMOS, reinstall the button cell battery.

17. Front Panel Audio header

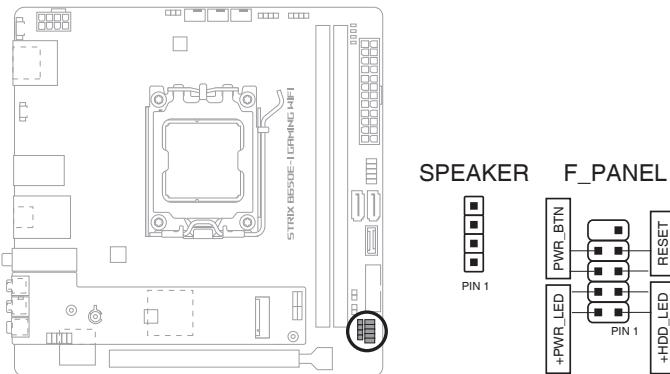
The Front Panel Audio header is for a chassis-mounted front panel audio I/O module that supports HD Audio. Connect one end of the front panel audio I/O module cable to this header.



We recommend that you connect a high-definition front panel audio module to this connector to avail of the motherboard's high-definition audio capability.

18. System Panel header

The System Panel header supports several chassis-mounted functions.



- **System Power LED header (+PWR_LED)**

The 2-pin header allows you to connect the System Power LED. The System Power LED lights up when the system is connected to a power source, or when you turn on the system power, and blinks when the system is in sleep mode.

- **Storage Device Activity LED header (+HDD_LED)**

The 2-pin header allows you to connect the Storage Device Activity LED. The Storage Device Activity LED lights up or blinks when data is read from or written to the storage device or storage device add-on card.

- **System Warning Speaker header (SPEAKER)**

The 4-pin header allows you to connect the chassis-mounted system warning speaker. The speaker allows you to hear system beeps and warnings.

- **Power Button/Soft-off Button header (PWR_BTN)**

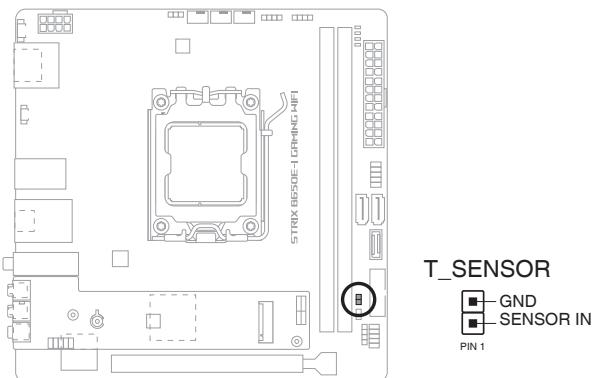
The 3-1 pin header allows you to connect the system power button. Press the power button to power up the system, or put the system into sleep or soft-off mode (depending on the operating system settings).

- **Reset button header (RESET)**

The 2-pin header allows you to connect the chassis-mounted reset button. Press the reset button to reboot the system.

19. Thermal Sensor header

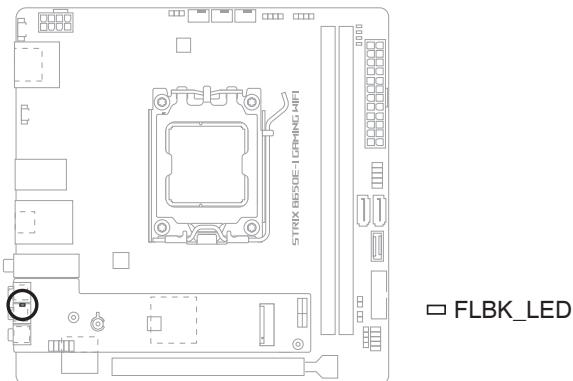
The Thermal Sensor header allows you to connect a sensor to monitor the temperature of the devices and the critical components inside the motherboard. Connect the thermal sensor and place it on the device or the motherboard's component to detect its temperature.



The thermal sensor is purchased separately.

20. BIOS FlashBack™ LED

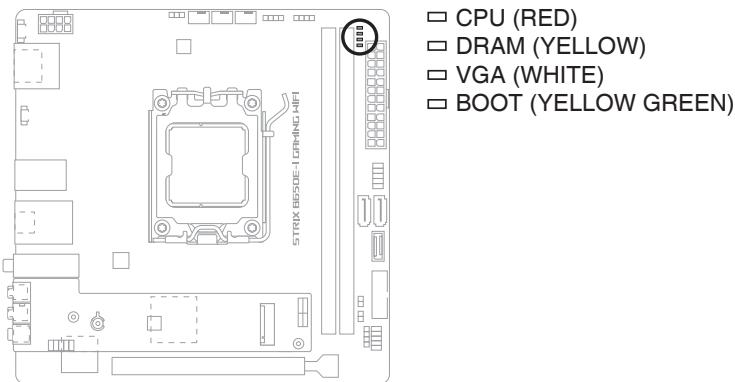
The FlashBack™ LED lights up or blinks to indicate the status of the BIOS FlashBack™ LED.



Refer to the **BIOS update utility** section for more information on the BIOS FlashBack™ feature.

21. Q-LEDs

The Q-LEDs check key components (CPU, DRAM, VGA, and booting devices) during the motherboard booting process. If an error is found, the critical component's LED stays lit up until the problem is solved.



The Q-LEDs provide the most probable cause of an error code as a starting point for troubleshooting. The actual cause may vary from case to case.

Basic Installation

2.1 Building your PC system



The diagrams in this section are for reference only. The motherboard layout may vary with models, but the installation steps are the same for all models.

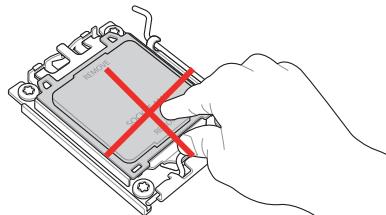
2.1.1 CPU installation



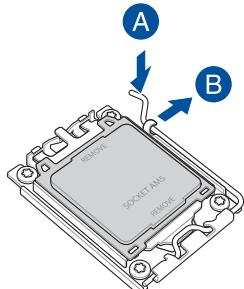
- Ensure that you use a CPU designed for the AM5 socket. The CPU fits in only one correct orientation. DO NOT force the CPU into the socket to prevent bending the pins and damaging the CPU.
- ASUS will not cover damages resulting from incorrect CPU installation/removal, incorrect CPU orientation/placement, or other damages resulting from negligence by the user.



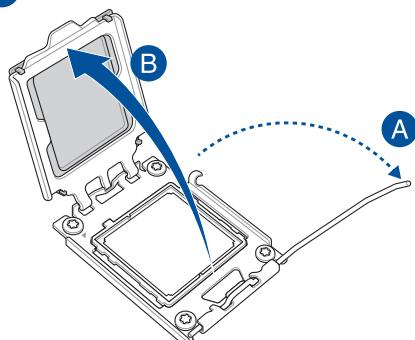
Unplug all power cables before installing the CPU.

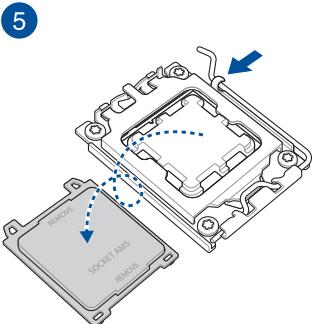
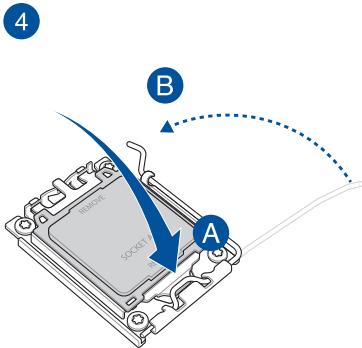
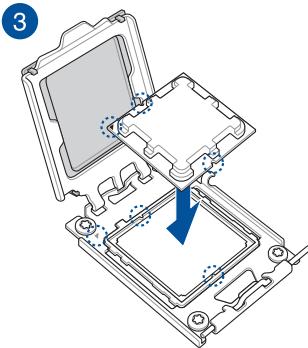


1



2





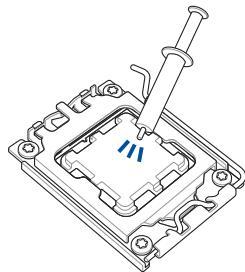
2.1.2 Cooling system installation



Apply the Thermal Interface Material to the CPU cooling system and CPU before you install the cooling system, if necessary.

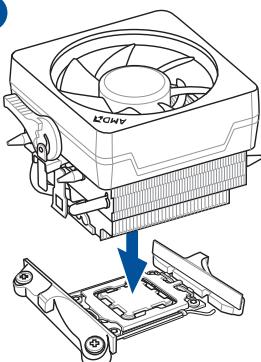


We recommend using AM5 compatible coolers with stock AM5 backplate to prevent potential damages to the pins in the socket.

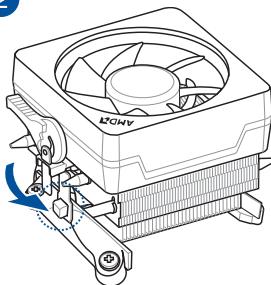


CPU heatsink and fan assembly Type 1

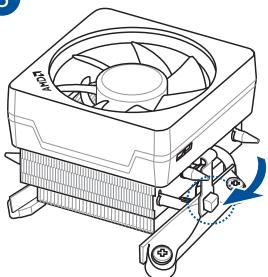
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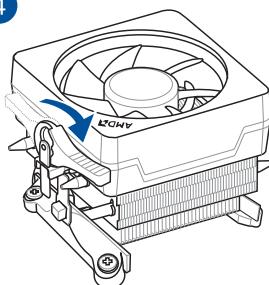
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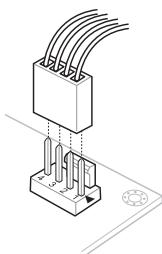
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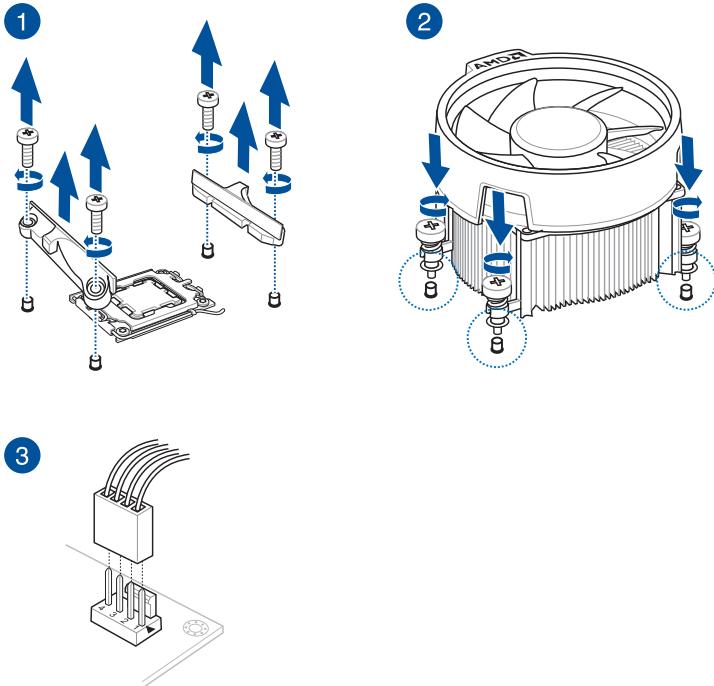
4



5



CPU heatsink and fan assembly Type 2



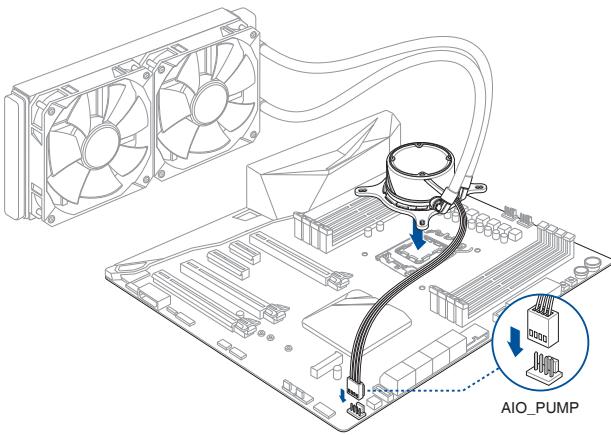
When using this type of CPU fan, remove the screws and the retention module only. Do not remove the plate on the bottom.

To install an AIO cooler

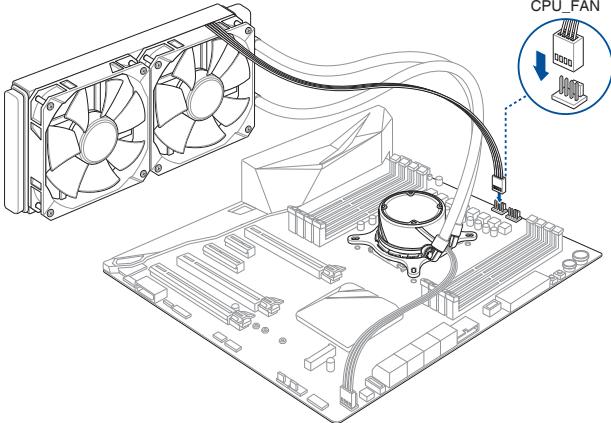


If you wish to install an AIO cooler, we recommend installing the AIO cooler after installing the motherboard into the chassis.

1

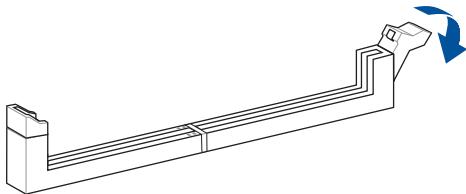


2

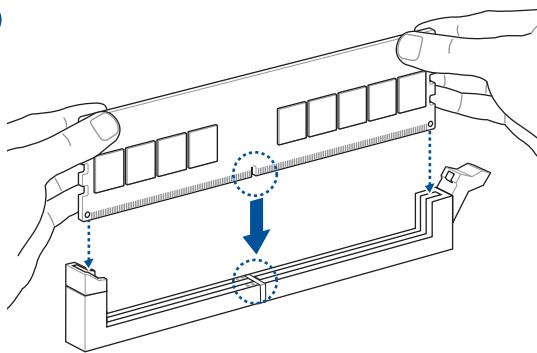


2.1.3 DIMM installation

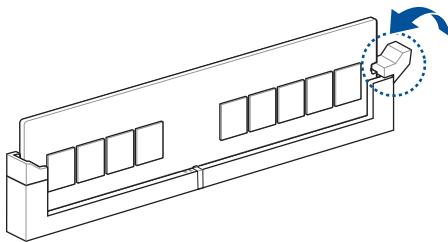
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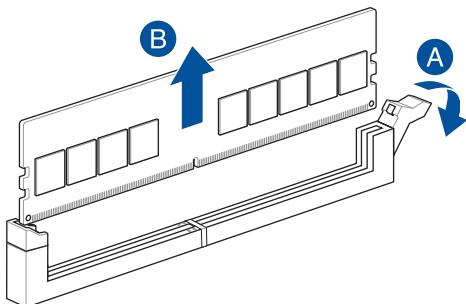
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3



To remove a DIMM



2.1.4

M.2 installation



Supported M.2 type varies per motherboard.



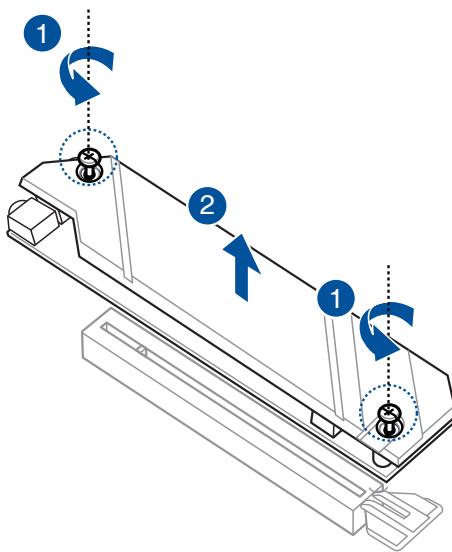
If the thermal pad on the M.2 heatsink becomes damaged, we recommend replacing it with the bundled thermal pad or a thermal pad with a thickness of 1.25mm.



- The illustrations only show the installation steps for a single M.2 slot, the steps are the same for the other M.2 slots if you wish to install an M.2 to another M.2 slot.
- Use a Phillips screwdriver when removing or installing the screws or screw stands mentioned in this section.
- The M.2 is purchased separately.

To install an M.2 to M.2_1 slot

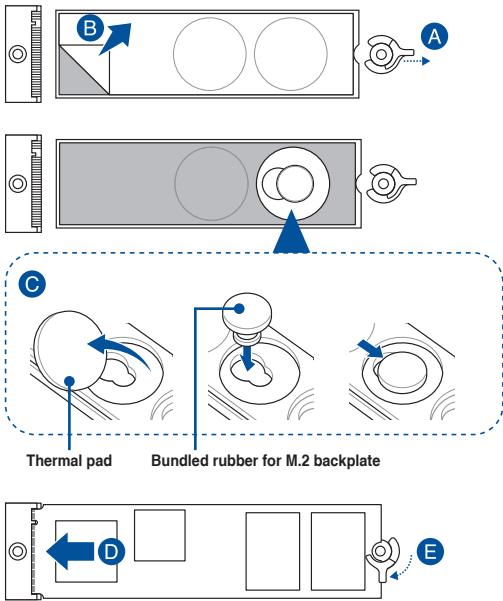
- Completely loosen the screws on the heatsink.
- Lift and remove the heatsink.



3. Install your M.2 to your M.2 slot. The steps may differ between installing M.2 of different lengths, please refer to the different types and their installation steps below:

For 2280 length

- A. Rotate and adjust the M.2 Q-latch at the 2280 position so that the handle points away from the M.2 slot.
- B. Remove the plastic film from the thermal pad.
- C. (optional) Remove the thermal pad of the 2260 M.2 length screw hole and install the bundled rubber for M.2 backplate if you are installing a single sided M.2 storage device. DO NOT install the bundled rubber for M.2 backplate when installing a double-sided M.2 storage device.
- D. Install your M.2 to the M.2 slot.
- E. Rotate the M.2 Q-Latch clockwise to secure the M.2 in place.



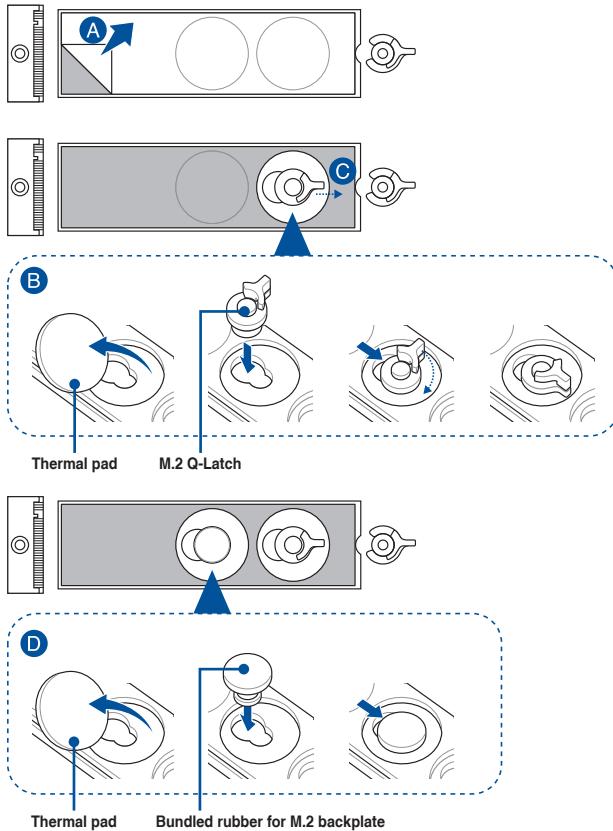
For 2242 and 2260 length

- A. Remove the plastic film from the thermal pad.
- B. Remove the thermal pad of the M.2 length screw hole you wish to install your M.2 to, then install the bundled M.2 Q-latch.
- C. Rotate and adjust the M.2 Q-latch so that the handle points away from the M.2 slot.

- D. (optional) Remove the thermal pad of the 2242 M.2 length screw hole and install the bundled rubber for M.2 backplate if you are installing a single sided M.2 storage device. DO NOT install the bundled rubber for M.2 backplate when installing a double-sided M.2 storage device.

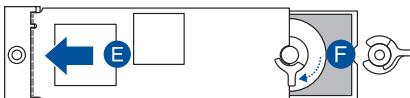


Follow this step only if you wish to install a single sided M.2 storage device to type 2260.



- E. Install your M.2 to the M.2 slot.

- F. Rotate the M.2 Q-Latch clockwise to secure the M.2 in place.

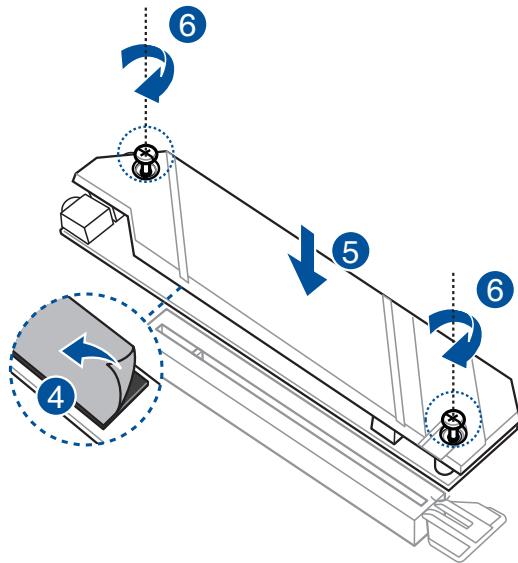


4. Remove the plastic film from the thermal pads on the bottom of the heatsink.



If the thermal pad on the M.2 heatsink becomes damaged, we recommend replacing it with the bundled thermal pad or a thermal pad with a thickness of 1.25mm.

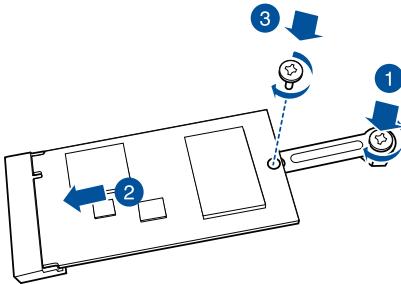
5. Replace the heatsink.
6. Secure the heatsink using the screws on the heatsink.



To install an M.2 to M.2_2 slot (Bottom side)

For 2242 length

1. Align the bigger hole on the mounting kit with the 2260 standoff and secure it with a screw.
2. Install your M.2 to the M.2 slot.
3. Secure your M.2 using the bundled screw.

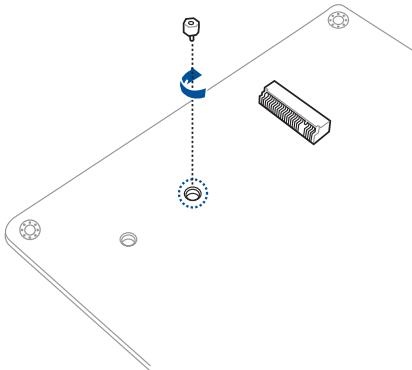


- For a 2242 storage device, use the bundled 2242 mounting kit.
- Before installing a 2242 M.2 SSD module, ensure that the mounting kit is properly installed with the bigger screw hole on the 2260 standoff.

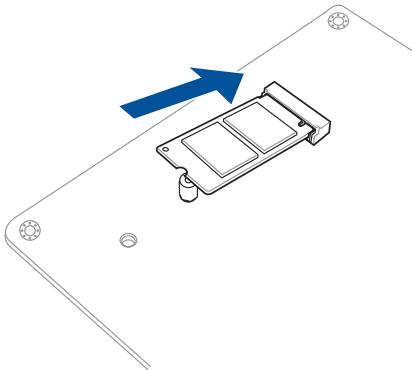
Chapter 2

For 2260 and 2280 length

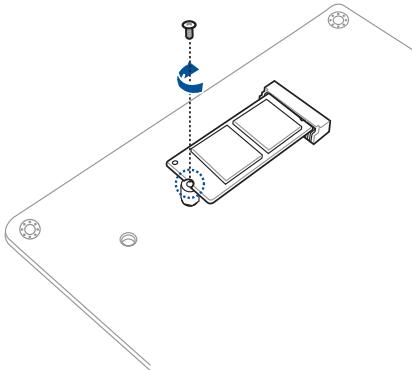
1



2



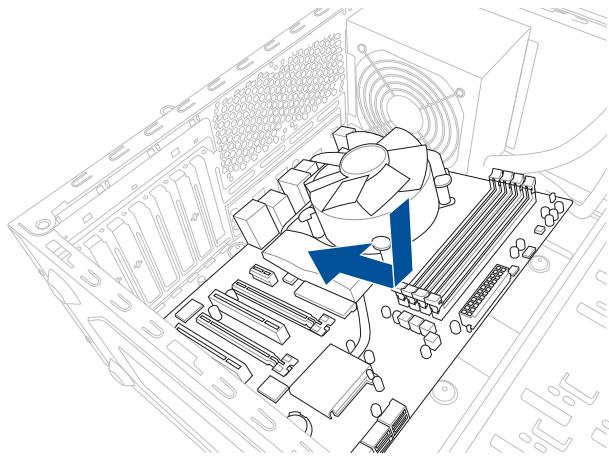
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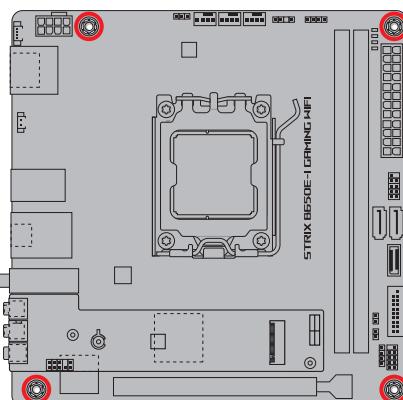
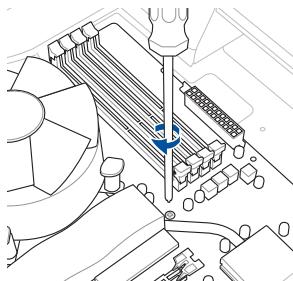
The M.2 is purchased separately.

2.1.5 Motherboard installation

1. Place the motherboard into the chassis, ensuring that its rear I/O ports are aligned to the chassis' rear I/O panel.

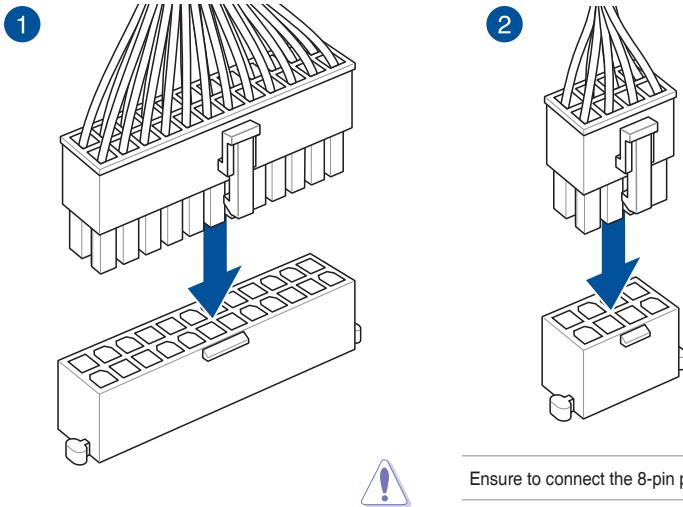


2. Place four (4) screws into the holes indicated by circles to secure the motherboard to the chassis.



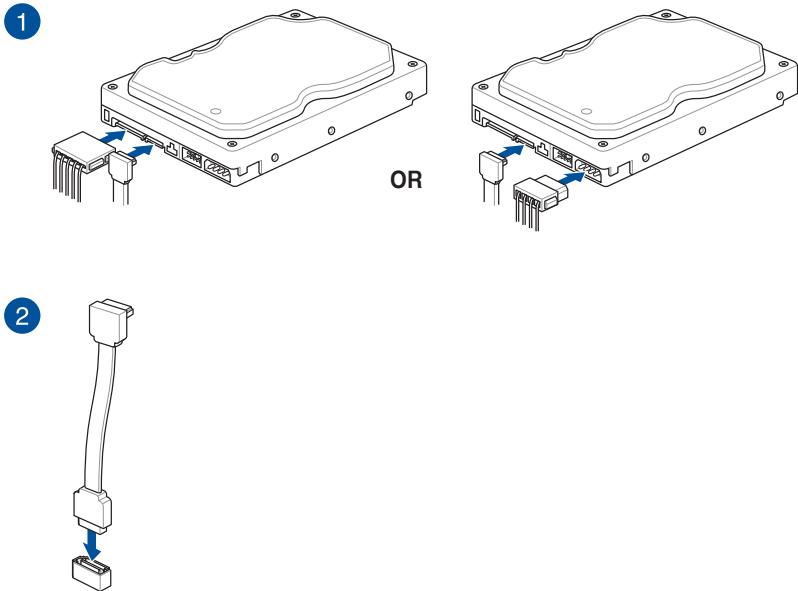
DO NOT over tighten the screws! Doing so can damage the motherboard.

2.1.6 ATX power connection



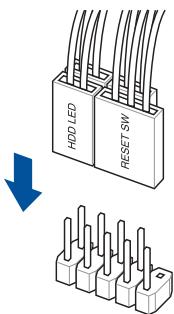
Ensure to connect the 8-pin power plug.

2.1.7 SATA device connection

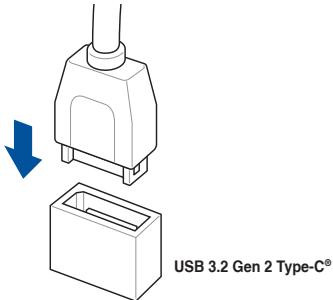


2.1.8 Front I/O connector

To install the front panel connector

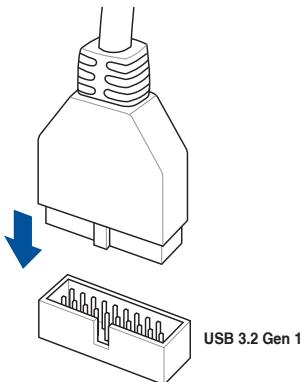


To install USB 3.2 Gen 2 Type-C® connector

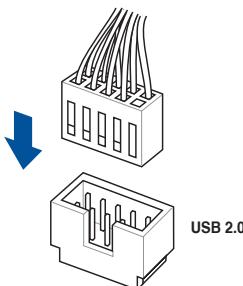


This connector will only fit in one orientation. Push the connector until it clicks into place.

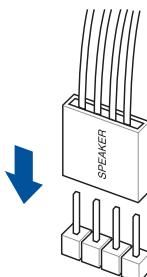
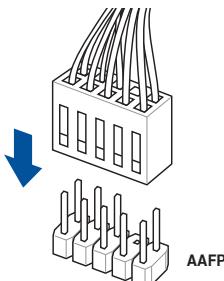
To install USB 3.2 Gen 1 connector



To install USB 2.0 connector

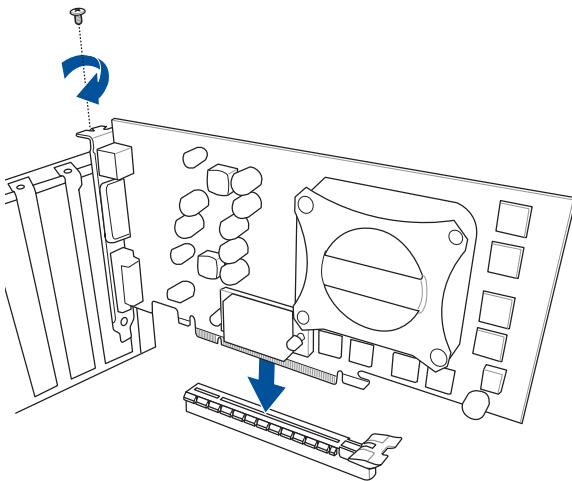


To install front panel audio connector To install system speaker connector



2.1.9 Expansion card installation

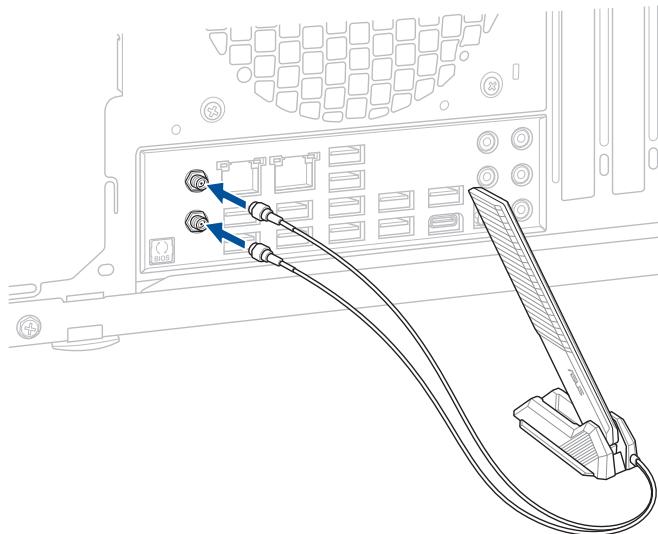
To install PCIe x16 cards



2.1.10 Wi-Fi moving antenna installation

Installing the ASUS Wi-Fi moving antenna

Connect the bundled ASUS Wi-Fi moving antenna connector to the Wi-Fi ports at the back of the chassis.



- Ensure that the ASUS Wi-Fi moving antenna is securely installed to the Wi-Fi ports.
- Ensure that the antenna is at least 20 cm away from all persons.



The illustration above is for reference only. The I/O port layout may vary with models, but the Wi-Fi moving antenna installation procedure is the same for all models.

2.2 BIOS update utility

BIOS FlashBack™

BIOS FlashBack™ allows you to easily update the BIOS without entering the existing BIOS or operating system.

To use BIOS FlashBack™:

1. Insert a USB storage device to the BIOS FlashBack™ port.



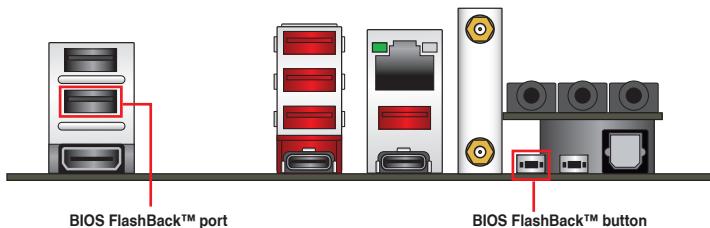
We recommend you to use a USB 2.0 storage device to save the latest BIOS version for better compatibility and stability.

2. Visit <https://www.asus.com/support/> and download the latest BIOS version for this motherboard.
3. Manually rename the file as **SB650EI.CAP**, or launch the **BIOSRenamer.exe** application to automatically rename the file, then copy it to your USB storage device.



The **BIOSRenamer.exe** application is zipped together with your BIOS file when you download a BIOS file for a BIOS FlashBack™ compatible motherboard.

4. Shut down your computer.
5. Press the BIOS FlashBack™ button for three (3) seconds until the BIOS FlashBack™ LED blinks three times, indicating that the BIOS FlashBack™ function is enabled.



6. Wait until the light goes out, indicating that the BIOS updating process is completed.



For more BIOS update utilities in BIOS setup, refer to the section **Updating BIOS** in Chapter 3.



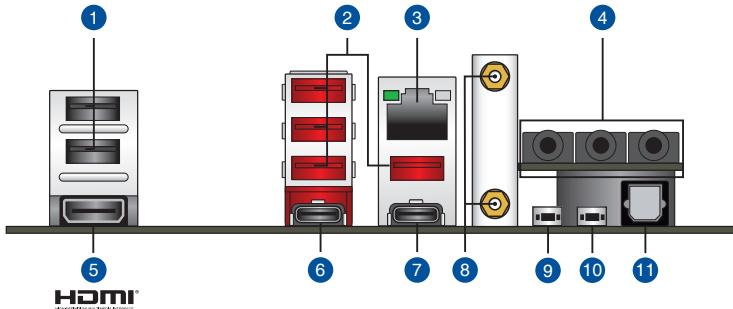
- Do not unplug portable disk or power system while BIOS update is ongoing, otherwise update will be interrupted. In case of interruption, please follow the steps again.
- If the light flashes for five seconds and turns into a solid light, this means that the BIOS FlashBack™ is not operating properly. This may be caused by improper installation of the USB storage device and filename/file format error. If this scenario happens, please restart the system to turn off the light.
- Updating BIOS may have risks. If the BIOS program is damaged during the process and results to the system's failure to boot up, please contact your local ASUS Service Center.

For more information on using the BIOS FlashBack™ feature, please refer to
<https://www.asus.com/support/>, or by scanning the QR code below.



2.3 Motherboard rear and audio connections

2.3.1 Rear I/O connection



Rear panel connectors

1. USB 2.0 ports 5 and 16
2. USB 3.2 Gen 2 Type-A ports 2, 3, 4 and 11
3. Intel® 2.5Gb Ethernet port*
4. LED-illuminated audio jacks**
5. HDMI® port
6. USB 3.2 Gen 2 Type-C® port C1 (supports USB Type-C® display outputs)
7. USB 3.2 Gen 2x2 Type-C® port C6
8. Wi-Fi module
9. BIOS FlashBack™ button
10. FlexKey button
11. Optical S/PDIF OUT port

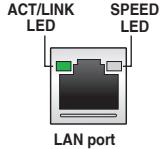
* and ** : Refer to the tables on the next page for LAN port LEDs, and audio port definitions.



We strongly recommend that you connect your devices to ports with matching data transfer rate. For example connecting your USB 3.2 Gen 1 devices to USB 3.2 Gen 1 ports for faster and better performance for your devices.

* Intel® 2.5Gb Ethernet port LED indications

Activity Link LED		Speed LED		
Status	Description	Status	Description	
OFF	No link	OFF	No link	
GREEN	Linked		100 Mbps / 10 Mbps connection	
BLINKING	Data activity	GREEN	2.5 Gbps connection	
		ORANGE	1 Gbps connection	

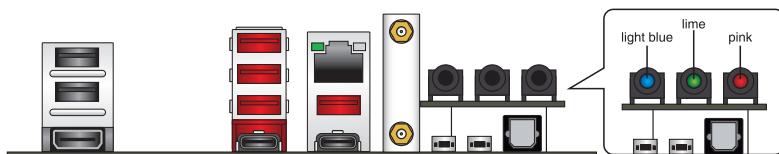


** Audio 2, 4, 5.1 or 7.1-channel configuration

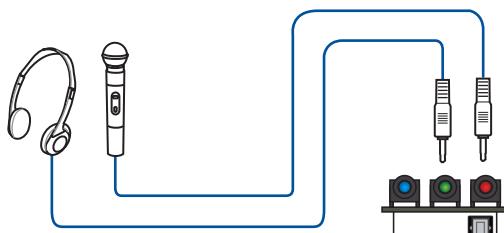
Port	2-channel	4-channel	5.1-channel	7.1-channel
Light Blue (Rear panel)	-	-	-	Side Speaker Out
Lime (Rear panel)	Front Speaker Out	Front Speaker Out	Front Speaker Out	Front Speaker Out
Pink (Rear panel)	-	-	Center/ Subwoofer	Center/ Subwoofer
Lime (Front panel)	-	-	-	-
Pink (Front panel)	-	Rear Speaker Out	Rear Speaker Out	Rear Speaker Out

2.3.2 Audio I/O connections

Audio I/O ports

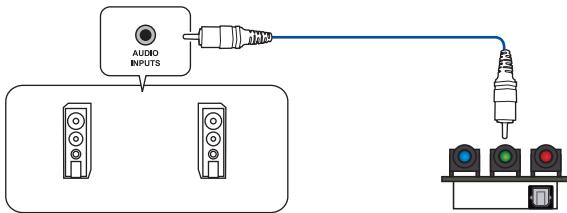


Connect to Headphone and Mic

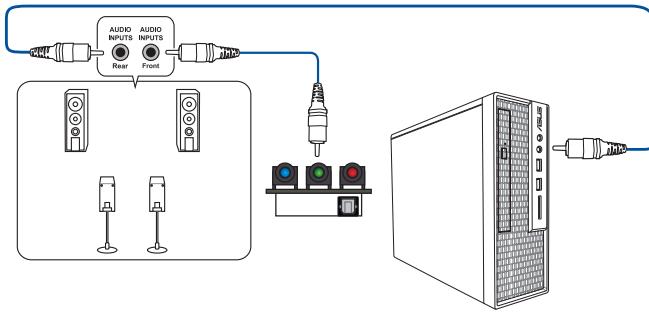


The rear panel Lime (Line out) port does not support spatial audio. If you wish to use spatial audio, make sure to connect your audio output device to the audio jack on the front panel of your chassis.

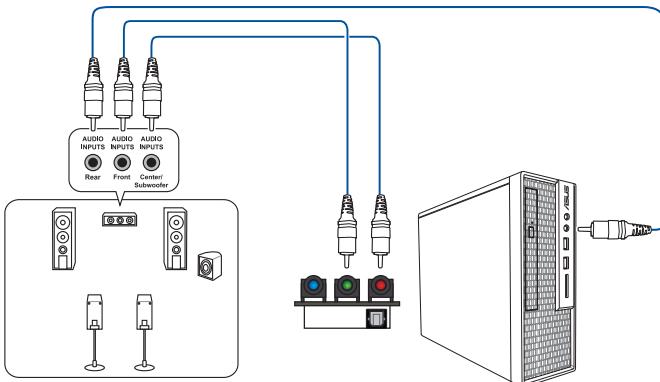
Connect to 2-channel Speakers



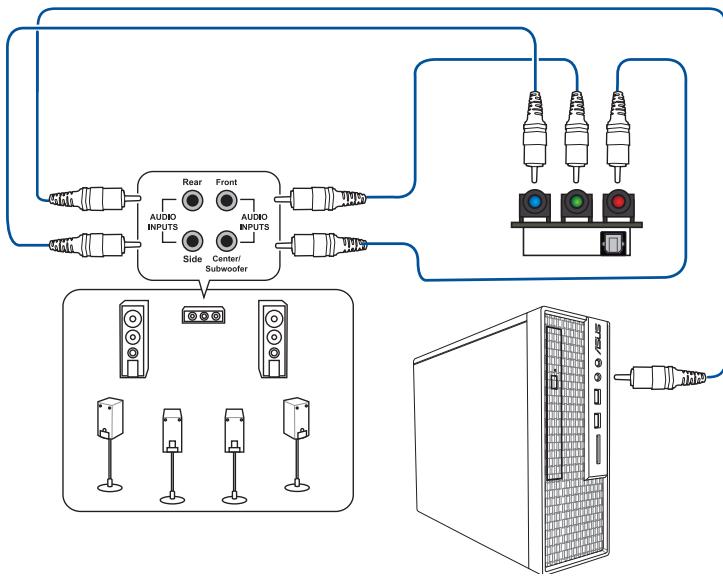
Connect to 4-channel Speakers



Connect to 5.1-channel Speakers



Connect to 7.1-channel Speakers



2.5 Starting up for the first time

1. After making all the connections, replace the system case cover.
2. Ensure that all switches are off.
3. Connect the power cord to the power connector at the back of the system chassis.
4. Connect the power cord to a power outlet that is equipped with a surge protector.
5. Turn on the devices in the following order:
 - a. Monitor
 - b. External storage devices (starting with the last device on the chain)
 - c. System power
6. After applying power, the system power LED on the system front panel case lights up. For systems with ATX power supplies, the system LED lights up when you press the ATX power button. If your monitor complies with the “green” standards or if it has a “power standby” feature, the monitor LED may light up or change from orange to green after the system LED turns on.

The system then runs the power-on self tests (POST). While the tests are running, the BIOS beeps (refer to the BIOS beep codes table) or additional messages appear on the screen. If you do not see anything within 30 seconds from the time you turned on the power, the system may have failed a power-on test. Check the jumper settings and connections or call your retailer for assistance.

BIOS Beep	Description
One short beep	VGA detected Quick boot set to disabled No keyboard detected
One continuous beep followed by two short beeps then a pause (repeated)	No memory detected
One continuous beep followed by three short beeps	No VGA detected
One continuous beep followed by four short beeps	Hardware component failure

7. At power on, hold down the <Delete> key to enter the BIOS Setup. Follow the instructions in Chapter 3.

2.6 Turning off the computer

While the system is ON, press the power button for less than four seconds to put the system on sleep mode or soft-off mode, depending on the BIOS setting. Press the power button for more than four seconds to let the system enter the soft-off mode regardless of the BIOS setting.

BIOS and RAID Support



For more details on BIOS and RAID configurations, please refer to www.asus.com/support.

3.1 Knowing BIOS



The new ASUS UEFI BIOS is a Unified Extensible Interface that complies with UEFI architecture, offering a user-friendly interface that goes beyond the traditional keyboard-only BIOS controls to enable a more flexible and convenient mouse input. You can easily navigate the new UEFI BIOS with the same smoothness as your operating system. The term "BIOS" in this user guide refers to "UEFI BIOS" unless otherwise specified.

BIOS (Basic Input and Output System) stores system hardware settings such as storage device configuration, overclocking settings, advanced power management, and boot device configuration that are needed for system startup in the motherboard CMOS. In normal circumstances, the default BIOS settings apply to most conditions to ensure optimal performance. **DO NOT change the default BIOS settings** except in the following circumstances:

- An error message appears on the screen during the system bootup and requests you to run the BIOS Setup.
- You have installed a new system component that requires further BIOS settings or update.



Inappropriate BIOS settings may result to instability or boot failure. **We strongly recommend that you change the BIOS settings only with the help of a trained service personnel.**



BIOS settings and options may vary due to different BIOS release versions. Please refer to the latest BIOS version for settings and options.

3.2 BIOS setup program

Use the BIOS Setup to update the BIOS or configure its parameters. The BIOS screens include navigation keys and brief onscreen help to guide you in using the BIOS Setup program.

Entering BIOS at startup

To enter BIOS Setup at startup, press <Delete> or <F2> during the Power-On Self Test (POST). If you do not press <Delete> or <F2>, POST continues with its routines.

Entering BIOS Setup after POST

To enter BIOS Setup after POST:

- Press <Ctrl>+<Alt>+<Delete> simultaneously.
- Press the reset button on the system chassis.
- Press the power button to turn the system off then back on. Do this option only if you failed to enter BIOS Setup using the first two options.

After doing either of the three options, press <Delete> key to enter BIOS.



- Ensure that a USB mouse is connected to your motherboard if you want to use the mouse to control the BIOS setup program.
- If the system becomes unstable after changing any BIOS setting, load the default settings to ensure system compatibility and stability. Select the **Load Optimized Defaults** item under the **Exit** menu or press hotkey <F5>.
- If the system fails to boot after changing any BIOS setting, try to clear the CMOS and reset the motherboard to the default value.
- The BIOS setup program does not support Bluetooth devices.

BIOS menu screen

The BIOS Setup program can be used under two modes: **EZ Mode** and **Advanced Mode**. You can change modes from **Setup Mode** in **Boot menu** or by pressing the <F7> hotkey.

3.3 ASUS EZ Flash 3

The ASUS EZ Flash 3 feature allows you to update the BIOS without using an OS-based utility.



Ensure to load the BIOS default settings to ensure system compatibility and stability. Select the **Load Optimized Defaults** item under the **Exit** menu or press hotkey <F5>.

To update the BIOS:



- This function can support devices such as a USB flash disk with FAT 32/16 format and single partition only.
- DO NOT shut down or reset the system while updating the BIOS to prevent system boot failure!

1. Insert the USB flash disk that contains the latest BIOS file to the USB port.
2. Enter the Advanced Mode of the BIOS setup program. Go to the **Tool** menu to select **ASUS EZ Flash 3 Utility** and press <Enter>.
3. Press the Left arrow key to switch to the **Drive** field.
4. Press the Up/Down arrow keys to find the USB flash disk that contains the latest BIOS, and then press <Enter>.
5. Press the Right arrow key to switch to the **Folder** field.
6. Press the Up/Down arrow keys to find the BIOS file, and then press <Enter> to perform the BIOS update process. Reboot the system when the update process is done.

3.4 ASUS CrashFree BIOS 3

The ASUS CrashFree BIOS 3 utility is an auto recovery tool that allows you to restore the BIOS file when it fails or gets corrupted during the updating process. You can restore a corrupted BIOS file using a USB flash drive that contains the BIOS file.

Recovering the BIOS

1. Download the latest BIOS version for this motherboard from [w~~h~~https://www.asus.com/support/](https://www.asus.com/support/).
2. Rename the BIOS file as **ASUS.CAP** or **SB650EI.CAP** and copy the renamed BIOS file to a USB flash drive.
3. Turn on the system.
4. Insert the USB flash drive containing the BIOS file to a USB port.
5. The utility automatically checks the devices for the BIOS file. When found, the utility reads the BIOS file and enters ASUS EZ Flash 3 automatically.
6. The system requires you to enter BIOS Setup to recover the BIOS setting. To ensure system compatibility and stability, we recommend that you press **<F5>** to load default BIOS values.



DO NOT shut down or reset the system while updating the BIOS! Doing so can cause system boot failure!

3.5 RAID configurations

The motherboard comes with the AMD RAIDXpert2 Technology that supports Volume, RAIDABLE, RAID 0, RAID 1, and RAID 10 (depends on system licensing) configurations.



For more information on configuring your RAID sets, please refer to the **RAID Configuration Guide** which you can find at <https://www.asus.com/support/>, or by scanning the QR code.



RAID definitions

Volume provides the ability to link-together storage from one or several disks, regardless of the size of the space on those disks. This configuration is useful in scavenging space on disks unused by other disks in the array. This configuration does not provide performance benefits or data redundancy, disk failure will result in data loss.

RAIDABLE arrays (also known as RAID Ready) are a special type of Volume (JBOD) that allows the user to add more storage space or create a redundant array after a system is installed. RAIDABLE arrays are created using Option ROM, UEFI, or radm.



The ability to create RAIDABLE arrays may vary per system.

RAID 0 (Data striping) optimizes two identical hard disk drives to read and write data in parallel, interleaved stacks. Two hard disks perform the same work as a single drive but at a sustained data transfer rate, double that of a single disk alone, thus improving data access and storage. Use of two new identical hard disk drives is required for this setup.

RAID 1 (Data mirroring) copies and maintains an identical image of data from one drive to a second drive. If one drive fails, the disk array management software directs all applications to the surviving drive as it contains a complete copy of the data in the other drive. This RAID configuration provides data protection and increases fault tolerance to the entire system. Use two new drives or use an existing drive and a new drive for this setup. The new drive must be of the same size or larger than the existing drive.

RAID 10 is data striping and data mirroring combined without parity (redundancy data) having to be calculated and written. With the RAID 10 configuration you get all the benefits of both RAID 0 and RAID 1 configurations. Use four new hard disk drives or use an existing drive and three new drives for this setup.

Chapter 3

Appendix

Notices

FCC Compliance Information

Responsible Party: Asus Computer International

Address: 48720 Kato Rd., Fremont, CA 94538, USA

Phone / Fax No: (510)739-3777 / (510)608-4555

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

RF exposure warning

This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provide with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

HDMI Trademark Notice

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

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

This device complies with Innovation, Science and Economic Development Canada licence exempt RSS standard(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)

Déclaration de conformité de Innovation, Sciences et Développement économique Canada (ISED)

Le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

La bande 5150–5250 MHz est réservée uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux.

CAN ICES-003(B)/NMB-003(B)

VCCI: Japan Compliance Statement

Class B ITE

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。

V C C I – B

Japan JATE

本製品は電気通信事業者(移動通信会社、固定通信会社、インターネットプロバイダ等)の通信回線(公衆無線LANを含む)に直接接続することができません。本製品をインターネットに接続する場合は、必ずルーター等を経由し接続してください。

KC: Korea Warning Statement

B급 기기 (가정용 방송통신기자재)

이 기기는 가정용(B급) 전자파적합기기로서 주로 가정에서 사용하는 것을 목적으로 하며, 모든 지역에서 사용할 수 있습니다.

*당해 무선 설비는 전파혼신 가능성이 있으므로 인명안전과 관련된 서비스는 할 수 없습니다.

NCC: Wireless Statement

取得審驗證明之低功率射頻器材，非經核准，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。低功率射頻器材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。前述合法通信，指依電信管理法規定作業之無線電通信。低功率射頻器材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。

應避免影響附近雷達系統之操作。

Japan RF Equipment Statement

屋外での使用について

本製品は、5GHz帯域での通信に対応しています。電波法の定めにより5.2GHz、5.3GHz帯域の電波は屋外で使用が禁じられています。

法律および規制遵守

本製品は電波法及びこれに基づく命令の定めるところに従い使用してください。日本国外では、その国の法律または規制により、本製品の使用ができないことがあります。このような国では、本製品を運用した結果、罰せられることがあります。当社は一切責任を負いかねますのでご了承ください。

Précautions d'emploi de l'appareil:

- Soyez particulièrement vigilant quant à votre sécurité lors de l'utilisation de cet appareil dans certains lieux (les avions, les aéroports, les hôpitaux, les stations-service et les garages professionnels).
- Évitez d'utiliser cet appareil à proximité de dispositifs médicaux implantés. Si vous portez un implant électronique (stimulateurs cardiaques, pompes à insuline, neurostimulateurs...), veuillez impérativement respecter une distance minimale de 15 centimètres entre cet appareil et l'implant pour réduire les risques d'interférence.
- Utilisez cet appareil dans de bonnes conditions de réception pour minimiser le niveau de rayonnement. Ce n'est pas toujours le cas dans certaines zones ou situations, notamment dans les parkings souterrains, dans les ascenseurs, en train ou en voiture ou tout simplement dans un secteur mal couvert par le réseau.
- Tenez cet appareil à distance du ventre des femmes enceintes et du bas-ventre des adolescents.

Declaration of compliance for product environmental regulation

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

Please refer to <http://csr.asus.com/Compliance.htm> for information disclosure based on regulation requirements ASUS is complied with:

EU REACH and Article 33

Complying with the REACH (Registration, Evaluation, Authorisation, and Restriction of Chemicals) regulatory framework, we published the chemical substances in our products at ASUS REACH website at <http://csr.asus.com/english/REACH.htm>.

EU RoHS

This product complies with the EU RoHS Directive. For more details, see <http://csr.asus.com/english/article.aspx?id=35>

India RoHS

This product complies with the “India E-Waste (Management) Rules, 2016” and prohibits use of lead, mercury, hexavalent chromium, polybrominated biphenyls (PBBs) and polybrominated diphenyl ethers (PBDEs) in concentrations exceeding 0.1% by weight in homogenous materials and 0.01% by weight in homogenous materials for cadmium, except for the exemptions listed in Schedule II of the Rule.

Vietnam RoHS

ASUS products sold in Vietnam, on or after September 23, 2011, meet the requirements of the Vietnam Circular 30/2011/TT-BCT.

Các sản phẩm ASUS bán tại Việt Nam, vào ngày 23 tháng 9 năm 2011 trở về sau, đều phải đáp ứng các yêu cầu của Thông tư 30/2011/TT-BCT của Việt Nam.

Türkiye RoHS

AEEE Yönetmeliğine Uygundur

ASUS Recycling/Takeback Services

ASUS recycling and takeback programs come from our commitment to the highest standards for protecting our environment. We believe in providing solutions for you to be able to responsibly recycle our products, batteries, other components as well as the packaging materials. Please go to <http://csr.asus.com/english/Takeback.htm> for detailed recycling information in different regions.



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



DO NOT throw the mercury-containing button cell battery in municipal waste. This symbol of the crossed out wheeled bin indicates that the battery should not be placed in municipal waste.

France sorting and recycling information



Points de collecte sur www.quefairedesmesdechets.fr
Privilégiez la réparation ou le don de votre appareil !

Safety Precautions

Accessories that came with this product have been designed and verified for the use in connection with this product. Never use accessories for other products to prevent the risk of electric shock or fire.

安全上のご注意

付属品は当該専用品です。他の機器には使用しないでください。機器の破損もしくは、火災や感電の原因となることがあります。

Simplified UKCA Declaration of Conformity

ASUSTek Computer Inc. hereby declares that this device is in compliance with the essential requirements and other relevant provisions of The Radio Equipment Regulations 2017 (SI. 2017/1206). Full text of UKCA declaration of conformity is available at <https://www.asus.com/support/>.

The WiFi operating in the band 5150-5350MHz shall be restricted to indoor use for the country listed below:

UK

UKCA RF Output table (The Radio Equipment Regulations 2017)

AMD Wi-Fi 6E RZ2616 (Model: MT7922A22M):

- a. Low Power Indoor (LPI) Wi-Fi 6E devices:
The device is restricted to indoor use only when operating in the 5925 to 6425 MHz frequency range in UK.
- b. Very Low Power (VLP) Wi-Fi 6E devices (portable devices):
The device is not permitted to be used on Unmanned Aircraft Systems (UAS) when operating in the 5925 to 6425 MHz frequency range in UK.

Function	Frequency	Maximum Output Power (EIRP)
WiFi	2412 - 2472 MHz	18.74 dBm
	5150 - 5350 MHz	21.54 dBm
	5470 - 5725 MHz	21.46 dBm
	5725 - 5850 MHz	10.1 dBm
	5925 - 6425 MHz	20.18 dBm
Bluetooth	2402 - 2480 MHz	14.11 dBm

* Receiver category 1



- a. Пристрой низької потужності для промислових (LP) Wi-Fi 6E:
 Використання пристроя обмежено лише промисловими із діапазоном частот від 5945 МГц до 6425 МГц у Бельгії (BE), Болгарії (BG), на Кіпрі (CY), у Чеській Республіці (CZ), Естонії (EE), Франції (FR), Ісландії (IS), Ірландії (IE), Литві (LT), Німеччині (DE), Нідерландах (NL), Іспанії (ES).
- b. Пристрой дуже низької потужності (VLP) Wi-Fi 6E (портативний пристрой):
 Використання пристроя не дозволено на безпілотних літальних апаратів (UAS) із діапазоном частот від 5945 МГц до 6425 МГц у Бельгії (BE), Болгарії (BG), на Кіпрі (CY), у Чеській Республіці (CZ), Естонії (EE), Франції (FR), Ісландії (IS), Ірландії (IE), Литві (LT), Німеччині (DE), Нідерландах (NL), Іспанії (ES).



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

CE RED RF Output table (Directive 2014/53/EU)

AMD Wi-Fi 6E RZ616 (Model: MT7922A22M):

Function	Frequency	Maximum Output Power (EIRP)
WiFi	2412 - 2472 MHz	18.74 dBm
	5150 - 5350 MHz	21.54 dBm
	5470 - 5725 MHz	21.46 dBm
	5725 - 5850 MHz	10.1 dBm
	5925 - 6425 MHz	20.18 dBm
Bluetooth	2402 - 2480 MHz	14.11 dBm

* Receiver category 1



Warranty

EN: ASUS Guarantee Information

- ASUS offers a voluntary manufacturer's Commercial Guarantee.
- ASUS reserves the right to interpret the provisions of the ASUS Commercial Guarantee.
- This ASUS Commercial Guarantee is provided independently and in addition to the statutory Legal Guarantee and in no way affects or limits the rights under the Legal Guarantee.

For all the guarantee information, please visit
<https://www.asus.com/support>.

F: Garantie-INFORMATION

- ASUS fournit une garantie commerciale en tant que garantie volontaire du fabricant.
- ASUS se réserve le droit d'interpréter et de clarifier les informations relatives à la garantie commerciale ASUS.
- Cette garantie commerciale ASUS est fournie indépendamment et parallèlement à la garantie légale, elle n'affecte ou ne limite d'aucune façon les droits acquis par la garantie légale.

Pour plus d'informations sur la garantie, consultez le site
<https://www.asus.com/fr/support/>.

G: ASUS Garantieinformationen

- ASUS bietet eine freiwillige Warengarantie des Herstellers an.
- ASUS behält sich das Recht zur Auslegung der Bestimmungen in der ASUS Warengarantie vor.
- Diese ASUS Warengarantie wird unabhängig und zusätzlich zur rechtmäßigen gesetzlichen Garantie gewährt und beeinträchtigt oder beschränkt in keiner Weise die Rechte aus der gesetzlichen Garantie.

Die vollständigen Garantieinformationen finden Sie unter
<https://www.asus.com/de/support/>.

I: Informazione sulla Garanzia ASUS

- ASUS offre una Garanzia Commerciale volontaria del produttore.
- ASUS si riserva il diritto di interpretare le disposizioni della Garanzia Commerciale ASUS.
- La presente Garanzia Commerciale ASUS viene fornita in modo indipendente e in aggiunta alla Garanzia Legale prevista per legge e non pregiudica o limita in alcun modo i diritti previsti dalla Garanzia Legale.

Per tutte le informazioni sulla garanzia, visitare
<https://www.asus.com/it/support>.

R: Информация о гарантии ASUS

- ASUS предлагает добровольную гарантию от производителя.
- ASUS оставляет за собой право интерпретировать положений гарантii ASUS.
- Настоящая гарантii ASUS никаким образом не ограничивает Ваши права, предусмотренные локальными законодательством.

Для получения полной информации о гарантii посетите
<https://www.asus.com/ru/support/>.

DA: ASUS garantioplysninger

- ASUS tilbyder en valgfri handelsmæssig garanti.
- ASUS forholder sig retten til at fortolke bestemmelserne i ASUS' handelsmæssige garanti.
- Denne handelsmæssige garanti fra ASUS tilbydes uafhængigt, som en tilføjelse til den lovbestemte juridiske garanti og den påvirker eller begrænser på ingen måde rettighederne i den juridiske garanti.

Alle garantioplysningerne kan findes på
<https://www.asus.com/dk/support/>.

BG: Информация за гарантията от ASUS

- ASUS предлага доброволна търговска гарантия от производителя.
- ASUS си запазва правото да тълкува условията на търговската гарантия на ASUS.
- Тази търговска гарантия на ASUS се предлага независимо от и в допълнение на законовата гарантия. Тя по никакъв начин не оказва влияние върху правата на потребителя в законовата гарантия и по никакъв начин не ги ограничава.

За цялостна информация относно гарантията, моля, посетете
<https://www.asus.com/support>.

CZ: Informace o záruce společnosti ASUS

- Společnost ASUS nabízí dobrovolnou komerční záruku výrobce.
- Společnost ASUS si vyhrazuje právo vykládat ustanovení komerční záruky společnosti ASUS.
- Tato komerční záruka společnosti ASUS je poskytována nezávisle a jako doplněk zákonné záruky a zážrným způsobem neovlivňuje ani neomezuje práva vyplývající ze zákonem záruky.

Všechny informace o záruce najdete na adrese
<https://www.asus.com/cz/support>.

CR: Informacije o ASUS jamstvu

- ASUS dragovoljno nudi komercijalno proizvodačko jamstvo.
- ASUS zadržava prava na tumačenje odredbi ASUS komercijalnog jamstva.
- Ovo ASUS komercijalno jamstvo daje se neovisno i kao dodatak zakonskom jamstvu i ni na koji način ne ograničjuje prava iz okvira zakonskog jamstva.

Sve informacije o jamstu potražite na
<https://www.asus.com/support>.

DU: ASUS-garantie-informatie

- SUS biedt een vrijwillige commerciële garantie van de fabrikant.
- ASUS behoudt zich het recht voor om de bepalingen van de commerciële garantie van ASUS uit te leggen.
- Deze commerciële garantie van ASUS wordt onafhankelijk en als aanvulling op de statutaire Wetstellijke garantie geboden en beïnvloedt of beperkt in geen geval de rechten onder de wetstellijke garantie.

Voor alle informatie over de garantie, gaat u naar
<https://www.asus.com/nl/support/>.

EE: Teave ASUS-e garantii kohta

- ASUS pakub vabatahtlikku tasulist tooltagarantiid.
- ASUS jätab endale õiguse tõlgendada ASUS-e tasulise garantii tingimusi.
- See ASUS-e tasuline garantii on sõltumatu lisagarantii seadusega kehtestatud garantii ega mõjuta mingil määral seadusega kehtestatud garantii ning seadusega kehtestatud garantii piiranguid.

Vaadake garantiai seotud teavet veebisaidilt
<https://www.asus.com/ee/>.

GR: Πληροφορίες εγγύησης ASUS

- H ASUS προσφέρει μια εθελοντική Εμπορική εγγύηση κατασκευαστή.
- H ASUS διατηρεί το δικαίωμα ερμηνείας των διατάξεων της Εμπορικής εγγύησης ASUS.
- Αυτή η Εμπορική εγγύηση ASUS παρέχεται ανεξάρτητα και επιπροσθέτως της θεωρικής Νομικής εγγύησης και σε καμιά περίπτωση δεν επρέπει να περιορίζει τα δικαιώματα βάσει της Νομικής εγγύησης.

Για όλες τις πληροφορίες εγγύησης, επισκεφθείτε τη διεύθυνση <https://www.asus.com/gr/cell>.

HU: ASUS garanciás információk

- Az ASUS önkéntes gyártói kereskedelmi garanciát kinál.
- Az ASUS fenntartja magának a jogot, hogy értelmezze az ASUS kereskedelmi garanciára vonatkozó rendelkezéseket.
- Ezt a kereskedelmi garanciát az ASUS függetlén és a törvényes garancia mellett nyújtja és semmilyen módon nem befolyásolja, vagy korlátozza a jogi garanciát nyújtotta jogokat.

A garanciára vonatkozó teljes körű információkért látogasson el a <https://www.asus.com/hu/support/oldalra>.

LV: ASUS garantijas informācija

- ASUS piedāvā brīvprātu rāzojātu komerciālu garantiju.
- ASUS patur tiesības interpretēt ASUS komerciālās garantijas noteikumus.
- Šī ASUS komerciāla garantija tiek piedāvāta neatkarīgi un papildus likumā noteiktajai juridiskajai garantijai, un tā nekādi netiekmētai vai neliecinēti juridiskajā garantiijā noteiktās tiesības.

Lai iegūtu informāciju par garantiju, apmeklējiet vietni <https://www.asus.com/lv/>.

LT: Informacija apie ASUS garantija

- ASUS siūlo savanorišką komercinę gamintojo garantiją.
- ASUS pasiūla teisę savo nuožiura aiškinti šios komercinės ASUS garantijos nuostatas.
- Ši komercinė ASUS garantija suteikiama nepriklausomai, be įstatyminių teisinių garantijos, ir jokiu būdu nepaveiklia ar neapribina teisinių garantijos suteikiamų teisisių.

Norédami gauti visą informaciją apie garantiją, apsilankykite <https://www.asus.com/lv/>.

PL: Informacje o gwarancji firmy ASUS

- Firma ASUS oferuje dobrowolną gwarancję handlową producenta.
- Firma ASUS zastępuje sobie prawo do interpretacji warunków gwarancji handlowej firmy ASUS.
- Niniejsza gwarancja handlowa firmy ASUS jest udzielana niezależnie, jako dodatek do wymaganej ustawowo gwarancji prawnnej i w żaden sposób nie wpływa na prawa przysługujące na mocu gwarancji prawnnej ani ich nie ogranicza.

Wszelkie informacje na temat gwarancji można znaleźć na stronie <https://www.asus.com/pl/support>.

PG: Informações de Garantia ASUS

- A ASUS oferece uma Garantia Comercial voluntária do fabricante.
- A ASUS reserva o direito de interpretar as disposições da Garantia Comercial da ASUS.
- Esta Garantia Comercial da ASUS é fornecida de forma independente além da Garantia Legal estatutária e não afeta nem limita de qualquer forma os direitos estabelecidos na Garantia Legal.

Para consultar todas as informações sobre a garantia, visite <https://www.asus.com/pt/support/>.

RO: Informații despre garanția ASUS

- ASUS oferă o garanție comercială voluntară a producătorului.
- ASUS își rezervă dreptul de a interpreta prevederile garanției comerciale ASUS.
- Acesta garanție comercială ASUS este oferită independent și în plus față de garanția obligatorie legală și nu afectează sau limitează în niciun fel drepturile acordate conform garanției legale.

Pentru toate informațiile legate de garanție, vizitați <https://www.asus.com/ro/support/>.

SL: Información de garantía ASUS

- ASUS ponúka prostovoljno tržno garancijo proizvajalca.
- ASUS si pridržuje pravico do razlage določb tržne garancije družbe ASUS.
- Ta tržna garancija družbe ASUS je na voljo neodvisno in kot dodatek zakonsko predpisani pravni garanciji ter na noben način ne vpliva na pravice, ki jih zagotavlja pravna garancija, oziroma jihomejje.

Vse informacije o garanciji najdete na spletnem mestu <https://www.asus.com/support/>.

SK: Informácie o záruke ASUS

- ASUS ponúka dobrovoľnú obchodnú záruku výrobca.
- ASUS si vyhradzuje právo interpretovať ustanovenia obchodnej záruky ASUS.
- Táto obchodná záruka ASUS je poskytnutá nezávisle a navýše k zákernej záruke a v žiadnom prípade neovplyvňuje ani neobmedzuje tiehto práva podľa tejto zákernej záruky.

Všetky ďalšie informácie o záruke nájdete na <https://www.asus.com/sk/support/>.

ES: Información de garantía de ASUS

- ASUS ofrece una garantía comercial voluntaria del fabricante.
- ASUS se reserva el derecho de interpretar las disposiciones de esta garantía comercial de ASUS.
- Esta garantía comercial de ASUS se proporciona de forma independiente y adicional a la garantía estatutaria y de ninguna manera afecta a los derechos bajo la garantía legal ni los limita.

Para obtener toda la información sobre la garantía, visite <https://www.asus.com/ES/support/>.

TR: ASUS Garanti Bilgileri

- ASUS, gönüllü olarak üretici Ticari Garantisi sunar.
- ASUS, ASUS Ticari Garantisinin hükümlerini yorumlama hakkını saklı tutar.
- Bu ASUS Ticari Garantisi, bağımsız olarak ve hukuki Yasal Garantisi ile olakar sağlanır ve hiçbir şekilde Yasal Garanti kapsamındaki hakları etkilemez veya sınırlandırmaz.

Tüm garanti bilgileri için lütfen <https://www.asus.com/tr/support> adresini ziyaret edin.

Fi: ASUS-takutiedot

- ASUS tarjoaa vapaaehtoisena valmistajan kaupallisen takuun.
- ASUS pidättää oikeuden tulkita ASUS-kaupallisen takuun ehdot.
- Tämä ASUS-kaupallinen takuu tarjoaa itsensäisesti lakisäädisen oikeudellisuuden takuun lisäksi eläk se vaikuta milään tavoin laillisen takuun olivaisuksiin tai rajoitai niitä.

Saadaksesi kaikki takutiedot, siirry osoitteeseen <https://www.asus.com/fi/support/>.

NW: Informasjon om ASUS-garanti

- ASUS nudi dobrovoľnou proizvodčiku komerčnú garanciu.
- ASUS forbereder seg retten til å tolke bestemmelserne i ASUS sin kommersielle garanti.
- ASUS sin kommersielle garanti gis uavhengig og i tillegg til den lovbestemte juridiske garantien, og verken påverker eller begrenser rettigheten under den juridiske garantien på noen måte.

Du finner fullstendig informasjon om garanti på <https://www.asus.com/no/support/>.

SB: Informacije o ASUS-garanciji

- ASUS nudi dobrovoľnou proizvodčiku komerčnú garanciu.
- ASUS zadává pravo da tumačí odredbe svoje ASUS komerčnej garancie.
- Ova ASUS komerčná garancia daje se nezávislo, ako dodatak zákonoské pravnej garancii, i ni ka koji način ne utiče na ne ograničava prava data pravnom garanciom.

Za sve informacije o garanciji, posjetite <https://www.asus.com/support/>.

SV: ASUS garantinformation

- ASUS erbjuder en frivillig kommersiell tillverkningsgaranti.
- ASUS förbehåller sig rätten att tolka bestämmelserna i ASUS kommersiella garanti.
- Denna kommersiella garanti från ASUS tillhandahålls separat och som tillägg till den lagstadgade garantin, och påverkar eller begränsar på intet sätt rättigheterna under den lagstadgade garantin.

For all garantinformation, besök <https://www.asus.com/se/support/>.

UA: Інформація про гарантію ASUS

- ASUS пропонує добровільну Комерційну Гарантію виробника.
- ASUS застірігає за собою право тлумачити положення Комерційної Гарантії ASUS
- Цю Комерційну Гарантію надано незалежно і на додаток до обов'язкової Законної Гарантії; вона жодним чином не впливає на права за Законною Гарантією і не обмежує їх.

Всю інформацію про гарантію подано тут:

<https://www.asus.com/ua/support>.

MX: Garantía y Soporte

Esta Garantía aplica en el país de compra. Usted acepta que en esta garantía:

- Los procedimientos de servicio pueden variar en función del país.
- Algunos servicios y/o piezas de reemplazo pudieran no estar disponibles en todos los países.
- Algunos países pueden tener tarifas y restricciones que se apliquen en el momento de realizar el servicio, visite el sitio de soporte de ASUS en <https://www.asus.com/mx/support/> para ver más detalles.
- Si tiene alguna queja o necesidad de un centro de reparación local o el período de garantía del producto ASUS, por favor visite el sitio de Soporte de ASUS en <https://www.asus.com/mx/support/> para mayores detalles.

Información de contacto ASUS

Esta garantía está respaldada por:

ASUSTek Computer Inc.

Centro de Atención ASUS +52 (55) 1946-3663

BP: Informações de garantia ASUS

Esta garantía aplica-se ao período definido pela garantia legal (90 dias) mais o período de garantia comercial oferecido pelo ASUS.

Por exemplo: 12M significa 12 meses de garantia no total (3 meses de garantia legal mais 9 meses de garantia contratual), 24 meses significa 24 meses de garantia no total (3 meses de garantia legal mais 21 meses de garantia contratual) e 36 meses significa 36 meses de garantia no total (3 meses de garantia legal e 33 de garantia contratual) a contar da data da garantia declarada (Data de Início da Garantia).

Para todas as informações de garantia, visite <https://www.asus.com/pt/support/>.

ID: Informasi Garansi ASUS

Garansi ini berlaku di negara tempat pembelian.

Periode Garansi tertera pada kemasan/kotak dari Produk dan Masa Garansi dimulai sejak tanggal pembelian Produk ASUS dengan kondisi baru.

Silahkan pindai kode QR di bagian bawah halaman terakhir untuk Kartu Garansi serta Web dalam format PDF untuk lebih informasi jelas mengenai jaminan garansi Produk ASUS.

- Informasi Dukungan ASUS, silakan kunjungi <https://www.asus.com/id/support>
- Informasi Lokasi Layanan, silakan kunjungi <https://www.asus.com/id/support/Service-Center/Indonesia>.
- Layanan Call Center: 1500128

VI: Thông tin đảm bảo của ASUS

- ASUS cung cấp Bảo hành thương mại tự nguyện của nhà sản xuất.
- ASUS bảo lưu quyền giải thích các điều khoản của Bảo hành thương mại của ASUS.
- Bảo hành thương mại này của ASUS được cung cấp độc lập và ngoài Bảo đảm pháp lý theo luật định và không có cách nào ảnh hưởng đến hoặc giới hạn các quyền theo Bảo lãnh pháp lý. Đảm bảo tất cả các thông tin bảo hành, vui lòng truy cập

<https://www.asus.com/vn/support>



ASUS contact information

ASUSTeK COMPUTER INC.

Address: 1F., No. 15, Lide Rd., Beitou Dist., Taipei City 112

ASUS COMPUTER INTERNATIONAL (America)

Address: 48720 Kato Rd., Fremont, CA 94538, USA

ASUS COMPUTER GmbH (Germany and Austria)

Address: Harkortstrasse 21-23, 40880 Ratingen, Germany

ASUSTeK (UK) LIMITED

Address: 1st Floor, Sackville House, 143-149 Fenchurch Street, London, EC3M 6BL,
England, United Kingdom

Service and Support

Visit our multi-language website at <https://www.asus.com/support>.

